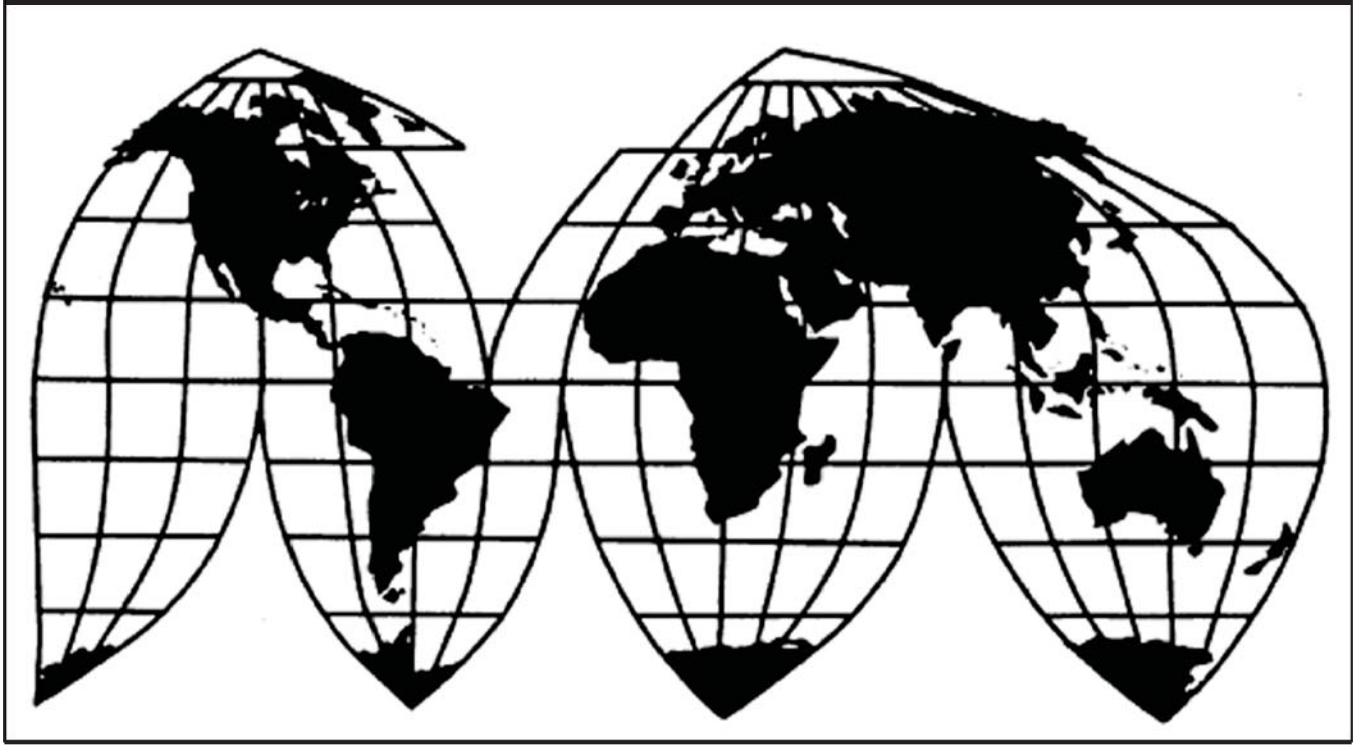
# Citric Acid and Certain Citrate Salts from Belgium, Colombia, and Thailand

Investigation Nos. 731-TA-1374-1376 (Final)

**Publication 4799** **July 2018**

**U.S. International Trade Commission**



**Washington, DC 20436**

# U.S. International Trade Commission

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# U.S. International Trade Commission

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**UNITED STATES INTERNATIONAL TRADE COMMISSION**

Investigation No. 731-TA-1374-1376 (Final)

Citric Acid and Certain Citrate Salts from Belgium, Colombia, and Thailand

## DETERMINATION

On the basis of the record[1] developed in the subject investigations, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), that an industry in the United States is materially injured by reason of imports of citric acid and certain citrate salts from Belgium, Colombia, and Thailand that have been found by the U.S. Department of Commerce ("Commerce") to be sold in the United States at less than fair value ("LTFV").[2] [3] [4]

## BACKGROUND

The Commission, pursuant to section 735(b) of the Act (19 U.S.C. 1673d(b)), instituted these investigations effective June 2, 2017, following receipt of a petition filed with the Commission and Commerce by Archer Daniels Midland Company, Decatur, Illinois; Cargill, Incorporated, Minneapolis, Minnesota; and Tate & Lyle Ingredients Americas, LLC, Hoffman Estates, Illinois. The Commission scheduled the final phase of the investigations following notification of a preliminary determination by Commerce that imports of citric acid and certain citrate salts from Belgium, Colombia, and Thailand were being sold at LTFV within the meaning of section 733(b) of the Act (19 U.S.C. 1673b(b)). Notice of the scheduling of the final phase of the Commission's investigation and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* of February 2, 2018 (83 FR 4922). The hearing was held in Washington, DC, on May 14, 2018, and all persons who requested the opportunity were permitted to appear in person or by counsel.

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[1] The record is defined in sec. 207.2(f) of the Commission's Rules of Practice and Procedure (19 CFR 207.2(f)).

[2] *Citric Acid and Certain Citrate Salts from Thailand: Affirmative Final Determination of Sales at Less Than Fair Value and Final Affirmative Determination of Critical Circumstances in Part,* 82 FR 25998, June 5, 2018; *Citric Acid and Certain Citrate Salts from Belgium: Affirmative Final Determination of Sales at Less Than Fair Value,* 82 FR 26001, June 5, 2018; *Citric Acid and Certain Citrate Salts from Colombia: Affirmative Final Determination of Sales at Less Than Fair Value and Final Negative Determination of Critical Circumstances,* 82 FR 26002, June 5, 2018.

[3] The Commission also finds that imports subject to Commerce's affirmative critical circumstances determination are not likely to undermine seriously the remedial effect of the antidumping duty order on Thailand.

[4] Commissioner Jason E. Kearns did not participate in these investigations.

# Views of the Commission

Based on the record in the final phase of these investigations, we determine that an industry in the United States is materially injured by reason of imports of citric acid and certain citrate salts from Belgium, Colombia, and Thailand found by the U.S. Department of Commerce ("Commerce") to be sold in the United States at less than fair value.

## I. Background

### A. The Current Investigations

Petitioners Archer Daniels Midland Company ("ADM"), Cargill, Inc. ("Cargill"), and Tate & Lyle Ingredients Americas LLC ("Tate & Lyle") (collectively "Petitioners"), domestic producers of citric acid and certain citrate salts ("CACCS") filed the petitions in these investigations on June 2, 2017.[1] Representatives appeared at the hearing accompanied by counsel and submitted prehearing and posthearing briefs and final comments.

Several respondent entities participated in the final phase of these investigations. Representatives and counsel for S.A. Citrique Belge N.V. ("Citrique Belge"), a producer of CACCS in Belgium, appeared at the hearing and submitted prehearing and posthearing briefs and final comments, as did representatives and counsel for Sucroal S.A. ("Sucroal"), a producer of CACCS in Colombia. Representatives and counsel for COFCO Biochemical (Thailand) Co., Ltd. ("COFCO"), and Niran (Thailand) Co., Ltd. ("Niran"), producers of CACCS in Thailand, and Zhong Ya Chemical, Ltd. ("Zhong Ya"), an importer of subject CACCS from Thailand, (collectively "Thai Respondents") appeared at the hearing and submitted prehearing and posthearing briefs. Several other respondent parties also submitted briefs and final comments including the following: Proctor & Gamble Manufacturing Co. ("Proctor & Gamble"),[2] an importer of subject CACCS from ***; and Quaker Sales & Distribution Inc., Tropicana Manufacturing Company, Inc., and Pepsi-Cola Sales and Distribution Inc. ("Quaker, Tropicana, and PepsiCo"), importers of subject CACCS from Colombia.

Except as noted, U.S. industry data are based on the questionnaire responses of three producers, believed to account for all of U.S. production of CACCS in 2017. U.S. import data are based on official Commerce import statistics and on questionnaire responses from 36 U.S.

[1] Petitioners alleged that the domestic industry was materially injured and threatened with material injury by reason of subsidized subject imports from Thailand and less-than-fair-value ("LTFV") subject imports from Belgium, Colombia, and Thailand. On June 5, 2018, Commerce published its negative final countervailing duty determination, finding that countervailable subsidies are not being provided to producers and exporters of citric acid and certain citrate salts from Thailand. 83 Fed. Reg. 26004. As a result, the Commission terminated its countervailing duty investigation. *Citric Acid and Certain Citrate Salts From Thailand; Termination of Investigation*, 83 Fed. Reg. 28011 (June 15, 2018). Therefore, the Commission's final determinations involve the antidumping duty investigations regarding CACCS imports from Belgium, Colombia, and Thailand.

[2] Proctor & Gamble is referred to as "PG" in table IV-1 of the confidential report. Confidential Report ("CR"), Public Report ("PR") at Table IV-1.

importers, accounting for 71.0 percent of subject imports from Belgium, 67.8 percent of subject imports from Colombia, and 91.5 percent of subject imports from Thailand in 2017.[3] The Commission received responses to its questionnaires from one producer of CACCS in Belgium accounting for virtually all U.S. imports of CACCS from Belgium,[4] one firm in Colombia accounting for *** U.S. imports of CACCS from Colombia,[5] and three firms in Thailand accounting for *** percent of all U.S. imports of CACCS from Thailand in 2017.[6]

### B. Previous and Related Investigations

In 1999, ADM, Cargill, and Tate & Lyle filed an antidumping petition on imports of CACCS from China. The investigation was terminated after the Commission made a negative determination in the preliminary phase.[7]

In 2008, the same three firms filed antidumping and countervailing duty petitions on imports of CACCS from Canada and China.[8] After affirmative determinations by Commerce and the Commission, Commerce subsequently issued a countervailing duty order on CACCS from China and antidumping duty orders on CACCS from Canada and China.[9] These orders remain in effect.[10]

## II. Domestic Like Product

### A. In General

In determining whether an industry in the United States is materially injured or threatened with material injury by reason of imports of subject merchandise, the Commission first defines the "domestic like product" and the "industry."[11] Section 771(4)(A) of the Tariff Act of 1930, as amended ("the Tariff Act"), defines the relevant domestic industry as the

[3] CR at I-5 – I-6; PR at I-4.

[4] CR at VII-3; PR at VII-3.

[5] CR at VII-9; PR at VII-7.

[6] CR at VII-16; PR at VII-10 – VII-11.

[7] *Citric Acid and Sodium Citrate from China*, Inv. No. 731-TA-863 (Preliminary), USITC Pub. 3277 at 1 (Feb. 2000); *Citric Acid and Sodium Citrate From China*, 65 Fed. Reg. 7889 (Feb. 16, 2000).

[8] *Citric Acid and Certain Citrate Salts from Canada and China*, Inv. Nos. 701-TA-456 and 731-TA-1151-1152 (Final), USITC Pub. 4076 (May 2009); *Citric Acid and Certain Citrate Salts from Canada and China*, 74 Fed. Reg. 25771 (May 29, 2009).

[9] *Citric Acid and Certain Citrate Salts from the People's Republic of China: Notice of Countervailing Duty Order*, 74 Fed. Reg. 25705 (May 28, 2009); *Citric Acid and Certain Citrate Salts from Canada and the People's Republic of China: Antidumping Duty Order*, 74 Fed. Reg. 25703 (May 29, 2009).

[10] *Citric Acid and Certain Citrate Salts from Canada and the People's Republic of China: Continuation of the Antidumping Duty Orders on Canada and the People's Republic of China, and Continuation of the Countervailing Duty Order on the People's Republic of China*, 80 Fed. Reg. 36318 (June 24, 2015); *Citric Acid and Certain Citrate Salts from Canada and China*, Inv. Nos. 701-TA-456 and 731-TA-1151-1152 (Review), USITC Pub. 4538 (June 2015).

[11] 19 U.S.C. § 1677(4)(A).

"producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[12] In turn, the Tariff Act defines "domestic like product" as "a product which is like, or in the absence of like, most similar in characteristics and uses with, the article subject to an investigation."[13]

The decision regarding the appropriate domestic like product in an investigation is a factual determination, and the Commission has applied the statutory standard of "like" or "most similar in characteristics and uses" on a case-by-case basis.[14] No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.[15] The Commission looks for clear dividing lines among possible like products and disregards minor variations.[16] Although the Commission must accept Commerce's determination as to the scope of the imported merchandise that is subsidized or sold at less than fair value,[17] the Commission determines what domestic product is like the imported articles Commerce has identified.[18]

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[12] 19 U.S.C. § 1677(4)(A).

[13] 19 U.S.C. § 1677(10).

[14] *See*, *e.g.*, *Cleo Inc. v. United States*, 501 F.3d 1291, 1299 (Fed. Cir. 2007); *NEC Corp. v. Department of Commerce*, 36 F. Supp. 2d 380, 383 (Ct. Int'l Trade 1998); *Nippon Steel Corp. v. United States*, 19 CIT 450, 455 (1995); *Torrington Co. v. United States*, 747 F. Supp. 744, 749 n.3 (Ct. Int'l Trade 1990), *aff'd*, 938 F.2d 1278 (Fed. Cir. 1991) ("every like product determination 'must be made on the particular record at issue' and the 'unique facts of each case'"). The Commission generally considers a number of factors, including the following: (1) physical characteristics and uses; (2) interchangeability; (3) channels of distribution; (4) customer and producer perceptions of the products; (5) common manufacturing facilities, production processes, and production employees; and, where appropriate, (6) price. *See Nippon*, 19 CIT at 455 n.4; *Timken Co. v. United States*, 913 F. Supp. 580, 584 (Ct. Int'l Trade 1996).

[15] *See*, *e.g.*, S. Rep. No. 96-249 at 90-91 (1979).

[16] *Nippon*, 19 CIT at 455; *Torrington*, 747 F. Supp. at 748-49; *see also* S. Rep. No. 96-249 at 90-91 (Congress has indicated that the like product standard should not be interpreted in "such a narrow fashion as to permit minor differences in physical characteristics or uses to lead to the conclusion that the product and article are not 'like' each other, nor should the definition of 'like product' be interpreted in such a fashion as to prevent consideration of an industry adversely affected by the imports under consideration.").

[17] *See*, *e.g., USEC, Inc. v. United States*, 34 Fed. Appx. 725, 730 (Fed. Cir. 2002) ("The ITC may not modify the class or kind of imported merchandise examined by Commerce."); *Algoma Steel Corp. v. United States*, 688 F. Supp. 639, 644 (Ct. Int'l Trade 1988), *aff'd*, 865 F.3d 240 (Fed. Cir.), *cert. denied*, 492 U.S. 919 (1989).

[18] *Hosiden Corp. v. Advanced Display Mfrs.*, 85 F.3d 1561, 1568 (Fed. Cir. 1996) (the Commission may find a single like product corresponding to several different classes or kinds defined by Commerce); *Cleo*, 501 F.3d at 1298 n.1 ("Commerce's {scope} finding does not control the Commission's {like product} determination."); *Torrington*, 747 F. Supp. at 748-52 (affirming the Commission's determination defining six like products in investigations in which Commerce found five classes or kinds).

### B. Product Description

Commerce defined the scope of the imported merchandise under investigation as follows:

> …all grades and granulation sizes of citric acid, sodium citrate, and potassium citrate in their unblended forms, whether dry or in solution, and regardless of packaging type. The scope also includes blends of citric acid, sodium citrate, and potassium citrate; as well as blends with other ingredients, such as sugar, where the unblended form(s) of citric acid, sodium citrate, and potassium citrate constitute 40 percent or more, by weight, of the blend.
>
> The scope also includes all forms of crude calcium citrate, including dicalcium citrate monohydrate, and tricalcium citrate tetrahydrate, which are intermediate products in the production of citric acid, sodium citrate, and potassium citrate.
> The scope includes the hydrous and anhydrous forms of citric acid, the dihydrate and anhydrous forms of sodium citrate, otherwise known as citric acid sodium salt, and the monohydrate and monopotassium forms of potassium citrate. Sodium citrate also includes both trisodium citrate and monosodium citrate which are also known as citric acid trisodium salt and citric acid monosodium salt, respectively.
>
> The scope does not include calcium citrate that satisfies the standards set forth in the United States Pharmacopeia and has been mixed with a functional excipient, such as dextrose or starch, where the excipient constitutes at least 2 percent, by weight, of the product.
>
> Citric acid and sodium citrate and classifiable under 2918.14.0000 and 2918.15.1000 of the HTSUS, respectively. Potassium citrate and crude calcium citrate are classifiable under 2918.15.5000 and, if included in a mixture or blend, 3824.99.9295 of the HTSUS. Blends that include citric acid, sodium citrate, and potassium citrate are classifiable under 3824.99.9295 of the HTSUS. Although the HTSUS subheadings are provided for convenience and customers purposes, the written description of the merchandise is dispositive.[19]

[19] *Citric Acid and Certain Citrate Salts from Belgium: Affirmative Final Determination of Sales at Less Than Fair Value*, 83 Fed. Reg. 26001 (June 5, 2018); *Citric Acid and Certain Citrate Salts from*

Crude calcium citrate is an intermediate product that is internally consumed for the production of citric acid[20] and citric acid is used to produce sodium citrate and potassium citrate. Each may be produced in more than one chemical form.[21] Citric acid, sodium citrate, and potassium citrate are all available as odorless, translucent crystals. In their dry form, they are sold as either granular, fine granular, or powder products. A water solution form of citric acid (normally a 50-percent solution) is produced and sold in the United States. Both liquid and dry forms can be easily converted to the other and purchasers sometimes buy the dry product and put it into a solution at their own facilities or at the facilities of an independent converter. Whether dry or dissolved in water, the product's chemical properties are the same.[22]

Citric acid, sodium citrate, and potassium citrate are each used in food and beverage products,[23] in pharmaceutical applications,[24] and in industrial uses.[25] Citric acid, sodium citrate,

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*Colombia: Affirmative Final Determination of Sales at Less Than Fair Value*, 83 Fed. Reg. 26002 (June 5, 2018); *Citric Acid and Certain Citrate Salts from Thailand: Affirmative Final Determination of Sales at Less Than Fair Value, Final Affirmative Critical Circumstances Determination, in Part*, 83 Fed. Reg. 25998 (June 5, 2018).

[20] CR at I-13; PR at I-9 – I-10.

[21] CR at I-14; PR at I-10. Citric acid may be produced as citric acid anhydrous ($C_6H_8O_7$) and as citric acid monohydrate ($C_6H_8O_7 \bullet H_2O$). Sodium citrate may be produced as sodium citrate anhydrous or trisodium anhydrous form ($Na_3C_6H_5O_7$), as sodium citrate dihydrate or trisodium citrate dihydrate ($Na_3C_6H_5O_7 \bullet H_2O$), and as monosodium citrate ($NaH_2(C_3H_5O(COO)_3$). Potassium citrate may be produced as potassium citrate monohydrate or tripotassium citrate monohydrate ($K_3C_6H_5O_7 \bullet H_2O$) and monopotassium citrate ($KH_2C_6H_5O_7$). Crude calcium citrate ("CCC") may be produced as tricalcium citrate ($Ca_3(C_6H_5O_7)_2$), dicalcium citrate ($Ca_2H_2(C_3H_5O)(COO)_3 \bullet H_2O$), and tricalcium citrate tetrahydrate ($Ca_3(C_6H_5O_7)_2(COO)_3 \bullet 4H_2O$). *Id.*

[22] CR at I-13 – I-15; PR at I-9 – I-11.

[23] Citric acid is used in foods and beverages (such as carbonated and non-carbonated drinks, dry powdered beverages, wine and wine coolers, jams, jellies, preserves, gelatin desserts, candies, frozen foods, and canned fruits and vegetables) as an acidulant, preservative, and flavor enhancer because of its tartness, high solubility, acidity, and buffering capabilities. Sodium citrate is used for carbonated beverages, dry beverage mixes, fruit drinks, jams, jellies, preserves, gelatin desserts, and candies, and in cheese and dairy products (to improve emulsifying properties, texture, and melting properties and to act as a preservative and aging agent). Potassium citrate can be used for many of the same food and beverage applications as sodium citrate, particularly for no- or low-sodium content products. CR at I-15 – I-16; PR at I-11; Petition at 5-6.

[24] Citric acid is used in pharmaceuticals and cosmetics and sodium citrate is used in pharmaceuticals as an expectorant in cough syrups and in over-the-counter antacids. Potassium citrate is also used in pharmaceutical applications as an antacid, a diuretic, and an expectorant, in dietary supplements, to treat kidney stones, and as a systemic and urinary alkalizer. CR at I-15 – I-16; PR at I-11; Petition at 6.

[25] Citric acid is used in industrial applications such as household detergents, metal finishers and cleaners, and durable press textile finishing treatments. Sodium citrate also is used in household cleaner products to act as a buffering agent and metal ion sequestrant and potassium citrate also can be used in electropolishing and as a buffering agent. CR at I-16; PR at I-11; Petition at 6.

and potassium citrate must meet Food Chemical Codex ("FCC") standards for use in beverage and food products in the United States and U.S. Pharmacopeia ("USP") standards for use in pharmaceutical products in the United States.[26] Non-conforming products, however, may be used in industrial applications.[27]

Citric acid is produced in a two-stage process: fermentation and recovery/refinement of crude citric acid. In the United States, citric acid, sodium citrate, and potassium citrate are produced at the same manufacturing facilities by the same employees, at least for the early production stages. At the first manufacturing stage, domestic producers ferment a starch or sugar base (primarily corn but sometimes molasses or other products) using a fermenting organism (normally a specific mold or yeast) in a deep tank. At the second stage, domestic producers recover the crude citric acid produced by fermentation and refine it by one of three common processes: the lime/sulfuric acid method, the solvent extraction method, or the ion exchange method. All three methods yield citric acid dissolved in water, and producers make hydrous or anhydrous citric acid by adjusting the temperature of the crystallization process. Citric acid can then be sold as is or converted into salts, such as sodium citrate or potassium citrate.[28]

In the preliminary phase of these investigations, the Commission defined a single domestic like product consisting of CACCS. It found that there was a spectrum or grouping of domestically produced products corresponding to the scope of the investigations without clear dividing lines based on chemical or physical form, grade (food, pharmaceutical, or industrial and genetically modified organism ("GMO"), non-GMO, or verified non-GMO), or product type (citric acid or citrate salts). The Commission further found that, whether in an intermediate form as crude calcium citrate, as citric acid, or transformed into sodium citrate or potassium citrate, citric acid and its citrate salts come in a variety of chemical and physical forms and grades for a variety of end uses, and physical appearance varies accordingly. It observed that crude calcium citrate, citric acid, and citrate salts have similar chemical composition and that, whereas crude calcium citrate is only used to produce citric acid, some citric acid is used to produce sodium citrate or potassium citrate. Citric acid, sodium citrate, and potassium citrate are all used as buffers, acidulants, and preservatives and in some of the same food and beverage applications. Although citric acid, sodium citrate, and potassium citrate are not substitutable in all applications, they are used in an overlapping manner in some of the same types of end products. The Commission recognized that there may be some limitations on interchangeability with respect to certain end uses, but it indicated in other investigations where the scope encompasses a variety of products, a lack of interchangeability among types of products along the spectrum, or included in a grouping of similar products, is not unexpected.

[26] CR at I-16; PR at I-11.

[27] Petition at 9-10.

[28] CR at I-20 – I-23; PR at I-14 – I-16.

### C. Domestic Like Product Analysis

The record in the final phase of these investigations do not contain any new information that would alter the Commission's definition of the domestic like product in the preliminary phase of these investigations, and no party argues for a different definition.[29] Accordingly, for the reasons set forth in the preliminary determinations, we define a single domestic like product consisting of the CACCS products corresponding to the scope of these investigations, including crude calcium citrate, citric acid, sodium citrate, and potassium citrate in all chemical and physical forms.

## III. Domestic Industry

The domestic industry is defined as the domestic "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[30] In defining the domestic industry, the Commission's general practice has been to include in the industry producers of all domestic production of the like product, whether toll-produced, captively consumed, or sold in the domestic merchant market.

In the United States, *** produce citric acid, sodium citrate, and potassium citrate, while *** produces only citric acid.[31] Petitioners contend that there is a single domestic industry consisting of all producers of CACCS corresponding to the definition of the domestic like product and that Petitioners are the only U.S. producers of CACCS.[32]

Consistent with our definition of the domestic like product, we define the domestic industry as including all domestic producers of CACCS. These are ADM, Cargill, and Tate & Lyle.

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[29] Petitioners argue for the reasons found in the preliminary determination that the Commission should continue to define a single domestic like product consisting of CACCS. Petitioners Prehearing Br. at 5-12. Sucroal indicated that it does not challenge the domestic like product definition that the Commission adopted in the preliminary determinations. Sucroal Prehearing Br. at 5. No other respondent party commented on the definition of the domestic like product in their submissions to the Commission in the final phase of these investigations; however, COFCO and Citrique Belge indicated that they agreed with Petitioners' proposed single domestic like product in the preliminary phase of these investigations. CR at I-23 nn.90, 91; PR at I-15 nn.90, 91; Conf. Tr. at 127 (Schaefer). In the preliminary phase of these investigations, Zhong Ya argued for two domestic like products consisting of citric acid and citrate salts. *Preliminary Determinations*, USITC Pub. 4710 at 7.

[30] 19 U.S.C. § 1677(4)(A).

[31] CR at I-14; PR at I-10.

[32] Petitioners' Prehearing Br. at 13-14. No respondent party argues for a different definition of the domestic industry. There are no related party issues in these investigations. CR/PR at Tables III-2 & III-7.

## IV. Cumulation[33]

For purposes of evaluating the volume and effects for a determination of material injury by reason of subject imports, section 771(7)(G)(i) of the Tariff Act requires the Commission to cumulate subject imports from all countries as to which petitions were filed and/or investigations self-initiated by Commerce on the same day, if such imports compete with each other and with the domestic like product in the U.S. market. In assessing whether subject imports compete with each other and with the domestic like product, the Commission generally has considered four factors:

(1) the degree of fungibility between subject imports from different countries and between subject imports and the domestic like product, including consideration of specific customer requirements and other quality related questions;

(2) the presence of sales or offers to sell in the same geographic markets of subject imports from different countries and the domestic like product;

(3) the existence of common or similar channels of distribution for subject imports from different countries and the domestic like product; and

(4) whether the subject imports are simultaneously present in the market.[34]

While no single factor is necessarily determinative, and the list of factors is not exclusive, these factors are intended to provide the Commission with a framework for determining whether the subject imports compete with each other and with the domestic like product.[35] Only a "reasonable overlap" of competition is required.[36]

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[33] Pursuant to Section 771(24) of the Tariff Act, imports from a subject country of merchandise corresponding to a domestic like product that account for less than 3 percent of all such merchandise imported into the United States during the most recent 12 months for which data are available preceding the filing of the petition shall be deemed negligible. 19 U.S.C. §§ 1673d(b)(1), 1677(24)(A)(i).

Subject imports from Belgium, Colombia, and Thailand accounted for *** percent, *** percent, and *** percent of total imports of CACCS by quantity, respectively, during May 2016 through April 2017, the most recent 12-month period preceding the filing of the petition for which data are currently available. CR at IV-9; PR at IV-7; CR/PR at Table IV-4. Because subject imports from each subject country exceed the applicable statutory threshold, we find that imports from each subject source are not negligible.

[34] *See Certain Cast-Iron Pipe Fittings from Brazil, the Republic of Korea, and Taiwan*, Inv. Nos. 731-TA-278-280 (Final), USITC Pub. 1845 (May 1986), *aff'd*, *Fundicao Tupy, S.A. v. United States*, 678 F. Supp. 898 (Ct. Int'l Trade), aff'd, 859 F.2d 915 (Fed. Cir. 1988).

[35] *See*, *e.g.*, *Wieland Werke, AG v. United State*s, 718 F. Supp. 50 (Ct. Int'l Trade 1989).

[36] The Statement of Administrative Action (SAA) to the Uruguay Round Agreements Act (URAA), expressly states that "the new section will not affect current Commission practice under which the

### A. Arguments of the Parties

Petitioners argue that imports from all three subject countries should be cumulated because the petitions were filed on the same day and there is a reasonable overlap of competition among subject imports and the domestic like product.[37] Citrique Belge argues that subject imports from Belgium should not be cumulated with imports of CACCS from other subject sources[38] because there is a limited overlap in competition between CACCS from Belgium and subject imports from Colombia and Thailand and the domestic like product. In particular, Citrique Belge claims that CACCS from Belgium is produced from non-GMO feedstock, and as such, competes in different segments of the U.S. market.[39] Sucroal contends that subject imports from Colombia should not be cumulated with subject imports from Thailand because certain differences justify finding that there is not a "reasonable overlap of competition."[40] Sucroal acknowledges that there is some competition between imports of CACCS from Colombia and Thailand, but argues that there is attenuated competition that suggests that the two are not fungible.[41]

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statutory requirement is satisfied if there is a reasonable overlap of competition." H.R. Rep. No. 103-316, Vol. I at 848 (1994) (*citing Fundicao Tupy, S.A. v. United States*, 678 F. Supp. at 902; *see Goss Graphic Sys., Inc. v. United States*, 33 F. Supp. 2d 1082, 1087 (Ct. Int'l Trade 1998) ("cumulation does not require two products to be highly fungible"); *Wieland Werke, AG*, 718 F. Supp. at 52 ("Completely overlapping markets are not required.").

[37] Petitioners Prehearing Br. at 31-35; Petitioners Posthearing Br. at 3-4 & Responses to Commission Questions at 25-31 & Exhibit 3.

[38] Citrique Belge Posthearing Br. at 1-5. In support of its argument, Citrique Belge contends that this case is similar to the investigations in *Xanthan Gum from Austria and China*, in which the Commission declined to cumulate subject imports due to differences in volume and pricing behavior and reached negative determinations with respect to subject imports from Austria. However, Citrique Belge's argument fails to recognize that, based on the traditional reasonable overlap factors, the Commission cumulated imports from both subject countries for purposes of its negative present material injury determinations, but exercised its discretion to not cumulate subject imports for purposes of analyzing threat, based on the differences in volume and pricing trends. *Xanthan Gum from Austria and China*, Inv. Nos. 731-TA-1202-03 (Final), USITC Pub. 4411 (July 2013) at 7-11. The statute only permits the Commission to exercise such discretion in the threat context, not in its present material injury analysis. 19 U.S.C. § 1677(7)(H).

[39] Citrique Belge Posthearing Br. at 2; Citrique Belge Prehearing Br. at 14.

[40] Sucroal Posthearing Br. at 10-12. Specifically, Sucroal contends that differences in import volume trends, market share, pricing trends, underselling and overselling instances, pricing strategies, and end use concentration suggest that there is a lack of a reasonable overlap of competition between subject imports from Colombia and Thailand.

[41] Sucroal Posthearing Br. at 13. Sucroal mistakenly argues that the Commission should "exercise its discretion not to cumulate in order to avoid unfairly punishing Sucroal." *Id.* Although we are mindful of some differing trends in the volume and pricing of subject imports from Belgium and Colombia compared to those from Thailand, for purposes of analyzing present material injury, the Commission cumulates subject imports from all countries when there is a reasonable overlap of competition.

### B. Analysis

We consider subject imports from Belgium, Colombia, and Thailand on a cumulated basis because the criteria for cumulation are satisfied. The statutory threshold for cumulation is satisfied in these investigations because Petitioners filed the antidumping petitions with respect to all three subject countries on the same day, June 17, 2017.[42] The record also supports finding a reasonable overlap of competition among CACCS produced in Belgium, Colombia, Thailand, and the United States, and between imports from each of the subject countries, as indicated below.

*Fungibility*. During the period of investigation, U.S. producers and U.S. importers of CACCS from each of the three subject countries shipped both citric acid and sodium citrate. U.S. producers and importers of CACCS from Colombia and Thailand also reported shipments of potassium citrate.[43] For U.S. producers and importers of CACCS from all three subject countries, citric acid accounted for the vast majority of their U.S. shipments, with sodium citrate accounting for a much smaller percentage. For U.S. producers and importers of CACCS from Colombia and Thailand, potassium citrate accounted for the smallest percentage of their U.S. shipments.[44]

The record in the final phase of these investigations indicates that subject imports from each subject country are generally interchangeable with each other and the domestic like product. All U.S. producers reported that domestically produced CACCS are always interchangeable with CACCS from each subject country and always interchangeable between each subject country. Most importers reported that domestically produced CACCS are always or frequently interchangeable with subject imports from Belgium and Colombia, and sometimes interchangeable with subject imports from Thailand. U.S. importers reported that CACCS from each subject country were always or sometimes interchangeable with the CACCS imports from each of the other subject countries. Most U.S. purchasers reported that domestically produced CACCS are always or frequently interchangeable with subject imports from Belgium, frequently or sometimes interchangeable with subject imports from Colombia, and sometimes interchangeable with subject imports from Thailand. Most purchasers reported that CACCS from each subject country were always or sometimes interchangeable with the CACCS imports from each of the other subject countries.[45] U.S. purchasers also reported that CACCS from all sources were comparable across nearly all factors, with the exception of non-GMO factors, for which the domestically produced CACCS was generally reported to be inferior compared to subject imports.[46] Although there may be some limitations on the fungibility of GMO and non-GMO CACCS based on certain customer preferences for CACCS made from non-GMO substrate,

[42] None of the statutory exceptions to cumulation applies.
[43] CR/PR at Tables IV-6 & D-2.
[44] CR/PR at Tables IV-6 & D-2.
[45] CR/PR at Table II-12.
[46] CR/PR at Table II-11.

the record in the final phase of these investigations indicates a reasonable level of fungibility between and among the domestic like product and CACCS from each subject source.

Citrique Belge's arguments do not establish a lack of fungibility among CACCS from all sources.[47] Specifically, the record does not support Citrique Belge's assertion that subject imports from Belgium are perceived to be qualitatively different from subject imports from Colombia or are perceived to be significantly different from subject imports from Thailand in terms of quality and reliability. Rather, as described above, most market participants reported that subject imports from Belgium were always or sometimes interchangeable with subject imports from Colombia and Thailand. Moreover, purchasers reported that CACCS from Belgium and Colombia were comparable in all factors, except in terms of being Non-GMO Project Verified, and that CACCS from Belgium and Thailand were comparable across all factors, including quality and reliability.[48]

The record also does not support Citrique Belge's argument that the domestic like product, which is produced using GMO inputs, is "in no way interchangeable" with subject imports from Belgium, which are produced using non-GMO inputs. As an initial matter, as discussed below, all CACCS produced from non-GMO substrates can be used in the same applications as CACCS produced from GMO substrates; the only limitation on interchangeability exists with respect to purchasers that specifically require non-GMO product. Moreover, a significant percentage of both the domestic industry's and Citrique Belge's total U.S. commercial shipments during the period of investigation were for food and beverage end uses, notwithstanding that both lack Non-GMO Project Verification.[49] Furthermore, both the domestic industry and Citrique Belge also had U.S. commercial shipments to industrial end users, which generally do not require non-GMO CACCS.[50] Because the domestic like product and subject imports from Belgium are sold to purchasers of both non-GMO and GMO products, there appears to be a reasonable overlap of competition between CACCS from both sources.[51]

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[47] Moreover, the fact that certain imports might be concentrated in different pricing products does not demonstrate a lack of fungibility, but rather pricing data for domestically produced CACCS and imports of CACCS from each subject source for all eight of the pricing products indicates an overlap in competition. CR/PR at Tables V-3 – V-10.

[48] CR/PR at Table II-11.

[49] CR/PR at Table II-1. As explained below, Non-GMO Project Verification is one of the most recognizable standards for non-GMO products. By its own admission, Citrique Belge's products lacked Non-GMO Project Verification during the period of investigation, but its products were considered non-GMO by purchasers. Notwithstanding the fact that domestically produced CACCS also lacked Non-GMO Project Verification and is produced using GMO corn, at least some purchasers also considered domestically produced CACCS to be non-GMO. CR/PR at Table II-9.

[50] Non-GMO CACCS is mostly used in the food, beverage, and pharmaceutical sectors. CR/PR at II-1.

[51] We also observe that during the preliminary phase of these investigations, representatives from Citrique Belge indicated that subject imports from Belgium and the domestic like product are "largely interchangeable," that subject producers from Thailand are taking market share from Citrique Belge and other producers, and that Citrique Belge also directly competes with Thai producers and

Accordingly, the record indicates that CACCS from Belgium is reasonably fungible with the domestic like product and subject imports from Colombia and Thailand.

The record also indicates that CACCS from Colombia is reasonably fungible with the domestic like product and subject imports from Belgium and Thailand. Sucroal argues that there is a lack of fungibility between CACCS from Colombia and CACCS from Thailand. In particular, Sucroal contends that differences in import volume trends, in market share, in pricing trends and strategies, including its efforts to obtain a price premium for its Non-GMO Project Verified CACCS, all suggest that there is attenuated competition between subject imports from Colombia and Thailand. Differences in volume and pricing trends and strategies do not necessarily establish that market participants view CACCS from the two sources not to be fungible. To the contrary, as discussed above, market participants reported that subject imports from Colombia were always or sometimes interchangeable with subject imports from Thailand.[52] In addition, purchasers reported CACCS from Colombia and Thailand to be comparable in all factors, except for delivery time and price.[53]

In addition, the record does not support Sucroal's assertion that the purportedly different focuses on end uses by producers of CACCS in Colombia and Thailand establishes a lack of fungibility between CACCS from the two sources. Importers of both reported that significant percentages of their U.S. commercial shipments of CACCS from Colombia and Thailand were both for food and beverage as well as industrial end uses.[54] Further, we observe that a representative of Sucroal testified at the hearing that its imports of CACCS compete directly with CACCS from Thailand.[55] Thus, the record demonstrates that CACCS from Colombia is reasonably fungible with subject imports from Thailand.

*Channels of Distribution*. Domestic producers and importers of CACCS from all subject countries sold CACCS to distributors and end users, although U.S. producers and importers of CACCS from Belgium and Colombia sold mainly to end users, while importers of CACCS from Thailand sold mainly to distributors.[56] In addition, domestic producers and importers of CACCS sold to both food and beverage as well as industrial end use sectors, with the food and beverage sector representing the largest end-use sector for U.S. producers and importers of CACCS from Belgium and Colombia. The share of commercial shipments of imports of CACCS from Thailand sold to end users varied between the food and beverage and industrial sectors for each year of the period of investigation.[57]

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Sucroal as well as domestic producers for U.S. customers. Petitioners' Posthearing Br., Response to Commission Questions at 28 (citing Conference Tr. at 118, 126).

[52] CR/PR at Table II-12.

[53] CR/PR at Table II-11.

[54] CR/PR at Table II-1.

[55] Tr. at 184-86 (Poulous).

[56] CR/PR at II-2 & CR/PR at Table II-1.

[57] CR/PR at II-2 & Table II-1.

*Geographic Overlap*. Domestically produced CACCS and subject imports from Belgium, Colombia, and Thailand are sold throughout the United States.[58]

*Simultaneous Presence in Market*. Import and pricing data show that the domestic product and CACCS imported from all subject countries have been present in the U.S. market throughout the period of investigation.[59]

*Conclusion*. The record in the final phase of these investigations indicates that subject imports from each subject country are reasonably fungible with the domestic like product and each other, that subject imports from each subject country and the domestic like product are sold in similar channels of distribution and in similar geographic markets, and have been simultaneously present in the U.S. market. In light of the foregoing, we find that there is a reasonable overlap of competition among the domestic like product and subject imports from each subject country and between imports from each subject country.

## V. Material Injury by Reason of Subject Imports

Based on the record in the final phase of these investigations, we find that an industry in the United States is materially injured by reason of imports of CACCS from Belgium, Colombia, and Thailand that Commerce has found to be sold in the United States at less than fair value.

### A. Legal Standards

In the final phase of antidumping and countervailing duty investigations, the Commission determines whether an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.[60] In making this determination, the Commission must consider the volume of subject imports, their effect on prices for the domestic like product, and their impact on domestic producers of the domestic like product, but only in the context of U.S. production operations.[61] The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant."[62] In assessing whether the domestic industry is materially injured by reason of subject imports, we consider all relevant economic factors that bear on the state of the industry in the United States.[63] No single factor is dispositive, and all relevant factors are considered "within the

[58] CR/PR at Table II-2.

[59] CR/PR at Tables IV-8, V-3 – V-10.

[60] 19 U.S.C. §§ 1671d(b), 1673d(b). The Trade Preferences Extension Act of 2015, Pub. L. 114-27, amended the provisions of the Tariff Act pertaining to Commission determinations of material injury and threat of material injury by reason of subject imports in certain respects. We have applied these amendments here.

[61] 19 U.S.C. § 1677(7)(B). The Commission "may consider such other economic factors as are relevant to the determination" but shall "identify each {such} factor ... and explain in full its relevance to the determination." 19 U.S.C. § 1677(7)(B).

[62] 19 U.S.C. § 1677(7)(A).

[63] 19 U.S.C. § 1677(7)(C)(iii).

context of the business cycle and conditions of competition that are distinctive to the affected industry."[64]

Although the statute requires the Commission to determine whether the domestic industry is "materially injured or threatened with material injury by reason of" unfairly traded imports,[65] it does not define the phrase "by reason of," indicating that this aspect of the injury analysis is left to the Commission's reasonable exercise of its discretion.[66] In identifying a causal link, if any, between subject imports and material injury to the domestic industry, the Commission examines the facts of record that relate to the significance of the volume and price effects of the subject imports and any impact of those imports on the condition of the domestic industry. This evaluation under the "by reason of" standard must ensure that subject imports are more than a minimal or tangential cause of injury and that there is a sufficient causal, not merely a temporal, nexus between subject imports and material injury.[67]

In many investigations, there are other economic factors at work, some or all of which may also be having adverse effects on the domestic industry. Such economic factors might include nonsubject imports; changes in technology, demand, or consumer tastes; competition among domestic producers; or management decisions by domestic producers. The legislative history explains that the Commission must examine factors other than subject imports to ensure that it is not attributing injury from other factors to the subject imports, thereby inflating an otherwise tangential cause of injury into one that satisfies the statutory material injury threshold.[68] In performing its examination, however, the Commission need not isolate

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[64] 19 U.S.C. § 1677(7)(C)(iii).

[65] 19 U.S.C. §§ 1671d(a), 1673d(a).

[66] *Angus Chemical Co. v. United States*, 140 F.3d 1478, 1484-85 (Fed. Cir. 1998) ("{T}he statute does not 'compel the commissioners' to employ {a particular methodology}."), *aff'g,* 944 F. Supp. 943, 951 (Ct. Int'l Trade 1996).

[67] The Federal Circuit, in addressing the causation standard of the statute, observed that "{a}s long as its effects are not merely incidental, tangential, or trivial, the foreign product sold at less than fair value meets the causation requirement." *Nippon Steel Corp. v. USITC*, 345 F.3d 1379, 1384 (Fed. Cir. 2003). This was further ratified in *Mittal Steel Point Lisas Ltd. v. United States*, 542 F.3d 867, 873 (Fed. Cir. 2008), where the Federal Circuit, quoting *Gerald Metals, Inc. v. United States*, 132 F.3d 716, 722 (Fed. Cir. 1997), stated that "this court requires evidence in the record 'to show that the harm occurred "by reason of" the LTFV imports, not by reason of a minimal or tangential contribution to material harm caused by LTFV goods.'" *See also Nippon Steel Corp. v. United States*, 458 F.3d 1345, 1357 (Fed. Cir. 2006); *Taiwan Semiconductor Industry Ass'n v. USITC*, 266 F.3d 1339, 1345 (Fed. Cir. 2001).

[68] SAA at 851-52 ("{T}he Commission must examine other factors to ensure that it is not attributing injury from other sources to the subject imports."); S. Rep. 96-249 at 75 (1979) (the Commission "will consider information which indicates that harm is caused by factors other than less-than-fair-value imports."); H.R. Rep. 96-317 at 47 (1979) ("in examining the overall injury being experienced by a domestic industry, the ITC will take into account evidence presented to it which demonstrates that the harm attributed by the petitioner to the subsidized or dumped imports is attributable to such other factors;" those factors include "the volume and prices of nonsubsidized imports or imports sold at fair value, contraction in demand or changes in patterns of consumption, trade restrictive practices of and competition between the foreign and domestic producers,

the injury caused by other factors from injury caused by unfairly traded imports.[69] Nor does the "by reason of" standard require that unfairly traded imports be the "principal" cause of injury or contemplate that injury from unfairly traded imports be weighed against other factors, such as nonsubject imports, which may be contributing to overall injury to an industry.[70] It is clear that the existence of injury caused by other factors does not compel a negative determination.[71]

Assessment of whether material injury to the domestic industry is "by reason of" subject imports "does not require the Commission to address the causation issue in any particular way" as long as "the injury to the domestic industry can reasonably be attributed to the subject imports" and the Commission "ensure{s} that it is not attributing injury from other sources to the subject imports."[72] Indeed, the Federal Circuit has examined and affirmed various Commission methodologies and has disavowed "rigid adherence to a specific formula."[73]

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developments in technology and the export performance and productivity of the domestic industry"); *accord Mittal Steel*, 542 F.3d at 877.

[69] SAA at 851-52 ("{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports."); *Taiwan Semiconductor Industry Ass'n,* 266 F.3d at 1345 ("{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports ... . Rather, the Commission must examine other factors to ensure that it is not attributing injury from other sources to the subject imports." (emphasis in original)); *Asociacion de Productores de Salmon y Trucha de Chile AG v. United States*, 180 F. Supp. 2d 1360, 1375 (Ct. Int'l Trade 2002) ("{t}he Commission is not required to isolate the effects of subject imports from other factors contributing to injury" or make "bright-line distinctions" between the effects of subject imports and other causes.); *see also Softwood Lumber from Canada*, Inv. Nos. 701-TA-414 and 731-TA-928 (Remand), USITC Pub. 3658 at 100-01 (Dec. 2003) (Commission recognized that "{i}f an alleged other factor is found not to have or threaten to have injurious effects to the domestic industry, *i.e*., it is not an 'other causal factor,' then there is nothing to further examine regarding attribution to injury"), *citing Gerald Metals,* 132 F.3d at 722 (the statute "does not suggest that an importer of LTFV goods can escape countervailing duties by finding some tangential or minor cause unrelated to the LTFV goods that contributed to the harmful effects on domestic market prices.").

[70] S. Rep. 96-249 at 74-75; H.R. Rep. 96-317 at 47.

[71] *See Nippon Steel Corp*., 345 F.3d at 1381 ("an affirmative material-injury determination under the statute requires no more than a substantial-factor showing. That is, the 'dumping' need not be the sole or principal cause of injury.").

[72] *Mittal Steel*, 542 F.3d at 877-78; *see also id.* at 873 ("While the Commission may not enter an affirmative determination unless it finds that a domestic industry is materially injured 'by reason of' subject imports, the Commission is not required to follow a single methodology for making that determination ... {and has} broad discretion with respect to its choice of methodology.") *citing United States Steel Group v. United States*, 96 F.3d 1352, 1362 (Fed. Cir. 1996) and S. Rep. 96-249 at 75. In its decision in *Swiff-Train v. United States*, 793 F.3d 1355 (Fed. Cir. 2015), the Federal Circuit affirmed the Commission's causation analysis as comporting with the Court's guidance in *Mittal*.

[73] *Nucor Corp. v. United States*, 414 F.3d 1331, 1336, 1341 (Fed. Cir. 2005); *see also Mittal Steel*, 542 F.3d at 879 ("*Bratsk* did not read into the antidumping statute a Procrustean formula for determining whether a domestic injury was 'by reason' of subject imports.").

The Federal Circuit's decisions in *Gerald Metals, Bratsk*, and *Mittal Steel* all involved cases where the relevant "other factor" was the presence in the market of significant volumes of price-competitive nonsubject imports. The Commission interpreted the Federal Circuit's guidance in *Bratsk* as requiring it to apply a particular additional methodology following its finding of material injury in cases involving commodity products and a significant market presence of price-competitive nonsubject imports.[74] The additional "replacement/benefit" test looked at whether nonsubject imports might have replaced subject imports without any benefit to the U.S. industry. The Commission applied that specific additional test in subsequent cases, including the *Carbon and Certain Alloy Steel Wire Rod from Trinidad and Tobago* determination that underlies the *Mittal Steel* litigation.

*Mittal Steel* clarifies that the Commission's interpretation of *Bratsk* was too rigid and makes clear that the Federal Circuit does not require the Commission to apply an additional test nor any one specific methodology; instead, the court requires the Commission to have "evidence in the record" to "show that the harm occurred 'by reason of' the LTFV imports," and requires that the Commission not attribute injury from nonsubject imports or other factors to subject imports.[75] Accordingly, we do not consider ourselves required to apply the replacement/benefit test that was included in Commission opinions subsequent to *Bratsk*.

The progression of *Gerald Metals, Bratsk*, and *Mittal Steel* clarifies that, in cases involving commodity products where price-competitive nonsubject imports are a significant factor in the U.S. market, the Court will require the Commission to give full consideration, with adequate explanation, to non-attribution issues when it performs its causation analysis.[76]

The question of whether the material injury threshold for subject imports is satisfied notwithstanding any injury from other factors is factual, subject to review under the substantial evidence standard.[77] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[78]

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[74] *Mittal Steel*, 542 F.3d at 875-79.

[75] *Mittal Steel*, 542 F.3d at 873 (quoting from *Gerald Metals*, 132 F.3d at 722), 875-79 & n.2 (recognizing the Commission's alternative interpretation of *Bratsk* as a reminder to conduct a non-attribution analysis).

[76] To that end, after the Federal Circuit issued its decision in *Bratsk*, the Commission began to present published information or send out information requests in the final phase of investigations to producers in nonsubject countries that accounted for substantial shares of U.S. imports of subject merchandise (if, in fact, there were large nonsubject import suppliers). In order to provide a more complete record for the Commission's causation analysis, these requests typically seek information on capacity, production, and shipments of the product under investigation in the major source countries that export to the United States. The Commission plans to continue utilizing published or requested information in the final phase of investigations in which there are substantial levels of nonsubject imports.

[77] We provide in our respective discussions below a full analysis of other factors alleged to have caused any material injury experienced by the domestic industry.

[78] *Mittal Steel*, 542 F.3d at 873; *Nippon Steel Corp*., 458 F.3d at 1350, *citing U.S. Steel Group*, 96 F.3d at 1357; S. Rep. 96-249 at 75 ("The determination of the ITC with respect to causation is ... complex and difficult, and is a matter for the judgment of the ITC.").

### B. Conditions of Competition and the Business Cycle

The following conditions of competition inform our analysis of whether there is material injury by reason of subject imports.

#### 1. Demand Considerations

Demand for CACCS in the U.S. market depends on demand for U.S.-produced downstream products. Reported end uses included acidulants, baby care wipes, beverages, candy, cosmetics, dairy formulas, detergents and cleaners, citrate salts, and pharmaceuticals. Petitioners estimated that nearly 50 percent of CACCS consumption is for beverages, 19 percent for food, 15 percent for detergents, and 8 percent each for industrial and pharmaceutical uses.[79] Petitioners expect demand to remain flat due to the declining consumption of carbonated beverages, but they allege that this decline is offset by growing demand for packaged foods and other applications.[80] Proctor & Gamble stated that demand for CACCS has increased for use in detergents.[81] All parties agree that demand for non-GMO certified CACCS is increasing.[82] CACCS generally accounts for a small share of the cost of the end-use products in which it is used and most market participants report that there are very few substitutes for CACCS.[83] Demand for CACCS is highly seasonal, and peaks during the spring and summer months as demand for soft drinks and other beverage applications is at its highest level.[84]

Apparent U.S. consumption of CACCS fluctuated during the period of investigation, which covered January 2015 through December 2017. It initially decreased from *** dry pounds in 2015 to *** dry pounds in 2016 and then increased to *** dry pounds in 2017.[85]

#### 2. Supply Considerations

The three sources of supply in the U.S. market are domestic producers, importers of subject merchandise from Belgium, Colombia, and Thailand, and importers of CACCS from nonsubject countries. During the period of investigation, the domestic industry held the largest share of the U.S. market, although its market share by quantity decreased from *** percent of apparent U.S. consumption in 2015 to *** percent in 2016 and *** percent in 2017.[86]

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[79] CR at II-12 – II-13; PR at II-7.

[80] CR at II-14 – II-15; PR at II-9.

[81] CR at II-15; PR at II-9. In addition, Citrique Belge contends that the boom in fracking activity in the United States has opened up a growing new market for CACCS, which serves as an additive to the water and sand solutions used in those operations. Citrique Belge Prehearing Br. at 5-7.

[82] CR at I-17; PR at I-12. We note that the increase is for all non-GMO CACCS whether Non-GMO Project Verified, certified, or not, as discussed in more detail below.

[83] CR at II-13, II-15; PR at II-7, II-9.

[84] CR at II-13; PR at II-8.

[85] CR/PR at Table C-1.

[86] CR/PR at Table C-1.

Nonsubject imports held the next largest share of the U.S. market, accounting for *** percent in 2015, *** percent in 2016, and *** percent in 2017.[87] Cumulated subject imports accounted for the smallest share of the U.S. CACCS market, but their share increased from *** percent in 2015 to *** percent in 2016 and *** percent in 2017.[88] During the period of investigation, the leading source of nonsubject imports was Canada, which accounted for *** percent of imports in 2017.[89] As indicated earlier, nonsubject imports from China and Canada are subject to countervailing and/or antidumping duty orders.

### 3. Substitutability and Other Conditions

The record in the final phase of these investigations indicates that there is at least a moderate degree of substitutability based on application between domestically produced CACCS and CACCS from subject sources. We recognize that CACCS includes a spectrum of product types -- citric acid, sodium citrate, and potassium citrate – and there may be some limitations on interchangeability with respect to certain end uses.

As discussed above, market participants reported that subject imports from each subject country are generally interchangeable with each other and the domestic like product. All domestic producers reported that CACCS from each subject country are always interchangeable with domestically produced CACCS and with CACCS produced in each other subject country. Most U.S. importers and purchasers reported that domestically produced CACCS are always or frequently interchangeable with subject imports from Belgium, always, frequently or sometimes interchangeable with subject imports from Colombia, and sometimes interchangeable with subject imports from Thailand. Most U.S. importers and purchasers also reported that CACCS from each subject country were always or sometimes interchangeable with the CACCS imports from each of the other subject countries.[90] U.S. purchasers also reported that CACCS from all sources were comparable across nearly all factors, with the exception of non-GMO factors, for which the domestically produced CACCS was generally reported to be inferior, compared to subject imports.[91] We recognize that certain applications requiring non-GMO certified product may limit interchangeability between the subject imports and domestic like product, but the vast majority of the U.S. market does not appear to require such certifications, as discussed below.

The record also indicates that price is an important factor in purchasing decisions. All U.S. producers reported that differences other than price were never significant in sales of CACCS. Responses from importers were mixed. Most U.S. importers reported that differences other than price for domestically produced CACCS were sometimes significant with respect to subject imports from Belgium and Thailand, and frequently significant with respect to subject imports from Colombia. Most U.S. purchasers reported that differences other than price were

[87] CR/PR at Table C-1.
[88] CR/PR at Table C-1.
[89] CR at II-10; PR at II-6.
[90] CR/PR at Table II-12.
[91] CR/PR at Table II-11.

always significant between sales of domestically produced CACCS and subject imports and sometimes significant between sales of CACCS from subject sources.[92] We observe, however, that price was most frequently cited by purchasers as a top three factor considered in purchasing decisions.[93] In addition, 35 out of 42 purchasers reported that price was a very important purchasing factor.[94]

The U.S. market is supplied with GMO and non-GMO CACCS. There currently is no official standard in the U.S. market as to what constitutes or may be labeled as non-GMO. Rather, there are multiple means to certify CACCS as non-GMO,[95] and the domestic industry as well as producers from each subject country sold CACCS that U.S. purchasers considered to be non-GMO.[96] Although there are no restrictions as to what can be labeled as non-GMO in the U.S. market, one of the more recognizable standards for non-GMO products is the Non-GMO Project Verified certification.[97] Once a product is Non-GMO Project Verified, a company may use the "Butterfly logo" in labeling its products, and downstream products that bear this label generally must only use inputs that have also been verified. The Non-GMO Project Verification is conferred based on a number of factors, including feedstock.[98] All subject producers use non-GMO feedstock in their production of CACCS, but none of them had Non-GMO Project Verification for the entire period of investigation. Sucroal obtained its verification in early 2015, while Thai companies, COFCO, Niran, and Sunshine obtained it in late 2016. Citrique Belge obtained the verification in 2018, after the period of investigation.[99] Due to their use of GMO corn as a feedstock, domestic producers are unable to qualify for Non-GMO Project Verification under its current standards.[100]

The parties disagree as to the significance of the distinction between GMO and non-GMO CACCS in the U.S. market. Petitioners argue that non-GMO CACCS was not a significant factor in the U.S. market during the period of investigation.[101] In particular, they assert that there is no official definition of non-GMO in the U.S. market and identifying a CACCS product as non-GMO is simply a labeling convention that does not correspond to any detectible physical differences.[102] Respondents assert that certain customers insist on non-GMO CACCS, and for

[92] CR/PR at Table II-14.

[93] CR/PR at Table II-6.

[94] CR/PR at Table II-7. Only availability, reliability of supply, product consistency, and quality meets industry standards were identified as very important by more purchasers. *Id.*

[95] CR at I-17; PR at I-12.

[96] CR/PR at Table II-9.

[97] CR at I-19; PR at I-13.

[98] CR at I-17; PR at I-12.

[99] CR at I-18; PR at I-13.

[100] CR at I-18; PR at I-13.

[101] Petitioners Prehearing Br. at 17-18, 20-30; Petitioners Posthearing Br. at 5 & Responses to Commission Questions at 1-13.

[102] Petitioners Prehearing Br. at 20-21. Petitioners assert that there is no detectable difference in physical characteristics between GMO and non-GMO citric acid because, during the fermentation process, the dextrose is consumed as a carbohydrate source to produce citric acid. As a result, there is no GMO DNA present in the citric acid after the final fermentation stage.

these customers, domestically produced CACCS derived from GMO corn cannot compete for these accounts.[103] Despite differing views on the significance of the role of non-GMO in the U.S. market, there is a relative consensus that demand for non-GMO CACCS in the U.S. market is growing but that its overall share of the market remains small.[104]

The record supports finding that substitutability of GMO and non-GMO CACCS is asymmetric because, although GMO CACCS may not be used in certain applications that require a particular non-GMO certification, non-GMO CACCS may be used in applications that are GMO-indifferent.[105] As noted above, we acknowledge that there is some limitation on interchangeability between domestically produced CACCS and subject imports based on its GMO status and that non-GMO is important for some purchasers for some of their purchases.

We find that the record in these investigations indicates that the distinction between GMO and non-GMO does not play a particularly significant role in the U.S. market. In particular, while we acknowledge that demand for non-GMO CACCS is increasing in the U.S. market, the size of the segment of the U.S. market that currently requires non-GMO CACCS appears to be relatively small, accounting for approximately five to fifteen percent of the total U.S. market, of which an even smaller portion requires Non-GMO Project Verification, leaving the vast majority of the U.S. market to be GMO indifferent.[106] The relative insignificance of the

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[103] Sucroal Prehearing Br. at 6-7; Thai Respondents Prehearing Br. at 12; Citrique Belge Posthearing Br. at 8-9; Citrique Belge Prehearing Br. at 7. Citrique Belge obtained its Non-GMO Project Verification only in 2018 after the period of investigation, but contends that, like other subject imports that achieved Non-GMO Project Verified status during the period of investigation, it does not compete with domestically produced CACCS. CR at I-18; PR at I-13.

[104] Petitioners contend that the size of the market that actually required CACCS to be non-GMO represent less than five percent of the total U.S. market, leaving the remaining 95 percent GMO indifferent, but acknowledge that demand for non-GMO CACCS has grown and is projected to grow. Petitioners Posthearing Br., Responses to Commission Questions at 1-2, 9-13; Petitioners Prehearing Br. at 17, 23-28. Sucroal maintains that demand for non-GMO CACCS has significantly increased, and accounts for ***. Although ***, Sucroal asserts that this is a conservative estimate, and it disagrees with Petitioners that it is less than that amount. Sucroal Prehearing Br. at 7-10; Sucroal Posthearing Br. at 6-8 & Responses to Commission Questions at 23-24 and 32-33. According to Citrique Belge, demand for the Non-GMO Project Verified label particularly in the food and pharmaceutical industries is significant and growing, accounting for over twenty percent of the U.S. market. Citrique Belge Posthearing Br. at 7-8. Proctor & Gamble as well as Quaker, Tropicana, and PepsiCo argue that demand for non-GMO CACCS in the U.S. market is significant and growing. Proctor & Gamble Posthearing Br. at 8, 11-13; Quaker, Tropicana, and PepsiCo Posthearing Br. at 4-5.

[105] Hearing Tr. at 42 (Szamosszegi).

[106] As described above, Petitioners and Sucroal estimate that approximately five percent of the total U.S. market for CACCS consisted of purchases that were required to be non-GMO. U.S. purchasers reported that approximately 67.4 million dry pounds of CACCS were required by them to be non-GMO in 2017, which accounted for approximately 15 percent of their purchases that year. CACCS that was required to be Non-GMO Project Verified accounted for at most 22.7 million dry pounds of CACCS, representing approximately five percent of their purchases. CR at II-21; PR at II-10; CR/PR at Table II-8. *See also* Petitioners Final Comments at 12-15; Petitioners Posthearing Br., Responses to Commission Questions at 5-8.

non-GMO market is further supported by the reported importance of non-GMO status by purchasers in purchasing decisions. Only seven purchasers reported certification/non-GMO as one of their top three purchasing factors, compared to 34 purchasers that listed price.[107] In addition, the majority of purchasers reported that, in terms of purchasing factors, being non-GMO and being Non-GMO Project Verified were not important.[108] Accordingly, we find that the record in the final phase of these investigations indicates that the distinction between GMO and non-GMO CACCS does not play a significant role in the overall U.S. market.

Both the domestic industry and importers of subject merchandise primarily sell CACCS by annual contracts. For the domestic industry, annual contract sales accounted for *** percent of total sales in 2015, *** percent in 2016, and *** percent in 2017. With respect to subject imports, annual contract sales accounted for *** percent of total sales in 2015, *** percent in 2016, and *** percent in 2017.[109] Domestic industry and subject import sales differ, however, in terms of the next largest method of sales. The domestic industry's second largest share of U.S. commercial shipments by type was long-term contracts, accounting for *** percent of total sales in 2015 and *** percent in both 2016 and 2017, whereas importers' second largest share was spot sales, accounting for *** percent of total sales in 2015, *** percent in 2016, and *** percent in 2017.[110]

The primary raw material for CACCS production is a starch, or substrate, that is fermented by yeast or mold to produce CACCS.[111] The substrate used by a producer varies depending on costs and producers seek to obtain the least expensive substrate, which varies by region.[112] Domestic producers of CACCS typically use a corn substrate, while producers in Belgium typically use beet sugar or molasses, producers in Colombia use sugarcane, and producers in Thailand use tapioca.[113] During the period of investigation, substrate prices decreased by varying degrees.[114] U.S. producers reported that raw materials as a share of the total cost of goods sold ("COGS") remained constant at about 48 percent during the period of investigation.[115]

### C. Volume of Subject Imports

Section 771(7)(C)(i) of the Tariff Act provides that the "Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States, is significant."[116]

[107] CR/PR at Table II-6.
[108] CR/PR at Table II-7.
[109] CR/PR at Table V-2.
[110] CR/PR at Table V-2.
[111] CR/PR at V-1.
[112] CR/PR at V-1.
[113] CR/PR at V-1.
[114] CR/PR at V-1 & Figure V-1.
[115] CR/PR at V-1.
[116] 19 U.S.C. § 1677(7)(C)(i).

Cumulated subject imports had a significant and increasing presence in the U.S. market during the period of investigation at the expense of the domestic industry. The volume of cumulated subject imports increased 26.0 percent from 2015 to 2017, increasing from 159.9 million dry pounds in 2015 to 175.5 million dry pounds in 2016 and 201.6 million dry pounds in 2017.[117] Although apparent U.S. consumption initially declined from 2015 to 2016, before reaching an overall increase in 2017, the absolute volume of cumulated subject imports increased steadily each year of the period of investigation. Cumulated subject imports as a share of apparent U.S. consumption accounted for *** percent of the U.S. market in 2015, *** percent in 2016, and *** percent in 2016.[118] In contrast, the domestic industry's market share declined from 2015 to 2017; its market share was *** percent in 2015, *** percent in 2016, and *** percent in 2017.[119]

We therefore conclude that the volume of subject imports, and the increase in that volume, was significant in absolute terms and relative to apparent U.S. consumption.[120]

### D. Price Effects of the Subject Imports

Section 771(7)(C)(ii) of the Tariff Act provides that, in evaluating the price effects of the subject imports, the Commission shall consider whether

> (I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and
>
> (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.[121]

As discussed above in section V.B.3, the record indicates that the domestic like product and subject imports are at least moderately substitutable and price is an important factor in purchasing decisions.

All three U.S. producers and 12 importers of subject merchandise provided usable quarterly data on the total quantity and f.o.b. value of their U.S. shipments of eight CACCS products sold to unrelated U.S. customers during January 2015 through December 2017,

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[117] CR/PR at Table C-1.

[118] CR/PR at Table C-1.

[119] CR/PR at Table C-1.

[120] As explained above, we recognize that there is a growing portion of the U.S. market that requires non-GMO CACCS that the domestic industry cannot satisfy, particularly those purchasers requiring Non-GMO Project Verification. However, as discussed in section V.B.3., that portion of the market appears to be small, with the portion requiring Non-GMO Project Verification an even smaller subset of that total non-GMO demand. This leaves the vast majority of the market indifferent to the distinction between GMO and non-GMO CACCS.

[121] 19 U.S.C. § 1677(7)(C)(ii).

although not all firms reported pricing data for all products for all quarters.[122] [123] The pricing data reported by these firms accounted for approximately 48.1 percent of U.S. producers'

[122] CR at V-7 – V-8; PR at V-6. The eight pricing products are as follows:

Product 1 – Citric acid, granular, in dry form in 25 kilogram and 50 pound bags, spot/short term sales.

Product 2 – Citric acid, granular, in dry form in 25 kilogram and 50 pound bags, annual contract sales.

Product 3 – Citric acid, fine granular, in dry form in 25 kilogram and 50 pound bags, spot/short term sales.

Product 4 – Citric acid, fine granular, in dry form in 25 kilogram and 50 pound bags, annual contract sales.

Product 5 – Citric acid, granular, in dry form in bulk sacks ("supersacks"), spot/short term sales.

Product 6 – Citric acid, granular, in dry form in bulk sacks ("supersacks"), annual contract sales.

Product 7 – Sodium citrate, granular, in dry form in in 25 kilogram and 50 pound bags, spot/short term sales.

Product 8 – Sodium citrate, granular, in dry form in in 25 kilogram and 50 pound bags, annual contract sales.

CR at V-7; PR at V-6.

[123] Petitioners contend that the Commission should rely on average unit value ("AUV") data rather than the pricing product data, asserting among other things that AUV data capture the point of competition between U.S. producers and subject producers more closely than importer resale data in quarterly pricing comparisons. Petitioners Prehearing Br. at 43-45. We assign greater weight to the more detailed data from the quarterly comparisons, which are representative of both U.S. producers' and importers' U.S. shipments of CACCS; however, we observe that the AUV data show similar pricing trends to the quarterly pricing comparisons. CR/PR at Table C-1.

With respect to Sucroal's criticism of the pricing products, Sucroal had an opportunity to comment upon the pricing products in its comments on the draft questionnaires, and to the extent that Sucroal believed these pricing products to be so flawed as to render the data unusable, it should have raised any such concerns earlier in these investigations. It did not do so. Sucroal claims that the pricing product data is distorted because it aggregates spot and short-term sales and that *** pricing product data are inaccurate. Sucroal Prehearing Br. 28-34; Sucroal's Final Comments at 12-14. The issue with respect to *** pricing data was addressed in Memorandum INV-QQ-068, which applied the same methodology to *** 2016 and 2017 pricing data as was used with respect to its 2015 pricing data, resulting in all of *** data being reported in pricing products for annual contracts, as opposed to those for spot/short term sales.

We also are not persuaded by Sucroal's challenge that pricing data for pricing products 1, 3, 5, and 7 are unusable for purposes of analyzing underselling because pricing data was aggregated for spot sales and short term sale. Although Sucroal is correct that there is some evidence that products may be priced differently in terms of spot sales versus short term contracts (*see, e.g.,* CR/PR at D-21 – D-25; Cargill's Domestic Producer Questionnaire at II-13), we find that the record evidence does not undermine our analysis. The domestic industry's sales are concentrated in comparatively lower priced annual term contracts, whereas subject imports are concentrated in the comparatively higher priced spot sales/short term contract market. Nonetheless, the AUVs for subject imports were below those of the domestic industry for these types of sales in almost every comparison for each year of the period of investigation. CR/PR at D-21, D-25 (the AUVs for subject imports were lower than those for the

shipments of CACCS, 81.0 percent of U.S. shipments of subject imports from Belgium, 91.6 percent of subject imports from Colombia, and 91.9 percent of subject imports from Thailand.[124]

While the pricing data show that subject imports undersold the domestic like product in *** out of *** quarterly comparisons, the underselling comparisons involved *** million dry pounds of CACCS, versus only *** million dry pounds that oversold the domestic like product. Margins of underselling ranged from *** percent to *** percent.[125] Breaking out pricing products in terms of spot/short term sales and annual contract sales showed similar underselling trends. The pricing data for spot/short term sales show that subject imports undersold the domestic like product in *** out of *** quarterly comparisons, with *** million dry pounds reported as underselling, versus *** million dry pounds that oversold the domestic like product.[126] The pricing data for annual contract sales show that subject imports undersold the domestic like product in *** out of *** quarterly comparisons, with *** million dry pounds reported as underselling, versus *** million dry pounds that oversold the domestic like product.[127] [128]

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domestic product every year of the period of investigation for spot and short term contract sales; they were lower than those for the domestic product in 2015 and 2017 and the same in 2016). As a result, we do not find that aggregating the different types of sales renders the data for pricing products 1, 3, 5, and 7 unusable. Moreover, the relatively small volume of spot sales compared to the volume of short term sales, particularly in 2016 and 2017, are not likely to significantly skew the domestic industry's prices for the pricing products 1, 3, 5, and 7.

[124] CR at V-8; PR at V-6.

[125] CR/PR at Tables V-3 – V-10; CR at V-27; PR at V-10, as revised in Memorandum INV-QQ-068.

[126] CR/PR at Table V-13; CR at V-27 – V-28 & n.2; PR at V-10 & n.2, as revised in Memorandum INV-QQ-068.

[127] CR/PR at Table V-13; CR at V-27 & n.1 – V-28; PR at V-10 & n.1, as revised in Memorandum INV-QQ-068.

[128] There is some disagreement among the parties as to whether non-GMO CACCS commands a price premium in the U.S. market. Petitioners contend that because non-GMO CACCS does not command a premium in the U.S. market, they do not produce it in large quantities. Petitioners Prehearing Br. at 29-30; Petitioners Posthearing Br., Response to Commission Questions at 29-30 (citing Conf. Tr. at 64, 66). The Thai Respondents argue that any price premium for non-GMO CACCS is limited and that there are several reasons why Thai producers were unable to obtain price premiums that producers in other subject countries were able to obtain. Thai Respondents Posthearing Br. at 12. Citrique Belge and Sucroal contend that non-GMO CACCS is sometimes sold at a premium. Citrique Belge Posthearing Br. at 5; Sucroal Posthearing Br., Responses to Commission Questions at 28, 31, 36. We find that the record does not demonstrate a correlation between non-GMO status and pricing; in particular, there does not appear to be a price difference between whether non-GMO CACCS has achieved the Non-GMO Project Verified "Butterfly" certification, which is the most commercially recognized certification, or not. Thai producers achieved this certification in late 2016, but concede that they do not receive price premiums. Conversely, Citrique Belge did not have the Non-GMO Project Verified certification during the period of review, yet its CACCS frequently was priced higher than CACCS from both domestic and other subject sources. CR/PR at Tables V-3 – V-10, as revised in Memorandum INV-QQ-068.

Given the significant and increasing volume of subject imports, we find this underselling to be significant. Other information in the record provides further support that the domestic industry lost sales of CACCS to low-priced subject imports. Of the 42 purchasers that responded to Petitioners' lost sales allegations, 26 reported that they had purchased CACCS imported from subject countries rather than the domestic product. Of those 26 purchasers, 18 reported that subject imports were priced lower than the domestic like product, and nearly half of those purchasers reported price was the primary reason for their decision to purchase subject imports rather than the domestic like product.[129]

We also examined changes in prices for the domestic like product between the first quarter of 2015 and the last quarter of 2017. Prices for seven of the eight pricing products declined over the period of investigation, particularly towards the end of the period of investigation as the volume of subject imports increased to its highest level.[130] In addition, other record evidence provides further support that the domestic industry lowered prices to compete with low-priced subject imports; five purchasers reported that U.S. producers reduced prices in order to compete with lower-priced imports.[131]

We find that the record does not support respondents' contention that the falling cost of corn, and not subject imports, caused the domestic industry's price declines.[132] Indeed, while the price of corn decreased significantly in the third quarter of 2016 and increased somewhat the first and second quarters of 2017,[133] prices for the domestic product did not show a comparable decline in the third quarter of 2016, and the domestic prices of CACCS were often at particularly low levels in the first and second quarters of 2017.[134] Moreover, raw materials only accounted for between *** to *** percent of the costs of goods sold ("COGS"),[135] and the domestic industry's raw material costs increased in 2016 as the price of corn decreased, yet declined in 2017 as the price of corn increased.[136] We recognize that, while certain domestic producers indicated that some contracts tie the prices of their products to the prices of corn, this was not universal. In fact, one domestic producer's contracts contain no such provision; another domestic producer has this provision in only one customer's contract, and for the third domestic producer, contracts with this type of provision accounted for a

[129] CR at V-32; PR at V-14; CR/PR at Table V-15.

[130] CR/PR at Tables V-3 – V-10, as revised in Memorandum INV-QQ-068. From the first quarter of 2015 to the last quarter in which data were available, the domestic industry's prices for product 2 declined *** percent, product 3 declined *** percent, product 4 declined *** percent, product 5 declined *** percent, product 6 declined *** percent, product 7 declined *** percent, and product 8 declined *** percent. CR/PR at Table V-11. The domestic industry's prices for product 1 increased *** percent. *Id.*

[131] CR at V-34; PR at V-14; CR/PR at Table V-16.

[132] *See, e.g.,* Citrique Belge Posthearing Br. at 9-10; Sucroal Posthearing Br. at 9-10; Proctor & Gamble Posthearing Br. at 8-9 & Exhibit 2; Quaker, Tropicana, and PepsiCo Posthearing Br. at 8.

[133] CR/PR at Figure V-1.

[134] CR/PR at Tables V-3 – V-10; CR at V-27; PR at V-10, as revised in Memorandum INV-QQ-068.

[135] CR/PR at Table VI-1.

[136] CR/PR at Table VI-1.

decreasing percentage of its total contracts during the period of investigation.[137] Further, the latter two producers explained that volatility in the price of corn has only a minimal effect on the price of citric acid; for example *** change in the price of citric acid.[138] Accordingly, we do not find that declines in the price of corn can explain the magnitude of declines in prices for the domestic like product.

We also find no evidence the observed price declines are related to any decline in the demand for GMO CACCS. Although purchasers initially reported a lower level of purchases of GMO CACCS in 2016 than in 2015, they reported a higher level of purchase of GMO CACCS in 2017, indicating that demand for GMO CACCS increased overall during the period of investigation.[139] Consequently, given the inadequacy of alternative causes proposed by respondents, we find that cumulated subject imports depressed prices of the domestic like product to a significant degree.

We therefore find that there was significant underselling of the domestic like product by cumulated subject imports and that low-priced cumulated subject imports significantly depressed prices of the domestic like product to a significant degree.

### E. Impact of the Subject Imports[140]

Section 771(7)(C)(iii) of the Tariff Act provides that examining the impact of subject imports, the Commission "shall evaluate all relevant economic factors which have a bearing on the state of the industry."[141] These factors include output, sales, inventories, capacity utilization, market share, employment, wages, productivity, gross profits, net profits, operating profits, cash flow, return on investment, return on capital, ability to raise capital, ability to service debts, research and development, and factors affecting domestic prices. No single

[137] CR at V-4 – V-5 & n.7; PR at V-4 & n.7. *See also* Petitioners Posthearing Br., Responses to Commission Questions at 51-52.

[138] Petitioners Posthearing Br., Responses to Commission Questions at 52.

[139] CR at II-22 – II-23; PR at II-14; CR/PR at Table II.

[140] The statute instructs the Commission to consider the "magnitude of the dumping margin" in an antidumping proceeding as part of its consideration of the impact of imports. 19 U.S.C. § 1677(7)(C)(iii)(V). In its final determination of sales at less value, Commerce found antidumping duty margins of 19.3 percent for imports from Belgium, 28.48 percent for imports from Colombia, and 6.47 to 15.71 percent for imports from Thailand. CR at I-10 – I-11; PR at I-7 – I-8. We take into account in our analysis the fact that Commerce has made final findings that all subject producers in Belgium, Colombia, and Thailand are selling subject imports in the United States at less than fair value. In addition to this consideration, our impact analysis has considered other factors affecting domestic prices. Our analysis of the significant underselling and price effects of subject imports, described in both the price effects discussion and below, is particularly probative to an assessment of the impact of the subject imports.

[141] 19 U.S.C. § 1677(7)(C)(iii); *see also* SAA at 851 and 885 ("In material injury determinations, the Commission considers, in addition to imports, other factors that may be contributing to overall injury. While these factors, in some cases, may account for the injury to the domestic industry, they also may demonstrate that an industry is facing difficulties from a variety of sources and is vulnerable to dumped or subsidized imports.").

factor is dispositive and all relevant factors are considered "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[142]

During the period of investigation, the domestic industry's output indicia declined overall. The domestic industry's capacity stayed constant throughout the period of investigation; it was 551.7 million dry pounds each year.[143] Production, however, declined from 508.5 million dry pounds in 2015 to 475.1 million dry pounds in 2016 and 465.0 million dry pounds in 2017.[144] As a result, capacity utilization decreased from 92.2 percent in 2015 to 86.1 percent in 2016 and 84.3 percent in 2017.[145] U.S. shipments decreased overall, initially falling from 470.2 million dry pounds in 2015 to 452.1 million dry pounds in 2016 before increasing somewhat in 2017 to 459.1 million dry pounds.[146] The domestic industry's ending inventories were *** dry pounds in 2015, *** dry pounds in 2016, and *** dry pounds in 2017.[147]

Although production declined, certain employment indicia, including the number of production related workers ("PRWs"), hours worked, and wages paid remained relatively stable from 2015 to 2017.[148] As a result, productivity declined and unit labor costs increased during the period of investigation.[149]

Many of the domestic industry's financial indicia showed significant declines during the period of investigation. Net sales, by value, declined steadily throughout the period of investigation; they were $328.6 million in 2015, $296.7 million in 2016, and $291.6 million in 2017.[150] The domestic industry's COGS decreased from $257.1 million in 2015 to $254.4 million in 2016 and then increased to $256.1 million in 2017, but the ratio of COGS to net sales increased steadily from 78.2 percent in 2015 to 85.7 percent in 2016 and 87.8 percent in 2017.[151] Gross profits fell steadily from $71.5 million in 2015 to $42.3 million in 2016 and $35.5 million in 2017.[152] Operating income fell steadily from $55.3 million in 2015 to $23.0 million in 2016 and $14.0 million in 2017.[153] Net income fell steadily from $50.7 million in 2015 to $19.6

[142] 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act of 2015, Pub. L. 114-27.

[143] CR/PR at Table III-4.

[144] CR/PR at Table III-4.

[145] CR/PR at Table III-4.

[146] CR/PR at Table III-5.

[147] CR/PR at Table III-6.

[148] The number of PRWs initially increased from *** in 2015 to *** in 2016 before decreasing to *** in 2017. Total hours worked remained constant each year at ***. Wages paid were $*** in 2015, $*** in 2016, and $*** in 2017. CR at III-8; PR at III-5; CR/PR at Table III-8.

[149] Productivity fell from *** dry pounds per hour in 2015 to *** dry pounds per hour in 2016 and *** dry pounds per hour in 2017. Unit labor costs increased from $*** per 1,000 pounds dry weight in 2015 to $*** per 1,000 pounds dry weight in 2016 and $*** per 1,000 pounds dry weight in 2017. CR at III-8; PR at III-5; CR/PR at Table III-8.

[150] CR/PR at Table VI-1.

[151] CR/PR at Table VI-1.

[152] CR/PR at Table VI-1.

[153] CR/PR at Table VI-1.

million in 2016 and $9.5 million in 2017.[154] The domestic industry's capital expenditures were $*** in 2015, $*** in 2016, and $*** in 2017.[155] Its research and development expenses were $*** in 2015, $*** in 2016, and $*** in 2017.[156]

We find that the cumulated subject imports had a significant impact on the domestic industry. As discussed above, significant and increasing volumes of low-priced cumulated subject imports that were at least moderately substitutable with the domestic product entered the U.S. market and significantly undersold the domestic product. As a result, the domestic industry lost sales to cumulated subject imports, and its production, capacity utilization, and U.S. shipments declined overall during the period of investigation. Cumulated subject imports also depressed domestic prices to a significant degree. Consequently, the domestic industry's revenues and financial performance declined and were worse than they otherwise would have been. We therefore find that the significant and increasing volumes of cumulated subject imports, which undersold the domestic product and depressed domestic prices to a significant degree, had a significant impact on the domestic industry.

Respondents argue that the domestic industry's declining financial performance is skewed by the experience of one domestic producer, ***. The statute, however, directs the Commission to evaluate the impact of cumulated subject imports on the domestic industry "as a whole."[157] Nevertheless, we observe that *** members of the domestic industry experienced declines in their financial performance during the period of investigation. In particular, gross profits, operating income, and net income for all three domestic producers declined steadily and significantly over the period of investigation.[158] Under the statute, the fact that the domestic industry, or individual domestic producers, continued to be profitable despite its declining overall financial performance does not mean that the domestic industry was not materially injured by reason of subject imports.[159]

We have also considered whether there are other factors that may have had an impact on the domestic industry during the period of investigation to ensure that we are not attributing injury from such other factors to subject imports. In particular, we have considered the role of nonsubject imports, which maintained a presence in the U.S. market throughout the period of investigation. As discussed above, during the period of investigation, the largest source of nonsubject imports was Canada, which accounted for *** percent of nonsubject imports in 2017.[160] While nonsubject imports from Canada increased in volume and market share throughout the period of investigation,[161] such imports were predominantly priced higher

[154] CR/PR at Table VI-1.

[155] CR/PR at Table VI-5.

[156] CR/PR at Table VI-5.

[157] 19 U.S.C. § 1677(4).

[158] CR/PR at Table VI-3.

[159] Indeed, the statute as amended by the Trade Preferences Extension Act of 2015, expressly states that the Commission may not determine that there is no material injury merely because an industry is profitable. 19 U.S.C. § 1677(7)(J).

[160] CR at II-10; PR at II-6. As mentioned above, imports from Canada have been subject to the discipline of an antidumping duty order since 2009; that order was continued in 2015.

[161] CR/PR at Table C-1.

than both the domestic product and cumulated subject imports both in the number of comparisons as well as in volume.[162] Accordingly, the presence of nonsubject imports do not explain the significant price effects caused by subject imports nor the sales and revenues the domestic industry lost to lower-price subject imports, described above in section V.D.

Respondents contend that the domestic industry was unable to meet demand in the U.S. market, particularly for non-GMO products.[163] As indicated above, however, the record in these investigations indicates that the size of the non-GMO market, although growing, is relatively small. Although domestically produced CACCS does not meet the current requirements to achieve the Non-GMO Project Verification, CACCS sold with this certification account for a subset of an already small section of the market. The vast majority of the market appears indifferent to the distinction between GMO and non-GMO CACCS and domestically produced CACCS and subject imports compete directly with each other for these GMO-indifferent sales. Accordingly, we find that the fact that there is a small portion of the market in which the domestic industry does not compete does not establish that competition is sufficiently attenuated to break the causal chain.[164] Moreover, to the extent that respondents are arguing that the domestic industry cannot supply the entire U.S. market, we note that the fact that a domestic industry may not be able to supply all of demand does not mean that it cannot be materially injured or threatened with material injury.[165]

Respondents also allege that certain domestic producers experienced supply constraints and were unable to satisfy demand for CACCS in the U.S. market during the period of

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[162] CR/PR at Tables E-1 – E-9, as revised in Memoranda INV-QQ-067 & INV-QQ-068. Nonsubject imports from Canada were priced higher than the domestic like product in *** out of *** comparisons involving *** dry pounds of CACCS and were priced lower the domestic like product in the remaining *** comparisons, involving *** dry pounds of CACCS. *Id.*

[163] *See generally* Citrique Belge Prehearing Br., Citrique Belge Posthearing Br.; Proctor & Gamble Posthearing Br. at 2; Quaker, Tropicana, and PepsiCo Prehearing Br. at 1-7.

[164] We also find that the record does not support Sucroal's arguments that competition is attenuated in other significant market segments. Sucroal Final Comments at 14; Sucroal Posthearing Br. at 19-25. In particular, competition is not attenuated with respect to sodium citrate and potassium citrate. Both domestic producers and subject sources sold these products during the period of investigation, and imports of potassium citrate from Colombia and imports of sodium citrate and potassium citrate from Thailand increased overall during that time. CR/PR at Table D-2. Moreover, we observe that in defining a single domestic like product, which Sucroal does not challenge, we found that these products are part of a spectrum or grouping of products without clear dividing lines, which may be used in an overlapping manner in some of the same types of end uses. *See Preliminary Determinations*, USITC Pub. 4710 at 7-11. Competition is also not attenuated with respect to citric acid in dry form or solution, as the two forms can be easily converted. CR at I-13; PR at I-10. Finally, although there may be a portion of the market in which purchasers require domestically produced CACCS, we observe that this segment is relatively small, comprising of only approximately *** percent of the market. Calculated from CR/PR at Table C-1; Sucroal Final Comments at 14.

[165] *See, e.g., Citric Acid and Certain Citrate Salts from Canada and China*, Inv. Nos. 701-TA-456 and 731-TA-1151-1152 (Review), USITC Pub. 4538 at 35 (June 2015).

investigation.[166] Petitioners, however, contend that the domestic industry did not experience significant supply constraints.[167] We find that the record does not indicate that any supply constraints experienced by domestic producers were so significant as to explain the significant and increasing volume of subject imports during the period of investigation or the consistent price declines. In particular, as described above, the domestic industry had available capacity during the period of investigation from which it could have supplied additional CACCS to the U.S. market. We further observe that some purchasers and importers also indicated that they experienced supply constraints with regard to subject imports.[168] Indeed, although more purchasers reported experiencing constraints for domestic supply of CACCS than subject imports,[169] a majority of purchasers reported that domestically produced CACCS was comparable with CACCS from each of the subject sources in terms of reliability of supply.[170] Accordingly, we find that the record does not indicate that subject imports were being pulled into the market due to any constraints on the domestic industry's ability to supply CACCS during the period of investigation.

Finally, respondents contend that any problems the domestic industry has experienced are due to competition among the three domestic producers, and in particular, the aggressive pricing of ***.[171] As an initial matter, respondents' argument is based on AUV data rather than more detailed pricing data, the latter of which contradicts respondents' assertions. First, *** did not report any sales for pricing products 5, 7, and 8; consequently, it could not be responsible for the price declines observed with respect to those products. With respect to the pricing products for which it did provide data, pricing products 2, 3, 4, and 6, the record indicates that *** is not responsible for the declining domestic prices.[172] Accordingly, we do

[166] Quaker, Tropicana, and PepsiCo Posthearing Br. at 9-10; Thai Respondents Prehearing Br. at 7; Proctor & Gamble Posthearing Br. at 11-12.

[167] Petitioners Posthearing Br., Responses to Commission Questions at 50-51 & Exhibit 18.

[168] CR at II-10 – II-12; PR at II-6 – II-7. In fact, one large purchaser reported experiencing constraints on the supply of domestically produced CACCS and CACCS from each subject country. *Id.*

[169] CR at II-11 – II-12; PR at II-6 – II-7.

[170] CR/PR at Table II-11.

[171] Sucroal Prehearing Br. at 31-33.

[172] *Calculated from* *** U.S. Producer Questionnaire at question IV-2b; CR/PR at Tables V-4 – V-6, V-8, as revised in Memorandum INV-QQ-068. With respect to pricing product 2, *** average price per pound was higher than the aggregate price per pound in two quarters of both 2016 and 2017. More importantly, its prices were higher than those of subject imports from Thailand, which were lower from the second quarter of 2016 through 2017 as the volumes of Thai imports increased significantly. With respect to pricing product 3, *** average price per pound was higher than both the aggregate domestic prices as well as those of subject imports from Thailand for every quarterly comparison. With respect to pricing products 4 and 6, although *** prices were lower than the aggregate domestic prices, its prices were higher than those of subject imports from Thailand in eight out of eleven quarterly comparisons for product 4 and eight out of twelve quarterly comparisons for product 6. Again, the volume of subject imports of these pricing products from Thailand increased significantly overall during the period of investigation. *Id.*

not find that record supports respondents' assertions that *** rather than subject imports caused the significant price effects observed during the period of investigation.[173]

We therefore conclude that cumulated subject imports have had a significant adverse impact on the domestic industry.

# VI. Critical Circumstances

## A. Legal Standards and Party Arguments

In its final antidumping duty determination concerning CACCS from Thailand, Commerce found that critical circumstances exist with respect to subject imports from Thai producer Niran, but do not exist for COFCO, Sunshine, and all other producers and/or exporters in Thailand.[174] Because we have determined that the domestic industry is materially injured by reason of subject imports from Thailand we must further determine "whether the imports subject to the affirmative {Commerce critical circumstances} determination ... are likely to undermine seriously the remedial effect of the antidumping {and/or countervailing duty} order{s} to be issued."[175] The SAA indicates that the Commission is to determine "whether, by massively increasing imports prior to the effective date of relief, the importers have seriously undermined the remedial effect of the order" and specifically "whether the surge in imports prior to the suspension of liquidation, rather than the failure to provide retroactive relief, is likely to seriously undermine the remedial effect of the order."[176] The legislative history for the

[173] We are also unpersuaded by Sucroal's assertion that the domestic industry was insulated from competition from subject imports as a result of its sales through long term contracts. Sucroal Final Comments at 13-14; Sucroal Posthearing Br. at 10; Sucroal Prehearing Br. at 10-12, 32-33. Domestic producers explained how subject imports affect contract prices. Petitioners Posthearing Br. at 10 & Responses to Commission Questions at 45-46; Tr. at 61 (Tuma). Indeed, Sucroal acknowledges that, even though subject imports may not be able to displace domestic producers with respect to certain long term contracts and relationships with large purchasers, these purchasers may use low price offers from importers to leverage lower prices from Petitioners. Sucroal Posthearing Br. at 13-14.

We also do not find that the fact that domestic producers were most frequently identified as price leaders, CR at V-6 – V-7; PR at V-5, to establish that domestic producers caused the decline in U.S. prices to the exclusion of subject imports. As discussed above, Sucroal explained how large purchasers may rely on subject imports to leverage lower prices from domestic producers, which is consistent with Petitioners' contentions. In fact, two of the purchasers that Sucroal mentioned in their discussion of this practice, ***, indicated that domestic producers were price leaders, notwithstanding the apparent practice of obtaining lower prices from domestic producers by leveraging prices for subject imports. Sucroal Posthearing Br. at 14. Sucroal also emphasized that *** identified *** as a price leader; however, *** also indicated that U.S. producers reduced prices to compete with subject imports, specifically identifying CACCS from Thailand. CR\PR at Table V-16.

[174] *Citric Acid and Certain Citrate Salts from Thailand: Affirmative Final Determination of Sales at Less Than Fair Value, Final Affirmative Critical Circumstances Determination, in Part*, 83 Fed. Reg. 25998 (June 5, 2018).

[175] 19 U.S.C. §§ 1671d(b)(4)(A)(ii), 1673d(b)(4)(A)(ii).

[176] SAA at 877.

critical circumstances provision indicates that the provision was designed "to deter exporters whose merchandise is subject to an investigation from circumventing the intent of the law by increasing their exports to the United States during the period between initiation of an investigation and a preliminary determination by {Commerce}."[177] An affirmative critical circumstances determination by the Commission, in conjunction with an affirmative determination of material injury by reason of subject imports, would normally result in the retroactive imposition of duties for those imports subject to the affirmative Commerce critical circumstances determination for a period 90 days prior to the suspension of liquidation.

The statute provides that, in making this determination, the Commission shall consider, among other factors it considers relevant,

> (I) the timing and the volume of the imports,
>
> (II) a rapid increase in inventories of the imports, and
>
> (III) any other circumstances indicating that the remedial effect of the {order} will be seriously undermined.[178]

In considering the timing and volume of subject imports, the Commission's practice is to consider import quantities prior to the filing of the petition with those subsequent to the filing of the petition using monthly statistics on the record regarding those firms for which Commerce has made an affirmative critical circumstances determination.[179]

The Thai Respondents argue that the Commission should make a negative critical circumstances determination with respect to Thai producer, Niran.[180] Petitioners did not address critical circumstances in the final phase of these investigations.

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[177] *ICC Industries, Inc. v United States,* 812 F.2d 694, 700 (Fed. Cir. 1987), *quoting* H.R. Rep. No. 96-317 at 63 (1979), *aff'g* 632 F. Supp. 36 (Ct. Int'l Trade 1986). *See* 19 U.S.C. §§ 1671b(e)(2), 1673b(e)(2).

[178] 19 U.S.C. §§ 1671d(b)(4)(A)(ii), 1673d(b)(4)(A)(ii).

[179] *See Lined Paper School Supplies from China, India, and Indonesia,* Inv. Nos. 701-TA-442-43, 731-TA-1095-97**,** USITC Pub. 3884 at 46-48 (Sept. 2006); *Carbazole Violet Pigment from China and India,* Inv. Nos. 701-TA-437 and 731-TA-1060-61 (Final), USITC Pub. 3744 at 26 (Dec. 2004); *Certain Frozen Fish Fillets from Vietnam,* Inv. No. 731-TA-1012 (Final), USITC Pub. 3617 at 20-22 (Aug. 2003).

[180] Thai Respondents Prehearing Br. at 23-30. In particular, the Thai Respondents argue that the timing and volume do not support a finding of critical circumstances because, although there was a *** percent increase in the cumulative six-month volume before the petition was filed, this increase does not reach the level that the Commission has considered sufficient to undermine the remedial effect of any AD order imposed on imports of CACCS from Thailand. The Thai Respondents further argue that there has not been a rapid increase in U.S. importer inventories of imports of CACCS from Niran and that, although Niran's inventories rose over the period examined, they are insignificant in the context of the overall size of the U.S. market and the availability of other subject and nonsubject imports. Finally, the Thai Respondents argue that other factors support a negative critical circumstances determination, including the fact that Niran was operating at high levels of capacity utilization and that the increase between pre-petition and post-petition periods was due to a stoppage at Niran in spring 2017 for

### B. Analysis

We first consider the appropriate period for comparison of pre-petition and post-petition levels of subject imports from Niran. The Commission is not required to analyze the same period that Commerce examined.[181] Unless the industry under investigation involves seasonality or the Commission decides that circumstances warrant otherwise,[182] the Commission generally compares six months of data gathered from the periods immediately preceding and following the petition's filing.[183] We have determined to compare the volume of subject imports from Niran for the six-month periods prior to and after the filing of the petition.[184]

The import volume from Thailand subject to Commerce's antidumping duty critical circumstances finding was 14.9 million pounds for the six-month period prior to the filing of the petition and 19.5 million pounds for the six-month period after the filing of the petition, an increase of 4.6 million pounds.[185] Although the volume of subject imports by Thai producer Niran increased during the post-petition period, we do not find the increased volume, particularly in the context of the 866.0 million dry pound merchant market for CACCS in 2017,[186] was sufficiently large to undermine seriously the remedial effect of the order. In addition, Niran reported that all of its CACCS was imported into the United States by a single

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factory maintenance. The Thai Respondents contend that these facts indicate a very low likelihood of a surge in imports by Niran. *Id.*

[181] *Certain Polyester Staple Fiber from China*, Inv. No. 731-TA-1104 (Final), USITC Pub. 3922 (June 2007) at 35; *Steel Concrete Reinforcing Bars from Turkey*, Inv. No. 731-TA-745 (Final), USITC Pub. 3034 (Apr. 1997) at 34.

[182] *See 1,1,1,2--Tetrafluoroethane (R-134a) from China*, Inv. No. 731-TA-1313 (Final), USITC Pub. 4679 (Apr. 2017) at 25 (engaging in seasonal analysis because of demand patterns for product).

[183] The Commission has relied on a shorter comparison period when a preliminary determination by Commerce applicable to the country at issue fell within the six-month post-petition period the Commission typically considers. *See Cold-Drawn Mechanical Tubing from China, Germany, India, Italy, Korea, and Switzerland*, Inv. Nos. 731-TA-1362-67 (Final), USITC Pub. 4790 (May 2018) at 7-8 (regarding subject imports from China). That situation does not arise here with respect to subject imports from Thai producer Niran. The petition in this investigation was filed on June 2, 2017. We recognize that Commerce issued its preliminary countervailing duty and critical circumstances determinations regarding subject imports from Thailand on November 3, 2017, which falls within the six-month post-petition period; however, these determinations were negative. *Citric Acid and Certain Citrate Salts from Thailand: Preliminary Negative Countervailing Duty Determination, Preliminary Negative Critical Circumstances Determination and Alignment With Final Antidumping Duty Determination*, 82 Fed. Reg. 51216 (Nov. 3 2017). Moreover, Commerce also made a negative final countervailing duty determination and the Commission subsequently terminated its related investigation. Thus, there was not an affirmative determination applicable to the country at issue that fell within the six-month post-petition period.

[184] The six-month periods considered are December 2016 through May 2017 and June 2017 through November 2017. CR/PR at Table IV-3.

[185] CR/PR at Table IV-3.

[186] CR/PR at Table C-1.

importer, Zhong Ya.[187] The available information about Zhong Ya's inventories of CACCS from Thailand, although higher in the post-petition period, also does not indicate an ability to undermine seriously the remedial effect of the order.[188]

Taken as a whole, the data on record do not show a sudden and significant increase in imports or inventories subject to Commerce's affirmative critical circumstances determination subsequent to the filing of the petition that would seriously undermine the remedial effect of the antidumping duty order to be issued on CACCS from Thailand. Consequently, we make a negative critical circumstances determination with regard to subject imports in the antidumping duty investigation of CACCS from Thailand.

## VII. Conclusion

For the reasons stated above, we determine that an industry in the United States is materially injured by reason of subject imports of CACCS from Belgium, Colombia, and Thailand that are sold in the United States at less than fair value.

[187] *See* Niran's Foreign Producer Questionnaire at question I-5.

[188] *See* Zhong Ya's U.S. Importer Questionnaire at question II-7a. Zhong Ya reported end of period inventories of *** dry pounds in 2016 and *** dry pounds in 2017. *Id*.

# PART I: INTRODUCTION

## BACKGROUND

These investigations result from petitions filed with the U.S. Department of Commerce ("Commerce") and the U.S. International Trade Commission ("USITC" or "Commission") by Archer Daniels Midland Company ("ADM"), Decatur, Illinois; Cargill, Inc. ("Cargill"), Minneapolis, Minnesota; and Tate & Lyle Ingredients Americas LLC ("Tate & Lyle"), Hoffman Estates, Illinois, on June 2, 2017, alleging that an industry in the United States is materially injured and threatened with material injury by reason of subsidized citric acid and certain citrate salts ("CACCS")[1] from Thailand and less-than-fair-value ("LTFV") imports of CACCS from Belgium, Colombia, and Thailand. The following tabulation provides information relating to the background of these investigations.[2] [3]

| Effective date | Action |
|---|---|
| **June 2, 2017** | Petitions filed with Commerce and the Commission; institution of the Commission's investigations |
| **June 22, 2017** | Commerce's notices of initiation |
| **July 17, 2017** | Commission's preliminary determinations (82 FR 33925, July 21, 2017) |
| **November 3, 2017** | Commerce's preliminary CVD determination (82 FR 51216, November 3, 2017) |
| **January 8, 2018** | Commerce's preliminary AD determinations (83 FR 784, January 8, 2018; 83 FR 787, January 8, 2018; 83 FR 791, January 8, 2018);<br>scheduling of final phase of Commission investigations (83 FR 4922, February 2, 2018) |
| **May 14, 2018** | Commission's hearing |
| **June 5, 2018** | Commerce's final determinations (83 FR 25998, June 5, 2018; 83 FR 26001, June 5, 2018; 83 FR 26002, June 5, 2018; 83 FR 26004, June 5, 2018) |
| **June 20, 2018** | Scheduled date for the Commission's vote |
| **July 6, 2018** | Scheduled date for Commission's views |

[1] See the section entitled "The Subject Merchandise" in *Part I* of this report for a complete description of the merchandise subject in this proceeding.

[2] Pertinent *Federal Register* notices are referenced in appendix A, and may be found at the Commission's website (www.usitc.gov).

[3] A list of witnesses appearing at the hearing are presented in appendix B of this report.

## STATUTORY CRITERIA AND ORGANIZATION OF THE REPORT

### Statutory criteria

Section 771(7)(B) of the Tariff Act of 1930 (the "Act") (19 U.S.C. § 1677(7)(B)) provides that in making its determinations of injury to an industry in the United States, the Commission--

> *shall consider (I) the volume of imports of the subject merchandise, (II) the effect of imports of that merchandise on prices in the United States for domestic like products, and (III) the impact of imports of such merchandise on domestic producers of domestic like products, but only in the context of production operations within the United States; and. . . may consider such other economic factors as are relevant to the determination regarding whether there is material injury by reason of imports.*

Section 771(7)(C) of the Act (19 U.S.C. § 1677(7)(C)) further provides that--[4]

> *In evaluating the volume of imports of merchandise, the Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States is significant.. . .In evaluating the effect of imports of such merchandise on prices, the Commission shall consider whether. . .(I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.. . . In examining the impact required to be considered under subparagraph (B)(i)(III), the Commission shall evaluate (within the context of the business cycle and conditions of competition that are distinctive to the affected industry) all relevant economic factors which have a bearing on the state of the industry in the United States, including, but not limited to. . . (I) actual and potential decline in output, sales, market share, gross profits, operating profits, net profits, ability to service debt, productivity, return on investments, return on assets, and utilization of capacity, (II) factors affecting domestic prices, (III) actual and potential negative effects on cash flow, inventories, employment, wages, growth, ability to raise capital, and investment, (IV) actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more*

[4] Amended by PL 114-27 (as signed, June 29, 2015), Trade Preferences Extension Act of 2015.

*advanced version of the domestic like product, and (V) in {an antidumping investigation}, the magnitude of the margin of dumping.*

In addition, Section 771(7)(J) of the Act (19 U.S.C. § 1677(7)(J)) provides that—[5]

*(J) EFFECT OF PROFITABILITY.—The Commission may not determine that there is no material injury or threat of material injury to an industry in the United States merely because that industry is profitable or because the performance of that industry has recently improved.*

## Organization of report

*Part I* of this report presents information on the subject merchandise, preliminary subsidy and dumping margins, and domestic like product. *Part II* of this report presents information on conditions of competition and other relevant economic factors. *Part III* presents information on the condition of the U.S. industry, including data on capacity, production, shipments, inventories, and employment. *Parts IV* and *V* present the volume of subject imports and pricing of domestic and imported products, respectively. *Part VI* presents information on the financial experience of U.S. producers. *Part VII* presents the statutory requirements and information obtained for use in the Commission's consideration of the question of threat of material injury as well as information regarding nonsubject countries.

## MARKET SUMMARY

CACCS are chemical products used in the production and formulation of various foods and beverages as an acidulant, preservative, and/or flavor enhancer due to their tart flavor, high solubility, acidity, and buffering capabilities. CACCS are also used in pharmaceuticals and cosmetics as well as in household and industrial applications such as laundry detergents, metal cleaners, and textile finishing treatments.[6] Cargill is *** U.S. producer of CACCS, *** ADM and Tate & Lyle. Leading producers of CACCS outside the United States include SA Citrique Belge NV ("Citrique Belge") of Belgium, Jungbunzlauer ("JBL") of Canada and the European Union, and multiple firms in China.[7]

The leading U.S. importers of CACCS from Belgium include ***. The leading U.S. importers of CACCS from Colombia include ***. The leading U.S. importers of

[5] Amended by PL 114-27 (as signed, June 29, 2015), Trade Preferences Extension Act of 2015.

[6] Petition, Vol. I, pp. 4-6.

[7] According to *** the top four producers in China have more than 1.1 million metric tons of production capacity. The nameplate capacity for each is as follows: Ensign (360,000 metric tons of capacity), TTCA (300,000 metric tons of capacity), RZBC (280,000 metric tons of capacity), and Yixing (200,000 metric tons of capacity). ***.

CACCS from Thailand include ***. The leading importers of CACCS from nonsubject countries (primarily Canada) include ***.

U.S. purchasers of CACCS include distributors and end users such as food and beverage producers, detergent producers, and pharmaceutical producers. Leading purchasers in 2017, in order of size, include ***.

Apparent U.S. consumption of CACCS totaled approximately *** in 2017. Currently, three firms are known to produce CACCS in the United States. U.S. producers' U.S. shipments of CACCS totaled 459.1 million pounds ($275.9 million) in 2017, and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from subject sources totaled 201.6 million pounds ($113.6 million) in 2017 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from nonsubject sources totaled *** in 2017 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value.

## SUMMARY DATA AND DATA SOURCES

A summary of data collected in these investigations is presented in appendix C, table C-1. Except as noted, U.S. industry data are based on questionnaire responses of three firms that accounted for all U.S. production of CACCS during 2017. U.S. import data are based on questionnaire responses of 36 importers accounting for an estimated 71.0 percent of U.S. imports from Belgium, 67.8 percent of U.S. imports from Colombia, 91.5 percent of U.S. imports from Thailand, and *** percent of U.S. imports from nonsubject sources. U.S. import data are also based on official U.S. import statistics using HTS statistical reporting numbers 2918.14.0000, 2918.15.1000, and 2918.15.5000.

## PREVIOUS AND RELATED INVESTIGATIONS

The Commission has conducted an antidumping investigation with respect to China as well as antidumping and countervailing investigations and related five-year reviews with respect to Canada and China. On December 15, 1999, petitions were filed with Commerce and the Commission alleging that an industry in the United States was threatened with material injury by reason of imports of citric acid and sodium citrate from China that were sold at LTFV.[8] On February 16, 2000, the Commission determined in the preliminary phase of this investigation that there was no reasonable indication that an industry in the United States was materially injured or threatened with material injury, or that the establishment of an industry in

[8] The petitions were filed by ADM, Cargill, and Tate & Lyle Citric Acid, Inc. *Citric Acid and Sodium Citrate From China: Investigation No. 731-TA-863 (Preliminary)*, USITC Publication 3277, February 2000, p. I-1. The scope of the investigation consisted of only citric acid and sodium citrate. It did not include potassium citrate and crude calcium citrate.

the United States was materially retarded by reason of citric acid and sodium citrate from China.[9]

On April 14, 2008, petitions were filed with Commerce and the Commission alleging that an industry in the United States was materially injured and threatened with material injury by reason of imports of CACCS from Canada and China that were sold at LTFV and subsidized by the government of China.[10] On April 13, 2009, Commerce issued final affirmative determinations with respect to the countervailing duty investigation regarding imports of CACCS from China[11] and the antidumping duty investigations regarding imports of CACCS from Canada[12] and China.[13] On May 8, 2009, the Commission determined that a domestic industry was materially injured by reason of imports of CACCS subsidized by the government of China and LTFV imports of CACCS from Canada and China.[14] Thereafter, Commerce issued a countervailing duty order on CACCS from China[15] and antidumping duty orders on CACCS from Canada and China.[16]

On April 1, 2014, the Commission instituted the first five-year reviews of the countervailing duty order on imports of CACCS from China and the antidumping duty orders on imports of CACCS from Canada and China.[17] In June 2015, the Commission completed its first full five-year reviews and determined that revocation of the countervailing duty order on CACCS from China and the antidumping duty orders on CACCS from Canada and China would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.[18] Following affirmative determinations with respect to

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[9] *Citric Acid and Sodium Citrate From China: Investigation No. 731-TA-863 (Preliminary)*, USITC Publication 3277, February 2000, p. 1; *Citric Acid and Sodium Citrate From China*, 65 FR 7889, February 16, 2000.

[10] The petitions were filed by ADM, Cargill, and Tate & Lyle Americas, Inc. *Citric Acid and Certain Citrate Salts From Canada and China: Investigation Nos. 701-TA-456 and 731-TA-1151-1152 (Final)*, USITC Publication 4076, May 2009, p. I-1.

[11] *Citric Acid and Certain Citrate Salts From the People's Republic of China: Final Affirmative Countervailing Duty Determination*, 74 FR 16836, April 13, 2009.

[12] *Notice of Final Determination of Sales at Less Than Fair Value: Citric Acid and Certain Citrate Salts from Canada*, 74 FR 16843, April 13, 2009.

[13] *Citric Acid and Certain Citrate Salts From the People's Republic of China: Final Affirmative Determination of Sales at Less Than Fair Value*, 74 FR 16838, April 13, 2009.

[14] *Citric Acid and Certain Citrate Salts From Canada and China: Investigation Nos. 701-TA-456 and 731-TA-1151-1152 (Final)*, USITC Publication 4076, May 2009, p. 1; *Citric Acid and Certain Citrate Salts From Canada and China*, 74 FR 25771, May 29, 2009.

[15] *Citric Acid and Certain Citrate Salts From the People's Republic of China: Notice of Countervailing Duty Order*, 74 FR 25705, May 28, 2009.

[16] *Citric Acid and Certain Citrate Salts from Canada and the People's Republic of China: Antidumping Duty Orders*, 74 FR 25703, May 29, 2009.

[17] *Citric Acid and Certain Citrate Salts from Canada and China; Institution of Five-Year Reviews*, 79 FR 18311, April 1, 2014.

[18] *Citric Acid and Certain Citrate Salts from Canada and China: Investigation Nos. 701-TA-456 and 731-TA-1151-1152 (Review)*, USITC Publication 4538, June 2015, p. 1.

imports of CACCS from Canada and China in the first five-year reviews by Commerce and the Commission,[19] Commerce issued a continuation notice for the countervailing duty order on CACCS from China and the antidumping duty orders on CACCS from Canada and China, effective June 24, 2015.[20]

On October 15, 2015, Commerce published its final determination regarding the administrative review on CACCS from Canada for the period May 1, 2013 through April 30, 2014. Commerce determined a weighted-average dumping margin of zero percent for imports of CACCS produced in Canada and exported into the United States by JBL.[21] Commerce completed three subsequent administrative reviews regarding CACCS from Canada for the periods May 1, 2014 through April 30, 2015; May 1, 2015 through April 30, 2016; and May 1, 2016 through April 30, 2017. In each of these administrative reviews, Commerce continued to find a weighted-average dumping margin of zero for imports of CACCS produced in Canada and exported into the United States by JBL.[22]

## NATURE AND EXTENT OF SUBSIDIES AND SALES AT LTFV

### Subsidies

On June 5, 2018, Commerce published a notice in the *Federal Register* of its final negative determination of countervailable subsidies for producers and exporters of CACCS from Thailand.[23] For this final determination, Commerce calculated *de minimis* estimated countervailable subsidies for all individually examined producers/exporters of the subject merchandise. Consistent with section 703(b)(4)(A) of the Act, Commerce has disregarded the *de minimis* rates. Table I-1 presents Commerce's findings of subsidization of CACCS in Thailand.

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[19] *Citric Acid and Certain Citrate Salts From the People's Republic of China: Final Results of Expedited Sunset Review of the Countervailing Duty Order*, 79 FR 45761, August 6, 2014; *Citric Acid and Certain Citrate Salts From Canada and the People's Republic of China: Final Results of Expedited First Sunset Reviews of the Antidumping Duty Orders*, 79 FR 45763, August 6, 2017; *Citric Acid and Certain Citrate Salts From Canada and China*, 80 FR 34693, June 17, 2015.

[20] *Citric Acid and Certain Citrate Salts From Canada and the People's Republic of China: Continuation of the Antidumping Duty Orders on Canada and the People's Republic of China, and Continuation of the Countervailing Duty Order on the People's Republic of China*, 80 FR 36318, June 24, 2015.

[21] *Citric Acid and Certain Citrate Salts From Canada: Final Results of Antidumping Duty Administrative Review; 2013-2014*, 80 FR 62016, October 15, 2015.

[22] *Citric Acid and Certain Citrate Salts From Canada: Final Results of Antidumping Duty Administrative Review; 2014-2015*, 81 FR 28827, May 10, 2016; *Citric Acid and Certain Citrate Salts From Canada: Final Results of Antidumping Duty Administrative Review; 2015-2016*, 82 FR 18284, April 18, 2017; *Citric Acid and Certain Citrate Salts From Canada: Final Results of Antidumping Duty Administrative Review; 2016-2017,* 83 FR 14263-4, April 3, 2018.

[23] *Citric Acid and Certain Citrate Salts From Thailand: Final Negative Countervailing Duty Determination, and Final Negative Critical Circumstances Determination*, 83 FR 26004, June 5, 2018.

**Table I-1**
**CACCS: Commerce's final subsidy determination with respect to imports from Thailand**

| Entity | Final countervailable subsidy margin (*percent*) |
|---|---|
| COFCO | 0.00 |
| Niran | 0.00 |
| Sunshine Biotech | 0.21 |

Source: 83 FR 26004, June 5, 2018.

## Sales at LTFV

On June 5, 2018, Commerce published a notice in the *Federal Register* of its final determination of sales at LTFV with respect to imports from Belgium,[24] Colombia,[25] and Thailand.[26] Tables I-2, I-3, and I-4 present Commerce's dumping margins with respect to imports of product from Belgium, Colombia, and Thailand.

**Table I-2**
**CACCS: Commerce's final weighted-average LTFV margins with respect to imports from Belgium**

| Exporter | Producer | Final dumping margin (*percent*) |
|---|---|---|
| Citrique Belge | Citrique Belge | 19.30 |
| All others | | 19.30 |

Source: 83 FR 26001, June 5, 2018.

**Table I-3**
**CACCS: Commerce's final weighted-average LTFV margins with respect to imports from Colombia**

| Exporter | Producer | Final dumping margin (*percent*) |
|---|---|---|
| Sucroal | Sucroal | 28.48 |
| All others | | 28.48 |

Source: 83 FR 26002, June 5, 2018.

[24] *Citric Acid and Certain Citrate Salts From Belgium: Affirmative Final Determination of Sales at Less Than Fair Value*, 83 FR 26001, June 5, 2018.

[25] *Citric Acid and Certain Citrate Salts From Colombia: Affirmative Final Determination of Sales at Less Than Fair Value, Final Negative Critical Circumstances Determination,* 83 FR 26002, June 5, 2018.

[26] *Citric Acid and Certain Citrate Salts From Thailand: Affirmative Final Determination of Sales at Less Than Fair Value, Final Affirmative Critical Circumstances Determination, in Part*, 83 FR 25998, June 5, 2018.

**Table I-4**
**CACCS: Commerce's final weighted-average LTFV margins with respect to imports from Thailand**

| Exporter | Producer | Final dumping margin (*percent*) |
|---|---|---|
| COFCO | COFCO | 15.71 |
| Niran | Niran | 13.00 |
| Sunshine Biotech | Sunshine Biotech | 6.47 |
| All others | | 11.25 |

Source: 83 FR 25998, June 5, 2018.

## THE SUBJECT MERCHANDISE

### Commerce's scope

In the current proceeding, Commerce has defined the scope as follows:

*The merchandise covered by this investigation includes all grades and granulation sizes of citric acid, sodium citrate, and potassium citrate in their unblended forms, whether dry or in solution, and regardless of packaging type. The scope also includes blends of citric acid, sodium citrate, and potassium citrate; as well as blends with other ingredients, such as sugar, where the unblended form(s) of citric acid, sodium citrate, and potassium citrate constitute 40 percent or more, by weight, of the blend.*

*The scope also includes all forms of crude calcium citrate, including dicalcium citrate monohydrate, and tricalcium citrate tetrahydrate, which are intermediate products in the production of citric acid, sodium citrate, and potassium citrate.*

*The scope includes the hydrous and anhydrous forms of citric acid, the dihydrate and anhydrous forms of sodium citrate, otherwise known as citric acid sodium salt, and the monohydrate and monopotassium forms of potassium citrate. Sodium citrate also includes both trisodium citrate and monosodium citrate which are also known as citric acid trisodium salt and citric acid monosodium salt, respectively.*

*The scope does not include calcium citrate that satisfies the standards set forth in the United States Pharmacopeia and has been mixed with a functional excipient, such as dextrose or starch, where the excipient constitutes at least 2 percent, by weight, of the product.*

*Citric acid and sodium citrate are classifiable under 2918.14.0000 and 2918.15.1000 of the Harmonized Tariff Schedule of the United States (HTSUS), respectively. Potassium citrate and crude calcium citrate are*

*classifiable under 2918.15.5000 and, if included in a mixture or blend, 3824.99.9295 of the HTSUS. Blends that include citric acid, sodium citrate, and potassium citrate are classifiable under 3824.99.9295 of the HTSUS. Although the HTSUS subheadings are provided for convenience and customs purposes, the written description of the merchandise is dispositive.*[27]

### Tariff treatment

Based upon the scope set forth by Commerce, information available to the Commission indicates that the citric acid and its salts and esters subject to these investigations are classified in HTS subheadings 2918.14.00, 2918.15.10, and 2918.15.50. Blends of these compounds subject to these investigations are classified in HTS subheading 3824.99.92 (statistical reporting number 3824.99.9295) of the HTSUS only if it is included in a mixture or blend with at least 40 percent consisting of CACCS. (Note: The corresponding chapter 38 statistical reporting number was 3824.90.9290 in 2015 and 3824.90.9295 in 2016. Both of these HTS statistical reporting numbers are basket categories of chemical products and preparations of the chemical or allied industries (including those consisting of mixtures of natural products) that are not elsewhere specified or included with very minimal subject merchandise.)

The 2018 general rates of duty in these four subheadings are 6 percent, 6.5 percent, 3.7 percent, and 5 percent *ad valorem*, respectively. In addition, the special rate of duty is free for eligible CACCS that is an originating good of Colombia under these subheadings, pursuant to the United States-Colombia Free Trade Agreement. Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

## THE PRODUCT

### Description and applications

The imported products subject to these investigations are citric acid and certain citrate salts, specifically sodium citrate and potassium citrate; blends containing citric acid, sodium citrate, and potassium citrate; and crude calcium citrate ("CCC"). Citric acid, sodium citrate, and potassium citrate are all available in either dry form or in solution. CCC is an intermediate form in the production of citric acid via the lime/sulfuric acid process.[28] CCC can be shipped to another facility for further processing into refined citric acid.[29]

Citric acid, sodium citrate, and potassium citrate are all available as odorless, translucent crystals.[30] These crystals are normally sold in three granulations: granular, fine

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[27] *Citric Acid and Certain Citrate Salts From Belgium: Affirmative final Determination of Sales at Less Than Fair Value, Postponement of Final Determination,* 83 FR 26001, June 5, 2018.

[28] Petition, Vol. I, pp. 3-4 and 10-11.

[29] Conference transcript, p. 99 (Anderson).

[30] Petition, Vol. I, p. 4.

granular, and powder.[31] Purchasers can buy the dry product and put it into solution or they can have an independent converter do it.[32] Petitioners argue that the products have only minor molecular differences which do not significantly alter their essential characteristics or uses.[33]

Citric acid is produced and sold in the U.S. market in both its dry and solution forms, and can be easily and reversibly converted between these two forms. Whether dry or dissolved in water, the product's chemical properties are the same.[34] The petitioners stated that the bulk of their shipments are in the dry form, but they do ship some citric acid in solution, generally only to nearby customers.[35] According to the petitioners, the three products are used basically for the same purposes, sold in the same markets, and produced in the same production facilities.[36]

ADM and Cargill produce citric acid, sodium citrate, and potassium citrate. Tate & Lyle produces only citric acid. The Belgian respondent makes citric acid and sodium citrate.[37] The Colombian producer reported making ***. All three Thai producers reported making citric acid, ***. Neither the petitioners nor the Belgian producer sells blends or CCC.[38] None of the Colombian or Thai producers commented directly on the production or sales of blends or CCC.

The formal chemical names and formulas for the typical commercial forms of the products are:

- Citric acid: Citric acid anhydrous ($C_6H_8O_7$) and citric acid monohydrate ($C_6H_8O_7 \cdot H_2O$);

- Sodium citrate: Sodium citrate anhydrous or trisodium citrate anhydrous ($Na_3C_6H_5O_7$), sodium citrate dihydrate or trisodium citrate dihydrate ($Na_3C_6H_5O_7 \cdot H_2O$), and monosodium citrate ($NaH_2(C_3H_5O(COO)_3$);

- Potassium citrate: Potassium citrate monohydrate or tripotassium citrate monohydrate ($K_3C_6H_5O_7 \cdot H_2O$), and monopotassium citrate ($KH_2C_6H_5O_7$); and

- Calcium citrate: Tricalcium citrate ($Ca_3(C_6H_5O_7)_2$), dicalcium citrate ($Ca_2H_2(C_3H_5O)(COO)_3 \cdot H_2O$), and tricalcium citrate tetrahydrate ($Ca_3(C_6H_5O_7)_2(COO)_3 \cdot 4H_2O$).[39]

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[31] Ibid.

[32] Petition, Vol. I, pp. 4-5.

[33] Petition, Vol. I, pp. 3-4.

[34] Petition, Vol. I, p. 4.

[35] Conference transcript, p. 64 (Erickson).

[36] Ibid.

[37] Ibid., p. 137 (Braeuer). In its questionnaire response for the final phase of these investigations, Citrique Belge stated that ***.

[38] Ibid.

[39] Petition, Vol. I, p. 4.

Citric acid is produced as a white granular or crystalline powder and has strong acidic taste. It is produced by the fermentation of glucose from a substrate such as corn, molasses, beet molasses, sugarcane, or tapioca.[40] Citric acid is produced both in anhydrous form and as a monohydrate. Both forms are isolated and purified through successive recrystallizations.

Sodium citrate is a white, granular crystalline powder with a pleasant acidic taste. Sodium citrate is produced by mixing citric acid slurry with sodium hydroxide (or sodium carbonate) and then crystallizing the resulting sodium citrate.[41] Potassium citrate is produced by reacting citric acid slurry with potassium hydroxide (or potassium carbonate).[42]

Citric acid, sodium citrate, and potassium citrate are chemical products used in the production and formulation of a wide variety of foods, beverages, pharmaceuticals, and cosmetics, as well as commercial and household products including detergents and metal cleaners, and in textile finishing treatments and other industrial applications.[43] Citric acid is used in the food and beverage industry as an acidulant, preservative, and flavor enhancer because of its tart flavor, high solubility, acidity, and buffering capabilities.[44] It is commonly used in carbonated and non-carbonated drinks, dry powdered beverages, wines and wine coolers, jams, jellies, preserves, gelatin desserts, candies, frozen foods, and canned fruits and vegetables.[45]

Sodium citrate, in addition to similar applications as citric acid, is used in cheese and dairy products to improve emulsifying properties, texture, and melting properties and to act as a preservative and aging agent.[46] It also has pharmaceutical applications such as a diuretic and an expectorant in cough syrup.[47]

Potassium citrate is used as an antacid, a diuretic, an expectorant, and as a systemic and urinary alkalizer. In industrial applications, potassium citrate can be used in electropolishing and as a buffering agent. In food and beverage applications, potassium citrate has been replacing sodium citrate as a means of reducing sodium content in low- or no-salt products.[48]

The domestic and subject producers always produce citric acid and certain citrate salts to meet the high purity U.S. Pharmacopeia ("USP") or Food Chemical Codex ("FCC") standards, regardless of the intended customer/application.[49] The products must meet these high

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[40] Ibid., p. 7.
[41] Ibid., p. 9.
[42] Ibid.
[43] Ibid., pp. 5-6.
[44] Ibid., p. 5.
[45] Ibid., pp. 5-6.
[46] Ibid., p. 6.
[47] Ibid.
[48] Ibid.
[49] Hearing transcript, pp. 65-66 (Jones, Peel). "Once a producer of citric acid … has received the standard food pharma certifications, the product can be purchased for virtually every end use by almost every U.S. customers (sic)." Hearing transcript, p. 39 (Szamosszegi). Conference transcript, pp. 66-67 (Anderson, Aud, Erickson, Peel, Tuma). Petitioners' postconference brief, p. 4.

standards to be used in food and beverage or pharmaceutical applications and some of the largest customers are in the food and beverage business.

Although CACCS is chemically identical regardless of its feedstock and certification,[50] all parties acknowledge that there is increasing demand for non-genetically modified organism (non-GMO) certified CACCS.[51] While U.S. producers claim that they can make, and have made, CACCS that qualifies as non-GMO, they do not have dedicated production facilities for such production and see no business case for changing their current processes.[52] Petitioners assert that demand is still too small and the price premium is insufficient to profitably make CACCS that qualifies for the Non-GMO Project certification.[53] There are multiple means to certify CACCS as non-GMO, but the Non-GMO Project certification is generally necessary for CACCS sold to customers who want to obtain the Non-GMO Project certification for their own downstream products.[54] For other applications, petitioners assert that the purchasers are GMO indifferent, implying that they can use GMO, uncertified non-GMO, or certified non-GMO CACCS to make their downstream products.[55]

The Non-GMO Project certification, which enables companies to use the "Butterfly logo" on their labels, is conferred based on a number of factors, including the feedstock.[56] Petitioners assert, however, that as a consequence of a chemical transformation, all CACCS is non-GMO regardless of the feedstock.[57] Petitioners also claim that there is no official U.S. non-GMO standard and that their product already qualifies as non-GMO under some standards.[58] U.S. producers use genetically modified corn as their primary feedstock so they would have to disrupt their production to change out the feedstocks to meet the current Non-GMO Project

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[50] Hearing transcript, p. 76 (Erickson).

[51] Hearing transcript, pp. 15 (Connelly), 66-67 (Aud), 106-107 (De Backer), 119 (Poulos), 125 (Lee).

[52] Hearing transcript, pp. 24 and 70 (Aud). Petitioners assert that their CACCS is already non-GMO, just not Non-GMO Project certified. Conference transcript, p. 51 (Aud).

[53] Hearing transcript, pp. 24 and 71-72 (Aud). Conference transcript, pp. 51-52 (Aud, Peel).

[54] If the share of CACCS in the downstream product is negligible, then the downstream product can still be verified by the Non-GMO Project even with GMO CACCS. "{T}he non-GMO Project Standard does not allow GMO derived fermentation nutrient sources, for example dextrose, above a threshold of 0.9 percent." Hearing transcript, p. 22 (Aud).

[55] Hearing transcript, p. 46 (Szamosszegi).

[56] The Non-GMO Project web site (https://www.nongmoproject.org) accessed July 5, 2017. Quaker, Tropicana, and PepsiCo's postconference brief, pp. 5-6.

[57] Conference transcript, pp. 52-53 (Anderson).

[58] "Currently, there are different and competing definitions and certifications used in the marketplace to label products as non-GMO. The citric acid produced by Cargill, which contains no detectable GMO DNA has been certified as non-GMO by the Global Testing and Verification firm SGS." Hearing transcript, p. 22 (Aud). "Citric acid that is labeled as non-GMO under one standard competes against citric acids without such labeling and citric acid that is labeled as non-GMO under another standard." Hearing transcript, p. 23 (Aud). On May 4, 2018, the USDA requested public comment on a proposed rule for a National Bioengineered Food Disclosure standard, 83 FR 19860-19889. Petitioners stated that it could take a year or longer before the rule would be finalized. Hearing transcript, p. 23 (Aud).

requirements for a non-GMO product.[59] All of the subject producers use non-GMO feedstock[60] but none of them had the Non-GMO Project certification for the entire period of investigation. All but Citrique Belge obtained the certification during the period of investigation: Sucroal in early 2015;[61] COFCO in September 2016;[62] Niran in November 2016;[63] and Sunshine in late 2016.[64] Citrique Belge, however, did not obtain the certification until April 2018.[65] Although none of the U.S. producers has obtained this certification for its U.S. production facilities, Tate & Lyle has obtained it for its Brazilian operations.[66]

The primary reason for obtaining Non-GMO Project Verified certification is to enable manufacturers of downstream products to use the Non-GMO Project's "Butterfly logo." According to the Non-GMO Project staff, companies are free to put "non-GMO" on their labels without restriction.[67] However, the "Butterfly logo" is the most recognized symbol of third-party verification that a product has met rigorous non-GMO standards.[68]

As noted earlier, there are multiple sources of non-GMO certification. The petitioners have obtained EU certification.[69] There are also other certifiers in the U.S. market. The Non-GMO Project administers its non-GMO certification process, but it does not directly test the material. The independent firms that conduct the tests for the Non-GMO Project can also provide non-GMO certification for CACCS and other products. For example, Cargill's CACCS has been certified as non-GMO by SGS, a global company that provides testing and certification services, including acting as a technical administrator for the Non-GMO Project.[70] NSF

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[59] Conference transcript, pp. 67-68 (Aud, Erickson).

[60] Citrique Belge uses sugar beet molasses; Sucroal uses sugarcane; and COFCO, Niran, and Sunshine use tapioca *** as the substrate. Hearing transcript, pp. 71 (Aud), 118 (Poulos), 129 (Lee), 136 (De Backer).

[61] Sucroal posthearing brief, p. 11; Hearing transcript, p. 119 (Poulos).

[62] Thai Respondents posthearing brief, p. Q-1.

[63] Thai Respondents posthearing brief, p. Q-1.

[64] Thai Respondents posthearing brief, p. Q-1.

[65] Petitioners posthearing brief, p. 1 of Answers to Commissioners Questions.

[66] Hearing transcript, p. 57 (Erickson). The Non-GMO Project web site (https://www.nongmoproject.org) accessed July 5, 2017.

[67] Staff telephone interview with Bonnell and Bos, Non-GMO Project, May 2, 2018. Hearing transcript, p. 119 (Poulos).

[68] Hearing transcript, pp. 108-109 (De Backer). "The non-GMO Project Verified label is the gold standard {f}or ingredient and food producers." Hearing transcript, p. 119 (Poulos).

[69] Cargill and ADM stated during the hearing that their CACCS meet the EU standard for a non-GMO product. Hearing transcript, pp. 73-74 (Tuma) and 88 (Peel).

[70] Hearing transcript, p. 22 (Aud). SGS certified clients directory, https://www.sgsgroup.us.com/en/certified-clients-and-products/certified-client-directory# (accessed May 31, 2018). SGS is listed as SCS Global Services on the Non-GMO Project's "Technical Administrators" page, https://www.nongmoproject.org/product-verification/technical-administrators/ (accessed May 31, 2018). Some subject producers listed in their questionnaire responses other branches of SGS as providing their non-GMO certification testing.

International is another technical administrator for the Non-GMO Project[71] and lists Jungbunzlauer, the Canadian nonsubject producer of CACCS, on its site as being a certified non-GMO provider of CACCS.[72]

## Manufacturing processes

Citric acid is produced in a two-stage process: fermentation and recovery/refinement of crude citric acid. Sodium citrate and potassium citrate are produced by reacting citric acid slurry with a solution containing certain sodium or potassium compounds (e.g., sodium hydroxide or potassium hydroxide).[73] The petitioners produce sodium citrate and potassium citrate using the same equipment and workers that are used for citric acid.[74]

The first stage of modern, large-scale production of citric acid is achieved through fermentation[75] involving the actions of specific strains of organisms such as the *Aspergillus niger* mold or the *Candida lipolytica* or *Candida guilliermondii* yeast upon a substrate.[76] Once the substrate is turned into glucose, it is fermented into crude citric acid by the organism.[77] The yield of citric acid can be optimized through the careful control of fermentation conditions, such as temperature, acidity or alkalinity, dissolved air or oxygen, and the rate of stirring of the mixture. Each fermentation reaction is done in batches in large tanks which hold several thousand gallons and takes approximately *** to achieve a citric acid yield of *** percent, based on the weight of the sugar.[78]

Producers ferment the substrate by one of three different methods: shallow pan, deep tank, or solid-state.[79] Citric acid was originally produced using a shallow pan or liquid surface culture technology, where microbial fermentation occurred on the surface of the liquid. Most modern production of citric acid uses a deep tank or a submerged culture process, where the reaction is constantly agitated or stirred with air in order to allow the organism to grow throughout the mixture.[80] The submerged culture process is generally favored due to the economics of increased yields and lower labor costs, although reaction conditions must be

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[71] The Non-GMO Project's "Technical Administrators" page, https://www.nongmoproject.org/product-verification/technical-administrators/ (accessed May 31, 2018). Two other technical administrators are listed on the page: Where Food Comes From, Inc. and FoodChain ID.

[72] http://www.qai-inc.com/search-products/search-results.php (accessed April 20, 2018). Quality Assurance International (QAI) is affiliated with NSF International.

[73] Petition, Vol. I, p. 7.

[74] Conference transcript, pp. 63-64 (Erickson).

[75] "Citric acid," Kirk-Othmer Encyclopedia of Chemical Technology (John Wiley & Sons, New York, 1979), Vol. 6, pp. 156-159.

[76] Petition, Vol. I, p. 7.

[77] Ibid.

[78] ***.

[79] Petition, Vol. I, pp. 7-8.

[80] Petition, Vol. I, p. 8.

more tightly controlled.[81] The petitioners use the deep tank method. The Belgian respondent uses the shallow pan method because it claims that this fermentation method results in higher yields.[82] The Colombian producer uses the deep tank method.[83] *** Thai producers use the deep tank method. According to petitioners, solid-state fermentation is used only in Japan.[84]

Corn starch is the principal substrate used in the United States, although other feedstocks such as molasses are also used.[85] The Belgian producer uses sugar beet molasses, the Colombian producer uses sugarcane, and the Thai producers use tapioca[86] *** as the substrate.

The second stage of production, recovery and refining, is normally performed by one of three common processes: the lime/sulfuric acid method, the solvent extraction method, or the ion exchange method. All three of these processes are compatible with either the shallow pan or deep tank fermentation processes.[87]

In the lime/sulfuric acid refining process, calcium hydroxide (lime) is added to the fermentation broth to precipitate out calcium citrate slurry, the CCC that is also part of the scope. After the calcium citrate is separated by filtration, it is washed to remove soluble impurities. The citrate is then mixed with sulfuric acid to produce a citric acid/charcoal slurry and gypsum (calcium sulfate). The citric acid is then purified through evaporation, crystallization, centrifugation, and drying.[88] This process ***.[89]

The second common refining method, ***,[90] is the solvent extraction process. This process does not involve the production of calcium citrate or gypsum. Instead, solvents separate the citric acid slurry from spent biomass. The subsequent processes of evaporation, crystallization, centrifugation, and drying are similar to those used in the lime/sulfuric acid process.[91]

The third refining method, ion exchange, is a recent development. In this method, the slurry is passed through a bed of polymer-based resin. Ionic mineral elements such as calcium and magnesium adhere to the resin, thus removing them from the citric acid slurry. The subsequent steps are similar to those in the other two processes.[92]

All three refining methods produce citric acid that is dissolved in water. The temperature used for the crystallization process determines whether the anhydrous or hydrous

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[81] "Citric acid," Kirk-Othmer Encyclopedia of Chemical Technology (John Wiley & Sons, New York, 1979), Vol. 6, pp. 156-157.

[82] Conference transcript, p. 136 (De Backer).

[83] ***.

[84] Petition, Vol. I, p. 8.

[85] Ibid., p. 7.

[86] Ibid. Hearing transcript, pp. 71 (Aud), 118 (Poulos), 129 (Lee), 136 (De Backer).

[87] Petition, Vol. I, p. 8.

[88] Ibid.

[89] ***.

[90] Ibid.

[91] Petition, Vol. I, p. 8.

[92] Ibid., p. 9.

form is produced.[93] Some manufacturers use different equipment for crystallizing hydrous versus anhydrous citric acid, whereas other producers use the same equipment and adjust the process to produce the preferred product.[94]

Producers can either sell the citric acid or convert it into salts. Petitioners produce dihydrate sodium citrate and anhydrous sodium citrate by diverting some of the citric acid slurry to a line dedicated to citric salt production, where the slurry is reacted with sodium hydroxide or sodium carbonate. Similarly, potassium citrate is produced by reacting citric acid slurry with potassium hydroxide or potassium carbonate.[95]

The dry forms of the subject merchandise are packaged in polyethylene-lined paper bags, typically holding 50 pounds or 25 kilograms. "Super sacks" containing 500 to 2,000 pounds are also used. When preferred in solution form, the subject product is shipped in drums, railcars, or tank trucks. Drums usually contain 200 to 275 pounds of solution.[96]

Sodium citrate and potassium citrate can also be produced by some distributors that are known as "converters." Converters can provide either citric acid as purchased from the manufacturer, or have the equipment on hand to blend sodium hydroxide or potassium hydroxide with citric acid, thus producing sodium citrate or potassium citrate, respectively.[97]

## DOMESTIC LIKE PRODUCT ISSUES

In the antidumping investigation on imports of citric acid and sodium citrate from China in 2000, the Commission concluded that citric acid and sodium citrate constitute one domestic like product.[98] In the antidumping and countervailing duty investigations on imports of CACCS from Canada and China in 2009, the Commission found no clear dividing lines among domestically produced CACCS corresponding to the scope of the investigations based on chemical and physical form, grade, or product type, and determined that the domestic like product consisted of citric acid (whether in crude form as crude calcium citrate or in finished form), sodium citrate, and potassium citrate in all chemical and physical forms and grades.[99] In its full first five-year reviews, the Commission again defined a single domestic like product consisting of citric acid (whether in crude form as calcium citrate or in finished form), sodium citrate, and potassium citrate in all chemical and physical forms and grades.[100]

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[93] Ibid.

[94] Ibid.

[95] Ibid.

[96] Ibid., p. 10.

[97] *Citric Acid and Certain Citrate Salts from Canada and China: Investigation Nos. 701-TA-456 and 731-TA-1151-1152 (Review)*, USITC Publication 4538, June 2015, p. I-18.

[98] *Citric Acid and Sodium Citrate From China: Investigation No. 731-TA-863 (Preliminary)*, USITC Publication 3277, February 2000, p. 7.

[99] *Citric Acid and Certain Citrate Salts From Canada China: Investigation Nos. 701-TA-456 and 731-TA-1151-1152 (Final)*, USITC Publication 4076, May 2009, pp. 7-9.

[100] *Citric Acid and Certain Citrate Salts from Canada and China: Investigation Nos. 701-TA-456 and 731-TA-1151-1152 (Review)*, USITC Publication 4538, June 2015, p. 6.

In the preliminary phase of these investigations, the Commission defined a single domestic like product consisting of CACCS co-extensive with the scope of these investigations. Citrique Belge, the only respondent to appear at the staff conference, stated that it agrees with the petitioners' definition of the domestic like product.[101] Citrique Belge, Sucroal, and a representative of the Thai respondents all appeared at the Commission hearing but did not raise like product issues.[102] Responding foreign producers, importers, and purchasers do not dispute the definitions of the domestic like product as defined in the preliminary phase of these investigations.[103]

During the preliminary phase of these investigations U.S. importer Zhong Ya did not participate in the staff conference but filed a postconference brief arguing that citric acid and certain citrate salts (sodium citrate, potassium citrate, and unrefined calcium citrate) covered by the scope of these investigations should be two separate domestic like products. Zhong Ya argues that the domestic industry is not materially injured or threatened with material injury by reason of imports of citrate salts from the subject countries. Zhong Ya asserted that citric acid has different physical characteristics and end uses, is not interchangeable, is partially made on different manufacturing facilities, with different production processes and production employees, has different channels of distribution, and has different customer and producer perceptions as compared to certain citrate salts, although prices of citric acid are generally the same as compared to certain citrate salts.[104] Zhong Ya did not submit a posthearing brief.

In the preliminary phase of these investigations, the Commission determined that there was a single domestic like product consisting of the CACCS products corresponding to the scope of these investigations, including crude calcium citrate, citric acid, sodium citrate, and potassium citrate in all chemical and physical forms. The Commission stated that the record indicated that there is a spectrum or grouping of domestically produced products corresponding to the scope of the investigations without clear dividing lines based on chemical or physical form, grade, or product type. All have similar chemical composition and, although citric acid, sodium citrate, and potassium citrate are not substitutable in all applications, they are used in an overlapping manner in some of the same types of end products. The Commission found that the prices of citric acid and sodium citrate were comparable and did not comment on any price distinction between sodium citrate and potassium citrate.[105]

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[101] Conference transcript, p. 127 (Schaefer).

[102] Hearing transcript, p. 114 (Cannistra).

[103] During the preliminary phase, foreign producers COFCO and Sunshine stated in their postconference brief that they agree with the petitioners' definition of the domestic like product. Foreign producer Sucroal and importers Proctor & Gamble, Quaker Sales & Distribution, Inc., Tropicana Manufacturing Company, Inc, and PepsiCo did not address the domestic like product issue in their postconference briefs. COFCO and Sunshine's postconference brief, p. 3. During the final phase, no respondents addressed the domestic like product issue in their posthearing briefs.

[104] Zhong Ya's postconference brief, pp. 1-2, 4-12.

[105] *Citric Acid and Sodium Citrate Salts From Belgium, Colombia, and Thailand: Investigation Nos. 701-TA-581 and 731-TA-1374-1376 (Preliminary)*, USITC Publication 4710, July 2017, p. 7.

# PART II: CONDITIONS OF COMPETITION IN THE U.S. MARKET

## U.S. MARKET CHARACTERISTICS

CACCS are used in a wide variety of foods, beverages, pharmaceuticals, and cosmetics, as well as in commercial and household products including detergents and metal cleaners, and in textile finishing treatments and other industrial applications.[1] CACCS are available in both dry form (granular, fine, and powder) and in aqueous solutions.[2] [3] CACCS in dry form are storable for multiple years and can be shipped relatively inexpensively. CACCS in aqueous solutions are shipped generally only to nearby customers.[4] Both domestic and imported CACCS are generally produced to the same FCC and USP standards.[5] Petitioners stated that all subject producers produce to these standard specifications and CACCS only vary in size and moisture level.[6] The U.S. market is supplied with genetically modified organism ("GMO") CACCS and non-genetically modified organism ("non-GMO") CACCS, which is mostly used in the food, beverage, and pharmaceutical sectors.

Apparent U.S. consumption of CACCS increased during January 2015-December 2017. Overall, apparent U.S. consumption in 2017 was *** percent higher than in 2015, and *** percent higher than in 2016.

## U.S. PURCHASERS

The Commission issued 98 questionnaires and received 42 usable questionnaire responses from firms that bought CACCS during January 2015-December 2017.[7] Sixteen responding purchasers are distributors, 13 are industrial end users, 10 are food and beverage products end users, 2 are household cleaning products end users, 2 firms described themselves as blenders, and 1 firm described itself as a contract manufacturer. The largest responding purchasers of CACCS, in descending order, were ***, representing more than half of total reported purchases in 2017.

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[1] Petition, p. 4.

[2] An aqueous solution form of CACCS is normally a 50-percent citric acid solution. Petition, pp. 3-4.

[3] Aqueous solutions are priced on a dry basis, and there is effectively no price difference between the different forms. Generally geographic proximity and application dictate whether a customer will request liquid or dry forms of CACCS. Conference transcript, pp. 64 (Erickson) and 78 (Tuma).

[4] Conference transcript, p. 35 (Anderson).

[5] Petition, p. 5. FCC standards are the highest, and CACCS that is produced to FCC standards can be used for every other end use. Conference transcript, pp. 34 (Anderson) and 67 (Tuma).

[6] Conference transcript, p. 30 (Erickson).

[7] Of the 42 responding purchasers, 28 purchased domestic CACCS, 16 purchased imports of the subject merchandise from Belgium, 7 purchased imports of subject merchandise from Colombia, 24 purchased imports of subject merchandise from Thailand, 7 purchased imports of nonsubject merchandise from Canada, and 7 purchased imports of CACCS from other sources.

## CHANNELS OF DISTRIBUTION

In 2017, U.S. producers and importers of CACCS from Belgium and Colombia sold mainly to end users while importers of CACCS from Thailand sold mainly to distributors, as shown in table II-1. The food and beverage sector represented the largest end-use sector for U.S. producers and importers of CACCS from Belgium and Colombia. The share of commercial shipments of imports of CACCS from Thailand sold to end users varied between the food and beverage and industrial sectors each year during 2015-17.

**Table II-1**
**CACCS: U.S. producers' and importers' U.S. commercial shipments, by sources and channels of distribution, 2015-2017**

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## GEOGRAPHIC DISTRIBUTION

U.S. producers and importers of subject CACCS reported selling CACCS to all regions in the contiguous United States, with most sales occurring in the Northeast and Pacific Coast regions (table II-2). The three reporting U.S. importers selling CACCS from Colombia reported selling only in the Pacific Coast and Puerto Rico. For U.S. producers, 11.2 percent of sales were within 100 miles of their production facility, 65.4 percent were between 101 and 1,000 miles, and 23.3 percent were over 1,000 miles. Importers sold 31.1 percent within 100 miles of their U.S. point of shipment, 58.5 percent between 101 and 1,000 miles, and 10.4 percent over 1,000 miles.

**Table II-2**
**CACCS: Geographic market areas in the United States served by U.S. producers and importers**

| Region | U.S. producers | Subject U.S. importers | | | |
|---|---|---|---|---|---|
| | | Belgium | Colombia | Thailand | Subject sources |
| Northeast | 3 | 10 | 1 | 10 | 17 |
| Midwest | 3 | 8 | 1 | 8 | 13 |
| Southeast | 3 | 10 | 1 | 6 | 13 |
| Central Southwest | 3 | 6 | 1 | 8 | 13 |
| Mountain | 3 | 5 | 1 | 9 | 12 |
| Pacific Coast | 3 | 8 | 2 | 13 | 17 |
| Other[1] | 3 | 1 | 2 | 4 | 5 |
| All regions (except Other) | 3 | 3 | 1 | 4 | 7 |
| Reporting firms | 3 | 16 | 3 | 19 | 27 |

[1] All other U.S. markets, including AK, HI, PR, and VI.

Source: Compiled from data submitted in response to Commission questionnaires.

## SUPPLY AND DEMAND CONSIDERATIONS

### U.S. supply

Table II-3 provides a summary of the supply factors regarding CACCS from U.S. producers and subject countries. Responding U.S. producers and foreign producers/exporters in Belgium and Thailand maintained stable production capacities from January 2015-December 2017. However, the U.S. producers' capacity utilization declined, while Belgian capacity utilization was stable and Thai capacity utilization increased considerably. From January 2015-December 2017, foreign producers/exporters from Colombia reported an increase in capacity, which led to a decrease in capacity utilization. The ratio of inventories to total shipments declined for responding U.S. producers and producers/exporters from Belgium and Thailand. In contrast, the ratio of inventories to total shipments increased for responding producers/exporters from Colombia.

**Table II-3**
**CACCS: Supply factors that affect the ability to increase shipments to the U.S. market**

* * * * * * *

### Domestic production

Based on available information, U.S. producers of CACCS have the ability to respond to changes in demand with small-to-moderate changes in the quantity of shipments of U.S.-produced CACCS to the U.S. market. The main contributing factors to this low degree of responsiveness of supply are limited availability of unused capacity, a limited ability to shift shipments from alternate markets, and an inability to shift production from other products.

Domestic capacity remained constant at more than 550 million pounds during January 2015-December 2017, while production decreased from more than 508 million pounds in 2015 to around 465 million pounds in 2017, leading to an overall decline in domestic capacity utilization over the period. The moderately high, though decreasing, level of capacity utilization suggests that U.S. producers may have somewhat limited, though slightly increasing, ability to increase production of CACCS in response to an increase in prices. [8]

U.S. producers' exports, relative to total shipments, fluctuated between 4.1 percent and 5.3 percent over the period. These export shares indicate that U.S. producers have a limited ability to shift shipments between the U.S. market and other markets in response to price changes. The primary export markets reported by U.S. producers include ***.

U.S. producers' inventories, as a share of total shipments, decreased from *** percent in 2015 to *** percent in 2017. These inventory levels suggest that U.S. producers may have

[8] According to petitioners, producers of CACCS must run at full capacity for maximum efficiency. Conference transcript, p. 18 (Aud).

some ability to respond to changes in demand with changes in the quantity shipped from inventories.

All three U.S. producers reported that they are unable to shift production between CACCS and other products.

**Subject imports from Belgium**

Based on available information, the producer of CACCS in Belgium, Citrique Belge, has the ability to respond to changes in demand with moderate changes in the quantity of shipments of CACCS to the U.S. market. The main contributing factor to this degree of responsiveness of supply is the ability to shift shipments from alternate markets, but is mitigated by limited availability of unused capacity, a limited ability to use on-hand inventories, and *** ability to shift production from alternate products.

Citrique Belge's capacity remained constant at more than *** pounds during January 2015-December 2017, while production fluctuated from *** pounds in 2015 to *** pounds in 2016 and then *** pounds in 2017, leading its capacity utilization to fluctuate between *** percent and *** percent. This moderately high level of capacity utilization suggests that the Belgian producer may have a limited ability to increase production of CACCS in response to an increase in prices.

Citrique Belge's exports to the United States, as a percentage of total shipments, decreased from *** percent in 2015 to *** percent in 2017. The Belgian producer's exports to markets other than the United States, as a percentage of total shipments, increased over the period from *** percent in 2015 to *** percent in 2017.[9] These export shares indicate that producers in Belgium have the ability to shift shipments from alternate markets in response to price changes.

The Belgian producer's inventories, relative to total shipments, decreased from *** percent in 2015 to *** percent in 2017. These inventory levels suggest that Belgian producers may have limited ability to respond to changes in demand with changes in the quantity shipped from inventories.

Citrique Belge reported that it is *** to shift production between CACCS and other products.

**Subject imports from Colombia**

Based on available information, Sucroal, the sole responding producer of CACCS in Colombia, has the ability to respond to changes in demand with moderate changes in the quantity of shipments of CACCS to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity, availability of inventories,

[9] Respondent Citrique Belge stated that it is home-market focused because prices are too low in the United States and more than half of its sales to EU customers are under annual or long-term contracts. Conference transcript, p. 104 (De Backer).

and some ability to shift shipments from alternate markets. This responsiveness is mitigated by the inability to shift large amounts of production from alternate products.

Colombian capacity increased from more than *** pounds in 2015 to more than *** pounds in 2017 while production was constant at approximately *** pounds. Consequently, capacity utilization decreased over the period from *** percent in 2015 to *** percent in 2017. This moderate level of capacity utilization suggests that Sucroal has some ability to increase production of CACCS in response to an increase in prices.

The overall level of Sucroal's exports fluctuated, between *** pounds and *** pounds from 2015 to 2017. Sucroal's exports to the United States, as a percentage of its total shipments, decreased from *** percent in 2015 to *** percent in 2017. Sucroal's home-market shipments remained stable, while its exports to markets other than the United States, as a percentage of total shipments, increased from *** percent in 2015 to *** percent in 2017. These export shares indicate that Sucroal have some ability to shift shipments from alternate markets in response to price changes.

Sucroal's inventories, relative to total shipments, doubled from *** percent in 2015 to *** percent in 2017. These inventory levels suggest that the Colombian producer may have a substantial ability to respond to changes in demand with changes in the quantity shipped from inventories.

Sucroal reported that it is *** to shift production between CACCS and other products. Sucroal reported that *** of its overall capacity is used to manufacture CACCS.

**Subject imports from Thailand**

Based on available information, producers of CACCS from Thailand have a limited ability to respond to changes in demand with moderate changes in the quantity of shipments of CACCS to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the limited ability to increase capacity utilization, relatively small availability of inventories, and some ability to shift shipments from alternate markets. This responsiveness is mitigated by the inability to shift production from alternate products.

Thai capacity remained stable at just over *** pounds from January 2015-December 2017, while production increased from approximately *** pounds in 2015 to around *** pounds in 2017. As a result, capacity utilization increased from *** percent in 2015 to *** percent in 2017. The shift from a moderate level of capacity utilization to a high level of capacity utilization suggests that producers in Thailand have a limited ability to increase production of CACCS in response to an increase in prices.

The Thai producers' exports to the United States, as a percentage of total shipments, fluctuated between *** percent and *** percent over the period. The Thai producers' exports to markets other than the United States, as a percentage of total shipments, fluctuated between *** percent and *** over the period. These export shares indicate that producers in Thailand have some ability to shift shipments from alternate markets in response to price changes.

Thai producers' inventories, relative to total shipments, decreased from *** percent in 2015 to *** percent in 2017. These inventory levels suggest that producers in Thailand may

have a small-to-moderate ability to respond to changes in demand with changes in the quantity shipped from inventories.

All responding producers in Thailand reported that they are unable to shift production of CACCS to other products.

**Imports from nonsubject sources**

Imports from nonsubject sources accounted for more than 50 percent of total U.S. imports in 2017. The largest source of nonsubject imports during January 2015-December 2017 was Canada, which accounted for *** percent of all imports in 2017.[10]

**Supply constraints**

When asked to describe their supply constraints during the period of investigation, ***. When asked to describe their production capacity constraints during the period of investigation, ***. Seven of 31 importers reported supply constraints, including a lack of ocean vessel space, a slowdown and disruption of GMO and non-GMO CACCS imports from subject countries due to current AD/CVD investigations, and general supply shortages in 2016.[11] Two importers cited untimely shipments, of which one also cited port strikes in the United States. Three importers cited the current AD/CVD investigations, and two of these specifically identified declines in imports from Thailand.[12]

Eleven of 38 responding purchasers reported domestic supply constraints since January 1, 2015, six of which specifically cited supply disruptions from domestic supplier ***. Purchaser *** reported that it sought to increase its purchases of CACCS from *** under its existing contract, but was limited to a 7-percent increase. Purchaser *** reported that *** declared force majeure and experienced shipping delays due to high seasonal demand. Purchaser *** reported that CACCS was not available to distributors in 2015. Purchaser *** reported that *** had a significant production issue and shut down, and it could not deliver CACCS causing *** to acquire CACCS elsewhere. Purchaser *** also cited supply issues with *** and purchased CACCS from another domestic supplier. Purchaser *** also reported that *** was not able to provide quotes and added that this led to less competiveness among the U.S. producers and an increase in prices from *** in 2017.

Two purchasers cited supply disruptions from domestic producer ***. Purchaser *** reported that in 2017, *** refused to submit a bid for CACCS volume due to a lack of capacity to meet potential requirements. *** reported shipping delays from *** due to high seasonal

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[10] Petitioners asserted that the largest nonsubject sources of imported CACCS are Austria, Canada, China, and Brazil. Conference transcript, pp. 15 (Aud), and 59 (Anderson and Aud).

[11] Domestic producer *** stated that it reported a supply constraint because it does not supply Non-GMO Project Verified CACCS. Otherwise, it did not experience a supply constraint during the period of investigation.

[12] Importer *** cited the uncertainty produced by the current antidumping and countervailing duty investigations as a reason to not pursue new business or expand existing business, even though product is available from Thailand.

demand. Two purchasers, *** and ***, reported that *** was unable to meet their specifications. Purchaser *** reported domestic supply constraints and price fluctuations after the inception of the present AD/CVD investigations.

One purchaser reported a supply constraint for product from Belgium and Colombia. Purchaser *** cited supply constraints from Belgium when *** sold out due to an increase in business in Europe and cited supply constraints from Colombia due to a trucking strike. Two of 32 responding purchasers reported supply constraints of product from Thailand. Purchaser *** reported that fewer sources of Thai CACCS are available, making it difficult to locate suppliers of Thai CACCS. Purchaser *** reported supply constraints from Thailand due to production outages, container rollovers, and quality issues due to moisture content.

**New suppliers**

Six of 42 purchasers indicated that new suppliers entered the U.S. market since January 1, 2015. Purchasers identified COFCO (Thailand), ER-Kang (Cambodia), Posy (India), S.A. Citrique Belge N.V. (Belgium), and Tate & Lyle (United States).

## U.S. demand

Based on available information, the overall demand for CACCS is likely to experience small changes in response to changes in price. The main contributing factors are the small cost share of CACCS in most of its end-use products, and the lack of substitute products.

**End uses and cost share**

U.S. demand for CACCS depends on the demand for U.S.-produced downstream products. Reported end uses include acidulants, baby care wipes, beverages, candy, cosmetics, dairy formulas, detergents and cleaners, citrate salts, and pharmaceuticals. Petitioners estimated that nearly 50 percent of CACCS consumption is for beverages, 19 percent for food, 15 percent for detergents, and 8 percent each for industrial and pharmaceutical uses.[13] CACCS accounts for a small share of the cost of the end-use products in which it is used. Reported cost shares for some end uses were as follows:

- Food and Beverages (<1 to 3 percent);
- Detergents and cleaners (1 to 7 percent);
- Pharmaceuticals (1 to 5 percent);
- Industrial applications (1 to 50 percent)

[13] Conference presentation by petitioners, Slide 5.

**Business cycles**

All three U.S. producers, 13 of 33 importers, and 8 of 40 purchasers indicated that the market was subject to business cycles or conditions of competition. Specifically, demand for CACCS is highly seasonal, and demand peaks during the spring and summer months as demand for soft drinks and for use in agricultural applications is highest.[14]

All three U.S. producers reported that a major condition of competition is the high capacity utilization rate required for CACCS production. U.S. producer *** reported that a lower price is often conceded instead of scaling back on capacity utilization. U.S. producer *** reported that, in addition to continuously operating plants, the contract season during the fourth quarter is another unique condition of competition that affects sales of CACCS.[15] Importer *** reported that non-GMO food labeling requirements have changed the conditions of competition since 2015. Purchaser *** also reported that increased consumer demand for non-GMO products increased demand for non-GMO raw materials.

**Demand trends**

*** reported that there has been no change in demand since January 2015. Importer and purchaser responses were mixed; 11 of 29 responding importers reported increased demand, 8 reported no change, and 8 reported that demand fluctuated. Twelve of 33 purchasers reported increased demand and another 12 reported no change (table II-4). Very few firms reported a decrease in demand for CACCS. Purchaser responses were also mixed with respect to the demand for purchasers' final products; 9 of 28 responding purchasers reported no change in demand, 7 reported increased demand, and 7 reported that demand fluctuated.

**Table II-4**
**CACCS: Firms' responses regarding U.S. demand and demand outside the United States**

| Item | Number of firms reporting | | | |
|---|---|---|---|---|
| | Increase | No change | Decrease | Fluctuate |
| **Demand in the United States** | | | | |
| U.S. producers | *** | *** | *** | *** |
| Importers | 11 | 8 | 2 | 8 |
| Purchasers | 12 | 12 | 2 | 7 |
| **Demand outside the United States** | | | | |
| U.S. producers | *** | *** | *** | *** |
| Importers | 8 | 5 | --- | 7 |
| Purchasers | 5 | 11 | 1 | 2 |
| **Demand for purchasers' final products** | | | | |
| Purchasers | 7 | 9 | 5 | 7 |

Source: Compiled from data submitted in response to Commission questionnaires.

[14] Petitioners reported no change in seasonality due to the declining demand in the beverage industry. Conference transcript, p. 90 (Aud).

[15] For additional information regarding contracts, see Part V.

Petitioners expect demand to remain flat due to the declining consumption of naturally and artificially sweetened carbonated beverages.[16] This decline is offset by growing demand for packaged foods and other applications, as well as general economic growth.[17] Respondent Citrique Belge stated that as demand for artificially carbonated soft drinks decreases, it is offset by an increase for energy drinks, sports drinks, and teas – all of which require more citric acid than the carbonated drinks.[18] Consumer P&G stated that demand for CACCS has increased for application in detergents. It continued that dishwasher detergent has shifted away from the use of phosphates to CACCS, and the ***.[19]

**Substitute products**

All U.S. producers, most importers (23 of 26), and most purchasers (34 of 41) reported that there are no substitutes for CACCS; two importers reported that there are substitutes for CACCS. U.S. importer *** reported that acids such as fumaric acid, malic acid, and sodium acid sulfate can be used in place of CACCS in certain food applications. While sodium acid sulfate has not affected prices of CACCS because it is higher priced, *** stated that if CACCS prices are too high, fumaric or malic acid can be used as pH adjusters and likely would affect CACCS prices. *** also stated that there are various acids that can be used in industrial applications as pH adjusters, and that pricing is a factor when deciding which acids to use.

Purchaser *** reported that nitric acid could be used in industrial applications for tank cleaning and deburring, but switched to CACCS because of environmental concerns and hazards. Purchasers *** reported malic acid as a substitute in certain food applications.

## SUBSTITUTABILITY ISSUES

The degree of substitution between domestic and imported CACCS depends upon such factors as relative prices, quality (e.g., grade standards, reliability of supply, reject rates, non-GMO certification, etc.), and conditions of sale (e.g., price discounts/rebates, lead times between order and delivery dates, payment terms, product services, etc.). Based on available data, staff believes that there is a moderate degree of substitutability between domestically produced CACCS and CACCS imported from subject sources, due to the increasing presence of non-GMO certifications.

### Lead times

[16] Conference transcript, p. 32 (Erickson).
[17] Conference transcript, p. 49 (Erickson).
[18] Hearing transcript, p. 136 (de Backer).
[19] P&G Manufacturing (***) postconference brief, p. 20.

CACCS are primarily sold from inventory. U.S. producers reported that *** percent of their commercial shipments were from inventories (with lead times averaging 16 days). U.S. importers reported that approximately 90 percent of their commercial shipments were from U.S. or foreign inventories (with lead times averaging 11 and 47 days, respectively). The remaining *** percent of shipments of domestically produced CACCS and 9 percent of shipments of imports CACCS from subject countries were produced-to-order with lead times averaging ***[20] and 90 days, respectively.

**Non-GMO certified CACCS**

The U.S. market is supplied with GMO and non-GMO CACCS. While there is some demand for non-GMO CACCS, petitioners stated that there is no official standard in the U.S. market, and Citrique Belge stated that the U.S. market for non-GMO CACCS is ambiguous.[21] Respondents Quaker, Tropicana, and PepsiCo stated that the U.S.-based Non-GMO Project provides a well-recognized standard for non-GMO products.[22] Most U.S.-produced CACCS is produced using a GMO corn substrate. The substrates used in the production of CACCS in Belgium, Colombia, and Thailand are capable of being non-GMO certified.[23] The Colombian producer, Sucroal, and three of four Thai producers are certified by the Non-GMO Project, which requires that the substrate be non-GMO.[24] [25] [26]

Petitioners stated that domestic producers manufacture CACCS that is considered non-GMO under some standards, but that demand is small.[27] Petitioners also stated that there is no price difference between GMO and non-GMO CACCS, and that non-GMO certification does not qualify for a price premium in the U.S. market.[28] Respondents stated that there is no additional cost to producing non-GMO CACCS because their substrates are already non-GMO.[29]

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[20] This reported average is *** than the average lead time for shipments from inventories because *** reported ***.

[21] Petitioners postconference brief, p. 11; Conference transcript, pp. 110-11 (De Backer).

[22] Quaker, Tropicana, and PepsiCo postconference brief, pp. 4-5.

[23] Zhong Ya (Thailand) postconference brief, p. 17; COFCO and Sunshine (Thailand) postconference brief, p. 9.

[24] Sucroal (Colombia) postconference brief, pp. 1-2; Quaker, Tropicana, and Pepsi-Cola postconference brief, pp. 3-5.

[25] Thai CACCS producers did not receive certification from Non-GMO Project Verified until 2016. Niran became certified by Non-GMO Project Verified in November 2016. COFCO Thailand became certified by Non-GMO Project Verified in September 2016. Sunshine Biotech became certified by Non-GMO Project Verified in October 2016. Respondent COFCO, Niran, Zhong Ya (Thailand) posthearing brief, p. 6.

[26] Citrique Belge (Belgium) received a Non-GMO Project Verified certification in April 2018. Petitioners posthearing brief, p. 1.

[27] Conference transcript, pp. 43 (Anderson), 51-52, and 59 (Aud).

[28] Petitioners postconference brief, p. 7.

[29] Respondent Citrique Belge (Belgium) postconference brief, p. 6

Petitioners estimate the non-GMO share of the overall market for citric acid to be *** percent.[30] Petitioners stated that certifications for subject-country producers are relatively new.[31] Respondent Citrique Belge stated that U.S. customers are increasingly requesting non-GMO CACCS, and although there is not a clear standard for non-GMO product, it acquired a non-GMO certificate from the Non-GMO Project Board.[32] Thai producers COFCO and Sunshine stated that non-GMO requirements are critical in food and beverage applications, which account for nearly 80 percent of the U.S. CACCS market.[33] Consumer *** stated that there is value in qualifying their product, ***, under this non-GMO standard.[34] Purchaser *** stated that the share of the U.S. market that requires Non-GMO Project Verified CACCS is between *** percent, and for the last 4 to 5 years the general trend has been a *** percent annual increase in demand for Non-GMO Project Verified CACCS.[35]

When asked about demand trends in the United States, importer *** reported that demand for imported CACCS has risen as food companies have started to require non-GMO certification. Several purchasers, including ***, reported an increase in demand for non-GMO certified CACCS.

### Other certifications

U.S. producers and some subject producers produce CACCS that are halal and kosher certified.[36] Respondent Citrique Belge stated that it is also able to meet additional standards, including some ISO certifications, as well as the Global Food Safety Initiative ("GFSI") standard, that its competitors cannot.[37]

### Knowledge of country sources

Thirty-one purchasers indicated they had marketing/pricing knowledge of domestic product, 18 of product from Belgium, 10 of product from Colombia, 26 of product from Thailand, and 33 of product from nonsubject countries.

As shown in table II-5, a plurality of purchasers and their customers "never" make purchasing decisions based on the producer or country of origin. Six purchasers that reported that they "always" make decisions based on the manufacturer, citing that the producer needs to be an approved supplier of CACCS, system standards, supply location, and customer specifications.

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[30] Petitioners posthearing brief, p. 11.

[31] Petitioners postconference brief, p. 11.

[32] Conference transcript, pp. 110-111 (De Backer).

[33] Respondents COFCO and Sunshine postconference brief, p. 6.

[34] Respondents Quaker, Tropicana, and Pepsi-Cola postconference brief, p. 5.

[35] See Economist phone notes, May 18, 2018, p. 2.

[36] Conference transcript, pp. 118 (De Backer) and 144 (Jones); Respondent Citrique Belge (Belgium) postconference brief, p. 5.

[37] Respondent Citrique Belge (Belgium) postconference brief, p. 5.

**Table II-5**
**CACCS: Purchasing decisions based on producer and country of origin**

| Purchaser/customer decision | Always | Usually | Sometimes | Never |
|---|---|---|---|---|
| Purchaser makes decision based on producer | 6 | 5 | 14 | 16 |
| Purchaser's customers make decision based on producer | 2 | 4 | 10 | 20 |
| Purchaser makes decision based on country | 1 | 3 | 11 | 26 |
| Purchaser's customers make decision based on country | 1 | 1 | 8 | 26 |

Source: Compiled from data submitted in response to Commission questionnaires.

## Factors affecting purchasing decisions

The most often cited top three factors firms consider in their purchasing decisions for CACCS were price or cost (34 firms), availability/supply (31 firms), and quality (27 firms), as shown in table II-6. Quality was the most frequently cited first-most important factor (cited by 14 firms), followed by availability/supply (13 firms); price was the most frequently reported second-most important factor (14 firms); and price and availability were the most frequently reported third-most important factor (11 firms each).

**Table II-6**
**CACCS: Ranking of factors used in purchasing decisions as reported by U.S. purchasers, by factor**

| Factor | First | Second | Third | Total |
|---|---|---|---|---|
| | Number of firms (number) | | | |
| Price/Cost | 9 | 14 | 11 | 34 |
| Availability/Supply | 13 | 10 | 11 | 31 |
| Quality | 14 | 8 | 5 | 27 |
| Lead time/Delivery | --- | 5 | 2 | 7 |
| Certification/non-GMO | 3 | 3 | 1 | 7 |
| Specifications | 3 | --- | 1 | 4 |
| Other[1] | --- | --- | 5 | 5 |

[1] All other factors include relationship with or reputation of the supplier (3 purchasers), customer approval (2 purchasers), and global sourcing (1 purchaser).

Source: Compiled from data submitted in response to Commission questionnaires.

A plurality of purchasers (19 of 42) reported that they only "sometimes" purchase the lowest-priced product, followed by 14 of 42 purchasers who reported that they "usually" purchase the lowest-priced product.

### Importance of specified purchase factors

Purchasers were asked to rate the importance of 19 factors in their purchasing decisions (table II-7). The factors rated as very important by more than half of responding purchasers were availability (41), reliability of supply (41), product consistency (40), quality meets industry standards (39), price (35), delivery time (28), delivery terms (28), and U.S. transportation costs (23).

**Table II-7**
**CACCS: Importance of purchase factors, as reported by U.S. purchasers, by factor**

| Factor | Very important | Somewhat important | Not important |
|---|---|---|---|
| Availability | 41 | 1 | --- |
| Reliability of supply | 41 | --- | --- |
| Product consistency | 40 | 1 | --- |
| Quality meets industry standards | 39 | 2 | --- |
| Price | 35 | 7 | --- |
| Delivery time | 28 | 13 | --- |
| Delivery terms | 28 | 12 | 1 |
| U.S. transportation costs | 23 | 16 | 3 |
| Kosher certified | 19 | 6 | 16 |
| Quality exceeds industry standards | 17 | 17 | 7 |
| Packaging | 16 | 22 | 4 |
| Minimum quantity requirements | 15 | 13 | 14 |
| Technical support/service | 13 | 18 | 10 |
| Extension of credit | 10 | 16 | 13 |
| Halal certified | 10 | 9 | 21 |
| Discounts offered | 9 | 15 | 15 |
| Being Non-GMO Project Verified | 8 | 9 | 24 |
| Product range | 6 | 21 | 13 |
| Being non-GMO | 3 | 15 | 22 |

Source: Compiled from data submitted in response to Commission questionnaires.

## Importance of specified certifications as purchase factors

Purchasers were also asked to indicate the importance of 5 certification factors in their purchasing decisions (table II-8). Twenty-three of 40 responding purchasers required kosher certification for their purchases of CACCS; this accounted for 84 percent of their purchases in 2017. Eleven of 33 responding purchases required halal certification for their purchases of CACCS; this accounted for 67 percent of the eleven firms' purchases in 2017. Seven of 33 responding purchasers required Non-GMO Project verification for their purchases of CACCS, which accounted for 15 percent of their purchases in 2017.

**Table II-8**
**CACCS: Importance of certifications as purchase factors, as reported by U.S. purchasers**

| Does the firm require its purchases of CACCS to have any of the following certifications? | | | Quantity (dry pounds) | Share of Quantity[2] | Total number responding |
|---|---|---|---|---|---|
| Factor | No | Yes | | | |
| Kosher | 17 | 23 | 358,900,800 | 84.3 | 40 |
| Halal | 22 | 11 | 286,908,968 | 67.4 | 33 |
| Non-GMO Project Verified | 25 | 7 | 22,662,092 | 5.3 | 33 |
| Non-GMO but not certified | 21 | 12 | 42,426,004 | 10.0 | 34 |
| Non-GMO other certification | 29 | 2 | 2,293,502 | 0.5 | 31 |
| Other[1] | 3 | 6 | 6,563,098 | 1.5 | 10 |

[1] All other factors include Organic certification, Organic compliant, and NSF certification.
[2] This percentage does not refer to the share of purchases that were required to be certified; it represents the percentage of purchases that were certified.
[3] Staff contacted the seven purchasers who responded "Yes" to requiring its purchases of CACCS to have Non-GMO Project Verified certification to verify that those purchases were not only certified but also required to be Non-GMO Project Verified. All firms but *** verified or clarified their data.

Source: Compiled from data submitted in response to Commission questionnaires.

### Supplier certification

Most (31 of 41) responding purchasers require their suppliers to become certified or qualified to sell CACCS to their firm. Purchasers reported that the time to qualify a new supplier ranged from 3 to 360 days. No purchaser reported that any domestic or foreign supplier had failed in its attempt to qualify CACCS, or had lost its approved status since 2015.

## GMO AND NON-GMO CACCS PURCHASES AND IMPORTS

Table II-9 provides a summary of U.S. purchasers' GMO and non-GMO CACCS purchases and imports from January 2015-December 2017. Responding U.S. purchasers reported purchasing *** pounds of GMO CACCS in 2015 and *** pounds in 2017, an increase of 1.3 percent. Responding U.S. purchasers reported purchasing *** pounds of non-GMO CACCS in 2015 and *** pounds in 2017, an increase of *** percent.

As a share of total reported U.S. purchases and/or imports, *** percent of purchases were domestically produced, while subject countries represented *** percent of purchases and/or imports in 2017. The majority of GMO CACCS purchases were from domestic producers while the majority of non-GMO CACCS purchases were imports from subject countries. U.S. purchasers reported that 98.7 percent of purchases of domestically produced CACCS was GMO and 1.3 percent was non-GMO. Responding U.S. purchasers reported that 6.2 percent of purchases and/or imports of CACCS from subject sources was GMO and 93.8 percent was non-GMO.

**Table II-9**
**CACCS: U.S. purchasers' purchases and imports, by source and GMO status, 2015-17**

| Item | Calendar year | | | Comparison years | | |
|---|---|---|---|---|---|---|
| | 2015 | 2016 | 2017 | 2015-17 | 2015-16 | 2016-17 |
| | Quantity (1,000 pounds dry weight) | | | Change (percent) | | |
| **GMO: U.S. purchases and/or imports** | | | | | | |
| United States | 233,102 | 226,357 | 221,373 | (5.0) | (2.9) | (2.2) |
| Belgium | *** | *** | *** | *** | *** | *** |
| Colombia | *** | *** | *** | *** | *** | *** |
| Thailand | *** | *** | *** | *** | *** | *** |
| Subject sources | 5,068 | 6,011 | 5,959 | 17.6 | 18.6 | (0.9) |
| Canada | *** | *** | *** | *** | *** | *** |
| All other sources | *** | *** | *** | *** | *** | *** |
| Nonsubject sources | 73,551 | 78,302 | 90,398 | 22.9 | 6.5 | 15.4 |
| All import sources | 78,619 | 84,312 | 96,358 | 22.6 | 7.2 | 14.3 |
| Unknown sources | 4,202 | 1,527 | 2,332 | (44.5) | (63.6) | 52.7 |
| All sources, domestic and imported | 315,924 | 312,196 | 320,063 | 1.3 | (1.2) | 2.5 |
| **Non-GMO: U.S. purchases and/or imports[1]** | Quantity (1,000 pounds dry weight) | | | Change (percent) | | |
| United States | 1,120 | 2,539 | 2,950 | 163.3 | 126.7 | 16.2 |
| Belgium | *** | *** | *** | *** | *** | *** |
| Colombia | *** | *** | *** | *** | *** | *** |
| Thailand | 28,211 | 36,913 | 53,559 | 89.9 | 30.8 | 45.1 |
| Subject sources | 68,219 | 81,221 | 90,242 | 32.3 | 19.1 | 11.1 |
| Canada | *** | *** | *** | *** | *** | *** |
| All other sources | *** | *** | *** | *** | *** | *** |
| Nonsubject sources | 12,782 | 6,785 | 10,758 | (15.8) | (46.9) | 58.6 |
| All import sources | 81,001 | 88,007 | 101,000 | 24.7 | 8.6 | 14.8 |
| Unknown sources | 359 | 1,039 | 1,569 | 337.3 | 189.6 | 51.0 |
| All sources, domestic and imported | 82,480 | 91,584 | 105,519 | 27.9 | 11.0 | 15.2 |
| **GMO and Non-GMO: U.S. purchases and/or imports** | Quantity (1,000 pounds dry weight) | | | Change (percent) | | |
| United States | 234,223 | 228,896 | 224,323 | (4.2) | (2.3) | (2.0) |
| Belgium | *** | *** | *** | *** | *** | *** |
| Colombia | *** | *** | *** | *** | *** | *** |
| Thailand | 33,219 | 42,727 | 59,317 | 78.6 | 28.6 | 38.8 |
| Subject sources | 73,287 | 87,232 | 96,201 | 31.3 | 19.0 | 10.3 |
| Canada | *** | *** | *** | *** | *** | *** |
| All other sources | *** | *** | *** | *** | *** | *** |
| Nonsubject sources | 86,334 | 85,087 | 101,156 | 17.2 | (1.4) | 18.9 |
| All import sources | 159,621 | 172,319 | 197,358 | 23.6 | 8.0 | 14.5 |
| Unknown sources | 4,560 | 2,566 | 3,901 | (14.5) | (43.7) | 52.0 |
| All sources, domestic and imported | 398,404 | 403,781 | 425,582 | 6.8 | 1.3 | 5.4 |

Table continued on next page.

**Table II-9–Continued**
**CACCS: U.S. purchasers' purchases and imports, by source and GMO status, 2015-17**

| Item | Calendar year | | | Comparison years | | |
|---|---|---|---|---|---|---|
| | 2015 | 2016 | 2017 | 2015-17 | 2015-16 | 2016-17 |
| **GMO's share: U.S. purchases and/or imports** | **GMO's share of total from source (percent)** | | | **Change (percentage points)** | | |
| United States | 99.5 | 98.9 | 98.7 | (0.8) | (0.6) | (0.2) |
| Belgium | 1.1 | 7.7 | 6.6 | 5.4 | 6.6 | (1.1) |
| Colombia | --- | --- | --- | --- | --- | --- |
| Thailand | 15.1 | 13.6 | 9.7 | (5.4) | (1.5) | (3.9) |
| Subject sources | 6.9 | 6.9 | 6.2 | (0.7) | (0.0) | (0.7) |
| Canada | *** | *** | *** | *** | *** | *** |
| All other sources | *** | *** | *** | *** | *** | *** |
| Nonsubject sources | 85.2 | 92.0 | 89.4 | 4.2 | 6.8 | (2.7) |
| All import sources | 49.3 | 48.9 | 48.8 | (0.4) | (0.3) | (0.1) |
| Unknown sources | 92.1 | 59.5 | 59.8 | (32.3) | (32.6) | 0.3 |
| All sources, domestic and imported | 79.3 | 77.3 | 75.2 | (4.1) | (2.0) | (2.1) |
| **Non-GMO's share: U.S. purchases and/or imports** | **Non-GMO's share of total from source (percent)** | | | **Change (percentage points)** | | |
| United States | 0.5 | 1.1 | 1.3 | 0.8 | 0.6 | 0.2 |
| Belgium | 98.9 | 92.3 | 93.4 | (5.4) | (6.6) | 1.1 |
| Colombia | 100.0 | 100.0 | 100.0 | --- | --- | --- |
| Thailand | 84.9 | 86.4 | 90.3 | 5.4 | 1.5 | 3.9 |
| Subject sources | 93.1 | 93.1 | 93.8 | 0.7 | 0.0 | 0.7 |
| Canada | *** | *** | *** | *** | *** | *** |
| All other sources | *** | *** | *** | *** | *** | *** |
| Nonsubject sources | 14.8 | 8.0 | 10.6 | (4.2) | (6.8) | 2.7 |
| All import sources | 50.7 | 51.1 | 51.2 | 0.4 | 0.3 | 0.1 |
| Unknown sources | 7.9 | 40.5 | 40.2 | 32.3 | 32.6 | (0.3) |
| All sources, domestic and imported | 20.7 | 22.7 | 24.8 | 4.1 | 2.0 | 2.1 |
| **Share of total: U.S. purchases and/or imports** | **Share of total (percent)** | | | **Change (percentage points)** | | |
| United States | 58.8 | 56.7 | 52.7 | (6.1) | (2.1) | (4.0) |
| Belgium | *** | *** | *** | *** | *** | *** |
| Colombia | *** | *** | *** | *** | *** | *** |
| Thailand | 8.3 | 10.6 | 13.9 | 5.6 | 2.2 | 3.4 |
| Subject sources | 18.4 | 21.6 | 22.6 | 4.2 | 3.2 | 1.0 |
| Canada | *** | *** | *** | *** | *** | *** |
| All other sources | *** | *** | *** | *** | *** | *** |
| Nonsubject sources | 21.7 | 21.1 | 23.8 | 2.1 | (0.6) | 2.7 |
| All import sources | 40.1 | 42.7 | 46.4 | 6.3 | 2.6 | 3.7 |
| Unknown sources | 1.1 | 0.6 | 0.9 | (0.2) | (0.5) | 0.3 |
| All sources, domestic and imported | 100.0 | 100.0 | 100.0 | --- | --- | --- |

Note.--Non-GMO was reported for all non-GMO specifications, including Non-GMO Project Verified, non-GMO but not certified, and non-GMO other certification.

Note.--Because of rounding, figures may not add to the totals shown.

Source: Compiled from data submitted in response to Commission questionnaires.

**Changes in GMO and Non-GMO purchasing patterns**

***GMO***

Purchasers were asked about changes in their GMO CACCS purchasing patterns from different sources since January 1, 2015 (table II-10). A plurality of purchasers reported decreasing their purchases of GMO CACCS from U.S. suppliers, while twelve purchasers reported increasing their purchases of GMO CACCS from nonsubject Canada.

Reasons reported for changes in sourcing included competitive pricing, consolidation of suppliers, customer requirements, diversification of supply, move to non-GMO CACCS, and newly qualified suppliers. Firms added or increased purchases from domestic producers because of growth in certain market segments that required domestic CACCS such as the industrial sector, and competitive pricing. Firms dropped or reduced GMO CACCS purchases from Thailand due to long lead times. One purchaser added purchases from Thailand because of customer preference.

**Table II-10**
**CACCS: Changes in GMO and non-GMO purchase patterns from U.S., subject, and nonsubject countries**

| Source of purchases | Did not purchase | Decreased | Increased | Constant | Fluctuated |
|---|---|---|---|---|---|
| **GMO** | | | | | |
| United States | 6 | 9 | 7 | 7 | 5 |
| Belgium | 27 | 1 | --- | --- | 1 |
| Colombia | 28 | 1 | --- | --- | --- |
| Thailand | 19 | 3 | 3 | 3 | 2 |
| Canada | 13 | 2 | 12 | --- | 2 |
| Other | 20 | 3 | 2 | --- | --- |
| Sources unknown | 19 | 5 | 2 | --- | 2 |
| **Non-GMO** | | | | | |
| United States | 28 | 1 | 1 | 1 | --- |
| Belgium | 18 | 7 | 1 | 2 | 3 |
| Colombia | 22 | 2 | 2 | 2 | 1 |
| Thailand | 16 | 3 | 8 | 2 | 3 |
| Canada | 26 | 1 | 1 | --- | 1 |
| Other | 19 | 4 | 2 | --- | 2 |
| Sources unknown | 19 | 1 | --- | --- | 1 |

Source: Compiled from data submitted in response to Commission questionnaires.

***Non-GMO***

Purchasers were asked about changes in their non-GMO CACCS purchasing patterns from different sources since 2015 (table II-10). Seven purchasers reported decreasing their purchase of non-GMO CACCS from Belgium, while eight purchasers reported increasing their purchases of non-GMO CACCS from Thailand.

Reasons reported for changes in sourcing included: customer requirements, competitive pricing, increase in demand for non-GMO CACCS, supplier consolidation, non-GMO

certifications, and supply diversification. Specifically, firms dropped or reduced purchases from Belgium due customer requirements and supplier consolidation. Firms increased or added purchases from Thailand because of non-GMO certification, competitive prices, customer requirements, customer demand for non-GMO CACCS, qualification of new supplier, and supply diversification.

**Changes in purchasing patterns**

Eighteen of 42 responding purchasers reported that they had changed suppliers since January 1, 2015. Specifically, purchaser *** reduced purchases from Cargill because of pricing and supply conflicts, and reached out to ADM to be its second supplier. Purchaser *** also reported removing Cargill from its supplier list in *** for noncompetitive prices, and replaced it with supplier ***. Purchaser *** reported adding Cargill because it could offer competitive pricing. Purchaser *** reported dropping Wego Chemical Group from its supplier list, and added suppliers *** as they were able to supply a blended product. Purchaser *** reported dropping Citrique Belge from its supplier list due to slow supply and its customer's request, and increased its purchases from COFCO. Purchaser *** reported adding COFCO in 2016 as an additional source of CACCS, and reduced purchases from Tate & Lyle's Brazilian facility.

**Importance of purchasing domestic product**

More than half of purchasers (30 of 42) reported that purchasing U.S.-produced product was not required in their purchasing decisions. Two purchasers, *** and ***, reported that domestic product was required by law (for 5 and 90 percent of their purchases, respectively), 9 reported it was required by their customers (for 5 to 90 percent of their purchases), and 4 reported other preferences for domestic product. Reasons cited for preferring domestic product included: quality, customer requirement, reliability of supply, and quality meets food industry standards.

**Comparisons of domestic products, subject imports, and nonsubject imports**

Purchasers were asked a number of questions comparing CACCS produced in the United States, subject countries, and nonsubject countries. First, purchasers were asked for a country-by-country comparison on the same 19 factors (table II-11) for which they were asked to rate the importance in their purchasing decisions.

Most responding purchasers reported that domestically produced CACCS and CACCS imported from Belgium, Colombia, and Thailand were comparable across nearly all factors, except the U.S. product was inferior with respect to non-GMO certifications. Most responding purchasers also reported U.S. product was inferior with respect to being Non-GMO Project Verified compared to Colombia and Thailand. Most responding purchasers reported that CACCS from the United States and subject countries were comparable across purchase factors that were rated as very important in table II-7.

Purchasers that compared CACCS from Belgium with that from Colombia reported that CACCS from both countries were comparable across all factors, except on being Non-GMO

Project verified, in which Belgium was inferior to Colombia. Purchasers that compared CACCS from Colombia with that from Thailand reported that CACCS from both countries were comparable across all factors, except prices, for which CACCS from Colombia were considered inferior to prices of CACCS from Thailand. Most responding purchasers reported that U.S. and nonsubject CACCS were comparable across nearly all factors, except on being Non-GMO Project verified or being non-GMO certified.

**Table II-11**
**CACCS: Purchasers' comparisons between U.S.-produced and imported product**

| Factor | U.S. vs. Belgium | | | U.S. vs. Colombia | | | U.S. vs. Thailand | | |
|---|---|---|---|---|---|---|---|---|---|
| | S | C | I | S | C | I | S | C | I |
| Availability | 4 | 11 | 1 | 1 | 5 | 1 | 5 | 15 | 2 |
| Delivery terms | 3 | 12 | --- | --- | 7 | --- | 3 | 17 | 1 |
| Delivery time | 6 | 8 | 1 | 3 | 3 | 1 | 7 | 11 | 3 |
| Discounts offered | --- | 12 | 1 | 1 | 4 | --- | 2 | 16 | --- |
| Extension of credit | --- | 13 | --- | 1 | 5 | --- | 3 | 16 | --- |
| Halal certified | --- | 11 | 1 | --- | 5 | --- | 1 | 13 | 1 |
| Kosher certified | --- | 15 | --- | --- | 7 | --- | --- | 17 | --- |
| Being Non-GMO Project verified | 2 | 5 | 5 | 1 | --- | 6 | 2 | 6 | 9 |
| Being non-GMO (generally) | --- | 5 | 8 | --- | --- | 5 | 1 | 6 | 9 |
| Minimum quantity requirements | 3 | 12 | --- | 1 | 6 | --- | 3 | 15 | 2 |
| Packaging | 2 | 12 | 1 | 1 | 6 | --- | 3 | 17 | 1 |
| Price[1] | 3 | 12 | 1 | 3 | 4 | --- | 2 | 15 | 5 |
| Product consistency | 1 | 15 | --- | 1 | 6 | --- | 6 | 14 | 1 |
| Product range | 2 | 10 | 2 | --- | 4 | 1 | 5 | 11 | 2 |
| Quality meets industry standards | --- | 16 | --- | --- | 7 | --- | --- | 21 | --- |
| Quality exceeds industry standards | --- | 13 | --- | --- | 5 | --- | 2 | 13 | 1 |
| Reliability of supply | 4 | 10 | 2 | 1 | 6 | --- | 5 | 13 | 3 |
| Technical support/service | 2 | 11 | 1 | 1 | 5 | --- | 6 | 10 | 1 |
| U.S. transportation costs[1] | 4 | 11 | --- | 3 | 4 | --- | 6 | 13 | 1 |

| Factor | Belgium vs. Colombia | | | Belgium vs. Thailand | | | Colombia vs. Thailand | | |
|---|---|---|---|---|---|---|---|---|---|
| | S | C | I | S | C | I | S | C | I |
| Availability | --- | 4 | --- | 2 | 8 | 2 | 1 | 3 | 1 |
| Delivery terms | --- | 4 | --- | --- | 10 | 2 | --- | 4 | --- |
| Delivery time | --- | 4 | --- | 2 | 8 | 2 | 2 | 2 | --- |
| Discounts offered | --- | 3 | --- | --- | 10 | 1 | --- | 3 | --- |
| Extension of credit | --- | 4 | --- | --- | 9 | 2 | --- | 4 | --- |
| Halal certified | --- | 3 | --- | --- | 11 | --- | --- | 3 | --- |
| Kosher certified | --- | 4 | --- | --- | 12 | --- | --- | 4 | --- |
| Being Non-GMO Project verified | --- | 1 | 2 | 2 | 7 | 2 | 1 | 3 | --- |
| Being non-GMO (generally) | --- | 3 | 1 | --- | 12 | --- | 1 | 3 | --- |
| Minimum quantity requirements | --- | 4 | --- | --- | 11 | 1 | --- | 4 | --- |
| Packaging | --- | 4 | --- | 2 | 10 | --- | 1 | 3 | --- |
| Price[1] | --- | 4 | --- | 1 | 7 | 4 | --- | 2 | 3 |
| Product consistency | --- | 4 | --- | 2 | 9 | 1 | 1 | 3 | --- |
| Product range | --- | 3 | 1 | 1 | 10 | 1 | 1 | 3 | --- |
| Quality meets industry standards | --- | 4 | --- | 1 | 10 | 1 | --- | 4 | --- |
| Quality exceeds industry standards | --- | 4 | --- | 1 | 10 | 1 | 1 | 3 | --- |
| Reliability of supply | --- | 4 | --- | 2 | 7 | 3 | 1 | 3 | --- |
| Technical support/service | --- | 3 | --- | 1 | 10 | --- | 1 | 2 | --- |
| U.S. transportation costs[1] | --- | 4 | --- | --- | 10 | 1 | --- | 4 | --- |

Table continued on next page.

**Table II-11--Continued**
**CACCS: Purchasers' comparisons between U.S.-produced and imported product**

| Factor | U.S. vs. nonsubject | | | Belgium vs. nonsubject | | |
|---|---|---|---|---|---|---|
| | S | C | I | S | C | I |
| Availability | 5 | 14 | 1 | 2 | 5 | 1 |
| Delivery terms | 5 | 13 | --- | --- | 7 | 1 |
| Delivery time | 7 | 11 | --- | --- | 6 | 1 |
| Discounts offered | 1 | 13 | 1 | --- | 7 | --- |
| Extension of credit | 1 | 13 | 1 | --- | 6 | --- |
| Halal certified | --- | 12 | 1 | --- | 7 | --- |
| Kosher certified | --- | 15 | --- | --- | 7 | --- |
| Being Non-GMO Project verified | --- | 5 | 8 | 1 | 6 | --- |
| Being Non-GMO (generally) | --- | 5 | 8 | --- | 6 | 1 |
| Minimum quantity requirements | 4 | 12 | 1 | --- | 7 | --- |
| Packaging | 1 | 16 | --- | --- | 7 | --- |
| Price[1] | 2 | 14 | 3 | 1 | 7 | --- |
| Product consistency | 3 | 14 | 1 | --- | 8 | --- |
| Product range | 2 | 15 | 1 | --- | 7 | --- |
| Quality meets industry standards | --- | 18 | --- | 1 | 7 | --- |
| Quality exceeds industry standards | --- | 16 | --- | --- | 7 | --- |
| Reliability of supply | 5 | 11 | 2 | 1 | 5 | 1 |
| Technical support/service | 5 | 11 | 1 | --- | 6 | 1 |
| U.S. transportation costs[1] | 4 | 13 | --- | 1 | 5 | 1 |

| Factor | Colombia vs. nonsubject | | | Thailand vs. nonsubject | | |
|---|---|---|---|---|---|---|
| | S | C | I | S | C | I |
| Availability | --- | 2 | --- | 1 | 11 | --- |
| Delivery terms | --- | 2 | --- | 1 | 10 | 1 |
| Delivery time | --- | 2 | --- | 1 | 10 | 1 |
| Discounts offered | --- | 2 | --- | 1 | 11 | --- |
| Extension of credit | --- | 2 | --- | 1 | 9 | --- |
| Halal certified | --- | 2 | --- | --- | 9 | --- |
| Kosher certified | --- | 2 | --- | --- | 10 | --- |
| Being Non-GMO Project verified | 1 | 1 | --- | 2 | 7 | --- |
| Being Non-GMO (generally) | 1 | 1 | --- | 2 | 7 | --- |
| Minimum quantity requirements | --- | 2 | --- | --- | 9 | 2 |
| Packaging | --- | 2 | --- | --- | 11 | 1 |
| Price[1] | --- | 2 | --- | 3 | 9 | --- |
| Product consistency | --- | 2 | --- | --- | 12 | --- |
| Product range | --- | 2 | --- | --- | 12 | --- |
| Quality meets industry standards | --- | 2 | --- | --- | 12 | --- |
| Quality exceeds industry standards | --- | 2 | --- | --- | 12 | --- |
| Reliability of supply | --- | 2 | --- | 2 | 9 | 1 |
| Technical support/service | --- | 2 | --- | 1 | 10 | 1 |
| U.S. transportation costs[1] | --- | 2 | --- | --- | 11 | 1 |

[1] A rating of superior means that price/U.S. transportation cost is generally lower. For example, if a firm reported "U.S. superior," it meant that the U.S. product was generally priced lower than the imported product.

Note.--S=first listed country's product is superior; C=both countries' products are comparable; I=first list country's product is inferior.

Source: Compiled from data submitted in response to Commission questionnaires.

## Comparison of U.S.-produced and imported CACCS

In order to determine whether U.S.-produced CACCS can generally be used in the same applications as imports from Belgium, Colombia, Thailand, and nonsubject sources, U.S. producers, importers, and purchasers were asked whether the products can "always", "frequently", "sometimes", or "never" be used interchangeably. As shown in table II-12, all U.S. producers reported that U.S.-produced CACCS can "always" be used interchangeably with CACCS from subject and nonsubject countries. Most importers reported that U.S.-produced CACCS can "sometimes" be used interchangeably with CACCS from all subject countries, except with CACCS produced in Colombia, for which firms most often considered its CACCS "frequently" interchangeable with U.S.-produced CACCS. Most purchasers reported that U.S.-produced CACCS can "sometimes" be used interchangeably with CACCS from all subject countries.

Purchasers that responded "sometimes" identified the granulation size and GMO and non-GMO status as factors affecting interchangeability. Purchaser *** stated that if GMO is required, the product is interchangeable; but if non-GMO is required, only CACCS imported from Belgium and Colombia are interchangeable. It further stated that if Non-GMO Project Verified is required, only CACCS imported from Colombia can be used. Purchaser *** also stated that all CACCS are interchangeable with the exception of CACCS imported from Thailand, which is non-GMO certified. Purchaser *** reported that Non-GMO Project Verfied and organic CACCS imported from Colombia and Thailand are not interchangeable with GMO CACCS produced in the United States; *** stated that while non-GMO or organic CACCS may be substitutes for GMO CACCS products, it cannot use GMO
CACCS in the production of beverages carrying organic or Non-GMO Project Verified labeling. Purchaser *** stated that it requires a *** only available from its supplier in Canada. Purchaser *** also reported that since CACCS imported from Thailand is generally clumpy and not free flowing, it is "sometimes" interchangeable with CACCS produced in the United States.

**Table II-12**
**CACCS: Interchangeability between CACCS produced in the United States and in other countries, by country pair**

| Country pair | Number of U.S. producers reporting | | | | Number of U.S. importers reporting | | | | Number of purchasers reporting | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | F | S | N | A | F | S | N | A | F | S | N |
| **U.S. vs. subject countries:** | | | | | | | | | | | | |
| U.S. vs. Belgium | 3 | --- | --- | --- | 4 | 6 | 8 | 1 | 7 | 4 | 7 | 1 |
| U.S. vs. Colombia | 3 | --- | --- | --- | 1 | 6 | 5 | 1 | 2 | 4 | 4 | 2 |
| U.S. vs. Thailand | 3 | --- | --- | --- | 2 | 6 | 10 | 1 | 5 | 4 | 9 | 1 |
| **Subject countries comparisons:** | | | | | | | | | | | | |
| Belgium vs. Colombia | 3 | --- | --- | --- | 1 | --- | 4 | --- | 2 | --- | 4 | 1 |
| Belgium vs. Thailand | 3 | --- | --- | --- | 1 | --- | 7 | --- | 5 | --- | 6 | 1 |
| Colombia vs. Thailand | 3 | --- | --- | --- | 2 | --- | 2 | --- | 3 | --- | 4 | --- |
| **Nonsubject countries comparisons:** | | | | | | | | | | | | |
| U.S. vs. Canada | 3 | --- | --- | --- | 3 | 6 | 2 | 1 | 12 | 4 | 2 | 1 |
| U.S. vs. Other | 3 | --- | --- | --- | 2 | 6 | 5 | 1 | 3 | 4 | 4 | --- |
| Belgium vs. Canada | 3 | --- | --- | --- | 2 | --- | 1 | --- | 3 | --- | 5 | 1 |
| Belgium vs. Other | 3 | --- | --- | --- | 2 | --- | 3 | --- | 3 | --- | 2 | --- |
| Colombia vs. Canada | 3 | --- | --- | --- | 1 | --- | 3 | --- | 2 | --- | 4 | 1 |
| Colombia vs. Other | 3 | --- | --- | --- | 2 | --- | 2 | --- | 3 | --- | 2 | --- |
| Thailand vs. Canada | 3 | --- | --- | --- | 1 | --- | 2 | --- | 3 | --- | 8 | 1 |
| Thailand vs. Other | 3 | --- | --- | --- | 1 | --- | 3 | --- | 3 | --- | 3 | --- |
| Canada vs. Other | 3 | --- | --- | --- | 1 | --- | 1 | --- | 3 | --- | 2 | --- |

Note.--A=Always, F=Frequently, S=Sometimes, N=Never.

Source: Compiled from data submitted in response to Commission questionnaires.

As can be seen from table II-13, most responding purchasers reported that domestically produced CACCS and CACCS imported from Belgium, Colombia, and Thailand "always" met minimum quality specifications.

**Table II-13**
**CACCS: Ability to meet minimum quality specifications, by source[1]**

| Source | Always | Usually | Sometimes | Rarely or never |
|---|---|---|---|---|
| United States | 27 | 4 | --- | 2 |
| Belgium | 15 | 2 | --- | 1 |
| Colombia | 7 | 2 | --- | 1 |
| Thailand | 19 | 4 | 1 | --- |
| Canada | 19 | 2 | --- | 1 |
| Other | 11 | --- | --- | --- |

[1] Purchasers were asked how often domestically produced or imported CACCS meets minimum quality specifications for their own or their customers' uses.

Source: Compiled from data submitted in response to Commission questionnaires.

In addition, producers, importers, and purchasers were asked to assess how often differences other than price were significant in sales of CACCS from the United States, subject, or nonsubject countries. As seen in table II-14, all U.S. producers reported that differences other than price were "never" significant in sales of CACCS from the United States, subject countries, or nonsubject countries. Most importers reported that differences other than price were "sometimes" significant in sales of CACCS between the United States and Belgium and Thailand, while most importers reported that differences other than price were "frequently" significant in sales of CACCS from the United States and Colombia. Most purchasers reported that differences other than price were "always" significant in sales of CACCS from the United States and subject countries, but most purchasers reported that differences other than price were "sometimes" significant in sales of CACCS among subject countries.

**Table II-14**
**CACCS: Significance of differences other than price between CACCS produced in the United States and in other countries, by country pair**

| Country pair | Number of U.S. producers reporting | | | | Number of U.S. importers reporting | | | | Number of purchasers reporting | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | F | S | N | A | F | S | N | A | F | S | N |
| **U.S. vs. subject countries:** | | | | | | | | | | | | |
| U.S. vs. Belgium | --- | --- | --- | 3 | 3 | 3 | 10 | 2 | 7 | 3 | 3 | 3 |
| U.S. vs. Colombia | --- | --- | --- | 3 | 2 | 3 | 2 | 2 | 4 | 3 | 1 | 2 |
| U.S. vs. Thailand | --- | --- | --- | 3 | 3 | 3 | 5 | 3 | 8 | 3 | 4 | 4 |
| **Subject countries comparisons:** | | | | | | | | | | | | |
| Belgium vs. Colombia | --- | --- | --- | 3 | --- | --- | 4 | 2 | 1 | --- | 3 | 2 |
| Belgium vs. Thailand | --- | --- | --- | 3 | --- | --- | 6 | 2 | 3 | --- | 3 | 1 |
| Colombia vs. Thailand | --- | --- | --- | 3 | --- | --- | 4 | 3 | 1 | --- | 4 | 1 |
| **Nonsubject countries comparisons:** | | | | | | | | | | | | |
| U.S. vs. Canada | --- | --- | --- | 3 | 1 | 3 | 1 | 5 | 4 | 3 | 5 | 9 |
| U.S. vs. Other | --- | --- | --- | 3 | 1 | 3 | 5 | 3 | 1 | 3 | 4 | 1 |
| Belgium vs. Canada | --- | --- | --- | 3 | --- | --- | 1 | 4 | 1 | --- | 1 | 3 |
| Belgium vs. Other | --- | --- | --- | 3 | --- | --- | 4 | 2 | 1 | --- | 2 | 1 |
| Colombia vs. Canada | --- | --- | --- | 3 | --- | --- | 2 | 2 | 1 | --- | 2 | 3 |
| Colombia vs. Other | --- | --- | --- | 3 | --- | --- | 3 | 2 | --- | --- | 2 | 2 |
| Thailand vs. Canada | --- | --- | --- | 3 | --- | --- | 2 | 3 | 1 | --- | 4 | 4 |
| Thailand vs. Other | --- | --- | --- | 3 | --- | --- | 5 | 2 | 1 | --- | 4 | 1 |
| Canada vs. Other | --- | --- | --- | 3 | --- | --- | 2 | 1 | 1 | --- | 2 | 2 |

Note.--A = Always, F = Frequently, S = Sometimes, N = Never.

Source: Compiled from data submitted in response to Commission questionnaires.

## ELASTICITY ESTIMATES

This section discusses elasticity estimates; parties were encouraged to comment on these estimates and did so in their prehearing briefs. Petitioners agree with the staff's elasticity ranges for U.S. supply and U.S. demand. However, petitioners suggest a range of 3 to 7 for the elasticity of substitution, citing the small size of the non-GMO market, as well as the asymmetric substitutability of non-GMO and GMO CACCS.[38] Parties' comments were taken into consideration in the elasticity ranges defined below.

### U.S. supply elasticity

The domestic supply elasticity[39] for CACCS measures the sensitivity of the quantity supplied by U.S. producers to changes in the U.S. market price of CACCS. The elasticity of

[38] Petitioners prehearing brief, pp. 16-18.

[39] A supply function is not defined in the case of a non-competitive market.

domestic supply depends on several factors including the level of excess capacity, the ease with which producers can alter capacity, producers' ability to shift to production of other products, the existence of inventories, and the availability of alternate markets for U.S.-produced CACCS. Analysis of these factors above indicates that the U.S. industry has the ability to somewhat increase or decrease shipments to the U.S. market; an estimate in the range of 2 to 5 is suggested.

### U.S. demand elasticity

The U.S. demand elasticity for CACCS measures the sensitivity of the overall quantity demanded to a change in the U.S. market price of CACCS. This estimate depends on factors discussed above such as the existence, availability, and commercial viability of substitute products, as well as the component share of the CACCS in the production of any downstream products. Based on the available information, the aggregate demand for CACCS is likely to be moderately to very inelastic; a range of -0.2 to -0.7 is suggested.

### Substitution elasticity

The elasticity of substitution depends upon the extent of product differentiation between the domestic and imported products.[40] Product differentiation, in turn, depends upon such factors as quality (e.g., chemistry, form, appearance, certification, etc.) and conditions of sale (e.g., availability, sales terms/discounts/promotions, etc.). Based on available information, the elasticity of substitution between U.S.-produced CACCS and imported CACCS is likely to be in the range of 3 to 6.

[40] The substitution elasticity measures the responsiveness of the relative U.S. consumption levels of the subject imports and the domestic like products to changes in their relative prices. This reflects how easily purchasers switch from the U.S. product to the subject products (or vice versa) when prices change.

# PART III: U.S. PRODUCERS' PRODUCTION, SHIPMENTS, AND EMPLOYMENT

The Commission analyzes a number of factors in making injury determinations (see 19 U.S.C. §§ 1677(7)(B) and 1677(7)(C)). Information on the subsidies and dumping margins was presented in *Part I* of this report and *Parts IV* and *V* present the volume of subject imports and pricing of domestic and imported products, respectively. Information on the other factors specified is presented in this section and/or *Part VI* and (except as noted) is based on the questionnaire responses of three firms that accounted for all U.S. production of CACCS during 2017.

## U.S. PRODUCERS

The Commission issued a U.S. producer questionnaire to three firms based on information contained in the petition. All three firms provided usable data on their productive operations. Staff believes that these responses represent all of U.S. production of CACCS.

Table III-1 lists U.S. producers of CACCS, their production locations, positions on the petition, and shares of total production.

**Table III-1**
**CACCS: U.S. producers of CACCS, their positions on the petition, production locations, and shares of reported production, 2017**

| Firm | Position on petition | Production location(s) | Share of production (percent) |
|---|---|---|---|
| ADM | Petitioner | Southport, NC | *** |
| Cargill | Petitioner | Eddyville, IA | *** |
| Tate & Lyle | Petitioner | Dayton, OH | *** |
| Total | | | 100.0 |

Source: Compiled from data submitted in response to Commission questionnaires.

Table III-2 presents information on U.S. producers' ownership and related firms of CACCS.

**Table III-2**
**CACCS: U.S. producers' ownership, related and/or affiliated firms**

* * * * * * *

As indicated in table III-2, *** related to foreign producers of the subject merchandise and *** related to U.S. importers of the subject merchandise. In addition, as discussed in greater detail below, *** the subject merchandise and *** the subject merchandise.

Table III-3 presents U.S. producers' reported changes in operations since January 1, 2015.

**Table III-3**
**CACCS: U.S. producers' reported changes in operations, since January 1, 2015**

* * * * * * *

## U.S. PRODUCTION, CAPACITY, AND CAPACITY UTILIZATION

Table III-4 and figure III-1 present U.S. producers' production, capacity, and capacity utilization. Overall domestic capacity remained constant at 551.7 million pounds throughout 2015 to 2017 and total production declined from 508.5 million pounds in 2015 to 465.0 million pounds in 2017, resulting in a decrease in average capacity utilization of 7.9 percentage points. The decrease in production was driven largely by ***, which decreased production by *** percent from 2015 to 2017 and occurred despite a slight production increase by *** which remained *** percent capacity utilization. *** saw an overall production decrease of *** percent from 2015 to 2017.

**Table III-4**
**CACCS: U.S. producers' production, capacity, capacity utilization, and total and share of production by substrate, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | **Capacity (1,000 pounds dry weight)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Total capacity | 551,710 | 551,710 | 551,710 |
| | **Production (1,000 pounds dry weight)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Total production | 508,482 | 475,066 | 465,038 |
| | **Capacity utilization (percent)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Average capacity utilization | 92.2 | 86.1 | 84.3 |
| | **Production (1,000 pounds dry weight)** | | |
| Production.-- Using corn | *** | *** | *** |
| Using sugar | *** | *** | *** |
| Using tapioca | *** | *** | *** |
| Using other substrates | *** | *** | *** |
| Using all substrates | 508,482 | 475,066 | 465,038 |

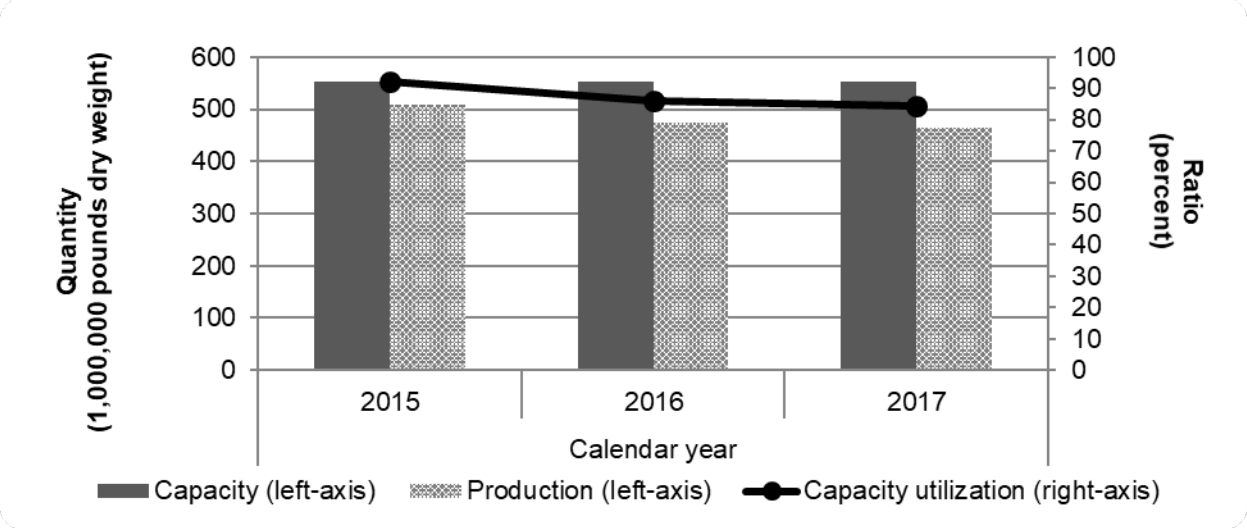
Table continued on next page.

**Table III-4 – Continued**
**CACCS: U.S. producers' production, capacity, capacity utilization, and total and share of production by substrate, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | Share of production (percent) | | |
| Production.-- | | | |
| Using corn | *** | *** | *** |
| Using sugar | *** | *** | *** |
| Using tapioca | *** | *** | *** |
| Using other substrates | *** | *** | *** |
| Using all substrates | 100.0 | 100.0 | 100.0 |

Source: Compiled from data submitted in response to Commission questionnaires.

**Figure III-1**
**CACCS: U.S. producers' production, capacity, and capacity utilization, 2015-17**




Source: Compiled from data submitted in response to Commission questionnaires.

## Alternative products

***. This suggests *** ability to shift production away from subject CACCS.

## U.S. PRODUCERS' U.S. SHIPMENTS AND EXPORTS

Table III-5 presents U.S. producers' U.S. shipments, export shipments, and total shipments. In terms of quantity, commercial U.S. shipments declined from *** pounds in 2015 to *** pounds in 2016 before recovering slightly to *** pounds in 2017. By value, commercial U.S. shipments of CACCS declined from $*** in 2015 to $*** in 2017. Likewise, unit values of U.S. commercial shipments of CACCS declined by *** percent, from $*** dollars per pound in 2015 to $*** dollars per pound in 2017.

**Table III-5**
**CACCS: U.S. producers' U.S. shipments, exports shipments, and total shipments, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | **Quantity (1,000 pounds dry weight)** | | |
| Commercial U.S. shipments | *** | *** | *** |
| Internal consumption | *** | *** | *** |
| Transfers to related firms | *** | *** | *** |
| U.S. shipments | 470,152 | 452,062 | 459,114 |
| Export shipments | 19,858 | 25,216 | 21,396 |
| Total shipments | 490,010 | 477,278 | 480,510 |
| | **Value (1,000 dollars)** | | |
| Commercial U.S. shipments | *** | *** | *** |
| Internal consumption | *** | *** | *** |
| Transfers to related firms | *** | *** | *** |
| U.S. shipments | 312,318 | 278,884 | 275,933 |
| Export shipments | 16,310 | 17,794 | 16,015 |
| Total shipments | 328,628 | 296,678 | 291,642 |
| | **Unit value (dollars per pound dry weight)** | | |
| Commercial U.S. shipments | *** | *** | *** |
| Internal consumption | *** | *** | *** |
| Transfers to related firms | *** | *** | *** |
| U.S. shipments | 0.66 | 0.62 | 0.61 |
| Export shipments | 0.82 | 0.71 | 0.75 |
| Total shipments | 0.67 | 0.62 | 0.61 |
| | **Share of quantity (percent)** | | |
| Commercial U.S. shipments | *** | *** | *** |
| Internal consumption | *** | *** | *** |
| Transfers to related firms | *** | *** | *** |
| U.S. shipments | 95.9 | 94.7 | 95.5 |
| Export shipments | 4.1 | 5.3 | 4.5 |
| Total shipments | 100.0 | 100.0 | 100.0 |
| | **Share of value (percent)** | | |
| Commercial U.S. shipments | *** | *** | *** |
| Internal consumption | *** | *** | *** |
| Transfers to related firms | *** | *** | *** |
| U.S. shipments | 95.0 | 94.0 | 94.6 |
| Export shipments | 5.0 | 6.0 | 5.4 |
| Total shipments | 100.0 | 100.0 | 100.0 |

Source: Compiled from data submitted in response to Commission questionnaires.

## U.S. PRODUCERS' INVENTORIES

Table III-6 presents U.S. producers' end-of-period inventories and the ratio of these inventories to U.S. producers' production, U.S. shipments, and total shipments**.** From 2015 to 2017, U.S. producers' inventories declined both in absolute quantity and as a ratio to U.S. production, U.S. shipments, and total shipments. This decline in inventories was concurrent with, but more pronounced than, the decline in U.S. shipments and U.S. production.

**Table III-6**
**CACCS: U.S. producers' inventories, 2015-17**

* * * * * * *

## U.S. PRODUCERS' IMPORTS AND PURCHASES

*** imports and purchases of CACCS are presented in table III-7. *** in their U.S. plant, instead it imports them from ***. These imports were equivalent to less than *** percent of U.S. production from 2015 to 2017.

**Table III-7**
**CACCS: U.S. producers' U.S. production, imports and purchases, 2015-17**

* * * * * * *

## U.S. EMPLOYMENT, WAGES, AND PRODUCTIVITY

Table III-8 shows U.S. producers' employment-related data. Despite a decline in production, employment measures such as production and related workers, hours worked, and wages paid remained relatively stable. As a result, productivity declined and unit labor costs increased between 2015 and 2017.

**Table III-8**
**CACCS: Average number of production and related workers, hours worked, wages paid to such employees, hourly wages, productivity, and unit labor costs, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| Production and related workers (PRWs) (number) | 320 | 322 | 319 |
| Total hours worked (1,000 hours) | 744 | 744 | 744 |
| Hours worked per PRW (hours) | 2,325 | 2,311 | 2,332 |
| Wages paid ($1,000) | 26,833 | 25,844 | 26,671 |
| Hourly wages (dollars per hour) | $36.07 | $34.74 | $35.85 |
| Productivity (dry pounds per hour) | 683.4 | 638.5 | 625.1 |
| Unit labor costs (dollars per 1,000 pounds dry weight) | $52.77 | $54.40 | $57.35 |

Source: Compiled from data submitted in response to Commission questionnaires.

# PART IV: U.S. IMPORTS, APPARENT U.S. CONSUMPTION, AND MARKET SHARES

## U.S. IMPORTERS

The Commission issued importer questionnaires to 102 firms believed to be importers of subject CACCS, as well as to all U.S. producers of CACCS.[1] Usable questionnaire responses were received from 36 companies, representing *** percent U.S. imports from Belgium,[2] *** percent U.S. imports from Colombia, *** percent of U.S. imports from Thailand, and *** percent of U.S. imports from Canada between January 1, 2017 to December 31, 2017 under HTS statistical reporting numbers 2918.14.0000 (citric acid), 2918.15.1000 (sodium citrate), and 2918.15.5000 (other salts and esters of citric acid).[3] Table IV-1 lists all responding U.S. importers of CACCS from Belgium, Colombia, Thailand, and other sources, their locations, and their shares of U.S. imports, in 2017.

[1] The Commission issued questionnaires to those firms identified in the petition, along with firms that, based on a review of data provided by U.S. Customs and Border Protection ("Customs"), may have accounted for more than one percent of total imports under HTS statistical reporting numbers 2918.14.0000, 2918.15.1000, and 2918.15.5000 during 2015-17.

[2] According to *** data, *** was one of the largest importers of record for CACCS from Belgium during 2015-17, importing *** of all Belgian-produced CACCS. During the preliminary phase of these investigations, *** indicated that the company is one legal entity, and that ***.

[3] The coverage estimates presented are based on official import statistics. Official import statistics are based on statistical reporting numbers 2918.14.0000, 2918.15.1000, and 2918.15.5000. HTS statistical reporting number 3824.99.9295 also includes other chemical products and preparations of the chemical or allied industries (including those consisting of mixtures of natural products) that are not elsewhere specified or included within the U.S. Harmonized Tariff Schedule ("HTSUS") with minimal imports that fall within the scope of these investigations. In addition, imports from nonsubject countries are based on questionnaire data because imports from Canada are suppressed in public import statistics. *** imported CACCS from Canada, the largest nonsubject source of such imports.

**Table IV-1**
**CACCS: U.S. importers by source, 2017**

| Firm | Headquarters | Share of imports by source (percent) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Belgium | Colombia | Thailand | Subject sources | Canada | All other sources | All import sources |
| Ampak | Carson, CA | *** | *** | *** | *** | *** | *** | *** |
| APAC Chemical | Arcadia, CA | *** | *** | *** | *** | *** | *** | *** |
| Batory Foods | Des Plaines, IL | *** | *** | *** | *** | *** | *** | *** |
| BBFY | City Of Industry, CA | *** | *** | *** | *** | *** | *** | *** |
| Brenntag | Reading, PA | *** | *** | *** | *** | *** | *** | *** |
| Cascade Columbia | Seattle, WA | *** | *** | *** | *** | *** | *** | *** |
| Chem Co | Jamestown, RI | *** | *** | *** | *** | *** | *** | *** |
| Citrique Belge | Tienen, Belgium | *** | *** | *** | *** | *** | *** | *** |
| Coca-Cola | Atlanta, GA | *** | *** | *** | *** | *** | *** | *** |
| Custom Chemical | Medley, FL | *** | *** | *** | *** | *** | *** | *** |
| Daxx | Houston, TX | *** | *** | *** | *** | *** | *** | *** |
| DKM Global | Schaumburg, IL | *** | *** | *** | *** | *** | *** | *** |
| EMD Millipore | Burlington, MA | *** | *** | *** | *** | *** | *** | *** |
| Gadot | Mahwah, NJ | *** | *** | *** | *** | *** | *** | *** |
| Gehring-Montgomery | Warminster, PA | *** | *** | *** | *** | *** | *** | *** |
| Jungbunzlauer | Newton Centre, MA | *** | *** | *** | *** | *** | *** | *** |
| Kalmia | Trujillo Alto, PR | *** | *** | *** | *** | *** | *** | *** |
| Marubeni | White Plains, NY | *** | *** | *** | *** | *** | *** | *** |
| MTC Industries | Hauppauge, NY | *** | *** | *** | *** | *** | *** | *** |
| Omni-Chem | Brownsburg, IN | *** | *** | *** | *** | *** | *** | *** |
| Pearson | Pomona, CA | *** | *** | *** | *** | *** | *** | *** |
| PepsiCo | Purchase, NY | *** | *** | *** | *** | *** | *** | *** |
| PG | Cincinnati, OH | *** | *** | *** | *** | *** | *** | *** |
| Shrieve | Houston, TX | *** | *** | *** | *** | *** | *** | *** |
| Silver Fern | Seattle, WA | *** | *** | *** | *** | *** | *** | *** |
| Tate & Lyle | Decatur, IL | *** | *** | *** | *** | *** | *** | *** |
| Teknor Apex | Pawtucket, RI | *** | *** | *** | *** | *** | *** | *** |
| Thatcher | Salt Lake City, UT | *** | *** | *** | *** | *** | *** | *** |
| TRInternational | Seattle, WA | *** | *** | *** | *** | *** | *** | *** |
| Two Rivers | Pasco, WA | *** | *** | *** | *** | *** | *** | *** |
| Univar | Downers Grove, IL | *** | *** | *** | *** | *** | *** | *** |
| UPI Chem | Somerset, NJ | *** | *** | *** | *** | *** | *** | *** |
| Vitusa | Berkeley Heights, NJ | *** | *** | *** | *** | *** | *** | *** |
| Vivion | San Carlos, CA | *** | *** | *** | *** | *** | *** | *** |
| Wego | Great Neck, NY | *** | *** | *** | *** | *** | *** | *** |
| Zhong Ya | Edison, NJ | *** | *** | *** | *** | *** | *** | *** |
| Total | | *** | *** | *** | *** | *** | *** | *** |

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Source: Compiled from data submitted in response to Commission questionnaires.

## U.S. IMPORTS

Table IV-2 and figure IV-1 present data for U.S. imports of CACCS from Belgium, Colombia, Thailand, and all other sources. From 2015 to 2017, subject imports of CACCS from Belgium have declined from 25.3 million pounds to 19.3 million pounds. Unit values for CACCS from Belgium have also declined, though they remain higher than unit values for domestically produced CACCS from 2015 to 2017. CACCS from Belgium accounted for *** percent of all imports by quantity, and were equivalent to *** percent of U.S. domestic production of CACCS in 2017.

Subject imports of CACCS from Colombia have declined from 45.2 million pounds in 2015 to 32.7 million pounds in 2017 and unit values dropped by one cent per pound from 2015 to 2017. CACCS from Colombia accounted for *** percent of all imports by quantity and were equivalent to *** percent of U.S. domestic production of CACCS in 2017.

Subject imports of CACCS from Thailand have increased by 67.3 percent: from 89.3 million pounds in 2015 to 149.5 million pounds in 2017. This increase offsets the decreases in imports of CACCS from Belgium and Colombia, resulting in an overall increase of subject imports from 159.9 million pounds in 2015 to 201.6 million pounds in 2017. The unit value of CACCS from Thailand also decreased from 2015 to 2017. These unit values were below unit values of domestically produced CACCS in each year from 2015 to 2017. CACCS from Thailand accounted for *** percent of all imports by quantity in 2017. Relative to U.S. production, imports from Thailand equaled *** percent.

Nonsubject imports of CACCS also increased from 2015 to 2017, driven by an increase in Canadian imports of CACCS from *** pounds to *** pounds in 2017, more than offsetting the decrease in other nonsubject imports of CACCS from 2015 to 2017. The average unit value of nonsubject CACCS from Canada dropped from $*** in 2015 to $*** in 2017 and was consistently lower than other nonsubject imports of CACCS, with the average unit values of other nonsubject imports of CACCS ranging from $*** to $***.

**Table IV-2**
**CACCS: U.S. imports by source, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | Quantity (1,000 pounds dry weight) | | |
| U.S. imports from.-- | | | |
| Belgium | 25,339 | 19,607 | 19,333 |
| Colombia | 45,239 | 48,961 | 32,729 |
| Thailand | 89,356 | 106,905 | 149,506 |
| Subject sources | 159,934 | 175,473 | 201,568 |
| Canada | *** | *** | *** |
| All other sources | 76,257 | 55,454 | 53,214 |
| Nonsubject sources | *** | *** | *** |
| All import sources | *** | *** | *** |
| | Value (1,000 dollars) | | |
| U.S. imports from.-- | | | |
| Belgium | 18,205 | 12,985 | 12,923 |
| Colombia | 28,020 | 29,727 | 19,993 |
| Thailand | 51,689 | 54,741 | 80,678 |
| Subject sources | 97,913 | 97,453 | 113,595 |
| Canada | *** | *** | *** |
| All other sources | 70,247 | 45,867 | 48,590 |
| Nonsubject sources | *** | *** | *** |
| All import sources | *** | *** | *** |
| | Unit value (dollars per pound dry weight) | | |
| U.S. imports from.-- | | | |
| Belgium | 0.72 | 0.66 | 0.67 |
| Colombia | 0.62 | 0.61 | 0.61 |
| Thailand | 0.58 | 0.51 | 0.54 |
| Subject sources | 0.61 | 0.56 | 0.56 |
| Canada | *** | *** | *** |
| All other sources | 0.92 | 0.83 | 0.91 |
| Nonsubject sources | *** | *** | *** |
| All import sources | *** | *** | *** |

Table continued on next page.

**Table IV-2—Continued**
**CACCS: U.S. imports by source, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | Share of quantity (percent) | | |
| U.S. imports from.-- | | | |
| Belgium | *** | *** | *** |
| Colombia | *** | *** | *** |
| Thailand | *** | *** | *** |
| Subject sources | *** | *** | *** |
| Canada | *** | *** | *** |
| All other sources | *** | *** | *** |
| Nonsubject sources | *** | *** | *** |
| All import sources | 100.0 | 100.0 | 100.0 |
| | Share of value (percent) | | |
| U.S. imports from.-- | | | |
| Belgium | *** | *** | *** |
| Colombia | *** | *** | *** |
| Thailand | *** | *** | *** |
| Subject sources | *** | *** | *** |
| Canada | *** | *** | *** |
| All other sources | *** | *** | *** |
| Nonsubject sources | *** | *** | *** |
| All import sources | 100.0 | 100.0 | 100.0 |
| | Ratio to U.S. production | | |
| U.S. imports from.-- | | | |
| Belgium | *** | *** | *** |
| Colombia | *** | *** | *** |
| Thailand | *** | *** | *** |
| Subject sources | *** | *** | *** |
| Canada | *** | *** | *** |
| All other sources | *** | *** | *** |
| Nonsubject sources | *** | *** | *** |
| All import sources | *** | *** | *** |

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Official import statistics do not include the quantity of imports from Canada due to confidentiality reasons. Therefore, staff used the quantity and value of imports from Canada provided by questionnaire responses.

Source: Compiled data submitted in response to Commission questionnaires and official U.S. imports statistics using HTS statistical reporting numbers 2918.14.0000, 2918.15.1000, and 2918.15.5000, accessed April 5, 2018.

**Figure IV-1**
**CACCS: U.S. imports by source, 2015-17**

* * * * * * *

## CRITICAL CIRCUMSTANCES

On January 8, 2018, Commerce issued its final determination that "critical circumstances" exist with regard to imports from Thailand of CACCS from Niran, but do not exist for COFCO, Sunshine, and all other producers and/or exporters.[4] In this investigation, if both Commerce and the Commission make affirmative final critical circumstances determinations, certain subject imports may be subject to antidumping duties retroactive by 90 days from January 8, 2018, the effective date of Commerce's preliminary affirmative LTFV determination. Table IV-3 presents this data.

**Table IV-3**
**CACCS: U.S. importers' U.S. imports from Thailand subject to Commerce's final AD critical circumstance findings, December 2016 through November 2017**

* * * * * * *

**Figure IV-2**
**CACCS: U.S. imports from Thailand subject to Commerce's final AD critical circumstance findings, December 2016 through November 2017**

* * * * * * *

## NEGLIGIBILITY

The statute requires that an investigation be terminated without an injury determination if imports of the subject merchandise are found to be negligible.[5] Negligible imports are generally defined in the Act, as amended, as imports from a country of merchandise corresponding to a domestic like product where such imports account for less than 3 percent of the volume of all such merchandise imported into the United States in the

[4] *Citric Acid and Certain Citrate Salts From Thailand: Preliminary Affirmative Determination of Sales at Less Than Fair Value, Preliminary Affirmative Critical Circumstances Determination, in Part, and Postponement of Final Determination and Extension of Provisional Measures*, 83 FR 784, January 8, 2018, referenced in app. A. When petitioners file timely allegations of critical circumstances, Commerce examines whether there is a reasonable basis to believe or suspect that (1) either there is a history of dumping and material injury by reason of dumped imports in the United States or elsewhere of the subject merchandise, or the person by whom, or for whose account, the merchandise was imported knew or should have known that the exporter was selling the subject merchandise at LTFV and that there was likely to be material injury by reason of such sales; and (2) there have been massive imports of the subject merchandise over a relatively short period.

[5] Sections 703(a)(1), 705(b)(1), 733(a)(1), and 735(b)(1) of the Act (19 U.S.C. §§ 1671b(a)(1), 1671d(b)(1), 1673b(a)(1), and 1673d(b)(1)).

most recent 12-month period for which data are available that precedes the filing of the petition or the initiation of the investigation. However, if there are imports of such merchandise from a number of countries subject to investigations initiated on the same day that individually account for less than 3 percent of the total volume of the subject merchandise, and if the imports from those countries collectively account for more than 7 percent of the volume of all such merchandise imported into the United States during the applicable 12-month period, then imports from such countries are deemed not to be negligible.[6] Imports from Belgium, Colombia, and Thailand accounted for *** percent respectively, with combined subject imports accounting for *** percent of total imports of CACCS by quantity during June 2016 through May 2017, presented in table IV-4. All imports from Thailand are excluded for the purposes of the countervailing duty investigation but are subject for these purposes of the antidumping investigations.

**Table IV-4**
**CACCS: U.S. imports in the twelve months preceding the filing of the petition, June 2016 through May 2017**

| Item | June 2016 through May 2017 | |
|---|---|---|
| | Quantity (1,000 pounds dry weight) | Share of quantity (percent) |
| U.S. imports from.-- | | |
| Belgium | 19,094 | *** |
| Colombia | 39,455 | *** |
| Thailand | 127,287 | *** |
| Subject sources | 185,836 | *** |
| Canada | *** | *** |
| All other sources | 52,710 | *** |
| Nonsubject sources | *** | *** |
| All import sources | *** | *** |

Source: Official U.S. imports statistics, and proprietary Customs records using HTS statistical reporting numbers 2918.14.0000, 2918.15.1000, and 2918.15.5000, accessed April 5, 2018.

## CUMULATION CONSIDERATIONS

In assessing whether imports should be cumulated, the Commission determines whether U.S. imports from the subject countries compete with each other and with the domestic like product and has generally considered four factors: (1) fungibility, (2) presence of sales or offers to sell in the same geographical markets, (3) common or similar channels of distribution, and (4) simultaneous presence in the market. Information regarding channels of distribution, market areas, and interchangeability appear in Part II. Additional information concerning fungibility, geographical markets, and simultaneous presence in the market is presented below.

[6] Section 771 (24) of the Act (19 U.S.C § 1677(24)).

Respondents from Belgium and Colombia both contend that the Commission should not cumulate subject imports from their respective countries. In their posthearing brief, Belgium cited the Commission's decision not to cumulate Austria and China in the xanthan gum case wherein the two countries exhibited differences in volume and pricing behavior and trends.[7] Citrique Belge argues their product is not fungible with the Thai CACCS because of granularity, product type, contract length, and package volume. Citrique Belge also argues that they focus their sales primarily in the Northeast with smaller volumes in the South and West, while imports of CACCS from Colombia and Thailand enter the U.S. primarily through the West. Additionally, Citrique Belge argues there are different channels of distribution because CACCS from Belgium are primarily sold through distributors, while Thai CACCS are primarily sold in bulk directly to end-users (see Part II). Finally, Citrique Belge argues they "cannot be found to have been present in the U.S. market in any meaningful way at any time throughout the investigation period," citing higher prices and small and declining volumes and market share.[8]

Sucroal argues the different import volume and market share trends suggest a perception of lack of fungibility between Thai and Colombian CACCS, especially given the industrial applications of Thai CACCS. Sucroal also argues the different import values of Colombian and Thai CACCS suggest sales are not being made to the same geographic markets or via the same channels of distribution.[9]

## Fungibility

As discussed in Part II, CACCS were sold to distributors, for food and beverage applications, industrial applications, pharmaceutical applications, and other applications.

Table IV-5 and figure IV-3 present U.S. shipments by GMO status for 2017. ***.[10]

**Table IV-5**
**CACCS: U.S. producers' U.S. shipments and U.S. importers' U.S. imports, by source and GMO status, 2017**

* * * * * * *

**Figure IV-3**
**CACCS: U.S. producers' U.S. shipments and U.S. importers' U.S. imports, by source and GMO status, 2017**

* * * * * * *

[7] Citrique Belge's posthearing brief, p. 4, see also: *Xanthan Gum from Austria and China: Investigation Nos. 731-TA-1202-1203 (Final),* USITC Publication 4411, July 2013, pp. 7-11.

[8] Citrique Belge's posthearing brief, pp. 2-4.

[9] Sucroal's posthearing brief, pp. 12-13.

[10] ***.

Table IV-6 and figure IV-4 present U.S. producers' U.S. shipments and U.S. importers' imports by product type. Citric acid accounted for more than *** percent of U.S. shipments of CACCS in each year. U.S. imports from each of the subject countries were similarly predominantly citric acid, as were (to a lesser extent) imports from nonsubject countries.

**Table IV-6**
**CACCS: U.S. producers' U.S. shipments and U.S. importers' U.S. imports, by source and product type, 2017**

* * * * * * *

**Figure IV-4**
**CACCS: U.S. producers' U.S. shipments and U.S. importers' U.S. imports, by source and product type, 2017**

* * * * * * *

## Geographical markets

Table IV-7 presents importers' shipments by border entry for 2017. New York, New York and Los Angeles, California were the largest districts of entry for subject imports, accounting for 30.4 and 29.6 percent of the total subject imports in 2017, respectively. Houston-Galveston, Texas was the third largest district, and accounted for 15.3 percent of the total subject imports. New York, New York and Los Angeles, California were the largest customs districts for imports from Belgium; San Francisco, California and New York, New York were the largest customs districts for imports from Colombia; and Los Angeles, California and New York, New York were the largest customs districts for imports from Thailand.[11]

[11] Based on HTS statistical reporting numbers 2918.14.0000, 2918.15.1000, and 2918.15.5000

**Table IV-7**
**CACCS: U.S. imports, by border of entry, 2017**

| Item | Calendar year | | | | |
|---|---|---|---|---|---|
| | East | North | South | West | Total |
| | Quantity (1,000 pounds dry weight) | | | | |
| U.S. imports from.-- | | | | | |
| Belgium | 8,697 | 2,574 | 3,777 | 4,285 | 19,333 |
| Colombia | 10,816 | 2,069 | 3,182 | 16,662 | 32,729 |
| Thailand | 61,960 | 6,529 | 14,621 | 66,396 | 149,506 |
| Subject sources | 81,473 | 11,172 | 21,580 | 87,343 | 201,568 |
| Canada | *** | *** | *** | *** | *** |
| All other sources | 27,442 | 8,638 | 4,805 | 12,330 | 53,214 |
| Nonsubject sources | *** | *** | *** | *** | *** |
| All import sources | *** | *** | *** | *** | *** |
| | Share across (percent) | | | | |
| U.S. imports from.-- | | | | | |
| Belgium | 45.0 | 13.3 | 19.5 | 22.2 | 100.0 |
| Colombia | 33.0 | 6.3 | 9.7 | 50.9 | 100.0 |
| Thailand | 41.4 | 4.4 | 9.8 | 44.4 | 100.0 |
| Subject sources | 40.4 | 5.5 | 10.7 | 43.3 | 100.0 |
| Canada | *** | *** | *** | *** | 100.0 |
| All other sources | 51.6 | 16.2 | 9.0 | 23.2 | 100.0 |
| Nonsubject sources | *** | *** | *** | *** | 100.0 |
| All import sources | *** | *** | *** | *** | 100.0 |
| | Share down (percent) | | | | |
| U.S. imports from.-- | | | | | |
| Belgium | *** | *** | *** | *** | *** |
| Colombia | *** | *** | *** | *** | *** |
| Thailand | *** | *** | *** | *** | *** |
| Subject sources | *** | *** | *** | *** | *** |
| Canada | *** | *** | *** | *** | *** |
| All other sources | *** | *** | *** | *** | *** |
| Nonsubject sources | *** | *** | *** | *** | *** |
| All import sources | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Note.--Shares and ratios shown as "0.0" represent values

Source: Compiled official U.S. imports statistics and proprietary Customs records using HTS statistical reporting numbers 2918.14.0000, 2918.15.1000, and 2918.15.5000, accessed April 5, 2018.

## Presence in the market

CACCS from Belgium, Colombia, and Thailand were present in the market in every month between January 2015 and December 2017. Table IV-8 presents monthly imports into the United States by source.

**Table IV-8**
**CACCS: Monthly U.S. imports, by source, January 2015 through December 2017**

| Item | U.S. imports | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Belgium | Colombia | Thailand | Subject sources | Canada | All other sources | Non-subject sources | All import sources |
| | Quantity (1,000 pounds dry weight) | | | | | | | |
| 2015.-- January | 2,200 | 2,021 | 4,074 | 8,296 | *** | 6,595 | *** | *** |
| February | 3,298 | 2,968 | 3,452 | 9,719 | *** | 6,153 | *** | *** |
| March | 2,555 | 4,656 | 9,607 | 16,817 | *** | 7,355 | *** | *** |
| April | 2,866 | 4,034 | 12,820 | 19,719 | *** | 9,007 | *** | *** |
| May | 3,228 | 4,710 | 9,462 | 17,400 | *** | 7,641 | *** | *** |
| June | 3,021 | 3,650 | 7,423 | 14,093 | *** | 7,892 | *** | *** |
| July | 1,793 | 3,936 | 10,610 | 16,338 | *** | 7,917 | *** | *** |
| August | 1,698 | 3,826 | 9,188 | 14,712 | *** | 4,635 | *** | *** |
| September | 1,265 | 3,462 | 7,597 | 12,324 | *** | 4,271 | *** | *** |
| October | 928 | 4,012 | 5,699 | 10,639 | *** | 5,002 | *** | *** |
| November | 1,695 | 3,392 | 5,253 | 10,341 | *** | 4,220 | *** | *** |
| December | 791 | 4,573 | 4,170 | 9,535 | *** | 5,569 | *** | *** |
| 2016.-- January | 1,251 | 4,441 | 7,327 | 13,020 | *** | 5,166 | *** | *** |
| February | 2,097 | 2,717 | 5,745 | 10,559 | *** | 4,695 | *** | *** |
| March | 1,235 | 3,830 | 7,795 | 12,860 | *** | 5,830 | *** | *** |
| April | 1,312 | 4,488 | 7,743 | 13,543 | *** | 5,011 | *** | *** |
| May | 2,183 | 6,152 | 9,460 | 17,796 | *** | 4,861 | *** | *** |
| June | 1,957 | 5,509 | 10,036 | 17,502 | *** | 6,394 | *** | *** |
| July | 1,729 | 5,244 | 8,866 | 15,839 | *** | 5,223 | *** | *** |
| August | 1,396 | 5,068 | 13,209 | 19,674 | *** | 3,731 | *** | *** |
| September | 1,589 | 3,920 | 10,044 | 15,552 | *** | 4,308 | *** | *** |
| October | 2,243 | 2,819 | 6,685 | 11,747 | *** | 3,607 | *** | *** |
| November | 1,608 | 2,755 | 9,063 | 13,426 | *** | 3,244 | *** | *** |
| December | 1,005 | 2,018 | 10,932 | 13,956 | *** | 3,385 | *** | *** |

Table continued on next page.

**Table IV-8—Continued**
**CACCS: Monthly U.S. imports, by source, January 2015 through December 2017**

| Item | U.S. imports | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Belgium | Colombia | Thailand | Subject sources | Canada | All other sources | Non-subject sources | All import sources |
| | Quantity (1,000 pounds dry weight) | | | | | | | |
| 2017.-- | | | | | | | | |
| January | 1,305 | 1,135 | 12,722 | 15,161 | *** | 3,925 | *** | *** |
| February | 1,355 | 2,887 | 11,691 | 15,933 | *** | 3,121 | *** | *** |
| March | 1,838 | 1,837 | 12,551 | 16,226 | *** | 5,002 | *** | *** |
| April | 1,309 | 2,835 | 10,424 | 14,568 | *** | 4,875 | *** | *** |
| May | 1,758 | 3,429 | 11,064 | 16,251 | *** | 5,895 | *** | *** |
| June | 1,699 | 4,556 | 12,298 | 18,553 | *** | 4,607 | *** | *** |
| July | 1,976 | 5,152 | 18,338 | 25,466 | *** | 4,479 | *** | *** |
| August | 1,305 | 3,507 | 12,608 | 17,420 | *** | 3,505 | *** | *** |
| September | 1,338 | 1,951 | 11,525 | 14,815 | *** | 4,790 | *** | *** |
| October | 2,646 | 2,123 | 13,921 | 18,691 | *** | 4,290 | *** | *** |
| November | 1,108 | 1,143 | 12,687 | 14,937 | *** | 4,463 | *** | *** |
| December | 1,696 | 2,174 | 9,676 | 13,546 | *** | 4,262 | *** | *** |

Source: Compiled official U.S. imports statistics and proprietary Customs records using HTS statistical reporting numbers 2918.14.0000, 2918.15.1000, and 2918.15.5000, accessed April 5, 2018.

## APPARENT U.S. CONSUMPTION

Table IV-9 and figure IV-5 present data on apparent U.S. consumption for CACCS. Total apparent consumption of CACCS by quantity decreased from *** dry pounds in 2015 to *** dry pounds in 2016 before increasing to *** dry pounds in 2017. This overall increase in apparent consumption from 2015 to 2017 reflects increased U.S. shipments of CACCS from Thailand and Canada, as U.S. producers' U.S. shipments, U.S. shipments of CACCS from Belgium, and U.S. shipments of CACCS from Colombia decreased from 2015 to 2017. By value, total apparent consumption decreased from $*** in 2015 to $*** in 2016, but then increased to $*** in 2017, not fully offsetting the previous year's decrease.

**Table IV-9**
**CACCS: U.S. shipments of domestic product, U.S. imports, and apparent U.S. consumption, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | Quantity (1,000 pounds dry weight) | | |
| U.S. producers' U.S. shipments | 470,152 | 452,062 | 459,114 |
| U.S. imports from.-- | | | |
| Belgium | *** | *** | *** |
| Colombia | *** | *** | *** |
| Thailand | *** | *** | *** |
| Subject sources | *** | *** | *** |
| Canada | *** | *** | *** |
| All other sources | 76,257 | 55,454 | 53,214 |
| Nonsubject sources | *** | *** | *** |
| All import sources | *** | *** | *** |
| Apparent U.S. consumption | *** | *** | *** |
| | Value (1,000 dollars) | | |
| U.S. producers' U.S. shipments | 312,318 | 278,884 | 275,933 |
| U.S. imports from.-- | | | |
| Belgium | 18,205 | 12,985 | 12,923 |
| Colombia | 28,020 | 29,727 | 19,993 |
| Thailand | 51,689 | 54,741 | 80,678 |
| Subject sources | 97,913 | 97,453 | 113,595 |
| Canada | *** | *** | *** |
| All other sources | 70,247 | 45,867 | 48,590 |
| Nonsubject sources | *** | *** | *** |
| All import sources | *** | *** | *** |
| Apparent U.S. consumption | *** | *** | *** |

Note.--Data for Canada are based on U.S. importers' questionnaires responses.

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. imports statistics using HTS statistical reporting numbers 2918.14.0000, 2918.15.1000, and 2918.15.5000, accessed April 5, 2018.

**Figure IV-5**
**CACCS: Apparent U.S. consumption, 2015-17**

* * * * * * *

## U.S. MARKET SHARES

U.S. market share data are presented in table IV-10. U.S. producers' share of the market decreased from *** percent in 2015 to *** percent in 2017 in quantity terms. This decrease in market share appears to be a result of an increase in market share of both CACCS from Thailand (which increased from *** percent in 2015 to *** percent in 2017) and CACCS from Canada (which increased from *** percent in 2015 to *** percent in 2017). The market shares of CACCS from Belgium, Colombia, and other nonsubject sources decreased from 2015 to 2017 by quantity.

Overall, from 2015 to 2017, U.S. producers' share of the market decreased by *** percentage points. Subject imports' share of the market increased by *** percentage points. Within subject imports, Belgian imports' share of the market decreased by *** percentage points, Colombian imports' share of the market decreased by *** percentage points, and Thai imports' share of the market increased by *** percentage points. Canadian imports' share of the market increased by *** percentage points. The share of the market attributable to imports from all other nonsubject sources decreased by *** percentage points. Overall, nonsubject market share increased by *** percent. These trends were also found when comparing market shares by value.

**Table IV-10**
**CACCS: U.S. consumption and market shares, 2015-17**

* * * * * * *

# PART V: PRICING DATA

## FACTORS AFFECTING PRICES

### Raw material costs

The primary raw material for CACCS production is a starch ("substrate") that is fermented by yeast or mold to produce CACCS. The substrate varies by producer depending on proximity to the production plant and cost, which varies by region.[1] Domestically produced CACCS begins with a corn starch substrate, Belgian CACCS with beet sugar molasses, Colombian CACCS with sugarcane, and Thai CACCS with tapioca.[2] During January 2015-December 2017, prices decreased to varying degrees for all substrates except tapioca, which saw a slight price increase (figure V-1).[3]

U.S. producers reported that raw materials as a share of cost of goods sold ("COGS") decreased slightly from *** percent in 2015 to *** percent in 2017. U.S. producers reported differing trends in raw material costs, with one each reporting constant, increasing, and fluctuating costs. Most importers reported fluctuating raw material prices over the period.

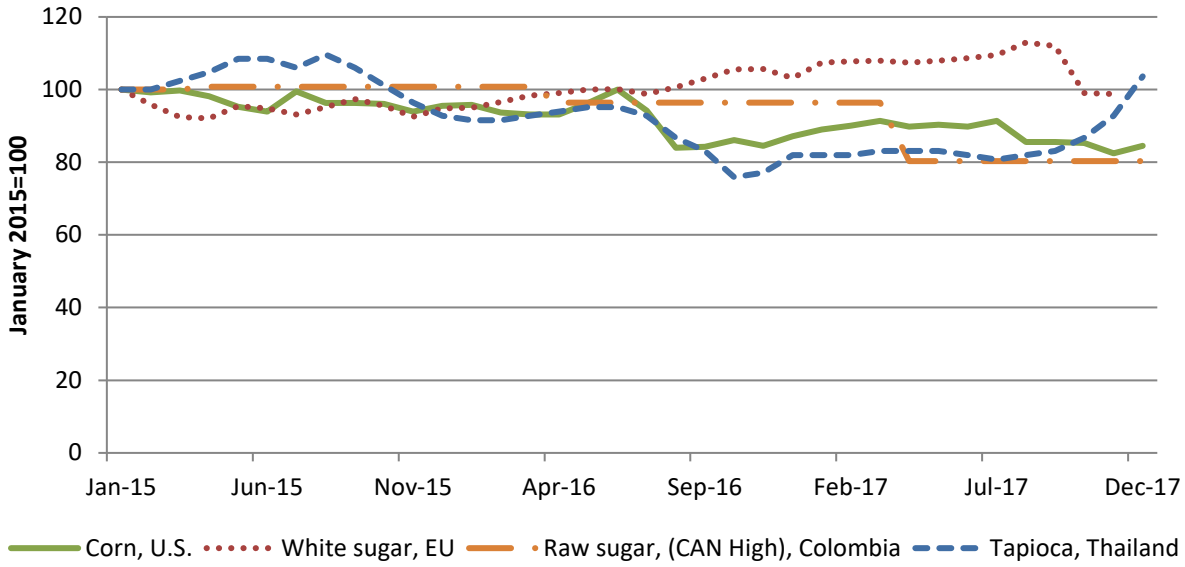
[1] Conference transcript, p. 68 (Erickson).

[2] Petition, p. 35. Producers usually choose substrates that are the lowest cost and most readily available; the substrates typically do not change. Each producer has its own in-house bred yeast or mold that is designed to achieve optimal yields based on specific plant conditions and specific substrates. It is generally not possible to switch between substrates in production. Conference transcript, pp. 35-36 (Anderson), 75 (Erickson), and 87 (Erickson).

[3] U.S. corn prices decreased by 15 percent during the period, EU white sugar prices decreased by less than 1 percent, and Thai tapioca prices increased by 6 percent between January 2015 and December 2017. The Andean Community's price band for raw sugar decreased by over 15 percent.

**Figure V-1**

**Substrate prices: Indexed regional prices of corn (United States), white sugar (EU), raw sugar (Colombia),[1] and tapioca (Thailand), January 2015=100, January 2015-December 2017**




[1] The best price information for raw sugar in Colombia is the Andean Community's established price bands that are revised every April. Additionally, Colombia has a sugar price stabilization fund that provides incentives for sugar exports to avoid oversupply and low prices in the domestic market.

Note.--Indexes were calculated based on USD per metric ton.

Sources: USDA, Prices Received: Corn Prices Received by Month, US. https://www.nass.usda.gov/Charts_and_Maps/Agricultural_Prices/pricecn.php. accessed April 16, 2018; European Commission information based on Member States notifications, Vegetal products - White Sugar, accessed April 16, 2018; USDA FAS GAIN Reports: Colombia, Sugar Annual 2015, 2016, and 2017. https://gain.fas.usda.gov/Pages/Default.aspx; The Tapioca Starch Association, Weekly Tapioca Starch Price, http://www.thaitapiocastarch.org/en/information/statistics/weekly_tapioca_starch_price; Federal Reserve Economic Data, Brazilian Reals to One U.S. dollar, and U.S. dollars to One Euro, monthly, not seasonally adjusted, https://fred.stlouisfed.org/, accessed April 16, 2018.

### U.S. inland transportation costs

*** responding U.S. producers and 23 of 25 responding importers reported that they typically arrange transportation to their customers. U.S. producers reported that their U.S. inland transportation costs ranged from 4 to 7 percent while importers reported costs from less than 1 percent to 13 percent. Importer P&G stated that ***.[4]

## PRICING PRACTICES

### Pricing methods

As presented in table V-1, U.S. producers and importers sell both through transaction-by-transaction negotiations and contracts. Nearly all responding importers reported selling via transaction-by-transaction negotiations, and more than half also sell via contracts.

**Table V-1**
**CACCS: U.S. producers' and importers' reported price setting methods, by number of responding firms[1]**

| Method | U.S. producers | Importers |
|---|---|---|
| Transaction-by-transaction | 3 | 27 |
| Contract | 3 | 17 |
| Set price list | --- | 3 |
| Other | --- | 3 |
| Responding firms | 3 | 29 |

[1] The sum of responses down may not add up to the total number of responding firms as each firm was instructed to check all applicable price setting methods employed.

Source: Compiled from data submitted in response to Commission questionnaires.

In 2017, U.S. producers and importers sold most of their CACCS under annual contracts, which are generally negotiated during the fourth quarter for the following calendar year (table V-2).[5] [6] U.S. producers also reported that a sizeable share of their commercial shipments was sold through long-term contracts lasting up to three years. Importers also reported that a sizable share of their sales was sold through spot sales.

[4] Respondent P&G Manufacturing (***) postconference brief, p. 9.

[5] Conference transcript, pp. 19 (Aud) and 37 (Anderson).

[6] Petitioners explained that larger purchasers are generally more likely to purchase through annual contracts and provide their annual requirements for bids around the same period, while smaller end users are more likely to purchase on the spot market from distributors. Conference transcript, pp. 10 (Jones) and 79 (Erickson).

**Table V-2**
**CACCS: U.S. producers' and importers' shares of U.S. commercial shipments by type of sale, 2015-17**

| Type of sale | Calendar Year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | Share of commercial U.S. shipments (percent) | | |
| **U.S. producers** | | | |
| Spot sales | 0.4 | 0.5 | 0.9 |
| Short-term contracts | 1.7 | [8.4] | 5.8 |
| Annual contract | 65.6 | 61.7 | 63.8 |
| Long-term contracts | 32.3 | 29.5 | 29.5 |
| All sales types | 100.0 | 100.0 | 100.0 |
| **Subject U.S. importers** | | | |
| Spot sales | 46.9 | 42.6 | 35.4 |
| Short-term contracts | 11.1 | 10.1 | 10.1 |
| Annual contract | 42.0 | 47.3 | 54.5 |
| Long-term contracts | --- | --- | --- |
| All sales types | 100.0 | 100.0 | 100.0 |

Note.--Because of rounding, figures may not add to the totals shown.

Source: Compiled from data submitted in response to Commission questionnaires.

Most U.S. producers reported that their annual contracts fix prices and do not contain meet-or-release provisions. *** reported that their long-term contracts fix price, do not contain meet-or-release provisions, and are indexed to raw material prices.[7] Petitioners stated that, in practice, some customers have asked to renegotiate prices or decrease their project volume mid-contract.[8]

Most responding importers reported that their annual contracts do not contain meet-or-release provisions, fix both price and quantity, are not indexed to raw material prices, and price cannot be renegotiated.

Three purchasers reported that they purchase CACCS daily, 12 purchase weekly, 15 purchase monthly, 3 purchase quarterly, 5 purchase annually, and 6 have other purchasing patterns. Thirty-one of 42 responding purchasers reported that their purchasing frequency has not changed since January 1, 2015. Nine of 39 responding purchasers contact 1 to 3 suppliers before making a purchase. Five purchasers reported contacting up to six suppliers before making a purchase, two purchasers reported contacting up to 10 suppliers, and one purchaser reported contacting up to 12.

### Sales terms and discounts

*** U.S. producers reported that they typically quote prices on an f.o.b. basis, while most importers (18 of 24) reported typically quoting on a delivered basis. *** U.S. producers

[7] Petitioner ***. Petitioners' posthearing brief, p. 51.

[8] Conference transcript, pp. 30-31 (Erickson) and 37 (Anderson).

reported sales terms of net 30 days, and *** reported terms of net 60 days. Most importers (23 of 24) reported sales terms of net 30 days, and one importer reported sales terms of net 60 days. Importers *** reported net sales terms of 45 days and 90 days, respectively.

*** U.S. producers generally have no discount policy, while U.S. producer *** reported that it offers ***. Most importers (21 of 28) reported having no discount policy. Five importers reported offering quantity discounts, and two reported offering total volume discounts.

### Price leadership

Purchasers reported that Cargill (11 purchasers), ADM (8), JBL (5), Tate & Lyle (4), Sunshine (3), COFCO (2), Sucroal (2), Connection Chemical (1), Gadot (1), and Univar (1) were price leaders. Purchaser *** reported that Connection Chemical offers the most competitive pricing. Purchaser *** stated that Cargill sends annual price notification to the market. Purchaser *** reported that ADM and Cargill set the market pricing for all other producers based on domestic production, and others might typically fall in line when selling similar product. *** also stated that Cargill and ADM had difficulty competing against suppliers of non-GMO CACCS. Purchaser *** stated that domestic producers steer and set the direction for the U.S. market. Purchaser *** stated that Cargill raised domestic prices by over 30 percent in the fourth quarter of 2017, prior to the fall bidding season for 2018 business; that ADM and Tate & Lyle followed by raising prices around 25 percent; and that Jungbunzlauer took the average spread between Cargill, ADM, and Tate & Lyle. *** added that Sucroal raised prices similar to Cargill, and Citrique Belge followed Sucroal. Purchaser *** stated that that once COFCO, Sunshine, Cargill, and Jungbunzlauer start to change prices, other import suppliers follow. *** stated that Cargill tends to price large customers in the market at a low price at the beginning of the bid season, then increases pricing after it locks up substantial market share. *** also stated that JBL offers the lowest priced products in the market, well below U.S. producers and in line with other imported material. Purchaser *** reported that Cargill can "move the market price" due to the volume and significance of its presence in the CACCS market.

## PRICE DATA

The Commission requested U.S. producers and importers to provide quarterly data for the total quantity and f.o.b. value of the following CACCS products shipped to unrelated U.S. customers during January 2015-December 2017.

**Product 1.**--Citric acid, granular, in dry form in 25 kilogram and 50 pound bags, spot/short term sales.

**Product 2.**--Citric acid, granular, in dry form in 25 kilogram and 50 pound bags, annual contract sales.

**Product 3.**--Citric acid, fine granular, in dry form in 25 kilogram and 50 pound bags, spot/short term sales.

**Product 4.**--Citric acid, fine granular, in dry form in 25 kilogram and 50 pound bags, annual contract sales.

**Product 5.**-- Citric acid, granular, in dry form packed in bulk sacks ("supersacks"), spot/short term sales.

**Product 6.**--Citric acid, granular, in dry form packed in bulk sacks ("supersacks"), annual contract sales.

**Product 7.**-- Sodium citrate, granular, in dry form in 25 kilogram and 50 pound bags, spot/short term sales.

**Product 8.**-- Sodium citrate, granular, in dry form in 25 kilogram and 50 pound bags, annual contract sales.

All three U.S. producers and 12 of 30 importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[9] Pricing data reported by these firms accounted for approximately 48.1 percent of U.S. producers' shipments of CACCS, 81.0 percent of U.S. shipments of subject imports from Belgium, 91.6 percent of subject imports from Colombia, and 91.9 percent of subject imports from Thailand in 2017.

Price data for products 1-8 are presented in tables V-3 to V-10 and figures V-2 to V-9. Nonsubject country prices reported for pricing products 1-8 are presented in Appendix E.

**Table V-3**
**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 1 and margins of underselling/(overselling), by quarters, January 2015-December 2017**

* * * * * * *

**Table V-4**
**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 2 and margins of underselling/(overselling), by quarters, January 2015-December 2017**

* * * * * * *

**Table V-5**
**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 3 and margins of underselling/(overselling), by quarters, January 2015-December 2017**

* * * * * * *

[9] Per-unit pricing data are calculated from total quantity and total value data provided by U.S. producers and importers. The precision and variation of these figures may be affected by rounding, limited quantities, and producer or importer estimates.

**Table V-6**
**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 4 and margins of underselling/(overselling), by quarters, January 2015-December 2017**

* * * * * * *

**Table V-7**
**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 5 and margins of underselling/(overselling), by quarters, January 2015-December 2017**

* * * * * * *

**Table V-8**
**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 6 and margins of underselling/(overselling), by quarters, January 2015-December 2017**

* * * * * * *

**Table V-9**
**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 7 and margins of underselling/(overselling), by quarters, January 2015-December 2017**

* * * * * * *

**Table V-10**
**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 8 and margins of underselling/(overselling), by quarters, January 2015-December 2017**

* * * * * * *

**Figure V-2**
**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 1, by quarters, January 2015-December 2017**

* * * * * * *

**Figure V-3**
**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 2, by quarters, January 2015-December 2017**

* * * * * * *

**Figure V-4**
**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 3, by quarters, January 2015-December 2017**

* * * * * * *

**Figure V-5**
**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 4, by quarters, January 2015-December 2017**

* * * * * * *

**Figure V-6**
**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 5, by quarters, January 2015-December 2017**

* * * * * * *

**Figure V-7**
**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 6, by quarters, January 2015-December 2017**

* * * * * * *

**Figure V-8**
**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 7, by quarters, January 2015-December 2017**

* * * * * * *

**Figure V-9**
**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 8, by quarters, January 2015-December 2017**

* * * * * * *

## Price trends

In general, prices decreased during January 2015-December 2017. Table V-11 summarizes the price trends, by country and by product. As shown in the table, domestic price decreases ranged from 3 to 25 percent during January 2015-December 2017. Prices decreased for most subject country–product combinations, ranging from 3 to 33 percent. Subject import price increases ranged from *** to *** percent and were more frequent for CACCS from Colombia.

**Table V-11**
**CACCS: Summary of weighted-average f.o.b. prices for products 1-8 from the United States and subject countries**

| Product/source | Number of quarters | Low price | High price | Change in price[1] (percent) |
|---|---|---|---|---|
| **Product 1** | | | | |
| United States | 12 | *** | *** | *** |
| Belgium | 12 | *** | *** | *** |
| Colombia | 11 | *** | *** | *** |
| Thailand | 12 | *** | *** | *** |
| **Product 2** | | | | |
| United States | 12 | *** | *** | *** |
| Belgium | 9 | *** | *** | *** |
| Colombia | 11 | *** | *** | *** |
| Thailand | 12 | *** | *** | *** |
| **Product 3** | | | | |
| United States | 12 | *** | *** | *** |
| Belgium | 12 | *** | *** | *** |
| Colombia | 12 | *** | *** | *** |
| Thailand | 12 | *** | *** | *** |
| **Product 4** | | | | |
| United States | 12 | *** | *** | *** |
| Belgium | 12 | *** | *** | *** |
| Colombia | 12 | *** | *** | *** |
| Thailand | 12 | *** | *** | *** |
| **Product 5** | | | | |
| United States | 12 | *** | *** | *** |
| Belgium | 7 | *** | *** | *** |
| Colombia | 12 | *** | *** | *** |
| Thailand | 12 | *** | *** | *** |
| **Product 6** | | | | |
| United States | 12 | *** | *** | *** |
| Belgium | 11 | *** | *** | *** |
| Colombia | 9 | *** | *** | *** |
| Thailand | 12 | *** | *** | *** |
| **Product 7** | | | | |
| United States | 12 | *** | *** | *** |
| Belgium | 9 | *** | *** | *** |
| Colombia | 7 | *** | *** | *** |
| Thailand | 12 | *** | *** | *** |
| **Product 8** | | | | |
| United States | 12 | *** | *** | *** |
| Belgium | 10 | *** | *** | *** |
| Colombia | --- | *** | *** | *** |
| Thailand | 10 | *** | *** | *** |

[1] Percentage change is calculated using data from the first quarter in which data were available in the first year to the last quarter in which data were available if it is among the last four quarters of the data-collection period. Subject countries for which there was insufficient data have been excluded from presentation.

Source: Compiled from data submitted in response to Commission questionnaires.

**Price comparisons**

As shown in table V-12, prices for CACCS imported from subject countries were below those for U.S.-produced product in 92 of 250 instances (228 million pounds); margins of underselling ranged from 0.0 to 35.9 percent. In the remaining 158 instances (96 million pounds), prices for product from subject countries were between 0.1 and 70.2 percent above prices for the domestic product.

CACCS imported from Belgium and Colombia oversold domestically produced CACCS in the majority of cases (*** pounds for Belgium; *** pounds for Colombia). CACCS imported from Belgium undersold domestically produced CACCS in *** instances (*** pounds). CACCS imported from Colombia undersold domestically produced CACCS in *** instances (*** pounds). CACCS imported from Thailand undersold domestically produced CACCS in the majority (*** pounds) of instances, compared with *** pounds in *** instances of overselling.

As shown in table V-13, all four products that requested data by annual contracts (products 2, 4, 6, and 8) oversold domestically produced CACCS in a majority of instances (80 of 120 instances and 45 million pounds).[10] As shown in table V-13, three of four products that requested data by spot/short term sales (products 3, 5, and 7) oversold domestically produced CACCS in 66 of 130 instances (41 million pounds).[11]

[10] For pricing data collected on annual contracts, the number of instances that domestically produced CACCS was undersold was 40 of 120 and a quantity of 113 million pounds.

[11] For pricing data collected on spot/short term sales, the number of instances that domestically produced CACCS was undersold was 52 of 130 and a quantity of 116 million pounds.

**Table V-12**
**CACCS: Instances of underselling/overselling and the range and average of margins, by country and product, January 2015-December 2017**

| Product/Source | Underselling | | | | |
|---|---|---|---|---|---|
| | Number of quarters | Quantity[1] (1,000 pounds) | Average margin (percent) | Margin range (percent) | |
| | | | | Min | Max |
| **By product:** | | | | | |
| Product 1 | 23 | 68,162 | 10.8 | 2.6 | 35.9 |
| Product 2 | 10 | 47,254 | 9.8 | 0.9 | 14.9 |
| Product 3 | 11 | 15,737 | 7.9 | 0.0 | 13.6 |
| Product 4 | 12 | 49,424 | 3.7 | 1.0 | 11.7 |
| Product 5 | 12 | 28,909 | 7.3 | 0.7 | 12.4 |
| Product 6 | 8 | 15,214 | 7.9 | 2.5 | 12.4 |
| Product 7 | 6 | 2,857 | 5.9 | 1.9 | 11.7 |
| Product 8 | 10 | 709 | 8.0 | 0.7 | 25.5 |
| Total, underselling | 92 | 228,266 | 8.1 | 0.0 | 35.9 |
| **By country:** | | | | | |
| Belgium | *** | *** | *** | *** | *** |
| Colombia | *** | *** | *** | *** | *** |
| Thailand | *** | *** | *** | *** | *** |
| Total, underselling | 92 | 228,266 | 8.1 | 0.0 | 35.9 |

| Product/Source | (Overselling) | | | | |
|---|---|---|---|---|---|
| | Number of quarters | Quantity[1] (1,000 pounds) | Average margin (percent) | Margin range (percent) | |
| | | | | Min | Max |
| **By product:** | | | | | |
| Product 1 | 12 | 10,069 | (7.2) | (0.8) | (19.4) |
| Product 2 | 22 | 13,129 | (22.9) | (0.3) | (70.2) |
| Product 3 | 25 | 28,198 | (22.0) | (0.8) | (57.7) |
| Product 4 | 24 | 21,006 | (25.0) | (9.9) | (51.3) |
| Product 5 | 19 | 9,787 | (16.6) | (1.8) | (36.6) |
| Product 6 | 24 | 9,957 | (19.3) | (0.5) | (51.7) |
| Product 7 | 22 | 3,074 | (29.9) | (0.9) | (59.1) |
| Product 8 | 10 | 714 | (29.3) | (13.5) | (50.8) |
| Total, overselling | 158 | 95,934 | (22.0) | (0.3) | (70.2) |
| **By country:** | | | | | |
| Belgium | *** | *** | *** | *** | *** |
| Colombia | *** | *** | *** | *** | *** |
| Thailand | *** | *** | *** | *** | *** |
| Total, overselling | 158 | 95,934 | (22.0) | (0.3) | (70.2) |

[1] These data include only quarters in which there is a comparison between the U.S. and subject product.

Source: Compiled from data submitted in response to Commission questionnaires.

**Table V-13**
**CACCS: Instances of underselling/overselling and the range and average of margins, by annual contract, January 2015-December 2017**

| Product | Underselling | | | | |
|---|---|---|---|---|---|
| | Number of quarters | Quantity[1] (1,000 pounds) | Average margin (percent) | Margin range (percent) | |
| | | | | Min | Max |
| **By product:** | | | | | |
| Product 2 | 10 | 47,254 | 9.8 | 0.9 | 14.9 |
| Product 4 | 12 | 49,424 | 3.7 | 1.0 | 11.7 |
| Product 6 | 8 | 15,214 | 7.9 | 2.5 | 12.4 |
| Product 8 | 10 | 709 | 8.0 | 0.7 | 25.5 |
| Total, underselling | 40 | 112,602 | 7.1 | 0.7 | 25.5 |
| **Product** | **(Overselling)** | | | | |
| | **Number of quarters** | **Quantity[1] (1,000 pounds)** | **Average margin (percent)** | **Margin range (percent)** | |
| | | | | **Min** | **Max** |
| **By product:** | | | | | |
| Product 2 | 22 | 13,129 | (22.9) | (0.3) | (70.2) |
| Product 4 | 24 | 21,006 | (25.0) | (9.9) | (51.3) |
| Product 6 | 24 | 9,957 | (19.3) | (0.5) | (51.7) |
| Product 8 | 10 | 714 | (29.3) | (13.5) | (50.8) |
| Total, overselling | 80 | 44,806 | (23.2) | (13.5) | (50.8) |

[1] These data include only quarters in which there is a comparison between the U.S. and subject product.

Source**:** Compiled from data submitted in response to Commission questionnaires.

**Table V-13**
**CACCS: Instances of underselling/overselling and the range and average of margins, by spot/short term sales, January 2015-December 2017**

| Product | Underselling | | | | |
|---|---|---|---|---|---|
| | Number of quarters | Quantity[1] (1,000 pounds) | Average margin (percent) | Margin range (percent) | |
| | | | | Min | Max |
| **By product:** | | | | | |
| Product 1 | 23 | 68,162 | 10.8 | 2.6 | 35.9 |
| Product 3 | 11 | 15,737 | 7.9 | 0.0 | 13.6 |
| Product 5 | 12 | 28,909 | 7.3 | 0.7 | 12.4 |
| Product 7 | 6 | 2,857 | 5.9 | 1.9 | 11.7 |
| Total, underselling | 52 | 115,665 | 8.8 | 0.0 | 35.9 |
| **Product** | **(Overselling)** | | | | |
| | **Number of quarters** | **Quantity[1] (1,000 pounds)** | **Average margin (percent)** | **Margin range (percent)** | |
| | | | | **Min** | **Max** |
| **By product:** | | | | | |
| Product 1 | 12 | 10,069 | (7.2) | (0.8) | (19.4) |
| Product 3 | 25 | 28,198 | (22.0) | (0.8) | (57.7) |
| Product 5 | 19 | 9,787 | (16.6) | (1.8) | (36.6) |
| Product 7 | 22 | 3,074 | (29.9) | (0.9) | (59.1) |
| Total, overselling | 78 | 51,128 | (20.6) | (1.8) | (19.4) |

[1] These data include only quarters in which there is a comparison between the U.S. and subject product.

Source**:** Compiled from data submitted in response to Commission questionnaires.

## LOST SALES AND LOST REVENUE

In the preliminary phase of the investigations, the Commission requested that U.S. producers of CACCS report purchasers where they experienced instances of lost sales or revenue due to competition from imports of CACCS from subject countries during January 2014-March 2017. *** responding U.S. producers reported that they had to either reduce prices or roll back announced price increases, and *** firms reported that they had lost sales. *** U.S. producers submitted lost sales and lost revenue allegations and identified 13 firms where they lost sales or revenue (6 consisting of lost sales allegations, 4 consisting of lost revenue allegations, and 3 consisting of both types of allegations). Lost sales and lost revenue allegations were with respect to Colombia and Thailand. No producer alleged lost sales or revenue regarding imports of CACCS from Belgium. All allegations were for contract sales that occurred in 2016 and 2017.

In the final phase of the investigations, *** responding U.S. producers reported that they had to either reduce prices or roll back announced price increases, and that they had lost sales. Staff contacted 95 purchasers and received responses from 42 purchasers. These responding purchasers reported purchasing 1.2 billion pounds of CACCS during January 2015-December 2017 (table V-14).

Of the 42 responding purchasers, 26 reported that, since January 1, 2015, they had purchased imported CACCS from subject countries instead of U.S.-produced product. Eighteen of these 26 purchasers reported that subject import prices were lower than U.S.-produced product, and nearly half (8 of 17) of these purchasers reported that price was a primary reason for the decision to purchase imported product rather than U.S.-produced product.

**Table V-14**
**CACCS: Purchasers' responses to purchasing patterns**

* * * * * * *

Nine purchasers also estimated the quantity of CACCS from subject countries that they purchased instead of domestic product; quantities ranged from 80,000 pounds to 5.4 million pounds (table V-15). Purchasers identified customer requirements, non-GMO certifications, and "purchasing from an approved supplier rather than qualifying a new supplier" as non-price reasons for purchasing imported rather than U.S.-produced product.

Of the 13 responding purchasers that indicated whether or not U.S. producers had reduced prices in order to compete with lower-priced imports from subject countries, five reported that U.S. producers had lowered their prices (table V-16). The reported estimated price reduction ranged from 5 to 25 percent. In describing the price reductions, purchasers indicated reaching lower prices when setting new contracts in order to compete with imports from Thailand.

**Table V-15**
**CACCS: Purchasers' responses to purchasing subject imports instead of domestic product**

* * * * * * *

**Table V-16**
**CACCS: Purchasers' responses to U.S. producer price reductions**

* * * * * * *

# PART VI: FINANCIAL EXPERIENCE OF U.S. PRODUCERS

## BACKGROUND

U.S. producers ADM, Cargill, and Tate & Lyle provided financial data on their operations on CACCS. These data are believed to account for all U.S. production of CACCS from January 2015 to December 2017. While most reported revenue reflects commercial sales, *** reported some sales as internal consumption or transfers to related firms which combined accounted for *** percent of the total net sales quantity between January 2015 and December 2017.[1] *** reported a fiscal year end of December 31, while *** reported fiscal year ends of ***, respectively. All firms reported their financial data on a calendar year basis.

Staff verified the results of *** with its company records. The verification adjustments were incorporated into this report.[2] ***.[3]

## OPERATIONS ON CACCS

Aggregate income-and-loss data for U.S. producers of CACCS are presented in table VI-1, while table VI-2 presents corresponding changes in average per-pound values. Selected financial data, by firm, are presented in table VI-3. U.S. producers collectively reported positive gross, operating, and net income in each requested period; however, the reported gross, operating, and net profitability of the U.S. industry declined from 2015 to 2017.

[1] ***. U.S. producers' questionnaire ***, questions II-7 and III-14, and email from ***, June 21, 2017.

[2] Staff verification report, ***.

[3] Staff notes that some, but not all, of the ***.

**Table VI-1**
**CACCS: Results of operations of U.S. producers, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | Quantity (1,000 dry pounds) | | |
| Total net sales | 490,011 | 477,277 | 480,508 |
| | Value (1,000 dollars) | | |
| Total net sales | 328,628 | 296,677 | 291,642 |
| Cost of goods sold.-- Raw materials | 119,387 | 120,963 | 116,037 |
| Direct labor | 13,642 | 14,675 | 15,685 |
| Other factory costs | 124,113 | 118,748 | 124,411 |
| Total COGS | 257,142 | 254,386 | 256,133 |
| Gross profit | 71,486 | 42,291 | 35,509 |
| SG&A expense | 16,229 | 19,255 | 21,494 |
| Operating income or (loss) | 55,257 | 23,036 | 14,015 |
| Other expense / (income), net | 4,605 | 3,455 | 4,556 |
| Net income or (loss) | 50,652 | 19,581 | 9,459 |
| Depreciation/amortization | 11,230 | 11,016 | 10,507 |
| Cash flow | 61,882 | 30,597 | 19,966 |
| | Ratio to net sales (percent) | | |
| Cost of goods sold.-- Raw materials | 36.3 | 40.8 | 39.8 |
| Direct labor | 4.2 | 4.9 | 5.4 |
| Other factory costs | 37.8 | 40.0 | 42.7 |
| Average COGS | 78.2 | 85.7 | 87.8 |
| Gross profit | 21.8 | 14.3 | 12.2 |
| SG&A expense | 4.9 | 6.5 | 7.4 |
| Operating income or (loss) | 16.8 | 7.8 | 4.8 |
| Net income or (loss) | 15.4 | 6.6 | 3.2 |

Table continued on next page.

**Table VI-1—Continued**
**CACCS: Results of operations of U.S. producers, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | Share of total COGS (percent) | | |
| Cost of goods sold.-- Raw materials | 46.4 | 47.6 | 45.3 |
| Direct labor | 5.3 | 5.8 | 6.1 |
| Other factory costs | 48.3 | 46.7 | 48.6 |
| Average COGS | 100.0 | 100.0 | 100.0 |
| | Unit value (dollars per dry pound) | | |
| Total net sales | 0.67 | 0.62 | 0.61 |
| Cost of goods sold.-- Raw materials | 0.24 | 0.25 | 0.24 |
| Direct labor | 0.03 | 0.03 | 0.03 |
| Other factory costs | 0.25 | 0.25 | 0.26 |
| Average COGS | 0.52 | 0.53 | 0.53 |
| Gross profit | 0.15 | 0.09 | 0.07 |
| SG&A expense | 0.03 | 0.04 | 0.04 |
| Operating income or (loss) | 0.11 | 0.05 | 0.03 |
| Net income or (loss) | 0.10 | 0.04 | 0.02 |
| | Number of firms reporting | | |
| Operating losses | *** | *** | *** |
| Net losses | *** | *** | *** |
| Data | 3 | 3 | 3 |

Source: Compiled from data submitted in response to Commission questionnaires.

**Table VI-2**
**CACCS: Changes in AUVs between calendar years, 2015-17**

| Item | Between calendar years | | |
|---|---|---|---|
| | 2015-17 | 2015-16 | 2016-17 |
| | Change in AUVs (dollars per dry pound) | | |
| Total net sales | (0.06) | (0.05) | (0.01) |
| Cost of goods sold.-- Raw materials | (2) | 0.01 | (0.01) |
| Direct labor | (1) | (1) | (1) |
| Other factory costs | 0.01 | (2) | 0.01 |
| Average COGS | 0.01 | 0.01 | (1) |
| Gross profit | (0.07) | (0.06) | (0.01) |
| SG&A expense | 0.01 | 0.01 | (1) |
| Operating income or (loss) | (0.08) | (0.06) | (0.02) |
| Net income or (loss) | (0.08) | (0.06) | (0.02) |

[1] The change was an increase of less than $0.005 per dry pound.
[2] The change was a decrease of less than $0.005 per dry pound.

Source: Compiled from data submitted in response to Commission questionnaires.

**Table VI-3**
**CACCS: Results of operations of U.S. producers, by firm, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | **Total net sales (1,000 dry pounds)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Total net sales quantity | 490,011 | 477,277 | 480,508 |
| | **Total net sales (1,000 dollars)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Total net sales value | 328,628 | 296,677 | 291,642 |
| | **Cost of goods sold (1,000 dollars)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Total COGS | 257,142 | 254,386 | 256,133 |
| | **Gross profit or (loss) (1,000 dollars)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Total gross profit or (loss) | 71,486 | 42,291 | 35,509 |
| | **SG&A expenses (1,000 dollars)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Total SG&A expenses | 16,229 | 19,255 | 21,494 |
| | **Operating income or (loss) (1,000 dollars)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Total operating income or (loss) | 55,257 | 23,036 | 14,015 |
| | **Net income or (loss) (1,000 dollars)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Total net income or (loss) | 50,652 | 19,581 | 9,459 |

Table continued on next page.

**Table VI-3—Continued**
**CACCS: Results of operations of U.S. producers, by firm, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | **COGS to net sales ratio (percent)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Average COGS to net sales ratio | 78.2 | 85.7 | 87.8 |
| | **Gross profit or (loss) to net sales ratio (percent)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Average gross profit or (loss) to net sales ratio | 21.8 | 14.3 | 12.2 |
| | **SG&A expense to net sales ratio (percent)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Average SG&A expense to net sales ratio | 4.9 | 6.5 | 7.4 |
| | **Operating income or (loss) to net sales ratio (percent)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Average operating income or (loss) to net sales ratio | 16.8 | 7.8 | 4.8 |
| | **Net income or (loss) to net sales ratio (percent)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Average net income or (loss) to net sales ratio | 15.4 | 6.6 | 3.2 |
| | **Unit net sales value (dollars per dry pound)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Average unit net sales value | 0.67 | 0.62 | 0.61 |
| | **Unit raw materials (dollars per dry pound)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Average unit raw materials | 0.24 | 0.25 | 0.24 |

Table continued on next page.

**Table VI-3—Continued**
**CACCS: Results of operations of U.S. producers, by firm, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | **Unit direct labor (dollars per dry pound)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Average unit direct labor | 0.03 | 0.03 | 0.03 |
| | **Unit other factory costs (dollars per dry pound)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Average unit other factory costs | 0.25 | 0.25 | 0.26 |
| | **Unit COGS (dollars per dry pound)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Average unit COGS | 0.52 | 0.53 | 0.53 |
| | **Unit gross profit or (loss) (dollars per dry pound)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Average unit gross profit or (loss) | 0.15 | 0.09 | 0.07 |
| | **Unit SG&A expenses (dollars per dry pound)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Average unit SG&A expense | 0.03 | 0.04 | 0.04 |
| | **Unit operating income or (loss) (dollars per dry pound)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Average unit operating income or (loss) | 0.11 | 0.05 | 0.03 |
| | **Unit net income or (loss) (dollars per dry pound)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Average unit net income or (loss) | 0.10 | 0.04 | 0.02 |

Source: Compiled from data submitted in response to Commission questionnaires.

## Net sales

Both the quantity and value of net sales decreased from 2015 to 2017.[4] The reported aggregate net sales quantity declined by 1.9 percent during this time, while the aggregate net sales value declined by 11.3 percent. The larger decrease by value was due to the decrease in the net sales unit value (from $0.67 per dry pound in 2015 to $0.61 per dry pound in 2017). *** reported the same directional pattern of decreasing net sales unit values from 2015 to 2017.

## Cost of goods sold and gross profit or (loss)

Raw material costs and other factory costs accounted for an average of 46.4[5] and 47.8 percent of total COGS for the reporting period, respectively, and thus had the largest influence on gross profit. Aggregate COGS declined by 0.4 percent from 2015 to 2017, while net sales value declined by 11.3 percent. As a result of the larger decline in revenue compared to COGS, gross profit declined from $71.5 million in 2015 to $35.5 million in 2017.

***.[6]

On a per dry pound basis, raw material costs and direct labor costs were essentially unchanged from 2015 to 2017, while other factory costs increased slightly. Table VI-2 shows that the unit value of COGS increased by $0.01 per dry pound from 2015 to 2017, while the unit net sales value declined by $0.06 per dry pound. The decline in unit net sales value, coupled with the slight increase in unit COGS, resulted in a decline in the unit gross profit from 2015 to 2017. As a ratio to net sales, all components of COGS generally increased from 2015 to 2017 as total net sales value declined.[7]

***.[8] ***.[9] In addition, ***.

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[4] Net sales quantity decreased from 2015 to 2016, and increased slightly from 2016 to 2017, but remained lower than the 2015 level in 2017.

[5] *** reported purchasing some raw materials from related sources. ***. U.S. producers' questionnaire response of ***, questions III-7 and III-8. ***. U.S. producers' questionnaire response of ***, questions III-7 and III-8.

[6] ***. ***.

[7] The ratio of raw materials to net sales increased from 2015 to 2016 and decreased from 2016 to 2017, but remained higher than the 2015 level in 2017. This was due to a larger decline in the cost of raw materials than net sales from 2016 to 2017.

[8] Overall, ADM reported sales revenue of $60.8 billion and total segment operating income of $2.5 billion in 2017. Citric acid is included in ADM's Sweeteners and Starches unit, which is part of the Corn Processing reporting segment. The Sweeteners and Starches business unit reported sales of $4.3 billion and operating income of $746 million in 2017, accounting for approximately 7.0 percent of ADM's total sales and 46.4 percent of ADM's total segment operating income. Citric acid accounted for approximately *** percent of the Sweeteners and Starches segment sales in 2017. ADM's 2017 Form 10-K, pp. 28 and 30.

[9] Email from ***, July 3, 2017.

### SG&A expenses and operating income

As seen in table VI-1, the industry's SG&A expenses increased from $16.2 million in 2015 to $21.5 million in 2017, and the expense ratio (SG&A expenses as a share of sales) increased from 4.9 percent to 7.4 percent during this period. This increase in SG&A expenses is ***.[10] SG&A expenses accounted for an average of 6.9 percent of total operating expenses (COGS and SG&A expenses) during the period examined. Operating income followed a trend similar to that of gross profit, but due to the increase in SG&A expenses, it decreased by 74.6 percent from 2015 to 2017 compared to the 50.3 percent decrease in gross profit during this time.

### All other expenses and net income

Classified below the operating income level are interest expense, other expense, and other income. In table VI-1, these items are aggregated and only the net amount is shown. The reported other expenses (net of other income) decreased from 2015 to 2016 and increased in 2017, but remained slightly below the 2015 level in 2017. These expenses accounted for an average of 1.5 percent of all reported expenses during the period examined, and therefore had much less of an impact on net income than operating expenses.[11] Net income followed a similar trend to operating income and declined by 81.3 percent from 2015 to 2017.

### Variance analysis

The variance analysis presented in table VI-4 is based on the data in table VI-1.[12] The analysis shows that the decrease in operating profitability from 2015 to 2017 is attributable to both a negative price variance and a negative net cost/expense variance (that is, average net sales unit values declined and operating expenses increased), but the decline in net sales unit values had a larger negative impact than the increase in operating costs.

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[10] Email from ***, April 16, 2018.

[11] ***. Email from ***, April 23, 2018.

[12] The Commission's variance analysis is calculated in three parts: sales variance, cost of sales variance (COGS variance), and SG&A expense variance. Each part consists of a price variance (in the case of the sales variance) or a cost variance (in the case of the COGS and SG&A expense variance), and a volume variance. The sales or cost variance is calculated as the change in unit price or unit cost/expense times the new volume, while the volume variance is calculated as the change in volume times the old unit price or unit cost. As summarized at the bottom of the table, the price variance is from sales; the cost/expense variance is the sum of those items from COGS and SG&A variances, respectively; and the volume variance is the sum of the volume components of the net sales, COGS, and SG&A expense variances.

**Table VI-4**
**CACCS: Variance analysis on the operations of U.S. producers, 2015-17**

| Item | Between calendar years | | |
|---|---|---|---|
| | 2015-17 | 2015-16 | 2016-17 |
| | Value (1,000 dollars) | | |
| Net sales: | | | |
| Price variance | (30,613) | (23,411) | (7,043) |
| Volume variance | (6,373) | (8,540) | 2,008 |
| Net sales variance | (36,986) | (31,951) | (5,035) |
| COGS: | | | |
| Cost variance | (3,978) | (3,926) | (25) |
| Volume variance | 4,987 | 6,682 | (1,722) |
| COGS variance | 1,009 | 2,756 | (1,747) |
| Gross profit variance | (35,977) | (29,195) | (6,782) |
| SG&A expenses: | | | |
| Cost/expense variance | (5,580) | (3,448) | (2,109) |
| Volume variance | 315 | 422 | (130) |
| Total SG&A expense variance | (5,265) | (3,026) | (2,239) |
| Operating income variance | (41,242) | (32,221) | (9,021) |
| Summarized (at the operating income level) as: | | | |
| Price variance | (30,613) | (23,411) | (7,043) |
| Net cost/expense variance | (9,598) | (6,344) | (3,211) |
| Net volume variance | (1,072) | (1,436) | 156 |

Source: Compiled from data submitted in response to Commission questionnaires.

## CAPITAL EXPENDITURES, RESEARCH AND DEVELOPMENT EXPENSES, AND TOTAL ASSETS

The responding firms' aggregate data on capital expenditures, research and development ("R&D") expenses, total assets, and return on assets ("ROA") are shown in table VI-5. *** reported both capital expenditures and R&D expenses during the period for which data were requested. Aggregate capital expenditures declined irregularly from 2015 to 2017, while R&D expenses continually declined. The majority of reported capital expenditures reflect the data of ***, while the majority of reported R&D expenses reflect the data of ***. According to ***, the firm's capital expenditures reflect ***.[13] According to ***, the firm's R&D expenses reflect ***.[14]

The total assets utilized in the production, warehousing, and sale of CACCS increased irregularly from $208.8 million in 2015 to $209.4 million in 2017, and the ROA declined from 26.5 percent in 2015 to 6.7 percent in 2017.[15]

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[13] U.S. producers' questionnaire response of ***, question III-13.

[14] U.S producers' questionnaire response of ***, question III-13.

[15] The return on assets ("ROA") is calculated as operating income divided by total assets. With respect to a firm's overall operations, the total asset value reflects an aggregation of a number of assets

(*continued*...)

**Table VI-5**
**CACCS: Capital expenditures, R&D expenses, total assets, and ROA of U.S. producers, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | **Capital expenditures (1,000 dollars)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Total capital expenditures | *** | *** | *** |
| | **Research and development expenses (1,000 dollars)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Total research and development expenses | *** | *** | *** |
| | **Total net assets (1,000 dollars)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Total net assets | 208,844 | 213,041 | 209,375 |
| | **Operating return on assets (percent)** | | |
| ADM | *** | *** | *** |
| Cargill | *** | *** | *** |
| Tate & Lyle | *** | *** | *** |
| Average operating return on assets | 26.5 | 10.8 | 6.7 |

Source: Compiled from data submitted in response to Commission questionnaires.

(…*continued*)
which are generally not product specific. Thus, high-level allocations are generally required in order to report a total asset value for the subject product.

## CAPITAL AND INVESTMENT

The Commission requested U.S. producers of CACCS to describe any actual or potential negative effects of imports of CACCS from Belgium, Colombia, and Thailand on their firms' growth, investment, ability to raise capital, development and production efforts, or the scale of capital investments. Table VI-6 presents the number of firms reporting an impact in each category and table VI-7 provides the U.S. producers' narrative responses.

**Table VI-6**
**CACCS: Actual and anticipated negative effects of imports on investment, growth, and development, since January 1, 2015**

| Item | No | Yes |
|---|---|---|
| Negative effects on investment | 0 | 3 |
| Cancellation, postponement, or rejection of expansion projects | | 3 |
| Denial or rejection of investment proposal | | 2 |
| Reduction in the size of capital investments | | 1 |
| Return on specific investments negatively impacted | | 2 |
| Other | | 1 |
| Negative effects on growth and development | 0 | 3 |
| Rejection of bank loans | | 0 |
| Lowering of credit rating | | 0 |
| Problem related to the issue of stocks or bonds | | 0 |
| Ability to service debt | | 0 |
| Other | | 3 |
| Anticipated negative effects of imports | 0 | 3 |

Source: Compiled from data submitted in response to Commission questionnaires.

**Table VI-7**
**CACCS: Narratives relating to actual and anticipated negative effects of imports on investment, growth, and development, since January 1, 2015**

* * * * * * *

# PART VII: THREAT CONSIDERATIONS AND INFORMATION ON NONSUBJECT COUNTRIES

Section 771(7)(F)(i) of the Act (19 U.S.C. § 1677(7)(F)(i)) provides that—

*In determining whether an industry in the United States is threatened with material injury by reason of imports (or sales for importation) of the subject merchandise, the Commission shall consider, among other relevant economic factors*[1]*--*

*(I) if a countervailable subsidy is involved, such information as may be presented to it by the administering authority as to the nature of the subsidy (particularly as to whether the countervailable subsidy is a subsidy described in Article 3 or 6.1 of the Subsidies Agreement), and whether imports of the subject merchandise are likely to increase,*

*(II) any existing unused Production capacity or imminent, substantial increase in Production capacity in the exporting country indicating the likelihood of substantially increased imports of the subject merchandise into the United States, taking into account the availability of other export markets to absorb any additional exports,*

*(III) a significant rate of increase of the volume or market penetration of imports of the subject merchandise indicating the likelihood of substantially increased imports,*

*(IV) whether imports of the subject merchandise are entering at prices that are likely to have a significant depressing or suppressing effect on domestic prices, and are likely to increase demand for further imports,*

*(V) inventories of the subject merchandise,*

---

[1] Section 771(7)(F)(ii) of the Act (19 U.S.C. § 1677(7)(F)(ii)) provides that "The Commission shall consider {these factors} . . . as a whole in making a determination of whether further dumped or subsidized imports are imminent and whether material injury by reason of imports would occur unless an order is issued or a suspension agreement is accepted under this title. The presence or absence of any factor which the Commission is required to consider . . . shall not necessarily give decisive guidance with respect to the determination. Such a determination may not be made on the basis of mere conjecture or supposition."

*(VI) the potential for product-shifting if Production facilities in the foreign country, which can be used to produce the subject merchandise, are currently being used to produce other products,*

*(VII) in any investigation under this title which involves imports of both a raw agricultural products (within the meaning of paragraph (4)(E)(iv)) and any products processed from such raw agricultural product, the likelihood that there will be increased imports, by reason of product shifting, if there is an affirmative determination by the Commission under section 705(b)(1) or 735(b)(1) with respect to either the raw agricultural products or the processed agricultural product (but not both),*

*(VIII) the actual and potential negative effects on the existing development and Production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the domestic like product, and*

*(IX) any other demonstrable adverse trends that indicate the probability that there is likely to be material injury by reason of imports (or sale for importation) of the subject merchandise (whether or not it is actually being imported at the time).*[2]

Information on the nature of the subsidies was presented earlier in this report. *Parts IV* and *V* presented the volume of subject imports and pricing of domestic and imported products, respectively; and information on the effects of imports of the subject merchandise on U.S. producers' existing development and production efforts is presented in *Part VI*. Information on inventories of the subject merchandise; foreign producers' operations, including the potential for "product-shifting;" other threat indicators, if applicable; and any dumping in third-country markets, follows. Also presented in this section of the report is information obtained for consideration by the Commission on nonsubject countries.

[2] Section 771(7)(F)(iii) of the Act (19 U.S.C. § 1677(7)(F)(iii)) further provides that, in antidumping investigations, ". . . the Commission shall consider whether dumping in the markets of foreign countries (as evidenced by dumping findings or antidumping remedies in other WTO member markets against the same class or kind of merchandise manufactured or exported by the same party as under investigation) suggests a threat of material injury to the domestic industry."

## THE INDUSTRY IN BELGIUM

The Commission issued foreign producers' or exporters' questionnaires to two firms believed to produce and/or export CACCS from Belgium.[3] Usable responses to the Commission's questionnaire were received from one firm: Citrique Belge. This firm's exports to the United States accounted for approximately *** percent of U.S. imports of CACCS from Belgium in 2017. According to estimates requested of the responding Belgian producer, the production of CACCS in Belgium reported in questionnaires accounts for approximately *** percent of overall production of CACCS in Belgium. Table VII-1 presents information on the CACCS operations of Citrique Belge.

**Table VII-1**
**CACCS: Summary data for producers in Belgium, 2017**

* * * * * * *

### Changes in operations

As presented in table VII-2, producers in Belgium reported several operational and organizational changes have occurred since January 1, 2015.

**Table VII-2**
**CACCS: Citrique Belge's reported changes in operations since January 1, 2015**

* * * * * * *

### Operations on CACCS

Table VII-3 presents information on the CACCS operations of the responding producers and exporters in Belgium during 2015-17 and projections for 2018-19. Production decreased from 2015 to 2016 but increased in 2017. End of period inventories increased from 2015 to 2016 but decreased in 2017.

Capacity in Belgium remained constant from 2015 to 2017 and is projected to remain at that level through 2019. Production decreased by *** percent between 2015 and 2016, increased by *** percent in 2017 (for a total increase of *** percent), and is projected to increase by *** percent in 2018. From 2015 to 2017, end-of-period inventories decreased by *** percent: first increasing by *** percent in 2016, then decreasing by *** percent in 2017. End-of-period inventories are anticipated to increase by *** percent in 2018 and *** percent in 2019, while capacity and production are projected to remain constant. Capacity utilization

[3] These firms were identified through a review of information submitted in the petition and contained in *** records.

increased by *** percentage points during 2015-17 and is projected to increase by *** percent from 2017 to 2019.

Total shipments decreased by *** percent from 2015 to 2016 but increased by *** percent in 2017. Total shipments are expected to decrease by *** percent in 2018 but increase by *** percent in 2019, returning to a similar level to that of 2017. Commercial home market shipments decreased by *** percent during 2015-17, but are projected to remain at relatively the same level in 2019 as it was in 2017, despite an expected decrease of *** percent in 2018. Internal consumption/transfers were not reported by Citrique Belge.

Export shipments to the United States decreased by *** percent during 2015-17 and are projected to decrease a further *** percent during 2018 and stay at the same level in 2019. Export shipments to other countries decreased (by *** percent) from 2015 to 2016 before increasing (by *** percent) from 2016 to 2017 for a total increase of *** percent during 2015-17. Export shipments to other markets are projected to increase further in 2018 and again in 2019. In total, export shipments to markets other than the U.S. accounted for more than *** percent of Citrique Belge's total shipments during 2015-17 and that share is project to increase to over *** percent in 2018 and 2019.

All Citrique Belge's shipments of CACCS were non-GMO. Citrique Belge began the process of receiving Non-GMO Project verification in 2015 and received their final verification in April, 2018. Citrique Belge attributed the delay to certification challenges due to a supply chain covering several countries in Europe and the difference between Non-GMO and GMO statuses of beet molasses in the U.S. compared with that of beet molasses in Europe.[4]

**Table VII-3**
**CACCS: Data for Citrique Belge, 2015-17 and projected 2018 and 2019**

* * * * * * *

## Alternative products

Citrique Belge *** other than CACCS on the same equipment and machinery used to produce CACCS in ***.

## Exports

According to GTA, the leading export markets for CACCS from Belgium are Germany, the Netherlands, France, and the United Kingdom (table VII-4). During 2017, the United States was the sixth-largest export market for CACCS from Belgium, accounting for 6.7 percent of its CACCS exports; Germany, the Netherlands, the United Kingdom, and France accounted for 23.9, 15.4, 11.6, and 11.2 percent, respectively.

[4] Hearing transcript, pp. 157-159 (Braeuer, De Backer).

**Table VII-4**
**CACCS: Belgian exports by destination market, 2015-17**

| Destination market | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | Quantity (1,000 pounds dry weight) | | |
| Belgian exports to the United States | 5,267 | 3,557 | 2,877 |
| Belgian exports to other major destination markets.-- Germany | 8,500 | 8,761 | 10,297 |
| Netherlands | 5,581 | 6,030 | 6,638 |
| United Kingdom | 3,542 | 3,594 | 5,017 |
| France | 5,126 | 4,817 | 4,818 |
| Ireland | 2,947 | 2,965 | 2,945 |
| Spain | 722 | 1,116 | 1,803 |
| Italy | 2,777 | 1,921 | 1,567 |
| Luxembourg | 1,783 | 1,037 | 1,442 |
| All other destination markets | 5,718 | 5,262 | 5,669 |
| Total Belgian exports | 41,962 | 39,060 | 43,074 |
| | Value (1,000 dollars) | | |
| Belgian exports to the United States | 3,510 | 2,384 | 2,396 |
| Belgian exports to other major destination markets.-- Germany | 5,832 | 5,435 | 6,465 |
| Netherlands | 4,338 | 5,047 | 4,951 |
| United Kingdom | 2,145 | 2,177 | 3,180 |
| France | 3,314 | 2,826 | 3,097 |
| Ireland | 1,666 | 1,796 | 1,797 |
| Spain | 445 | 857 | 1,302 |
| Italy | 1,927 | 1,604 | 1,211 |
| Luxembourg | 799 | 468 | 750 |
| All other destination markets | 16,496 | 17,044 | 24,567 |
| Total Belgian exports | 40,470 | 39,639 | 49,714 |

Table continued on next page.

**Table VII-4—Continued**
**CACCS: Belgian exports by destination market, 2015-17**

| Destination market | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | Unit value (dollars per pound dry weight) | | |
| Belgian exports to the United States | 0.67 | 0.67 | 0.83 |
| Belgian exports to other major destination markets.-- Germany | 0.69 | 0.62 | 0.63 |
| Netherlands | 0.78 | 0.84 | 0.75 |
| United Kingdom | 0.61 | 0.61 | 0.63 |
| France | 0.65 | 0.59 | 0.64 |
| Ireland | 0.57 | 0.61 | 0.61 |
| Spain | 0.62 | 0.77 | 0.72 |
| Italy | 0.69 | 0.84 | 0.77 |
| Luxembourg | 0.45 | 0.45 | 0.52 |
| All other destination markets | 2.89 | 3.24 | 4.33 |
| Total Belgian exports | 0.96 | 1.01 | 1.15 |
| | Share of quantity (percent) | | |
| Belgian exports to the United States | 12.6 | 9.1 | 6.7 |
| Belgian exports to other major destination markets.-- Germany | 20.3 | 22.4 | 23.9 |
| Netherlands | 13.3 | 15.4 | 15.4 |
| United Kingdom | 8.4 | 9.2 | 11.6 |
| France | 12.2 | 12.3 | 11.2 |
| Ireland | 7.0 | 7.6 | 6.8 |
| Spain | 1.7 | 2.9 | 4.2 |
| Italy | 6.6 | 4.9 | 3.6 |
| Luxembourg | 4.2 | 2.7 | 3.3 |
| All other destination markets | 13.6 | 13.5 | 13.2 |
| Total Belgian exports | 100.0 | 100.0 | 100.0 |

Source: Official exports statistics under HS subheading 2918.14 and 2918.15 as reported by Eurostat in the IHS/GTA database, accessed April 20, 2018.

## THE INDUSTRY IN COLOMBIA

The Commission issued a foreign producers' or exporters' questionnaire to the one firm believed to produce and/or export CACCS from Colombia.[5] The Commission received a usable questionnaire response from that firm: Sucroal. Sucroal's exports to the United States accounted for approximately *** percent of U.S. imports of CACCS from Colombia in 2017. According to estimates requested of the responding Colombian producer, the production of CACCS in Colombia reported in questionnaires accounts for approximately *** percent of overall production of CACCS in Colombia. Table VII-5 presents information on the CACCS operations of Sucroal.

**Table VII-5**
**CACCS: Summary data for Sucroal, 2017**

* * * * * * *

### Changes in operations

As presented in table VII-6 Sucroal reported several operational and organizational changes since January 1, 2015.

**Table VII-6**
**CACCS: Sucroal's reported changes in operations, since January 1, 2015**

* * * * * * *

### Operations on CACCS

Table VII-7 presents information on the CACCS operations of Sucroal during 2015-17 and projections for 2018-19.

Capacity increased from *** million pounds dry weight to *** million pounds dry weight in 2016 but remained constant in 2017, and is projected to remain constant in 2018 and 2019. Production and end-of-period inventories changed year-to-year. Production increased by *** in 2016 but decreased by *** percent in 2017. Production projections include a *** decrease in 2018 but an *** increase in 2019. The ratio of end-of-period inventories to total shipments increased from *** percent in 2015 to *** percent in 2017. End-of-period inventories are predicted to decrease to *** percent of total shipments in 2018 but increase slightly to *** percent in 2019.

[5] This firm was identified through a review of information submitted in the petition and contained in proprietary Customs records.

**Table VII-7**
**CACCS: Data on industry in Colombia, 2015-17 and projected 2018 and 2019**

* * * * * * *

Capacity utilization decreased from *** percent in 2015 to *** in 2017 due to the increase in capacity, despite increased production. Capacity utilization is projected to decrease by *** percentage points in 2018 but increase by *** percentage points in 2019.

Total shipments decreased by *** percent from 2015 to 2017 but are projected to increase by *** percent in 2018 and by *** percent in 2019 based on higher projected sales to third-country markets. Export shipments across all five years shown in table VII-8 account for approximately *** of the Colombian producer's shipments, with *** each year's exports being shipped to the United States. Home market shipments increased slightly, and accounted for approximately *** of Colombian total shipments in 2017.

Although export shipments to the United States decreased from *** percent of exports in 2015 to *** percent in 2017, it is still the largest export destination for Colombia. Export shipments to all other markets in the same time period increased by *** percentage points. In 2018 and 2019, export shipments to the United States are projected to decrease to less than *** percent of total shipments. In contrast, export shipment to all other markets are expected to increase to nearly *** percent of total shipments. Compared with 2015, the share of exports shipped to the United States by 2019 is projected to decrease by *** percent and exports to other countries ***.

All shipments of Sucroal's CACCS are non-GMO. Sucroal received Non-GMO Project verification in early 2015 (the first citric acid producer to receive this verification) and used that status to market specifically to the food and beverage segment of the CACCS market.[6]

## Alternative products

As shown in table VII-8, Sucroal produced *** on the same equipment and machinery used to produce CACCS in each year. Overall capacity initially increased by *** percent between 2015 and 2016 but then remained constant between 2016 and 2017.[7] Over the period, CACCS production marginally increased by *** percent due to an increase of *** percent in 2016 followed by a decrease of *** in 2017. Out-of-scope production increased by *** percent in 2016 but decreased by *** percent in 2017. Overall, total production of CACCS and out-of-scope production remained relatively stable, increasing *** percent from 2015-17.

Overall capacity utilization decreased by *** percentage points from 2015 to 2017 with the decrease attributable to increased capacity. CACCS's share of production was *** percentage points higher in 2017 than 2015, at *** percent.

[6] Sucroal's posthearing brief, pp. 5 and 11.

[7] This increase is wholly attributable to increased capacity to produce CACCS. Non-CACCS production capacity accounted for *** percent of total capacity.

**Table VII-8**
**CACCS: Colombia producers' overall capacity and production on the same equipment as CACCS by Sucroal, 2015-17**

* * * * * * *

## Exports

According to GTA, the leading export markets for CACCS from Colombia are the United States, Brazil, and Uruguay (table VII-9). During 2017, the United States accounted for 60.0 percent of its CACCS exports, Brazil 19.7 percent, and Uruguay 3.2 percent.

**Table VII-9**
**CACCS: Colombian exports by destination market, 2015-17**

| Destination market | 2015 | 2016 | 2017 |
|---|---|---|---|
| | Quantity (1,000 pounds dry weight) | | |
| Colombian exports to the United States | 46,234 | 47,044 | 33,550 |
| Colombian exports to other major destination markets.- Brazil | 3,276 | 9,087 | 11,007 |
| Uruguay | 1,836 | 1,929 | 1,761 |
| Mexico | 1,005 | 1,246 | 1,263 |
| Indonesia | 1,195 | 1,190 | 1,022 |
| Spain | 6 | --- | 882 |
| Israel | 617 | 1,372 | 882 |
| Japan | 1,102 | 1,011 | 747 |
| Guatemala | 705 | 1,014 | 705 |
| All other destination markets | 5,883 | 4,533 | 4,092 |
| Total Colombia exports | 61,858 | 68,426 | 55,912 |
| | Value (1,000 dollars) | | |
| Colombian exports to the United States | 26,861 | 26,263 | 19,289 |
| Colombian exports to other major destination markets.- Brazil | 2,384 | 5,670 | 6,908 |
| Uruguay | 1,098 | 1,084 | 1,010 |
| Mexico | 861 | 949 | 891 |
| Indonesia | 858 | 772 | 703 |
| Spain | 2 | --- | 389 |
| Israel | 373 | 765 | 485 |
| Japan | 861 | 786 | 576 |
| Guatemala | 656 | 757 | 521 |
| All other destination markets | 5,690 | 4,367 | 3,762 |
| Total Colombia exports | 39,644 | 41,413 | 34,535 |

Table continued on next page.

**Table VII-9—Continued**
**CACCS: Colombian exports by destination market, 2015-17**

| Destination market | 2015 | 2016 | 2017 |
|---|---|---|---|
| | Unit value (dollars per pound dry weight) | | |
| Colombian exports to the United States | 0.58 | 0.56 | 0.57 |
| Colombian exports to other major destination markets.- | | | |
| Brazil | 0.73 | 0.62 | 0.63 |
| Uruguay | 0.60 | 0.56 | 0.57 |
| Mexico | 0.86 | 0.76 | 0.71 |
| Indonesia | 0.72 | 0.65 | 0.69 |
| Spain | 0.28 | --- | 0.44 |
| Israel | 0.61 | 0.56 | 0.55 |
| Japan | 0.78 | 0.78 | 0.77 |
| Guatemala | 0.93 | 0.75 | 0.74 |
| All other destination markets | 0.97 | 0.96 | 0.92 |
| Total Colombia exports | 0.64 | 0.61 | 0.62 |
| | Share of quantity (percent) | | |
| Colombian exports to the United States | 74.7 | 68.8 | 60.0 |
| Colombian exports to other major destination markets.- | | | |
| Brazil | 5.3 | 13.3 | 19.7 |
| Uruguay | 3.0 | 2.8 | 3.2 |
| Mexico | 1.6 | 1.8 | 2.3 |
| Indonesia | 1.9 | 1.7 | 1.8 |
| Spain | 0.0 | --- | 1.6 |
| Israel | 1.0 | 2.0 | 1.6 |
| Japan | 1.8 | 1.5 | 1.3 |
| Guatemala | 1.1 | 1.5 | 1.3 |
| All other destination markets | 9.5 | 6.6 | 7.3 |
| Total Colombia exports | 100.0 | 100.0 | 100.0 |

Source: Official exports statistics under HS subheading 2918.14 and 2918.15 as reported by Eurostat in the IHS/GTA database, accessed April 20, 2018.

## THE INDUSTRY IN THAILAND

The Commission issued foreign producers' or exporters' questionnaires to four firms believed to produce and/or export CACCS from Thailand.[8] Usable responses to the Commission's questionnaire were received from three firms: COFCO, Niran, and Sunshine. These firms' exports to the United States accounted for approximately 92.8 percent of U.S. imports of CACCS from Thailand in 2017. According to estimates requested from the responding Thai producers, the production of CACCS in Thailand reported in questionnaires accounts for

[8] These firms were identified through a review of information submitted in the petition and contained in *** records.

approximately 70.0 percent of overall production of CACCS in Thailand. Table VII-10 presents information on the CACCS operations of the responding producers and exporters in Thailand.

**Table VII-10**
**CACCS: Summary data for producers in Thailand, 2017**

| Firm | Production (1,000 dry pounds) | Share of reported production (percent) | Exports to the United States (1,000 dry pounds) | Share of reported exports to the United States (percent) | Total shipments (1,000 dry pounds) | Share of firm's total shipments exported to the United States (percent) |
|---|---|---|---|---|---|---|
| Niran | *** | *** | *** | *** | *** | *** |
| Sunshine | *** | *** | *** | *** | *** | *** |
| COFCO | *** | *** | *** | *** | *** | *** |
| Total | 287,302 | 100.0 | 145,805 | 100.0 | 280,430 | 52.0 |

Source: Compiled from data submitted in response to Commission questionnaires.

## Changes in operations

Since January 1, 2015, producers in Thailand of CACCS reported that they had no reported operational or organizational changes.

## Operations on CACCS

Table VII-11 presents information on the CACCS operations of the responding producers and exporters in Thailand during 2015-17 and projections for 2018 and 2019.

Capacity for Thai producers of CACCS was constant from 2015 to 2017 and is projected to remain constant in 2018 and 2019. Production increased by 52.0 percent between 2015 and 2017 and is projected to increase by 0.4 percent and 0.5 percent in 2018 and 2019, respectively. End-of-period inventories decreased by 47.4 percent in 2016 but then increased by 43.0 percent in 2017, for an overall decrease of 24.8 percent. Inventories of CACCS are projected to be slightly above 2017 levels in 2018 and 2019. The increase in production during 2015-17 is mostly attributable to an increase in export shipments, with the majority of the increase attributable to CACCS exported to the United States. Capacity utilization during 2015-17 increased 33.7 percentage points, reaching 98.6 percent in 2017, and is predicted to increase slightly in 2018 and 2019.

Total shipments increased by 56.1 percent during 2015-17 and are projected to increase between 2017 and 2019 as well. Home market shipments increased by a total of 19.9 percent between 2015 and 2017 and are projected to continue to increase in 2018 and 2019. Home market shipments accounted for 27.4 percent of total shipments in 2015, but decreased to 21.0 percent in 2017. Home market shipments are projected to account for slightly greater than 22 percent in of total shipments 2018 and 2019. Internal consumption/transfers were not reported by the Thai producers.

Export shipments accounted for 72.6 percent of total shipments in 2015 and increased to 79.0 percent in 2017. Export shipments to the United States increased by over 55 million pounds and by more than 35 million pounds for exports to all other countries from 2015 to 2017. All CACCS exported by Thailand are non-GMO. All three Thai producers received their Non-GMO Project Verified certification in late 2016.[9]

**Table VII-11**
**CACCS: Data for producers in Thailand, 2015-17 and projected 2018 and 2019**

| Item | Actual experience | | | Projections | |
|---|---|---|---|---|---|
| | 2015 | 2016 | 2017 | 2018 | 2019 |
| | Quantity (1,000 pounds dry weight) | | | | |
| Capacity | 291,503 | 291,503 | 291,503 | 291,503 | 291,503 |
| Production | 188,969 | 234,675 | 287,302 | 288,324 | 289,905 |
| End-of-period inventories | 30,348 | 15,963 | 22,834 | 23,901 | 23,657 |
| Shipments: | | | | | |
| Home market shipments: | | | | | |
| Internal consumption/transfers | --- | --- | --- | --- | --- |
| Commercial home market shipments | 49,162 | 59,492 | 58,940 | 63,472 | 64,817 |
| Total home market shipments | 49,162 | 59,492 | 58,940 | 63,472 | 64,817 |
| Export shipments to: | | | | | |
| United States | 90,103 | 116,007 | 145,805 | 134,179 | 134,879 |
| All other markets | 40,435 | 73,561 | 75,685 | 89,605 | 90,452 |
| Total exports | 130,538 | 189,568 | 221,490 | 223,784 | 225,331 |
| Total shipments | 179,700 | 249,060 | 280,430 | 287,256 | 290,148 |
| | Ratios and shares (percent) | | | | |
| Capacity utilization | 64.8 | 80.5 | 98.6 | 98.9 | 99.5 |
| Inventories/production | 16.1 | 6.8 | 7.9 | 8.3 | 8.2 |
| Inventories/total shipments | 16.9 | 6.4 | 8.1 | 8.3 | 8.2 |
| Share of shipments: | | | | | |
| Home market shipments: | | | | | |
| Internal consumption/transfers | --- | --- | --- | --- | --- |
| Commercial home market shipments | 27.4 | 23.9 | 21.0 | 22.1 | 22.3 |
| Total home market shipments | 27.4 | 23.9 | 21.0 | 22.1 | 22.3 |
| Export shipments to: | | | | | |
| United States | 50.1 | 46.6 | 52.0 | 46.7 | 46.5 |
| All other markets | 22.5 | 29.5 | 27.0 | 31.2 | 31.2 |
| Total exports | 72.6 | 76.1 | 79.0 | 77.9 | 77.7 |
| Total shipments | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: Compiled from data submitted in response to Commission questionnaires.

## Alternative products

*** produced goods other than CACCS on the same equipment and machinery used to produce CACCS in ***.

[9] Thai Respondents' posthearing brief, p.6.

## Exports

According to GTA, the leading export markets for CACCS from Thailand are the United States and Brazil, although exports to Brazil are substantially smaller (table VII-12). During 2017, the United States accounted for 64.6 percent of exports of CACCS from Thailand, followed by Brazil (7.3 percent).

**Table VII-12**
**CACCS: Thailand's exports by destination market, 2015-17**

| Destination market | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | Quantity (1,000 pounds dry weight) | | |
| Thailand's exports to the United States | 92,760 | 118,608 | 142,425 |
| Thailand's exports to other major destination markets.-- Brazil | 2,842 | 17,641 | 16,115 |
| Israel | 6,916 | 3,814 | 11,488 |
| Belgium | 8,774 | 20,106 | 11,199 |
| Ireland | 1,279 | 7,077 | 7,672 |
| Poland | 1,190 | 2,985 | 4,850 |
| Netherlands | 6,120 | 5,932 | 4,849 |
| Spain | 3,726 | 5,870 | 4,762 |
| Vietnam | 274 | 915 | 3,019 |
| All other destination markets | 9,711 | 14,669 | 14,008 |
| Total Thailand exports | 133,592 | 197,617 | 220,388 |
| Thailand's exports to the United States | 47,047 | 53,424 | 68,574 |
| Thailand's exports to other major destination markets.-- Brazil | 1,308 | 7,857 | 7,416 |
| Israel | 3,521 | 1,752 | 5,338 |
| Belgium | 3,372 | 7,671 | 4,475 |
| Ireland | 572 | 2,922 | 3,204 |
| Poland | 458 | 1,102 | 1,931 |
| Netherlands | 2,540 | 2,282 | 1,988 |
| Spain | 1,483 | 2,150 | 1,966 |
| Vietnam | 153 | 598 | 1,870 |
| All other destination markets | 4,225 | 5,771 | 6,442 |
| Total Thailand exports | 64,676 | 85,529 | 103,203 |

Table continued on next page.

**Table VII-12—Continued**
**CACCS: Thailand's exports by destination market, 2015-17**

| Destination market | 2015 | 2016 | 2017 |
|---|---|---|---|
| | Value (1,000 dollars) | | |
| | Unit value (dollars per pound dry weight) | | |
| Thailand's exports to the United States | 0.51 | 0.45 | 0.48 |
| Thailand's exports to other major destination markets.-- | | | |
| Brazil | 0.46 | 0.45 | 0.46 |
| Israel | 0.51 | 0.46 | 0.46 |
| Belgium | 0.38 | 0.38 | 0.40 |
| Ireland | 0.45 | 0.41 | 0.42 |
| Poland | 0.38 | 0.37 | 0.40 |
| Netherlands | 0.41 | 0.38 | 0.41 |
| Spain | 0.40 | 0.37 | 0.41 |
| Vietnam | 0.56 | 0.65 | 0.62 |
| All other destination markets | 0.44 | 0.39 | 0.46 |
| Total Thailand exports | 0.48 | 0.43 | 0.47 |
| | Share of quantity (percent) | | |
| Thailand exports to the United States | 69.4 | 60.0 | 64.6 |
| Thailand exports to other major destination markets.-- | | | |
| Brazil | 2.1 | 8.9 | 7.3 |
| Israel | 5.2 | 1.9 | 5.2 |
| Belgium | 6.6 | 10.2 | 5.1 |
| Ireland | 1.0 | 3.6 | 3.5 |
| Poland | 0.9 | 1.5 | 2.2 |
| Netherlands | 4.6 | 3.0 | 2.2 |
| Spain | 2.8 | 3.0 | 2.2 |
| Vietnam | 0.2 | 0.5 | 1.4 |
| All other destination markets | 7.3 | 7.4 | 6.4 |
| Total Thailand exports | 100.0 | 100.0 | 100.0 |

Source: GTIS/GTA database.

## U.S. INVENTORIES OF IMPORTED MERCHANDISE

Table VII-13 presents data on U.S. importers' reported inventories of CACCS from 2015 to 2017. Two major trends are shown in the table below: an increase in 2016, followed by a decrease in 2017 in inventories and ratios for subject countries Belgium and Colombia, and an increase in inventories and ratios for Thailand and all non-subject countries from 2015 to 2017. In 2016, as a share of imports and total shipment to imports, U.S.-held inventories of imports from Belgium and Colombia saw a large increase in quantity from 2015 to 2016 and then decreased in 2017. In the following year, Colombia's import inventories returned close to 2015 levels but imports from Belgium remained substantially higher than in 2015. The majority of import inventory originated in Thailand in each year and increased in both 2016 and 2017. As a share of imports, U.S.-held inventories of CACCS from Belgium and Colombia were ***, *** percent in 2015, *** percent in 2016, and *** percent in 2017, respectively. The ratio for U.S.-

held inventories imported from Thailand were higher, decreasing from *** percent in 2015 to *** percent in 2017.

**Table VII-13**
**CACCS: U.S. importers' inventories, 2015-17**

* * * * * * *

## U.S. IMPORTERS' OUTSTANDING ORDERS

The Commission requested that importers indicate whether they imported or arranged for the importation of CACCS from subject and nonsubject sources after December 2017. Shown in table VII-14, importers reported arrangements for all subject countries and nonsubject sources *** in each quarter of 2018.

**Table VII-14**
**CACCS: Arranged imports, January 2018 through December 2018**

| Item | Period | | | | |
|---|---|---|---|---|---|
| | Jan-Mar 2018 | Apr-Jun 2018 | Jul-Sept 2018 | Oct-Dec 2018 | Total |
| Arranged U.S. imports from.--Belgium | *** | *** | *** | *** | *** |
| Colombia | *** | *** | *** | *** | *** |
| Thailand | *** | *** | *** | *** | *** |
| Subject sources | 19,184 | 5,218 | 1,713 | 1,135 | 27,250 |
| Canada | *** | *** | *** | *** | *** |
| All other sources | *** | *** | *** | *** | *** |
| Nonsubject sources | 35,678 | 5,136 | 4,721 | 4,224 | 49,759 |
| All sources | 54,862 | 10,354 | 6,434 | 5,359 | 77,009 |

Source: Compiled from data submitted in response to Commission questionnaires.

## ANTIDUMPING OR COUNTERVAILING DUTY ORDERS IN THIRD-COUNTRY MARKETS

There are currently no antidumping or countervailing duty orders on CACCS from Belgium, Colombia, or Thailand.

## INFORMATION ON NONSUBJECT COUNTRIES

Table VII-15 presents data on global exports of citric acid and citrate salts under the harmonized tariff schedule for subheadings 2918.14 and 2918.15. China has at least *** percent of global nameplate capacity for CACCS and is the largest global exporter of these

products.[10] The United States maintains an antidumping duty order on CACCS from Canada[11] and countervailing and antidumping duty orders on CACCS from China.

The two major nonsubject sources of CACCS to the United States have been Canada and Israel. JBL Canada, with an annual capacity of ***[12], is the sole producer in Canada. JBL Canada, which produces citric acid and sodium citrate, was operating at *** during 2014 and 2015, the latest years for which data are available.[13] Based on mirror trade data, JBL Canada exports the bulk of its production.

Israel was the largest nonsubject source of citrate salts during the period of investigation. Gadot Biochemical Industries, the only Israeli producer of CACCS, has a nameplate capacity of 66,000 pounds.[14] Gadot stopped producing citric acid in 2015 but still produces citrate salts ***.[15]

[10] ***.

[11] The antidumping duty order on CACCS imports from Canada remains in place, but the administrative reviews of Canadian imports have set the antidumping duty rate at 0 percent. *Citric Acid and Certain Citrate Salts From Canada: Final Results of Antidumping Duty Administrative Review; 2013–2014*, 80 FR 62016, October 15, 2015; *Citric Acid and Certain Citrate Salts From Canada: Final Results of Antidumping Duty Administrative Review; 2015–2016*, 82 FR 18284, April 18, 2017; *Citric Acid and Certain Citrate Salts From Canada: Final Results of Antidumping Duty Administrative Review; 2016-2017,* 83 FR 14263-4, April 3, 2018.

[12] ***.

[13] ***.

[14] Conference transcript, pp. 122-123 (De Backer). ***.

[15] DairyReporter.com https://www.dairyreporter.com/Suppliers/Gadot-Biochemical-Industries (accessed April 16, 2018). ***, April 18, 2018.

**Table VII-15**
**CACCS: Global exports by exporter, 2015-17**

| Exporter | 2015 | 2016 | 2017 |
|---|---|---|---|
| | Quantity (1,000 pounds dry weight) | | |
| United States | 43,906 | 53,754 | 51,623 |
| Belgium | 41,962 | 39,060 | 43,074 |
| Colombia | 61,858 | 68,426 | 55,912 |
| Thailand | 133,592 | 197,617 | 220,388 |
| Subject sources | 237,412 | 305,104 | 319,374 |
| All other major reporting exporters.-- China | 2,113,190 | 2,211,414 | 2,403,779 |
| Germany | 160,412 | 138,726 | 142,410 |
| Netherlands | 54,543 | 74,938 | 115,334 |
| Poland | 35,416 | 41,600 | 92,814 |
| Ireland | 27,639 | 29,665 | 27,970 |
| Slovenia | 19,316 | 20,305 | 19,518 |
| Brazil | 21,789 | 13,186 | 12,631 |
| India | 8,596 | 10,044 | 12,230 |
| France | 4,624 | 6,573 | 9,363 |
| Singapore | 6,325 | 7,537 | 6,032 |
| All other exporters | 73,065 | 85,005 | 44,250 |
| Total global exports | 2,806,233 | 2,997,850 | 3,257,328 |
| | Value (1,000 dollars) | | |
| United States | 59,725 | 64,377 | 74,929 |
| Belgium | 40,470 | 39,639 | 49,714 |
| Colombia | 39,644 | 41,413 | 34,535 |
| Thailand | 64,676 | 85,529 | 103,203 |
| Subject sources | 144,791 | 166,581 | 187,452 |
| All other major reporting exporters.-- China | 759,621 | 741,261 | 936,592 |
| Germany | 157,305 | 138,761 | 147,271 |
| Netherlands | 33,141 | 41,867 | 68,622 |
| Poland | 19,128 | 19,652 | 19,108 |
| Ireland | 31,133 | 28,324 | 30,089 |
| Slovenia | 9,589 | 9,716 | 10,414 |
| Brazil | 17,503 | 10,104 | 9,728 |
| India | 8,876 | 10,061 | 12,340 |
| France | 8,995 | 8,040 | 10,092 |
| Singapore | 12,170 | 12,849 | 14,476 |
| All other exporters | 67,632 | 65,668 | 51,208 |
| Total global exports | 1,329,609 | 1,317,262 | 1,572,322 |

Table continued on next page.

**Table VII-15—Continued**
**CACCS: Global exports by exporter, 2015-17**

| Exporter | 2015 | 2016 | 2017 |
|---|---|---|---|
| | Unit value (dollars per pound dry weight) | | |
| United States | 1.36 | 1.20 | 1.45 |
| Belgium | 0.96 | 1.01 | 1.15 |
| Colombia | 0.64 | 0.61 | 0.62 |
| Thailand | 0.48 | 0.43 | 0.47 |
| Subject sources | 0.61 | 0.55 | 0.59 |
| All other major reporting exporters.-- China | 0.36 | 0.34 | 0.39 |
| Germany | 0.98 | 1.00 | 1.03 |
| Netherlands | 0.61 | 0.56 | 0.59 |
| Poland | 0.54 | 0.47 | 0.21 |
| Ireland | 1.13 | 0.95 | 1.08 |
| Slovenia | 0.50 | 0.48 | 0.53 |
| Brazil | 0.80 | 0.77 | 0.77 |
| India | 1.03 | 1.00 | 1.01 |
| France | 1.95 | 1.22 | 1.08 |
| Singapore | 1.92 | 1.70 | 2.40 |
| All other exporters | 0.93 | 0.77 | 1.16 |
| Total global exports | 0.47 | 0.44 | 0.48 |
| | Share of quantity (percent) | | |
| United States | 1.6 | 1.8 | 1.6 |
| Belgium | 1.5 | 1.3 | 1.3 |
| Colombia | 2.2 | 2.3 | 1.7 |
| Thailand | 4.8 | 6.6 | 6.8 |
| Subject sources | 8.5 | 10.2 | 9.8 |
| All other major reporting exporters.-- China | 75.3 | 73.8 | 73.8 |
| Germany | 5.7 | 4.6 | 4.4 |
| Netherlands | 1.9 | 2.5 | 3.5 |
| Poland | 1.3 | 1.4 | 2.8 |
| Ireland | 1.0 | 1.0 | 0.9 |
| Slovenia | 0.7 | 0.7 | 0.6 |
| Brazil | 0.8 | 0.4 | 0.4 |
| India | 0.3 | 0.3 | 0.4 |
| France | 0.2 | 0.2 | 0.3 |
| Singapore | 0.2 | 0.3 | 0.2 |
| All other exporters | 2.6 | 2.8 | 1.4 |
| Total global exports | 100.0 | 100.0 | 100.0 |

Source: Official exports statistics under HS subheadings 2918.14 and 2918.15 as reported by various national statistical authorities in the IHS/GTA database, accessed April 20, 2018.

# APPENDIX A

# *FEDERAL REGISTER* NOTICES

The Commission makes available notices relevant to its investigations and reviews on its website, www.usitc.gov. In addition, the following tabulation presents, in chronological order, *Federal Register* notices issued by the Commission and Commerce during the current proceeding.

| Citation | Title | Link |
|---|---|---|
| 82 FR 26712, June 8, 2017 | *Citric Acid and Certain Citrate Salts From Belgium, Colombia, Thailand Institution of Antidumping and Countervailing Duty Investigations and Scheduling of Preliminary Phase Investigations* | https://www.gpo.gov/fdsys/pkg/FR-2017-06-08/pdf/2017-11917.pdf |
| 82 FR 29828, June 30, 2017 | *Citric Acid and Certain Citrate Salts From Belgium, Colombia, and Thailand: Initiation of Less-Than-Fair-Value Investigations* | https://www.gpo.gov/fdsys/pkg/FR-2017-06-30/pdf/2017-13823.pdf |
| 82 FR 29836, June 30, 2017 | *Citric Acid and Certain Citrate Salts From Thailand: Initiation of Countervailing Duty Investigation* | https://www.gpo.gov/fdsys/pkg/FR-2017-06-30/pdf/2017-13824.pdf |
| 82 FR 33925, July 21, 2017 | *Citric Acid and Certain Citrate Salts From Belgium, Colombia, and Thailand* | https://www.gpo.gov/fdsys/pkg/FR-2017-07-21/pdf/2017-15300.pdf |
| 82 FR 51216, November 3, 2017 | *Citric Acid and Certain Citrate Salts From Thailand: Preliminary Negative Countervailing Duty Determination, Preliminary Negative Critical Circumstances Determination, and Alignment of Final Determination with Final Antidumping Duty Determination* | https://www.gpo.gov/fdsys/pkg/FR-2017-11-03/pdf/2017-23973.pdf |
| 83 FR 784, January 8, 2018 | *Citric Acid and Certain Citrate Salts from Thailand: Preliminary Affirmative Determination of Sales at Less Than Fair Value, Preliminary Affirmative Critical Circumstances Determination, In Part, and Postponement of Final Determination and Extension of Provisional Measures* | https://www.gpo.gov/fdsys/pkg/FR-2018-01-08/pdf/2018-00132.pdf |

| | | |
|---|---|---|
| 83 FR 787, January 8, 2018 | *Citric Acid and Certain Citrate Salts from Belgium: Preliminary Affirmative Determination of Sales at Less Than Fair Value, Postponement of Final Determination, and Extension of Provisional Measures* | https://www.gpo.gov/fdsys/pkg/FR-2018-01-08/pdf/2018-00133.pdf |
| 83 FR 791, January 8, 2018 | *Citric Acid and Certain Citrate Salts from Colombia: Preliminary Affirmative Determination of Sales at Less Than Fair Value, Preliminary Negative Critical Circumstances Determination, Postponement of Final Determination, and Extension of Provisional Measures* | https://www.gpo.gov/fdsys/pkg/FR-2018-01-08/pdf/2018-00131.pdf |
| 83 FR 4922, January 8, 2018 | *Citric Acid and Certain Citrate Salts From Belgium, Colombia, and Thailand; Scheduling of the Final Phase of Countervailing Duty and Antidumping Duty Investigations* | https://www.gpo.gov/fdsys/pkg/FR-2018-02-02/pdf/2018-02073.pdf |
| 83 FR 25998, June 5, 2018 | *Citric Acid and Certain Citrate Salts From Thailand: Affirmative Final Determination of Sales at Less Than Fair Value and Final Affirmative Determination of Critical Circumstances in Part* | https://www.gpo.gov/fdsys/pkg/FR-2018-06-05/pdf/2018-12009.pdf |
| 83 FR 26001, June 5, 2018 | *Citric Acid and Certain Citrate Salts From Belgium: Affirmative Final Determination of Sales at Less Than Fair Value* | https://www.gpo.gov/fdsys/pkg/FR-2018-06-05/pdf/2018-12012.pdf |
| 83 FR 26002, June 5, 2018 | *Citric Acid and Certain Citrate Salts From Colombia: Affirmative Final Determination of Sales at Less Than Fair Value and Final Negative Determination of Critical Circumstances* | https://www.gpo.gov/fdsys/pkg/FR-2018-06-05/pdf/2018-12008.pdf |
| 83 FR 26004, June 5, 2018 | *Citric Acid and Certain Citrate Salts From Thailand: Final Negative Countervailing Duty Determination, and Final Negative Critical Circumstances Determination* | https://www.gpo.gov/fdsys/pkg/FR-2018-06-05/pdf/2018-12011.pdf |

# APPENDIX B

# LIST OF HEARING WITNESSES

## CALENDAR OF PUBLIC HEARING

Those listed below appeared as witnesses at the United States International Trade Commission's hearing:

**Subject:** Citric Acid and Certain Citrate Salts from Belgium, Colombia, and Thailand

**Inv. Nos.:** 701-TA-581 and 731-TA-1374-1376 (Final)

**Date and Time:** May 14, 2018 - 9:30 a.m.

Sessions were held in connection with these investigations in the Main Hearing Room (Room 101), 500 E Street, SW., Washington, DC.

**OPENING REMARKS:**

Petitioners (**Stephen A. Jones**, King & Spalding LLP)
Respondents (**Warren E. Connelly**, Trade Pacific)

**In Support of the Imposition of**
**Antidumping and Countervailing Duty Orders:**

King & Spalding LLP
Washington, DC
on behalf of

Archer Daniels Midland Company
Cargill, Inc.
Tate & Lyle Ingredients Americas LLC

**Christopher B. Aud**, Assistant Vice President, Cargill Starches and Sweeteners, Acidulants Product Line, Cargill, Inc.

**Brett S. Tuma**, Commercial Manager, Acidulants, Cargill, Inc.

**Jeffrey S. Peel**, Director, Acidulants, Archer Daniels Midland Company

**Kenneth F. Erickson**, Vice President, Product Line Management Acidulants & Vico, Tate & Lyle Ingredients Americas LLC

**Andrew Szamosszegi,** Principal, Capital Trade, Inc.

**In Support of the Imposition of**
**Antidumping and Countervailing Duty Orders (continued):**

**Bonnie B. Byers**, Senior International Trade Consultant,
King & Spalding LLP

**Stephen A. Jones** )
) – OF COUNSEL
**Benjamin J. Bay** )

**In Opposition to the Imposition of**
**Antidumping and Countervailing Duty Orders:**

Crowell & Moring LLP
Washington, DC
on behalf of

S.A. Citrique Belge N.V. ("Citrique Belge")

**Hans de Backer**, Managing Director, Citrique Belge

**Beate Braeuer**, Sales Manager, Citrique Belge

**Daniel J. Cannistra** ) – OF COUNSEL

Trade Pacific
Washington, DC
on behalf of

Sucroal S.A. ("Sucroal")

**Curtis Andrew Poulos**, Commercial Executive, Sucroal

**Warren E. Connelly** ) – OF COUNSEL

Harris Bricken McVay, LLP
Seattle, WA
on behalf of

COFCO Biochemical (Thailand) Co., Ltd. ("COFCO Thailand")
Niran (Thailand) Co., Ltd. ("Niran")
Zhong Ya Chemical (USA) Ltd. ("Zhong Ya")

**Adams C. Lee** ) – OF COUNSEL

**REBUTTAL/CLOSING REMARKS:**

Petitioners (**Stephen A. Jones**, King & Spalding LLP)
Respondents (**Daniel J. Cannistra**, Crowell & Moring LLP)

**-END-**

# APPENDIX C

# SUMMARY DATA

**Table C-1**
**CACCS: Summary data concerning the U.S. market, 2015-17**
(Quantity=1,000 pounds dry weight; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound dry weight; Period changes=percent--exceptions noted)

| | Reported data | | | Period changes | | |
|---|---|---|---|---|---|---|
| | Calendar year | | | | Calendar year | |
| | 2015 | 2016 | 2017 | 2015-17 | 2015-16 | 2016-17 |
| U.S. consumption quantity: | | | | | | |
| Amount | *** | *** | *** | *** | *** | *** |
| Producers' share (fn1) | *** | *** | *** | *** | *** | *** |
| Importers' share (fn1): | | | | | | |
| Belgium | *** | *** | *** | *** | *** | *** |
| Colombia | *** | *** | *** | *** | *** | *** |
| Thailand | *** | *** | *** | *** | *** | *** |
| Subject sources | *** | *** | *** | *** | *** | *** |
| Canada | *** | *** | *** | *** | *** | *** |
| All other sources | *** | *** | *** | *** | *** | *** |
| Nonsubject sources | *** | *** | *** | *** | *** | *** |
| All import sources | *** | *** | *** | *** | *** | *** |
| U.S. consumption value: | | | | | | |
| Amount | *** | *** | *** | *** | *** | *** |
| Producers' share (fn1) | *** | *** | *** | *** | *** | *** |
| Importers' share (fn1): | | | | | | |
| Belgium | *** | *** | *** | *** | *** | *** |
| Colombia | *** | *** | *** | *** | *** | *** |
| Thailand | *** | *** | *** | *** | *** | *** |
| Subject sources | *** | *** | *** | *** | *** | *** |
| Canada | *** | *** | *** | *** | *** | *** |
| All other sources | *** | *** | *** | *** | *** | *** |
| Nonsubject sources | *** | *** | *** | *** | *** | *** |
| All import sources | *** | *** | *** | *** | *** | *** |
| U.S. imports from: | | | | | | |
| Belgium: | | | | | | |
| Quantity | 25,339 | 19,607 | 19,333 | (23.7) | (22.6) | (1.4) |
| Value | 18,205 | 12,985 | 12,923 | (29.0) | (28.7) | (0.5) |
| Unit value | $0.72 | $0.66 | $0.67 | (7.0) | (7.8) | 0.9 |
| Ending inventory quantity | *** | *** | *** | *** | *** | *** |
| Colombia: | | | | | | |
| Quantity | 45,239 | 48,961 | 32,729 | (27.7) | 8.2 | (33.2) |
| Value | 28,020 | 29,727 | 19,993 | (28.6) | 6.1 | (32.7) |
| Unit value | $0.62 | $0.61 | $0.61 | (1.4) | (2.0) | 0.6 |
| Ending inventory quantity | *** | *** | *** | *** | *** | *** |
| Thailand: | | | | | | |
| Quantity | 89,356 | 106,905 | 149,506 | 67.3 | 19.6 | 39.8 |
| Value | 51,689 | 54,741 | 80,678 | 56.1 | 5.9 | 47.4 |
| Unit value | $0.58 | $0.51 | $0.54 | (6.7) | (11.5) | 5.4 |
| Ending inventory quantity | *** | *** | *** | *** | *** | *** |
| Subject sources: | | | | | | |
| Quantity | 159,934 | 175,473 | 201,568 | 26.0 | 9.7 | 14.9 |
| Value | 97,913 | 97,453 | 113,595 | 16.0 | (0.5) | 16.6 |
| Unit value | $0.61 | $0.56 | $0.56 | (7.9) | (9.3) | 1.5 |
| Ending inventory quantity | *** | *** | *** | *** | *** | *** |
| Canada: | | | | | | |
| Quantity | *** | *** | *** | *** | *** | *** |
| Value | *** | *** | *** | *** | *** | *** |
| Unit value | *** | *** | *** | *** | *** | *** |
| Ending inventory quantity | *** | *** | *** | *** | *** | *** |
| All other sources | | | | | | |
| Quantity | 76,257 | 55,454 | 53,214 | (30.2) | (27.3) | (4.0) |
| Value | 70,247 | 45,867 | 48,590 | (30.8) | (34.7) | 5.9 |
| Unit value | $0.92 | $0.83 | $0.91 | (0.9) | (10.2) | 10.4 |
| Ending inventory quantity | *** | *** | *** | *** | *** | *** |
| Nonsubject sources: | | | | | | |
| Quantity | *** | *** | *** | *** | *** | *** |
| Value | *** | *** | *** | *** | *** | *** |
| Unit value | *** | *** | *** | *** | *** | *** |
| Ending inventory quantity | *** | *** | *** | *** | *** | *** |
| All import sources: | | | | | | |
| Quantity | *** | *** | *** | *** | *** | *** |
| Value | *** | *** | *** | *** | *** | *** |
| Unit value | *** | *** | *** | *** | *** | *** |
| Ending inventory quantity | *** | *** | *** | *** | *** | *** |

Table continued next page.

**Table C-1**
**CACCS: Summary data concerning the U.S. market, 2015-17**
(Quantity=1,000 pounds dry weight; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound dry weight; Period changes=percent--exceptions noted)

| | Reported data | | | Period changes | | |
|---|---|---|---|---|---|---|
| | Calendar year | | | | Calendar year | |
| | 2015 | 2016 | 2017 | 2015-17 | 2015-16 | 2016-17 |
| U.S. producers': | | | | | | |
| Average capacity quantity | 551,710 | 551,710 | 551,710 | --- | --- | --- |
| Production quantity | 508,482 | 475,066 | 465,038 | (8.5) | (6.6) | (2.1) |
| Capacity utilization (fn1) | 92.2 | 86.1 | 84.3 | (7.9) | (6.1) | (1.8) |
| U.S. shipments: | | | | | | |
| Quantity | 470,152 | 452,062 | 459,114 | (2.3) | (3.8) | 1.6 |
| Value | 312,318 | 278,884 | 275,933 | (11.6) | (10.7) | (1.1) |
| Unit value | $0.66 | $0.62 | $0.60 | (9.5) | (7.1) | (2.6) |
| Export shipments: | | | | | | |
| Quantity | 19,858 | 25,216 | 21,396 | 7.7 | 27.0 | (15.1) |
| Value | 16,310 | 17,794 | 15,709 | (3.7) | 9.1 | (11.7) |
| Unit value | $0.82 | $0.71 | $0.73 | (10.6) | (14.1) | 4.0 |
| Ending inventory quantity | *** | *** | *** | *** | *** | *** |
| Inventories/total shipments (fn1) | *** | *** | *** | *** | *** | *** |
| Production workers | 320 | 322 | 319 | (0.3) | 0.6 | (0.9) |
| Hours worked (1,000s) | 744 | 744 | 744 | --- | --- | --- |
| Wages paid ($1,000) | 26,833 | 25,844 | 26,671 | (0.6) | (3.7) | 3.2 |
| Hourly wages (dollars per hour) | $36.07 | $34.74 | $35.85 | (0.6) | (3.7) | 3.2 |
| Productivity (pounds per hour) | 683.4 | 638.5 | 625.1 | (8.5) | (6.6) | (2.1) |
| Unit labor costs (dollars per 1,000 pounds) | $52.77 | $54.40 | $57.35 | 8.7 | 3.1 | 5.4 |
| Net sales: | | | | | | |
| Quantity | 490,011 | 477,277 | 480,508 | (1.9) | (2.6) | 0.7 |
| Value | 328,628 | 296,677 | 291,642 | (11.3) | (9.7) | (1.7) |
| Unit value | $0.67 | $0.62 | $0.61 | (9.5) | (7.3) | (2.4) |
| Cost of goods sold (COGS) | 257,142 | 254,386 | 256,133 | (0.4) | (1.1) | 0.7 |
| Gross profit or (loss) | 71,486 | 42,291 | 35,509 | (50.3) | (40.8) | (16.0) |
| SG&A expenses | 16,229 | 19,255 | 21,494 | 32.4 | 18.6 | 11.6 |
| Operating income or (loss) | 55,257 | 23,036 | 14,015 | (74.6) | (58.3) | (39.2) |
| Net income or (loss) | 50,652 | 19,581 | 9,459 | (81.3) | (61.3) | (51.7) |
| Capital expenditures | *** | *** | *** | *** | *** | *** |
| Unit COGS | $0.52 | $0.53 | $0.53 | 1.6 | 1.6 | 0.0 |
| Unit SG&A expenses | $0.03 | $0.04 | $0.04 | 35.1 | 21.8 | 10.9 |
| Unit operating income or (loss) | $0.11 | $0.05 | $0.03 | (74.1) | (57.2) | (39.6) |
| Unit net income or (loss) | $0.10 | $0.04 | $0.02 | (81.0) | (60.3) | (52.0) |
| COGS/sales (fn1) | 78.2 | 85.7 | 87.8 | 9.6 | 7.5 | 2.1 |
| Operating income or (loss)/sales (fn1) | 16.8 | 7.8 | 4.8 | (12.0) | (9.0) | (3.0) |
| Net income or (loss)/sales (fn1) | 15.4 | 6.6 | 3.2 | (12.2) | (8.8) | (3.4) |

Notes:

fn1.--Reported data are in percent and period changes are in percentage points.
fn2.--Undefined.

Source: Compiled from data submitted in response to Commission questionnaires and official U.S. imports statistics numbers 2918.14.0000, 2918.15.1000, and 2918.15.5000, accessed April 5, 2018.

# APPENDIX D

# DETAILED U.S. PRODUCERS' AND U.S. IMPORTERS' INFORMATION

**Table D-1**
**CACCS: U.S. producers' U.S. shipments and U.S. importers' U.S. imports by GMO/non-GMO certification, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | Quantity (1,000 pounds dry weight) | | |
| U.S. producers.-- GMO | 470,152 | 452,061 | 459,114 |
| Non-GMO not certified | --- | --- | --- |
| Non-GMO Project verified | --- | --- | --- |
| Non-GMO other certification | --- | --- | --- |
| Non-GMO | --- | --- | --- |
| U.S. shipments | 470,152 | 452,061 | 459,114 |
| | Value (1,000 dollars) | | |
| U.S. producers.-- GMO | 312,319 | 278,884 | 275,933 |
| Non-GMO not certified | --- | --- | --- |
| Non-GMO Project verified | --- | --- | --- |
| Non-GMO other certification | --- | --- | --- |
| Non-GMO | --- | --- | --- |
| U.S. shipments | 312,319 | 278,884 | 275,933 |
| | Unit value (dollars per pound dry weight) | | |
| U.S. producers.-- GMO | 0.66 | 0.62 | 0.60 |
| Non-GMO not certified | --- | --- | --- |
| Non-GMO Project verified | --- | --- | --- |
| Non-GMO other certification | --- | --- | --- |
| Non-GMO | --- | --- | --- |
| U.S. shipments | 0.66 | 0.62 | 0.60 |
| | Share of quantity (percent) | | |
| U.S. producers.-- GMO | 100.0 | 100.0 | 100.0 |
| Non-GMO not certified | --- | --- | --- |
| Non-GMO Project verified | --- | --- | --- |
| Non-GMO other certification | --- | --- | --- |
| Non-GMO | --- | --- | --- |
| U.S. shipments | 100.0 | 100.0 | 100.0 |

Table continued on next page.

**Table D-1—Continued**
**CACCS: U.S. producers' U.S. shipments and U.S. importers' U.S. imports by GMO/non-GMO certification, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | **Quantity (1,000 pounds dry weight)** | | |
| U.S. importers: Belgium.--GMO | *** | *** | *** |
| Non-GMO not certified | *** | *** | *** |
| Non-GMO Project verified | *** | *** | *** |
| Non-GMO other certification | *** | *** | *** |
| Non-GMO | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Value (1,000 dollars)** | | |
| U.S. importers: Belgium.--GMO | *** | *** | *** |
| Non-GMO not certified | *** | *** | *** |
| Non-GMO Project verified | *** | *** | *** |
| Non-GMO other certification | *** | *** | *** |
| Non-GMO | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Unit value (dollars per pound dry weight)** | | |
| U.S. importers: Belgium.--GMO | *** | *** | *** |
| Non-GMO not certified | *** | *** | *** |
| Non-GMO Project verified | *** | *** | *** |
| Non-GMO other certification | *** | *** | *** |
| Non-GMO | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Share of quantity (percent)** | | |
| U.S. importers: Belgium.--GMO | --- | --- | --- |
| Non-GMO not certified | *** | *** | *** |
| Non-GMO Project verified | *** | *** | *** |
| Non-GMO other certification | *** | *** | *** |
| Non-GMO | 100.0 | 100.0 | 100.0 |
| U.S. imports | 100.0 | 100.0 | 100.0 |

Table continued on next page.

**Table D-1—Continued**
**CACCS: U.S. producers' U.S. shipments and U.S. importers' U.S. imports by GMO/non-GMO certification, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | **Quantity (1,000 pounds dry weight)** | | |
| U.S. importers: Colombia--GMO | *** | *** | *** |
| Non-GMO not certified | *** | *** | *** |
| Non-GMO Project verified | *** | *** | *** |
| Non-GMO other certification | *** | *** | *** |
| Non-GMO | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Value (1,000 dollars)** | | |
| U.S. importers: Colombia--GMO | *** | *** | *** |
| Non-GMO not certified | *** | *** | *** |
| Non-GMO Project verified | *** | *** | *** |
| Non-GMO other certification | *** | *** | *** |
| Non-GMO | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Unit value (dollars per pound dry weight)** | | |
| U.S. importers: Colombia--GMO | *** | *** | *** |
| Non-GMO not certified | *** | *** | *** |
| Non-GMO Project verified | *** | *** | *** |
| Non-GMO other certification | *** | *** | *** |
| Non-GMO | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Share of quantity (percent)** | | |
| U.S. importers: Colombia--GMO | --- | --- | --- |
| Non-GMO not certified | --- | --- | --- |
| Non-GMO Project verified | 100.0 | 100.0 | 100.0 |
| Non-GMO other certification | --- | --- | --- |
| Non-GMO | 100.0 | 100.0 | 100.0 |
| U.S. imports | 100.0 | 100.0 | 100.0 |

Table continued on next page.

**Table D-1—Continued**
**CACCS: U.S. producers' U.S. shipments and U.S. importers' U.S. imports by GMO/non-GMO certification, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | **Quantity (1,000 pounds dry weight)** | | |
| U.S. importers: Thailand.--GMO | --- | --- | --- |
| Non-GMO not certified | 23,561 | 19,712 | 1,600 |
| Non-GMO Project verified | 41,726 | 53,196 | 135,262 |
| Non-GMO other certification | 18,026 | 30,267 | --- |
| Non-GMO | 83,313 | 103,175 | 136,862 |
| U.S. imports | 83,313 | 103,175 | 136,862 |
| | **Value (1,000 dollars)** | | |
| U.S. importers: Thailand.--GMO | --- | --- | --- |
| Non-GMO not certified | 12,700 | 10,289 | 906 |
| Non-GMO Project verified | 26,187 | 26,986 | 65,854 |
| Non-GMO other certification | 8,986 | 12,308 | --- |
| Non-GMO | 47,873 | 49,583 | 66,760 |
| U.S. imports | 47,873 | 49,583 | 66,760 |
| | **Unit value (dollars per pound dry weight)** | | |
| U.S. importers: Thailand.--GMO | --- | --- | --- |
| Non-GMO not certified | 0.54 | 0.52 | 0.57 |
| Non-GMO Project verified | 0.63 | 0.51 | 0.49 |
| Non-GMO other certification | 0.50 | 0.41 | --- |
| Non-GMO | 0.57 | 0.48 | 0.49 |
| U.S. imports | 0.57 | 0.48 | 0.49 |
| | **Share of quantity (percent)** | | |
| U.S. importers: Thailand.--GMO | --- | --- | --- |
| Non-GMO not certified | 28.3 | 19.1 | 1.2 |
| Non-GMO Project verified | 50.1 | 51.6 | 98.8 |
| Non-GMO other certification | 21.6 | 29.3 | --- |
| Non-GMO | 100.0 | 100.0 | 100.0 |
| U.S. imports | 100.0 | 100.0 | 100.0 |

Table continued on next page.

**Table D-1—Continued**
**CACCS: U.S. producers' U.S. shipments and U.S. importers' U.S. imports by GMO/non-GMO certification, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | **Quantity (1,000 pounds dry weight)** | | |
| U.S. importers: Subject sources.--GMO | --- | --- | --- |
| Non-GMO not certified | 38,999 | 32,528 | 14,219 |
| Non-GMO Project verified | 72,881 | 84,564 | 157,710 |
| Non-GMO other certification | 20,760 | 31,149 | 525 |
| Non-GMO | 132,640 | 148,241 | 172,454 |
| U.S. imports | 132,640 | 148,241 | 172,454 |
| | **Value (1,000 dollars)** | | |
| U.S. importers: Subject sources.--GMO | --- | --- | --- |
| Non-GMO not certified | 23,422 | 18,388 | 8,714 |
| Non-GMO Project verified | 46,737 | 46,392 | 79,555 |
| Non-GMO other certification | 11,024 | 12,977 | 398 |
| Non-GMO | 81,183 | 77,757 | 88,667 |
| U.S. imports | 81,183 | 77,757 | 88,667 |
| | **Unit value (dollars per pound dry weight)** | | |
| U.S. importers: Subject sources.--GMO | --- | --- | --- |
| Non-GMO not certified | 0.60 | 0.57 | 0.61 |
| Non-GMO Project verified | 0.64 | 0.55 | 0.50 |
| Non-GMO other certification | 0.53 | 0.42 | 0.76 |
| Non-GMO | 0.61 | 0.52 | 0.51 |
| U.S. imports | 0.61 | 0.52 | 0.51 |
| | **Share of quantity (percent)** | | |
| U.S. importers: Subject sources.--GMO | --- | --- | --- |
| Non-GMO not certified | 29.4 | 21.9 | 8.2 |
| Non-GMO Project verified | 54.9 | 57.0 | 91.5 |
| Non-GMO other certification | 15.7 | 21.0 | 0.3 |
| Non-GMO | 100.0 | 100.0 | 100.0 |
| U.S. imports | 100.0 | 100.0 | 100.0 |

Table continued on next page.

**Table D-1—Continued**
**CACCS: U.S. producers' U.S. shipments and U.S. importers' U.S. imports by GMO/non-GMO certification, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | **Quantity (1,000 pounds dry weight)** | | |
| U.S. importers: Canada.--GMO | *** | *** | *** |
| Non-GMO not certified | *** | *** | *** |
| Non-GMO Project verified | *** | *** | *** |
| Non-GMO other certification | *** | *** | *** |
| Non-GMO | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Value (1,000 dollars)** | | |
| U.S. importers: Canada.--GMO | *** | *** | *** |
| Non-GMO not certified | *** | *** | *** |
| Non-GMO Project verified | *** | *** | *** |
| Non-GMO other certification | *** | *** | *** |
| Non-GMO | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Unit value (dollars per pound dry weight)** | | |
| U.S. importers: Canada.--GMO | *** | *** | *** |
| Non-GMO not certified | *** | *** | *** |
| Non-GMO Project verified | *** | *** | *** |
| Non-GMO other certification | *** | *** | *** |
| Non-GMO | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Share of quantity (percent)** | | |
| U.S. importers: Canada.--GMO | *** | *** | *** |
| Non-GMO not certified | *** | *** | *** |
| Non-GMO Project verified | *** | *** | *** |
| Non-GMO other certification | *** | *** | *** |
| Non-GMO | *** | *** | *** |
| U.S. imports | 100.0 | 100.0 | 100.0 |

Table continued on next page.

**Table D-1—Continued**
**CACCS: U.S. producers' U.S. shipments and U.S. importers' U.S. imports by GMO/non-GMO certification, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | **Quantity (1,000 pounds dry weight)** | | |
| U.S. importers: All other sources.--GMO | *** | *** | *** |
| Non-GMO not certified | *** | *** | *** |
| Non-GMO Project verified | *** | *** | *** |
| Non-GMO other certification | *** | *** | *** |
| Non-GMO | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Value (1,000 dollars)** | | |
| U.S. importers: All other sources.--GMO | *** | *** | *** |
| Non-GMO not certified | *** | *** | *** |
| Non-GMO Project verified | *** | *** | *** |
| Non-GMO other certification | *** | *** | *** |
| Non-GMO | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Unit value (dollars per pound dry weight)** | | |
| U.S. importers: All other sources.--GMO | *** | *** | *** |
| Non-GMO not certified | *** | *** | *** |
| Non-GMO Project verified | *** | *** | *** |
| Non-GMO other certification | *** | *** | *** |
| Non-GMO | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Share of quantity (percent)** | | |
| U.S. importers: All other sources.--GMO | *** | *** | *** |
| Non-GMO not certified | *** | *** | *** |
| Non-GMO Project verified | *** | *** | *** |
| Non-GMO other certification | *** | *** | *** |
| Non-GMO | *** | *** | *** |
| U.S. imports | *** | *** | *** |

Table continued on next page.

**Table D-1—Continued**
**CACCS: U.S. producers' U.S. shipments and U.S. importers' U.S. imports by GMO/non-GMO certification, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | **Quantity (1,000 pounds dry weight)** | | |
| U.S. importers: Nonsubject sources.-- GMO | *** | *** | *** |
| Non-GMO not certified | *** | *** | *** |
| Non-GMO Project verified | *** | *** | *** |
| Non-GMO other certification | *** | *** | *** |
| Non-GMO | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Value (1,000 dollars)** | | |
| U.S. importers: Nonsubject sources.-- GMO | *** | *** | *** |
| Non-GMO not certified | *** | *** | *** |
| Non-GMO Project verified | *** | *** | *** |
| Non-GMO other certification | *** | *** | *** |
| Non-GMO | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Unit value (dollars per pound dry weight)** | | |
| U.S. importers: Nonsubject sources.-- GMO | *** | *** | *** |
| Non-GMO not certified | *** | *** | *** |
| Non-GMO Project verified | *** | *** | *** |
| Non-GMO other certification | *** | *** | *** |
| Non-GMO | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Share of quantity (percent)** | | |
| U.S. importers: Nonsubject sources.-- GMO | 72.7 | 77.8 | 82.6 |
| Non-GMO not certified | 27.0 | 10.0 | 2.6 |
| Non-GMO Project verified | --- | 12.0 | 9.4 |
| Non-GMO other certification | 0.2 | 0.2 | 5.4 |
| Non-GMO | 27.3 | 22.2 | 17.4 |
| U.S. imports | 100.0 | 100.0 | 100.0 |

Table continued on next page.

**Table D-1—Continued**
**CACCS: U.S. producers' U.S. shipments and U.S. importers' U.S. imports by GMO/non-GMO certification, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | **Quantity (1,000 pounds dry weight)** | | |
| U.S. importers: All import sources.-- GMO | *** | *** | *** |
| Non-GMO not certified | *** | *** | *** |
| Non-GMO Project verified | *** | *** | *** |
| Non-GMO other certification | *** | *** | *** |
| Non-GMO | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Value (1,000 dollars)** | | |
| U.S. importers: All import sources.-- GMO | *** | *** | *** |
| Non-GMO not certified | *** | *** | *** |
| Non-GMO Project verified | *** | *** | *** |
| Non-GMO other certification | *** | *** | *** |
| Non-GMO | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Unit value (dollars per pound dry weight)** | | |
| U.S. importers: All import sources.-- GMO | *** | *** | *** |
| Non-GMO not certified | *** | *** | *** |
| Non-GMO Project verified | *** | *** | *** |
| Non-GMO other certification | *** | *** | *** |
| Non-GMO | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Share of quantity (percent)** | | |
| U.S. importers: All import sources.-- GMO | 37.1 | 38.2 | 42.8 |
| Non-GMO not certified | 28.2 | 16.1 | 5.3 |
| Non-GMO Project verified | 26.9 | 34.9 | 48.9 |
| Non-GMO other certification | 7.8 | 10.8 | 3.0 |
| Non-GMO | 62.9 | 61.8 | 57.2 |
| U.S. imports | 100.0 | 100.0 | 100.0 |

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Source: Compiled from data submitted in response to Commission questionnaires

**Table D-2**
**CACCS: U.S. producers' U.S. shipments and U.S. importers' U.S. imports by product type, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | **Quantity (1,000 pounds dry weight)** | | |
| U.S. producers.-- Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. shipments | 470,152 | 452,061 | 459,114 |
| | **Value (1,000 dollars)** | | |
| U.S. producers.-- Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. shipments | 313,319 | 278,884 | 275,933 |
| | **Unit value (dollars per pound dry weight)** | | |
| U.S. producers.-- Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. shipments | 0.67 | 0.62 | 0.61 |
| | **Share of quantity (percent)** | | |
| U.S. producers.-- Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. shipments | 100.0 | 100.0 | 100.0 |

Table continued on next page.

**Table D-2—Continued**
**CACCS: U.S. producers' U.S. shipments and U.S. importers' U.S. imports by product type, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | **Quantity (1,000 pounds dry weight)** | | |
| U.S. importers: Belgium--Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Value (1,000 dollars)** | | |
| U.S. importers: Belgium--Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Unit value (dollars per pound dry weight)** | | |
| U.S. importers: Belgium--Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Share of quantity (percent)** | | |
| U.S. importers: Belgium--Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | 100.0 | 100.0 | 100.0 |

Table continued on next page.

**Table D-2—Continued**
**CACCS: U.S. producers' U.S. shipments and U.S. importers' U.S. imports by product type, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | **Quantity (1,000 pounds dry weight)** | | |
| U.S. importers: Colombia.--Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Value (1,000 dollars)** | | |
| U.S. importers: Colombia.--Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Unit value (dollars per pound dry weight)** | | |
| U.S. importers: Colombia.--Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Share of quantity (percent)** | | |
| U.S. importers: Colombia.--Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | 100.0 | 100.0 | 100.0 |

Table continued on next page.

**Table D-2—Continued**
**CACCS: U.S. producers' U.S. shipments and U.S. importers' U.S. imports by product type, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | **Quantity (1,000 pounds dry weight)** | | |
| U.S. importers: Thailand.--Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Value (1,000 dollars)** | | |
| U.S. importers: Thailand.--Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Unit value (dollars per pound dry weight)** | | |
| U.S. importers: Thailand.--Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Share of quantity (percent)** | | |
| U.S. importers: Thailand.--Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | 100.0 | 100.0 | 100.0 |

Table continued on next page.

**Table D-2—Continued**
**CACCS: U.S. producers' U.S. shipments and U.S. importers' U.S. imports by product type, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | **Quantity (1,000 pounds dry weight)** | | |
| U.S. importers: Subject sources.--Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | 132,895 | 148,495 | 172,782 |
| | **Value (1,000 dollars)** | | |
| U.S. importers: Subject sources.--Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | 81,377 | 77,935 | 88,871 |
| | **Unit value (dollars per pound dry weight)** | | |
| U.S. importers: Subject sources.--Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | 0.61 | 0.52 | 0.51 |
| | **Share of quantity (percent)** | | |
| U.S. importers: Subject sources.--Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | 100.0 | 100.0 | 100.0 |

Table continued on next page.

**Table D-2—Continued**
**CACCS: U.S. producers' U.S. shipments and U.S. importers' U.S. imports by product type, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | **Quantity (1,000 pounds dry weight)** | | |
| U.S. importers: Canada.--Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Value (1,000 dollars)** | | |
| U.S. importers: Canada.--Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Unit value (dollars per pound dry weight)** | | |
| U.S. importers: Canada.--Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Share of quantity (percent)** | | |
| U.S. importers: Canada.--Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | 100.0 | 100.0 | 100.0 |

Table continued on next page.

**Table D-2—Continued**
**CACCS: U.S. producers' U.S. shipments and U.S. importers' U.S. imports by product type, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | **Quantity (1,000 pounds dry weight)** | | |
| U.S. importers: All other sources.-- Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Value (1,000 dollars)** | | |
| U.S. importers: All other sources.-- Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Unit value (dollars per pound dry weight)** | | |
| U.S. importers: All other sources.-- Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Share of quantity (percent)** | | |
| U.S. importers: All other sources.-- Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | 100.0 | 100.0 | 100.0 |

Table continued on next page.

**Table D-2—Continued**
**CACCS: U.S. producers' U.S. shipments and U.S. importers' U.S. imports by product type, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | **Quantity (1,000 pounds dry weight)** | | |
| U.S. importers: Nonsubject sources.-- | | | |
| Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Value (1,000 dollars)** | | |
| U.S. importers: Nonsubject sources.-- | | | |
| Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Unit value (dollars per pound dry weight)** | | |
| U.S. importers: Nonsubject sources.-- | | | |
| Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Share of quantity (percent)** | | |
| U.S. importers: Nonsubject sources.-- | | | |
| Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | 100.0 | 100.0 | 100.0 |

Table continued on next page.

**Table D-2—Continued**
**CACCS: U.S. producers' U.S. shipments and U.S. importers' U.S. imports by product type, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | **Quantity (1,000 pounds dry weight)** | | |
| U.S. importers: All import sources.-- Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Value (1,000 dollars)** | | |
| U.S. importers: All import sources.-- Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Unit value (dollars per pound dry weight)** | | |
| U.S. importers: All import sources.-- Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | *** | *** | *** |
| | **Share of quantity (percent)** | | |
| U.S. importers: All import sources.-- Citric acid | *** | *** | *** |
| Sodium citrate | *** | *** | *** |
| Potassium citrate | *** | *** | *** |
| Crude calcium citrate | *** | *** | *** |
| Blends | *** | *** | *** |
| U.S. imports | 100.0 | 100.0 | 100.0 |

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Source: Compiled from data submitted in response to Commission questionnaires

**Table D-3**
**CACCS: U.S. producers' and U.S. importers' commercial U.S. shipments by sales type, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | Quantity (1,000 pounds dry weight) | | |
| U.S. producers.-- | | | |
| Spot | 1,887 | 2,076 | 3,887 |
| Short-term contract | 7,788 | 37,520 | 26,578 |
| Annual contract | 306,408 | 277,255 | 291,155 |
| Long-term contract | 151,060 | 132,424 | 134,642 |
| Subtotal, contract | 465,256 | 447,199 | 452,375 |
| Commercial U.S. shipments | 467,143 | 449,275 | 456,262 |
| | Value (1,000 dollars) | | |
| U.S. producers.-- | | | |
| Spot | 1,444 | 1,505 | 2,694 |
| Short-term contract | 5,233 | 23,974 | 16,334 |
| Annual contract | 212,159 | 171,161 | 175,482 |
| Long-term contract | 91,024 | 80,129 | 79,241 |
| Subtotal, contract | 308,416 | 275,264 | 271,057 |
| Commercial U.S. shipments | 309,860 | 276,769 | 273,753 |
| | Unit value (dollars per pound dry weight) | | |
| U.S. producers.-- | | | |
| Spot | 0.77 | 0.72 | 0.69 |
| Short-term contract | 0.67 | 0.64 | 0.61 |
| Annual contract | 0.70 | 0.62 | 0.61 |
| Long-term contract | 0.60 | 0.61 | 0.59 |
| Subtotal, contract | 0.67 | 0.62 | 0.60 |
| Commercial U.S. shipments | 0.67 | 0.62 | 0.60 |
| | Share of quantity (percent) | | |
| U.S. producers.-- | | | |
| Spot | 0.4 | 0.5 | 0.9 |
| Short-term contract | 1.7 | 8.4 | 5.8 |
| Annual contract | 65.6 | 61.7 | 63.8 |
| Long-term contract | 32.3 | 29.5 | 29.5 |
| Subtotal, contract | 99.6 | 99.5 | 99.1 |
| Commercial U.S. shipments | 100.0 | 100.0 | 100.0 |

Table continued on next page.

**Table D-3—Continued**
**CACCS: U.S. producers' and U.S. importers' commercial U.S. shipments by sales type, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | Quantity (1,000 pounds dry weight) | | |
| U.S. importers: Belgium.--Spot | *** | *** | *** |
| Short-term contract | *** | *** | *** |
| Annual contract | *** | *** | *** |
| Long-term contract | *** | *** | *** |
| Subtotal, contract | *** | *** | *** |
| Commercial U.S. shipments | *** | *** | *** |
| | Value (1,000 dollars) | | |
| U.S. importers: Belgium.--Spot | *** | *** | *** |
| Short-term contract | *** | *** | *** |
| Annual contract | *** | *** | *** |
| Long-term contract | *** | *** | *** |
| Subtotal, contract | *** | *** | *** |
| Commercial U.S. shipments | *** | *** | *** |
| | Unit value (dollars per pound dry weight) | | |
| U.S. importers: Belgium.--Spot | *** | *** | *** |
| Short-term contract | *** | *** | *** |
| Annual contract | *** | *** | *** |
| Long-term contract | *** | *** | *** |
| Subtotal, contract | *** | *** | *** |
| Commercial U.S. shipments | *** | *** | *** |
| | Share of quantity (percent) | | |
| U.S. importers: Belgium.--Spot | *** | *** | *** |
| Short-term contract | *** | *** | *** |
| Annual contract | *** | *** | *** |
| Long-term contract | *** | *** | *** |
| Subtotal, contract | *** | *** | *** |
| Commercial U.S. shipments | 100.0 | 100.0 | 100.0 |

Table continued on next page.

**Table D-3—Continued**
**CACCS: U.S. producers' and U.S. importers' commercial U.S. shipments by sales type, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | Quantity (1,000 pounds dry weight) | | |
| U.S. importers: Colombia.--Spot | *** | *** | *** |
| Short-term contract | *** | *** | *** |
| Annual contract | *** | *** | *** |
| Long-term contract | *** | *** | *** |
| Subtotal, contract | *** | *** | *** |
| Commercial U.S. shipments | *** | *** | *** |
| | Value (1,000 dollars) | | |
| U.S. importers: Colombia.--Spot | *** | *** | *** |
| Short-term contract | *** | *** | *** |
| Annual contract | *** | *** | *** |
| Long-term contract | *** | *** | *** |
| Subtotal, contract | *** | *** | *** |
| Commercial U.S. shipments | *** | *** | *** |
| | Unit value (dollars per pound dry weight) | | |
| U.S. importers: Colombia.--Spot | *** | *** | *** |
| Short-term contract | *** | *** | *** |
| Annual contract | *** | *** | *** |
| Long-term contract | *** | *** | *** |
| Subtotal, contract | *** | *** | *** |
| Commercial U.S. shipments | *** | *** | *** |
| | Share of quantity (percent) | | |
| U.S. importers: Colombia.--Spot | *** | *** | *** |
| Short-term contract | *** | *** | *** |
| Annual contract | *** | *** | *** |
| Long-term contract | *** | *** | *** |
| Subtotal, contract | *** | *** | *** |
| Commercial U.S. shipments | 100.0 | 100.0 | 100.0 |

Table continued on next page.

**Table D-3—Continued**
**CACCS: U.S. producers' and U.S. importers' commercial U.S. shipments by sales type, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | Quantity (1,000 pounds dry weight) | | |
| U.S. importers: Thailand.-- | | | |
| Spot | 32,306 | 38,558 | 40,716 |
| Short-term contract | 5,551 | 8,975 | 12,962 |
| Annual contract | 27,755 | 40,719 | 70,436 |
| Long-term contract | --- | --- | --- |
| Subtotal, contract | 33,306 | 49,694 | 83,398 |
| Commercial U.S. shipments | 65,612 | 88,252 | 124,114 |
| | Value (1,000 dollars) | | |
| U.S. importers: Thailand.-- | | | |
| Spot | 22,037 | 22,989 | 24,988 |
| Short-term contract | 2,819 | 4,839 | 7,181 |
| Annual contract | 19,374 | 23,148 | 40,424 |
| Long-term contract | --- | --- | --- |
| Subtotal, contract | 22,193 | 27,987 | 47,605 |
| Commercial U.S. shipments | 44,230 | 50,976 | 72,593 |
| | Unit value (dollars per pound dry weight) | | |
| U.S. importers: Thailand.-- | | | |
| Spot | 0.68 | 0.60 | 0.61 |
| Short-term contract | 0.51 | 0.54 | 0.55 |
| Annual contract | 0.70 | 0.57 | 0.57 |
| Long-term contract | --- | --- | --- |
| Subtotal, contract | 0.67 | 0.56 | 0.57 |
| Commercial U.S. shipments | 0.67 | 0.58 | 0.58 |
| | Share of quantity (percent) | | |
| U.S. importers: Thailand.-- | | | |
| Spot | 49.2 | 43.7 | 32.8 |
| Short-term contract | 8.5 | 10.2 | 10.4 |
| Annual contract | 42.3 | 46.1 | 56.8 |
| Long-term contract | --- | --- | --- |
| Subtotal, contract | 50.8 | 56.3 | 67.2 |
| Commercial U.S. shipments | 100.0 | 100.0 | 100.0 |

Table continued on next page.

**Table D-3—Continued**
**CACCS: U.S. producers' and U.S. importers' commercial U.S. shipments by sales type, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | Quantity (1,000 pounds dry weight) | | |
| U.S. importers: Subject sources.--Spot | 46,757 | 50,835 | 52,867 |
| Short-term contract | 11,080 | 12,037 | 15,119 |
| Annual contract | 41,908 | 56,416 | 81,551 |
| Long-term contract | --- | --- | --- |
| Subtotal, contract | 52,988 | 68,453 | 96,670 |
| Commercial U.S. shipments | 99,745 | 119,288 | 149,537 |
| | Value (1,000 dollars) | | |
| U.S. importers: Subject sources.--Spot | 34,127 | 32,656 | 34,430 |
| Short-term contract | 6,448 | 6,622 | 8,545 |
| Annual contract | 30,463 | 35,155 | 49,090 |
| Long-term contract | --- | --- | --- |
| Subtotal, contract | 36,911 | 41,777 | 57,635 |
| Commercial U.S. shipments | 71,038 | 74,433 | 92,065 |
| | Unit value (dollars per pound dry weight) | | |
| U.S. importers: Subject sources.--Spot | 0.73 | 0.64 | 0.65 |
| Short-term contract | 0.58 | 0.55 | 0.57 |
| Annual contract | 0.73 | 0.62 | 0.60 |
| Long-term contract | --- | --- | --- |
| Subtotal, contract | 0.70 | 0.61 | 0.60 |
| Commercial U.S. shipments | 0.71 | 0.62 | 0.62 |
| | Share of quantity (percent) | | |
| U.S. importers: Subject sources.--Spot | 46.9 | 42.6 | 35.4 |
| Short-term contract | 11.1 | 10.1 | 10.1 |
| Annual contract | 42.0 | 47.3 | 54.5 |
| Long-term contract | --- | --- | --- |
| Subtotal, contract | 53.1 | 57.4 | 64.6 |
| Commercial U.S. shipments | 100.0 | 100.0 | 100.0 |

Table continued on next page.

**Table D-3—Continued**
**CACCS: U.S. producers' and U.S. importers' commercial U.S. shipments by sales type, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | Quantity (1,000 pounds dry weight) | | |
| U.S. importers: Canada.--Spot | *** | *** | *** |
| Short-term contract | *** | *** | *** |
| Annual contract | *** | *** | *** |
| Long-term contract | *** | *** | *** |
| Subtotal, contract | *** | *** | *** |
| Commercial U.S. shipments | *** | *** | *** |
| | Value (1,000 dollars) | | |
| U.S. importers: Canada.--Spot | *** | *** | *** |
| Short-term contract | *** | *** | *** |
| Annual contract | *** | *** | *** |
| Long-term contract | *** | *** | *** |
| Subtotal, contract | *** | *** | *** |
| Commercial U.S. shipments | *** | *** | *** |
| | Unit value (dollars per pound dry weight) | | |
| U.S. importers: Canada.--Spot | *** | *** | *** |
| Short-term contract | *** | *** | *** |
| Annual contract | *** | *** | *** |
| Long-term contract | *** | *** | *** |
| Subtotal, contract | *** | *** | *** |
| Commercial U.S. shipments | *** | *** | *** |
| | Share of quantity (percent) | | |
| U.S. importers: Canada.--Spot | *** | *** | *** |
| Short-term contract | *** | *** | *** |
| Annual contract | *** | *** | *** |
| Long-term contract | *** | *** | *** |
| Subtotal, contract | *** | *** | *** |
| Commercial U.S. shipments | 100.0 | 100.0 | 100.0 |

Table continued on next page.

**Table D-3—Continued**
**CACCS: U.S. producers' and U.S. importers' commercial U.S. shipments by sales type, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | Quantity (1,000 pounds dry weight) | | |
| U.S. importers: All other sources.--Spot | *** | *** | *** |
| Short-term contract | *** | *** | *** |
| Annual contract | *** | *** | *** |
| Long-term contract | *** | *** | *** |
| Subtotal, contract | *** | *** | *** |
| Commercial U.S. shipments | *** | *** | *** |
| | Value (1,000 dollars) | | |
| U.S. importers: All other sources.--Spot | *** | *** | *** |
| Short-term contract | *** | *** | *** |
| Annual contract | *** | *** | *** |
| Long-term contract | *** | *** | *** |
| Subtotal, contract | *** | *** | *** |
| Commercial U.S. shipments | *** | *** | *** |
| | Unit value (dollars per pound dry weight) | | |
| U.S. importers: All other sources.--Spot | *** | *** | *** |
| Short-term contract | *** | *** | *** |
| Annual contract | *** | *** | *** |
| Long-term contract | *** | *** | *** |
| Subtotal, contract | *** | *** | *** |
| Commercial U.S. shipments | *** | *** | *** |
| | Share of quantity (percent) | | |
| U.S. importers: All other sources.--Spot | *** | *** | *** |
| Short-term contract | *** | *** | *** |
| Annual contract | *** | *** | *** |
| Long-term contract | *** | *** | *** |
| Subtotal, contract | *** | *** | *** |
| Commercial U.S. shipments | 100.0 | 100.0 | 100.0 |

Table continued on next page.

**Table D-3—Continued**
**CACCS: U.S. producers' and U.S. importers' commercial U.S. shipments by sales type, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | Quantity (1,000 pounds dry weight) | | |
| U.S. importers: Nonsubject sources.--Spot | *** | *** | *** |
| Short-term contract | *** | *** | *** |
| Annual contract | *** | *** | *** |
| Long-term contract | *** | *** | *** |
| Subtotal, contract | *** | *** | *** |
| Commercial U.S. shipments | *** | *** | *** |
| | Value (1,000 dollars) | | |
| U.S. importers: Nonsubject sources.--Spot | *** | *** | *** |
| Short-term contract | *** | *** | *** |
| Annual contract | *** | *** | *** |
| Long-term contract | *** | *** | *** |
| Subtotal, contract | *** | *** | *** |
| Commercial U.S. shipments | *** | *** | *** |
| | Unit value (dollars per pound dry weight) | | |
| U.S. importers: Nonsubject sources.--Spot | *** | *** | *** |
| Short-term contract | *** | *** | *** |
| Annual contract | *** | *** | *** |
| Long-term contract | *** | *** | *** |
| Subtotal, contract | *** | *** | *** |
| Commercial U.S. shipments | *** | *** | *** |
| | Share of quantity (percent) | | |
| U.S. importers: Nonsubject sources.--Spot | *** | *** | *** |
| Short-term contract | *** | *** | *** |
| Annual contract | *** | *** | *** |
| Long-term contract | *** | *** | *** |
| Subtotal, contract | *** | *** | *** |
| Commercial U.S. shipments | 100.0 | 100.0 | 100.0 |

Table continued on next page.

**Table D-3—Continued**
**CACCS: U.S. producers' and U.S. importers' commercial U.S. shipments by sales type, 2015-17**

| Item | Calendar year | | |
|---|---|---|---|
| | 2015 | 2016 | 2017 |
| | **Quantity (1,000 pounds dry weight)** | | |
| U.S. importers: All import sources.--Spot | *** | *** | *** |
| Short-term contract | *** | *** | *** |
| Annual contract | *** | *** | *** |
| Long-term contract | *** | *** | *** |
| Subtotal, contract | *** | *** | *** |
| Commercial U.S. shipments | *** | *** | *** |
| | **Value (1,000 dollars)** | | |
| U.S. importers: All import sources.--Spot | *** | *** | *** |
| Short-term contract | *** | *** | *** |
| Annual contract | *** | *** | *** |
| Long-term contract | *** | *** | *** |
| Subtotal, contract | *** | *** | *** |
| Commercial U.S. shipments | *** | *** | *** |
| | **Unit value (dollars per pound dry weight)** | | |
| U.S. importers: All import sources.--Spot | *** | *** | *** |
| Short-term contract | *** | *** | *** |
| Annual contract | *** | *** | *** |
| Long-term contract | *** | *** | *** |
| Subtotal, contract | *** | *** | *** |
| Commercial U.S. shipments | *** | *** | *** |
| | **Share of quantity (percent)** | | |
| U.S. importers: All import sources.--Spot | *** | *** | *** |
| Short-term contract | *** | *** | *** |
| Annual contract | *** | *** | *** |
| Long-term contract | *** | *** | *** |
| Subtotal, contract | *** | *** | *** |
| Commercial U.S. shipments | 100.0 | 100.0 | 100.0 |

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Source: Compiled from data submitted in response to Commission questionnaires

# APPENDIX E

# NONSUBJECT COUNTRY PRICE DATA

Three importers reported price data for nonsubject country Canada for products 1-8. Price data reported by these firms accounted for 91.4 percent of U.S. commercial shipments from Canada. These price items and accompanying data are comparable to those presented in tables V-3 to V-10. Price and quantity data for Canada are shown in tables E-1 to E-8 and in figure E-1 to E-8 (with domestic and subject sources).

In comparing nonsubject country pricing data with U.S. producer pricing data, prices for product imported from Canada were lower than prices for U.S.-produced product in 20 instances and higher in 76 instances, although these prices were very often within a penny or two of each other, especially for products 1-4. A summary of price differentials is presented in table E-9.

**Table E-1**

**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 1 and margins of underselling/(overselling), by quarters, January 2015-December 2017**

* * * * * * *

**Table E-2**

**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 2 and margins of underselling/(overselling), by quarters, January 2015-December 2017**

* * * * * * *

**Table E-3**

**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 3 and margins of underselling/(overselling), by quarters, January 2015-December 2017**

* * * * * * *

**Table E-4**

**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 4 and margins of underselling/(overselling), by quarters, January 2015-December 2017**

* * * * * * *

**Table E-5**

**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 5 and margins of underselling/(overselling), by quarters, January 2015-December 2017**

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**Table E-6**

**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 6 and margins of underselling/(overselling), by quarters, January 2015-December 2017**

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**Table E-7**

**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 7 and margins of underselling/(overselling), by quarters, January 2015-December 2017**

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**Table E-8**

**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 8 and margins of underselling/(overselling), by quarters, January 2015-December 2017**

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**Figure E-1**

**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 1, by quarters, January 2015-December 2017**

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**Figure E-2**

**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 2, by quarters, January 2015-December 2017**

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**Figure E-3**

**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 3, by quarters, January 2015-December 2017**

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**Figure E-4**

**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 4, by quarters, January 2015-December 2017**

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**Figure E-5**

**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 5, by quarters, January 2015-December 2017**

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**Figure E-6**

**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 6, by quarters, January 2015-December 2017**

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**Figure E-7**

**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 7, by quarters, January 2015-December 2017**

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**Figure E-8**

**CACCS: Weighted-average f.o.b. prices and quantities of domestic and imported product 8, by quarters, January 2015-December 2017**

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**Table E-9**
**CACCS: Summary of underselling/(overselling), by country, January 2015-December 2017**

| Comparison | Total number of comparisons | Nonsubject lower than the comparison source | | Nonsubject higher than the comparison source | |
|---|---|---|---|---|---|
| | | Number of quarters | Quantity (pounds) | Number of quarters | Quantity (pounds) |
| **Nonsubject vs United States:** | | | | | |
| Canada vs. United States | 96 | 20 | 53,797,313 | 76 | 267,840,082 |

Source: Compiled from data submitted in response to Commission questionnaires.