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# Sugar and Sweeteners Outlook

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## Increased Domestic Production Raises Supplies and Projected Ending Stocks for 2017/18

The next release is  
March 14, 2018

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Approved by the  
World Agricultural  
Outlook Board.

The February *World Agricultural Supply and Demand Estimates* (WASDE) lowered projected 2017/18 sugar use by 75,000 short tons, raw value (STRV), due to fewer expected domestic deliveries for food and beverage use. Projected total supplies are also lowered by 57,000 STRV, as reduced beet sugar production and cane sugar production from Florida eclipse the increase in cane sugar production in Louisiana. Projected ending stocks for 2017/18 are increased by 18,000 STRV, resulting in a stocks-to-use ratio of 14.6 percent.

Mexico sugar domestic deliveries are also reduced in the February WASDE, down 87,000 metric tons, actual value (MT), as deliveries of high-fructose corn syrup (HFCS) have been strong in the first quarter of the fiscal year, dampening sugar deliveries. With additional sugar supplies available, projected exports are increased by 106,000 MT, but exports to the United States remain unchanged from the previous month. Ending stocks are lowered 19,000 MT, and the stocks-to-consumption ratio remains at 22.0 percent.

The USDA's long-term projections for U.S. sugar markets show increasing production in both the beet sugar and cane sugar sectors, but not at a high enough rate to meet the growth in domestic deliveries. As a result, projections are for a growth in imports along with relatively tight markets that support price levels. Mexico is also projected to increase sugar production. Growing domestic deliveries are projected to constrain the amount of sugar available for export, meaning that the United States is expected to need additional imports from TRQ programs in order to maintain adequate domestic supplies.

**Record projected production in Louisiana eclipsed by lowered expectations for Florida and beet sugar production**

The February *World Agricultural Supply and Demand Estimates* (WASDE) shows a reduced outlook for sugar supplies in the United States for 2017/18, primarily due to lowered production expectations for both beet and cane sugar. Projected beginning stocks are increased to 1.876 million short tons, raw value (STRV), however, due to revisions for 2016/17, which moved 25,000 STRV from deliveries for consumption to ending stocks. Projected total supplies are 14.422 million STRV, a 57,000-STRV decline from the January projection.

Table 1 -- U.S. sugar: supply and use, by fiscal year (Oct./Sept.), February 2018

Items	2015/16	2016/17 (estimate)	2017/18 (forecast)	2015/16	2016/17 (estimate)	2017/18 (forecast)
	1,000 Short tons, raw value			1,000 Metric tons, raw value		
Beginning stocks	1,815	2,054	1,876	1,647	1,863	1,702
Total production	8,989	8,969	9,230	8,155	8,137	8,373
Beet sugar	5,119	5,103	5,219	4,644	4,629	4,735
Cane sugar	3,870	3,866	4,011	3,511	3,507	3,638
Florida	2,173	2,055	1,992	1,971	1,864	1,807
Louisiana	1,428	1,628	1,859	1,296	1,477	1,686
Texas	116	140	160	106	127	145
Hawaii	152	43	0	138	39	0
Total imports	3,341	3,244	3,316	3,031	2,943	3,008
Tariff-rate quota imports	1,620	1,611	1,788	1,469	1,462	1,622
Other program imports	396	419	250	359	380	227
Non-program imports	1,325	1,213	1,278	1,202	1,101	1,160
Mexico	1,309	1,201	1,268	1,187	1,090	1,151
Total supply	14,145	14,267	14,422	12,832	12,943	13,083
Total exports	74	95	100	67	86	91
Miscellaneous	-33	38	0	-30	35	0
Deliveries for domestic use	12,051	12,258	12,480	10,932	11,121	11,322
Transfer to sugar-containing products for exports under re-export program	148	127	120	134	115	109
Transfer to polyhydric alcohol, feed, other alcohol	22	29	35	20	27	32
Commodity Credit Corporation (CCC) sale for ethanol, other	0	0	0	0	0	0
Deliveries for domestic food and beverage use	11,881	12,102	12,325	10,778	10,979	11,181
Total use	12,091	12,391	12,580	10,969	11,241	11,412
Ending stocks	2,054	1,876	1,842	1,863	1,702	1,671
Private	2,054	1,876	1,842	1,863	1,702	1,671
Commodity Credit Corporation (CCC)	0	0	0	0	0	0
Stocks-to-use ratio	16.99	15.14	14.64	16.99	15.14	14.64

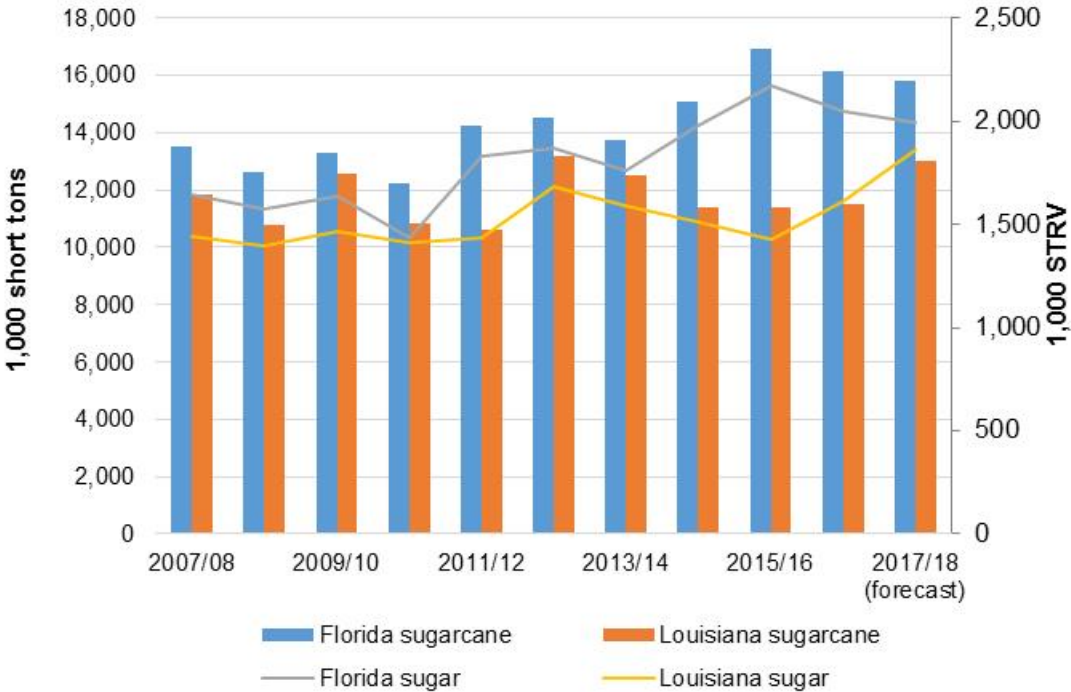
Source: U.S. Dept. of Agriculture, Economic Research Service, Sugar and Sweetener Outlook.

Domestic cane sugar production for 2017/18 is projected to be 4.011 million STRV, a 44,000-STRV decrease from the January projection. The two largest sugarcane-producing States have had diverging developments in terms of crop conditions and production. Cane sugar production in Louisiana is projected to be 1.859 million STRV, a 39,000-STRV increase from the previous month, based primarily on processor reports from the State. Louisiana's strong harvest season was able to continue into late January, several weeks beyond most years, further adding to a projected record sugar production year. The record sugar production implies record-level sucrose recovery, along with strong sugarcane yields and a 3.8-percent annual increase in harvested area for sugar production.

Conversely, Cane sugar production in Florida is projected to be 1.992 million STRV, reduced 83,000-STRV from the previous month. A number of adverse weather conditions during the late period of the growing season through the harvest season have reportedly had a detrimental impact on the quality of the sugarcane being processed in the

State—Hurricane Irma in early September, followed by excessive precipitation in the fall as the rainy season extended longer than normal, and, finally, streaks of unseasonably cool weather during the winter, combined to contribute to lower sugarcane yields and sucrose recovery rates than previous estimates. The specific impacts of each of these events is difficult to gauge due to the length of the harvest and the ability of the sugarcane crop to recover from weather-related setbacks, particularly early in the harvest year. The National Agricultural Statistics Service (NASS) reduced sugarcane yield forecasts in the State from 40.9 tons per acre in January to 39.8 tons per acre in February, more than offsetting a slight increase in forecast harvested area. The reduction in sugar production in the State, based on information provided by processors to the Farm Service Agency’s (FSA) *Sweetener Market Data* (SMD), implies a reduction in the State’s recovery rate from 12.8 percent in the January projection to 12.6 percent in February.

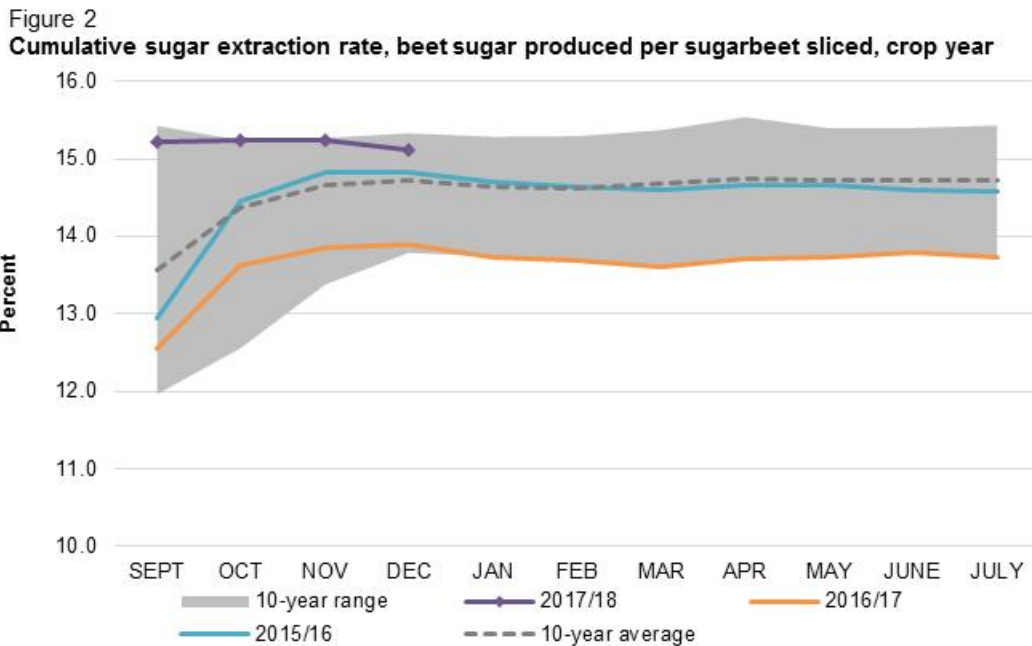
Figure 1  
**Sugarcane and Sugar Production, Florida and Louisiana, 2007/08 to 2017/18**



Source: U.S. Department of Agriculture, National Agricultural Statistics Service.

Beet sugar production is projected to be 5.219 million STRV, a 38,000-STRV reduction from the January report. The reduction is due to a decrease in the expected sucrose extraction rate from sliced sugarbeets. The 2017/18 slicing campaign has seen very high extraction rates by historical standards, indicating that the 2017/18 crop of sugarbeets have a high sugar content and that storage and processing conditions have allowed for a high rate of recovery.

Typical seasonal patterns for the cumulative extraction rates are for an increase from September through December or January. During this period, processors begin the season with sugarbeets that are harvested early in the summer and not stored in piles, eventually transitioning to extraction from the sugarbeets from the main fall harvest that are stored in large piles, utilizing the cold winter weather to maintain quality. Subsequently, cumulative extraction rates typically level off or slightly deteriorate as the slicing campaign progresses. Technological advancements and industry investment in improved, ventilated storage facilities in recent years have resulted in less deterioration and less fluctuation in extraction rates during the late winter and early spring.



The pattern developing thus far in 2017/18, however, shows high extraction rates with the early-season sugarbeets. There was a dip in December, believed primarily due to processing issues for one beet processor that forced a stoppage in some operations, but this is expected to be a temporary interruption that will be accounted for later in the season. Nonetheless, without the usual seasonal increase from the fall into the winter, extraction rates are not expected to increase significantly. The current estimated extraction rate of about 15.25 percent is still relatively high compared with historical averages, but lower than earlier expectations. The projection also assumes a shrink rate in line with recent averages, as no significant weather conditions have been identified thus far that would impact the shrink at a national level. However, the weather for the remainder of the year will be critical in maintaining pile conditions and sugarbeet quality.

Table 2. Beet sugar production projection calculation, 2017/18

	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18 January	2017/18 February
Sugarbeet production (1,000 short tons) 1/	29,783	32,034	28,896	35,224	32,789	31,285	35,371	36,881	35,325	35,325
Sugarbeet shrink 2/	5.7%	5.9%	5.9%	4.8%	6.8%	5.4%	6.5%	8.3%	6.4%	6.4%
Sugarbeet sliced (1,000 short tons)	28,097	30,137	27,184	33,532	30,545	29,595	33,066	33,834	33,076	33,076
Sugar extraction rate from slice	14.3%	15.4%	15.0%	15.3%	14.3%	14.6%	14.6%	13.7%	15.4%	15.3%
Sugar from beets slice (1,000 STRV)	4,023	4,631	4,086	5,142	4,325	4,325	4,820	4,643	5,083	5,045
Sugar from molasses (1,000 STRV) 2/	325	357	401	327	324	341	380	352	345	345
Crop year sugar production (1,000 STRV) 3/	4,348	4,987	4,487	5,469	4,648	4,667	5,201	4,995	5,428	5,390
August-September sugar production (1,000 STRV)	396	623	294	708	315	461	688	606	715	715
August-September sugar production forecast (1,000 STRV) 4/	623	294	708	315	461	688	606	715	504	504
Sugar from imported beets (1,000 STRV) 5/	--	--	--	--	--	--	--	--	40	40
Fiscal year sugar production (1,000 STRV)	4,575	4,659	4,900	5,076	4,794	4,893	5,119	5,103	5,257	5,219

Notes: 1/ National Agricultural Statistics Service, U.S. Dept. of Agriculture. 2/Projections based on processor forecasts published by U.S. Dept. of Agriculture, Farm Service Agency. 3/ August-July basis. 4/ 2017/18 based on 10-year historical average. 5/ Sugar from imported beets split out for projections only, included in total once full crop year slice is recorded. They are incorporated into total production in historical data.

Source: U.S. Dept. of Agriculture, Economic Research Service and World Agricultural Outlook Board.

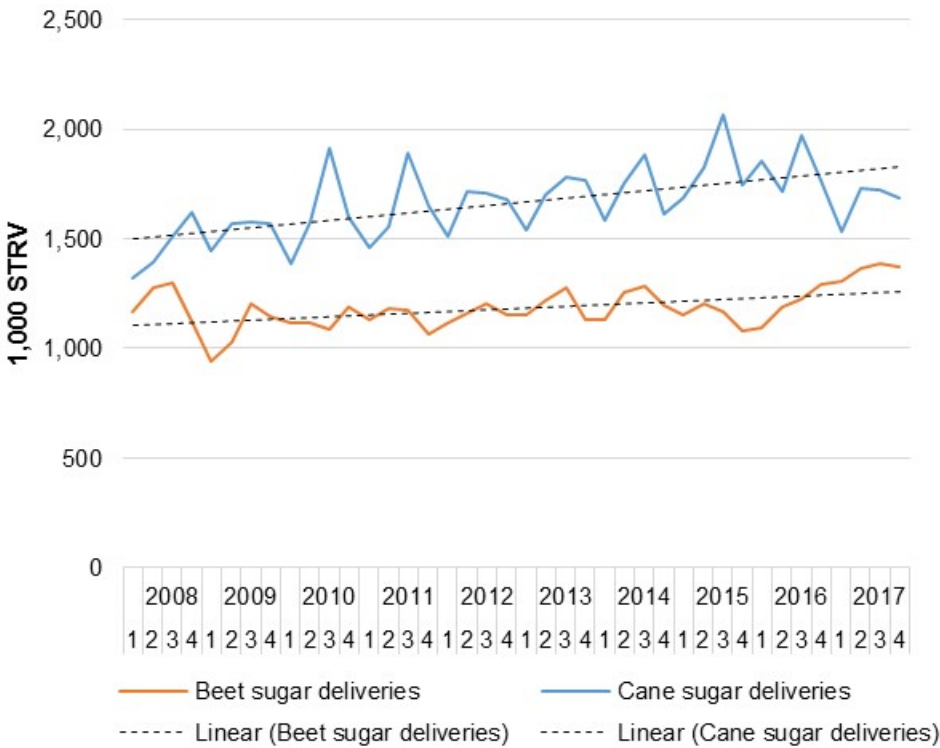
### ***Domestic deliveries lowered as calendar year 2017 deliveries decline from previous year***

The outlook for sugar use in the United States also shows reduced volumes compared with the previous month. Total sugar use is projected to be 12.325 million STRV in 2017/18, a 75,000-STRV reduction from the January report. The reduction is due to lower projected domestic deliveries for food and beverage use, from 12.400 million

STRV to 12.325 million STRV, based on the pace set in the October-to-December quarter beginning the 2017/18 fiscal year. The reduced projection would still represent a 1.8-percent increase from the 2016/17 food deliveries total of 12.102 million STRV, which was also revised down 25,000 STRV with fewer deliveries from nonreporters.

Through December, 3.060 million STRV of sugar have been delivered for food and beverage consumption in 2017/18, nearly unchanged from the same period the previous year, which totaled 3.062 million STRV. Important sector-level trends underlie the relatively stagnant total deliveries, however. Deliveries by beet processors through December were 5.9 percent larger than the previous year. This continues the strong delivery performance that began at the end of 2015/16 and continued through 2016/17. Conversely, deliveries by cane refineries through December are 4.3 percent lower. Along with nonreporter import deliveries that are 5.3-percent lower than the previous year, total cane deliveries have remained well below trend levels for several consecutive quarters.

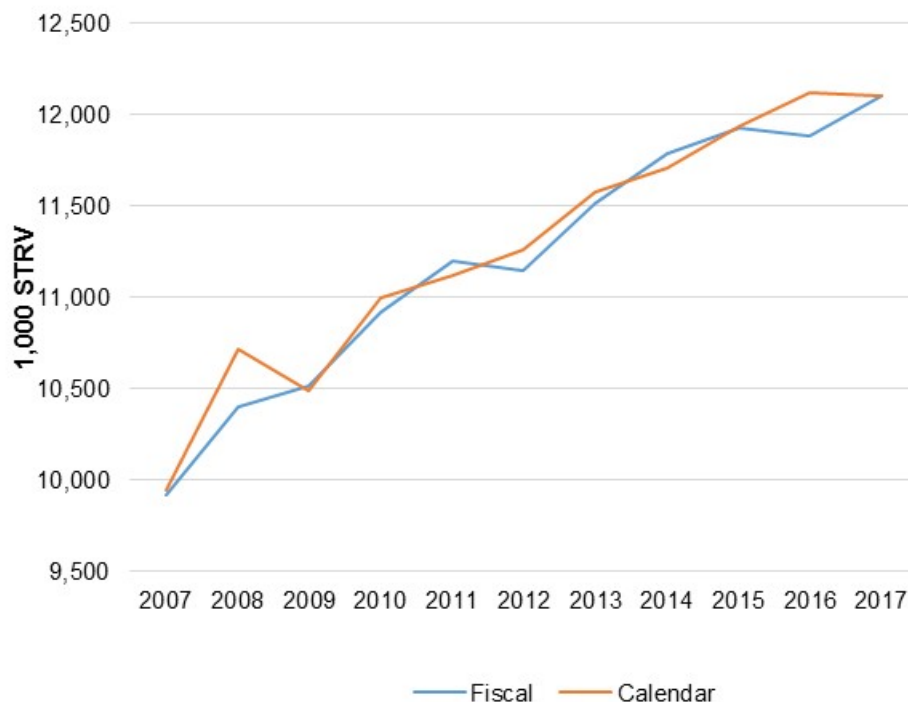
Figure 3  
**Sugar deliveries, by beet sugar and cane sugar, quarterly, 2008 to 2017**



Source: U.S. Department of Agriculture, Farm Service Agency.

For the 2017 calendar year, food and beverage deliveries totaled 12.100 million STRV, also a slight decline compared with the previous year, which totaled 12.115 million STRV. The significance of calendar year figures is that they usually tend to be less volatile compared with fiscal year totals. This is primarily due to the structure of many delivery contracts, the fact that the busiest delivery periods are during the summer and fall quarters, and the introduction of the suspension agreements with Mexico that instituted the Export Limit based on the fiscal year period, which changed trade patterns.

Figure 4  
**Total U.S. sugar deliveries, fiscal and calendar year, 2008 to 2017**



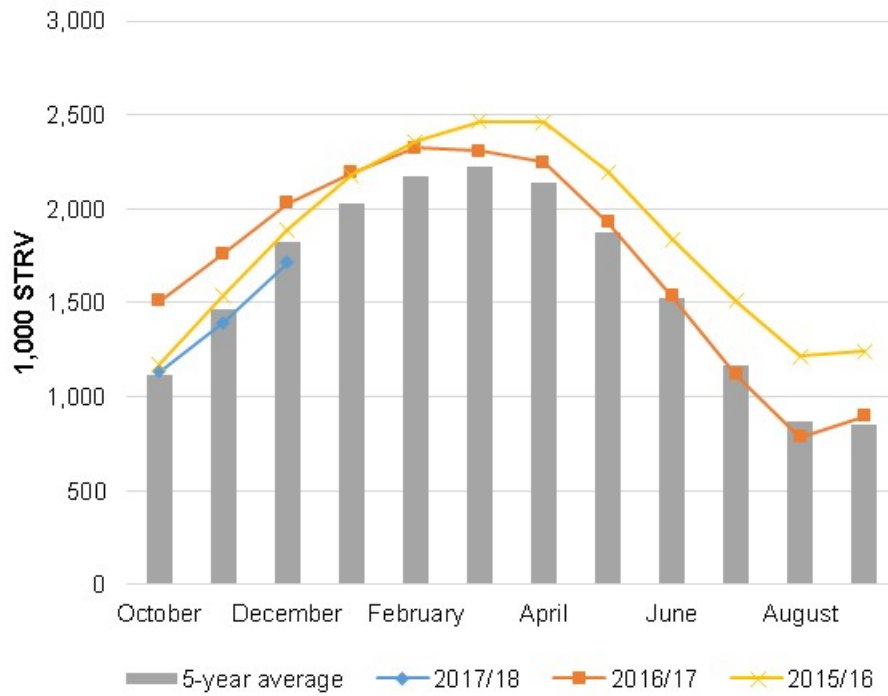
Source: U.S. Department of Agriculture, Farm Service Agency.

The decline in calendar year 2017 deliveries represents the first year-over-year decline since 2009. While a meaningful data point, it is unclear whether this signals a change in the relatively steady trends witnessed over the past 7 years or a short-term interruption. On a quarterly basis, no clear pattern emerges for 2017. Deliveries were lower in the first and third quarters compared with the previous year (by 3.9 percent and 2.6 percent, respectively), 6.3-percent higher in the second quarter, and essentially unchanged in the fourth quarter.

Ending stocks for 2017/18 are projected to be 1.842 million STRV, an 18,000-STRV increase from the previous projection, resulting in a 14.6 percent stocks-to-use ratio. While an increase from the previous month's forecast, it would represent a slightly tighter market than the revised 2016/17 stocks-to-use ratio at 15.1 percent.

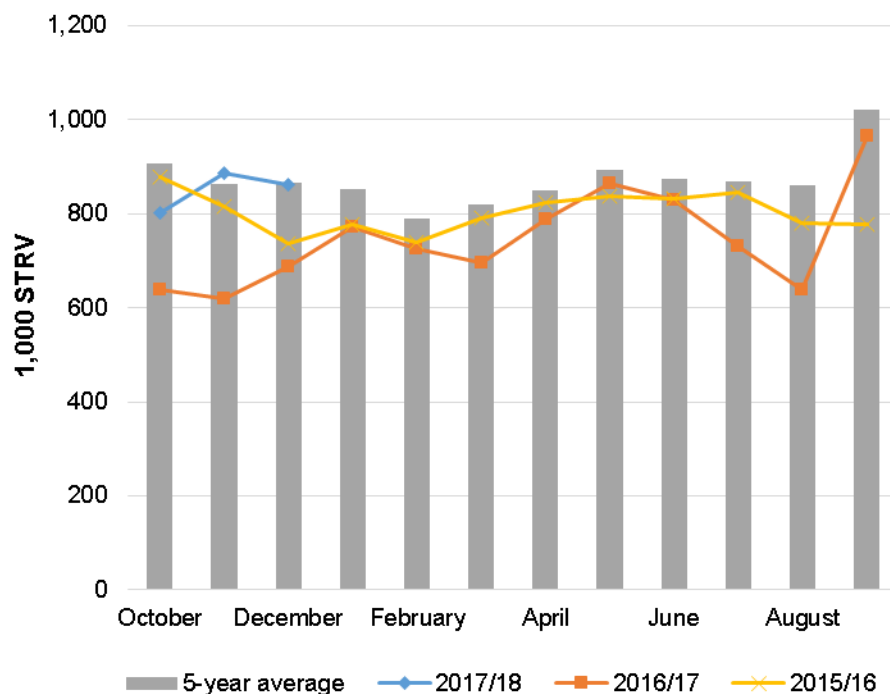
Beginning in 2015/16, sugar inventories held by the sugarbeet and sugarcane sectors began to diverge, a trend that continued through 2016/17 and was reflected by a divergence in the spot market for refined cane and refined beet sugar. Strong deliveries during 2015/16 and early 2016/17, along with constrained supplies of imported raw sugar, resulted in cane refiners drawing down inventories to relatively low levels by the end of 2016/17. Strong beet sugar production from consecutive large sugarbeet harvests and relatively sluggish deliveries during the first half of 2015/16 resulted in beet processors holding substantially larger stocks and carrying large inventories into 2016/17. This period also coincided with the legislative debate during the spring of 2016 regarding genetically-modified (GMO) ingredient labeling laws, which created uncertainty in the food manufacturing market. Domestically produced sugarbeets are almost exclusively grown from GMO varieties; in contrast, there are no commercially available GMO varieties of sugarcane.

Figure 5  
**Sugarbeet processors' total sugar inventories, monthly, 2015/16 to 2017/18**



Source: U.S. Department of Agriculture, Farm Service Agency.

**Figure 6**  
**Sugarcane refiners' total sugar inventories, monthly, 2015/16 to 2017/18**



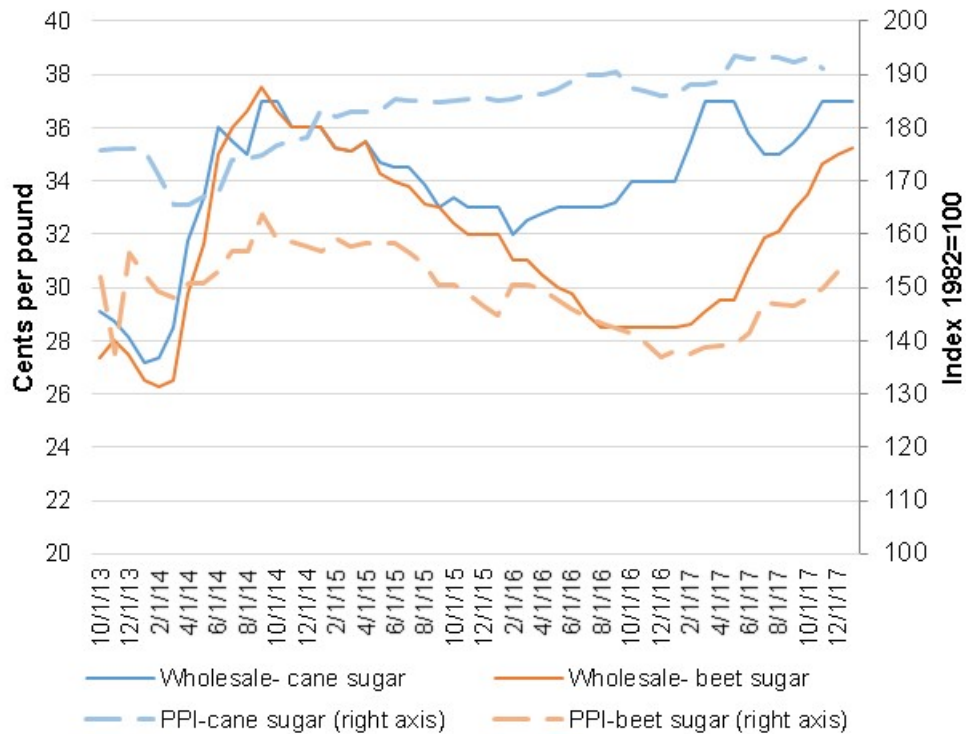
Source: U.S. Department of Agriculture, Farm Service Agency.

Through December, 2017, inventories held by cane refiners and beet processors have returned to more balanced levels between the sectors. For the sugarbeet sector, strong deliveries, likely aided by the passage of the GMO labeling legislation in July 2016 that removed some of the uncertainties in the market, along with the price discount that had developed for refined beet sugar and the availability of beet sugar supplies, allowed sugarbeet processors to increase their deliveries and successfully draw down inventories. For the cane sector, USDA program actions in July 2017 increased the amount of sugar that could be imported under the 2016/17 WTO raw sugar TRQ and Export Limit with Mexico. Increased raw sugar imports, particularly from WTO raw sugar TRQ holders, allowed cane refiners' inventories to increase substantially beginning in September 2017. Combined with relatively strong production from domestic cane processors in 2017/18 and continued sluggishness in cane sugar deliveries, inventories have remained substantially higher than the previous year.

The developments in the cane and beet sectors' inventories have also been seen in prices over the same period. Wholesale spot prices of refined cane and refined beet prices began dramatically diverging in 2016, but the spread has narrowed considerably in the past few months, with recent weekly prices showing just a 1-cent per pound difference between the two products. Producer Price Indices (PPI) for both products, which reflect the actual costs paid, have also narrowed over the past several months, further suggesting that the two sectors' fundamentals are more integrated.



Figure 8  
**Refined sugar prices, wholesale and Producer Price Indices, monthly**



Source: U.S. Department of Agriculture, Economic Research Service.

***Large Mexico deliveries of high-fructose corn syrup thus far in 2017/18 reduce sugar use projections***

Mexico sugar use projections are increased in the 2017/18, raised 19,000 metric tons, actual value (MT), to 6.248 million MT. Projected domestic deliveries for human consumption are reduced 87,000 MT, however, totaling 4.496 million MT. If realized, this would be a 0.4 percent decrease from 2016/17 levels.

Table 3 -- Mexico sugar supply and use, 2015/16 - 2016/17 and projected 2017/18, February 2018

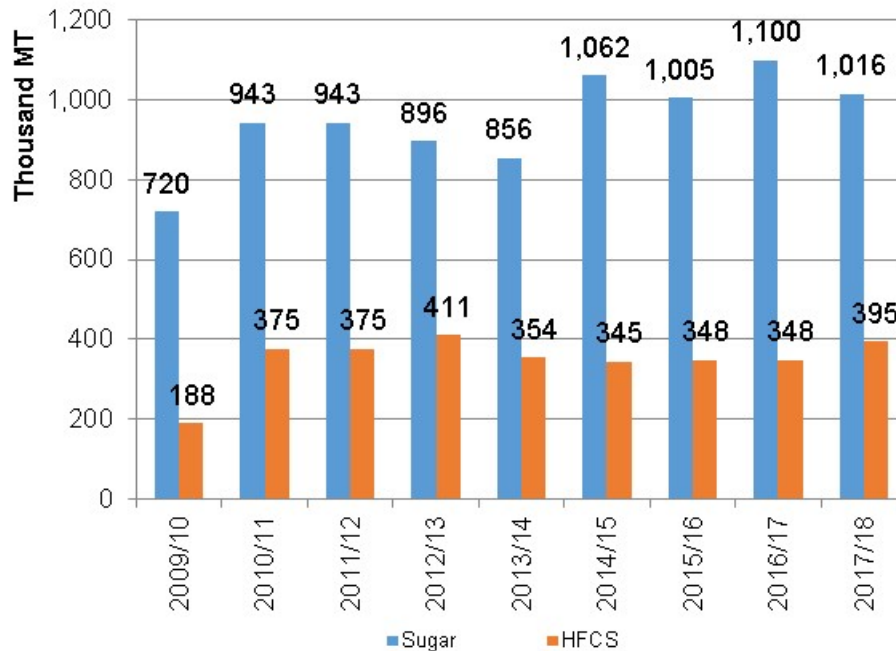
Items	2015/16	2016/17 (estimate)	2017/18 (forecast)
	1,000 metric tons, actual weight		
Beginning stocks	811	1,037	1,002
Production	6,117	5,957	6,100
Imports	83	93	135
Imports for consumption	17	48	85
Imports for sugar-containing product exports, IMMEX 1/, other	66	45	50
Total supply	7,011	7,087	7,237
Disappearance			
Human consumption	4,387	4,515	4,496
For sugar-containing product exports (IMMEX)	390	397	390
Other deliveries and end-of-year statistical adjustment	-10	-61	0
Total	4,767	4,851	4,886
Exports			
Exports to the United States & Puerto Rico	1,207	1,234	1,362
Exports to other countries	1,120	1,028	1,085
Exports to other countries	86	205	277
Total use	5,974	6,085	6,248
Ending stocks	1,037	1,002	989
	1,000 metric tons, raw value		
Beginning stocks	859	1,099	1,062
Production	6,484	6,315	6,466
Imports	88	98	143
Imports for consumption	18	51	90
Imports for sugar-containing product exports (IMMEX)	70	47	53
Total supply	7,431	7,512	7,672
Disappearance			
Human consumption	4,650	4,786	4,766
For sugar-containing product exports (IMMEX)	413	420	413
Other deliveries and end-of-year statistical adjustment	-10	-64	0
Total	5,053	5,142	5,179
Exports			
Exports to the United States & Puerto Rico	1,279	1,308	1,444
Exports to other countries	1,187	1,090	1,151
Exports to other countries	92	218	294
Total use	6,332	6,450	6,623
Ending stocks	1,099	1,062	1,048
Stocks-to-human consumption (percent)	23.6	22.2	22.0
Stocks-to-use (percent)	17.4	16.5	15.8
High fructose corn syrup (HFCS) consumption (dry weight)	1,482	1,522	1,608

1/ IMMEX = Industria Manufacturera, Maquiladora y de Servicios de Exportación.

Source: USDA, *World Agricultural Supply and Demand Estimates* and Economic Research Service, Sugar and Sweeteners Outlook; Conadesuca.

Through December, sugar deliveries have been down 7.7 percent from the previous year, while deliveries of HFCS have been at their highest level since 2013/14. While still early in the year, particularly as the Mexico sugar harvest did not hit full steam until January, high domestic sugar prices and relatively tight supplies of estandar and refined sugar are likely market factors that are resulting in additional HFCS deliveries. During the first quarter of 2017/18, HFCS deliveries accounted for 28.0 percent of total sweetener deliveries. By comparison, the proportion from the previous 3 years was between 24.0 and 25.7 percent.

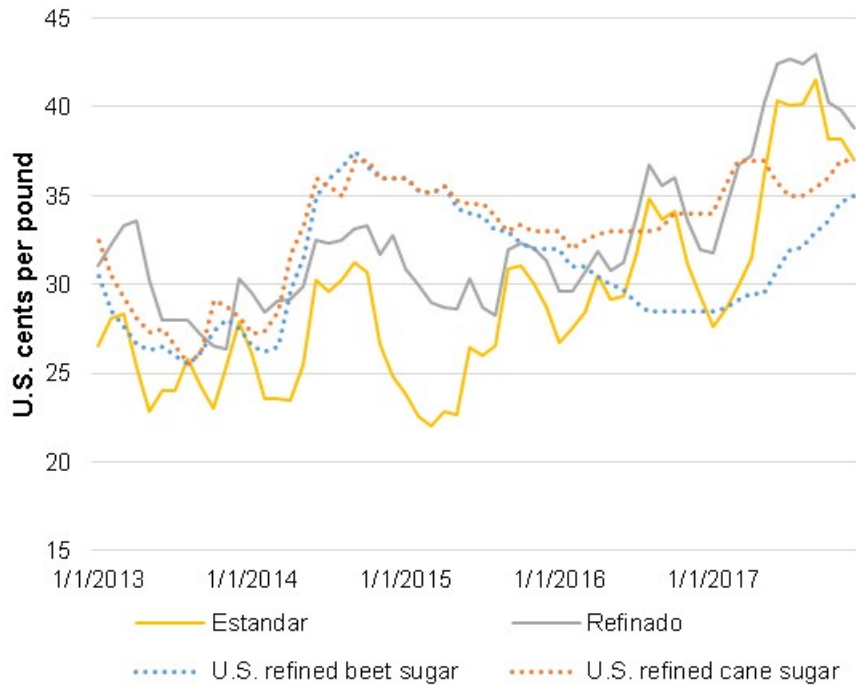
Figure 9  
**Mexican sweetener consumption October to December**



Source: Conadesuca.

High sugar prices are a contributing factor to Mexico’s shift in sweetener consumption toward high-fructose corn syrup (HFCS) and away from sugar, at least for the first quarter of the 2017/18 fiscal year. Projected HFCS deliveries for 2017/18 are projected to be 1.608 million MT, which would be a 5.4-percent increase from deliveries in 2016/17. Domestic sugar prices in Mexico increased in the summer of 2017, with the U.S. dollar equivalent of the wholesale prices in the Mexico City market exceeding the respective U.S. sugar prices. While prices have been lower in recent months, they remain high by historical standards and in relation to prices in the United States. The price is driven in part by sugar market fundamentals and the Mexico Peso’s foreign exchange rate, which explains some of the increase and volatility in sugar prices. The price is also likely also be impacted by the U.S. market fundamentals, particularly as the Export Limit set by the U.S. Department of Commerce (USDOC) that defines Mexico’s market access to the United States evolves. As a result, the Export Limit set subsequent to the March WASDE will be an important market development for both the U.S. and Mexico sugar markets. Nonetheless, the high prices in Mexico are a contributing factor to both higher sugar imports and HFCS deliveries relative to previous years.

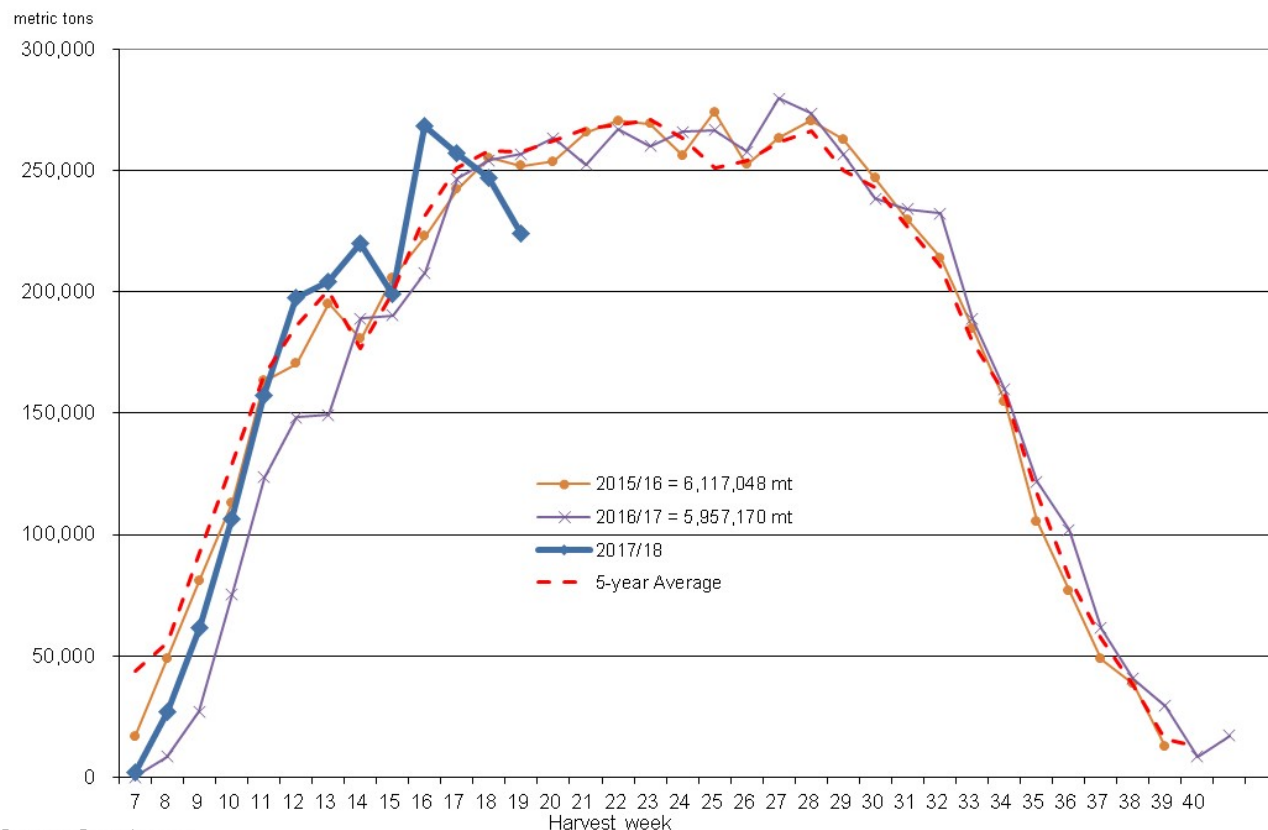
Figure 10  
**Mexico Estandar and Refinado sugar prices, monthly, January 2013 to January 2018**



Source: U.S. Department of Agriculture, Economic Research Service.

Mexico sugar production is projected to be 6.100 million MT, unchanged from the previous month's projection. Through February 3, Mexican mills have produced 2.172 million MT, which is 15.7 percent higher than the previous year and the highest production total at this point in the campaign since 2012/13, according to Mexico's *Comité Nacional para el Desarrollo Sustentable de la Caña de Azúcar* (Conadesuca). The 2017/18 sugarcane harvest campaign got off to a strong start, with harvested area 11.5-percent ahead of the same period the previous year and cumulative sugarcane yields and processor recovery rates in line with recent years. Entering into the peak of the harvest campaign, with 50 out of the 51 sugar mills under operation, there have been a few weeks with relatively lower sugar production due to fewer weekly acres harvested, but there have not been any indications of issues that may continue for the remainder of the season.

Figure 11  
**Mexico sugar production, by week of harvest, 2015/16-2017/18**



Conadesuca lowered its production forecast to 6.055 million MT on February 9, 2018, subsequent to the February WASDE release. The reduction was primarily the result of a lower harvested area—reduced from 802,000 hectares in the first estimate to 778,000 hectares in the latest estimate. If realized, this harvested area would be slightly higher than the 2016/17 harvest and in line with levels seen over the last 3 years. The updated estimate has relatively minor, mostly offsetting, changes to the expected sugarcane harvest and recovery rates that would have a slight net increase in the amount of sugar produced per hectare.

Sugar produced below a polarity of 99.2 totaled 236,000 MT through February 3, also according to Conadesuca. According to the terms of the suspension agreements amended in June 2017, 70 percent of the sugar that Mexico ships to the United States must qualify as “Other Sugar” below the 99.2 polarity threshold. Based on the projected Export Limit from the December WASDE, the most recent report of low-polarity sugar production would fill 31.0 percent of the Other Sugar portion of the limit. Based on Conadesuca’s weekly reporting, 13 of the 50 mills currently operating have produced the low-polarity sugar. Those mills are concentrated in the regions closest to the Gulf of Mexico, particularly in the State of Veracruz. Several of the mills’ sugar-production mixes, particularly in mills that have produced the largest volumes, have been almost exclusively of this specification of sugar. Although there are no data in previous years for this type of production, it is likely that it has reduced the amount of estandar sugar available to the domestic market.

It is expected that most of the low-polarity sugar produced will be exported to the United States to fulfill the Other Sugar portion of the Export Limit. Production of this specification remains a market uncertainty, however. Market reports suggest that the Mexican mills are not designed to optimize production for specification of product, and low-polarity sugar is likely not a product that will be as easy to market domestically as estandar sugar. Current projections are based upon Mexico’s fulfilling the full volume of the established Export Limit. If availability of the

supply of low-polarity sugar becomes a constraint, it could have implications for other areas of the U.S. and Mexico supply and use balances.

Mexico is projected to export 1.362 million MT of sugar in 2017/18, a 106,000-MT increase from the previous month. Exports to the United States remain unchanged at 1.085 million MT, based on the expected Export Limit from the December WASDE, per the terms of the suspension agreements between the USDOC and the Government of Mexico. Exports to other countries are projected to be 106,000 MT higher than the previous month, totaling 277,000 MT. This increase is due to the reduction in domestic deliveries that will increase the amount of exportable supplies.

Ending stocks are projected to be 989,000 MT, a reduction of 19,000 MT from the January report. The stocks-to-consumption ratio remains unchanged at 22 percent, however. This is in line with historical levels and stated targets by Mexican authorities to maintain 2.5 months of deliveries in inventories at the end of the fiscal year. With fewer projected deliveries for 2017/18, less sugar needs to be held in stocks to reach those targets. Instead, the additional supplies are expected to be marketed in the export market.

## Special Article: Long-Term Market Projections for U.S. and Mexico Sugar Markets

This month the USDA releases *USDA Agricultural Projections to 2027*. The report provides a long-term market perspective for many agricultural markets important to U.S. agriculture. The projections for all commodities are performed under specific Government policy and macroeconomic assumptions. The projections run through 2027/28, using the projections from the November 2017 WASDE as the starting point.

The sugar Interagency Commodity Estimates Committee (ICEC) generated the baseline long-term projections for the U.S. sugar market. In addition, the committee generated a baseline projection for Mexico and two alternative scenarios for both countries, with the primary objective of evaluating the likelihood of forfeitures and Government outlays under the current USDA sugar policies' market loan program. The two alternative scenarios are: Per capita sugar consumption remains unchanged from current levels or Mexico sugar production experiences a single-year increase due to higher sugarcane yields similar to those that occurred in 2012/13.

### Baseline projection results show tight supplies for both the United States and Mexico

The baseline scenario for sugar markets assumes that current Government policies remain in place for the duration of the projection period, including current farm policies and programs and current trade policies and the terms of free-trade agreements. The future projections are largely based on trends and statistical relationships from recent years in the North American sugar market carrying forward into the future.

Table 4 -- U.S. sugar supply and use projections base specifications

	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Sugarbeet harvested area (1,000 acres)	1,126	1,113	1,162	1,196	1,166	1,149	1,133	1,118	1,106	1,093	1,079	1,069
Sugarbeet yield (short tons/acre)	32.7	32.4	29.9	30.4	30.9	31.4	31.9	32.4	32.9	33.4	33.9	34.4
Sugarcane harvested area (1,000 acres)	853	845	862	872	882	889	896	900	903	908	912	916
Sugarcane yield (short tons/acre)	35.6	36.1	35.5	35.8	35.9	35.8	35.8	35.8	35.8	35.8	35.8	35.8
	1,000 short tons, raw value											
Beginning stocks	2,054	1,834	1,775	1,732	1,765	1,798	1,830	1,863	1,895	1,927	1,958	1,989
Total production	8,967	8,836	8,975	9,312	9,343	9,378	9,442	9,483	9,546	9,604	9,649	9,713
Beet sugar	5,101	4,950	5,019	5,252	5,204	5,206	5,217	5,228	5,248	5,265	5,275	5,302
Cane sugar	3,866	3,886	3,956	4,060	4,140	4,172	4,225	4,255	4,298	4,339	4,374	4,411
Total imports	3,247	3,710	3,810	3,794	4,006	4,213	4,389	4,585	4,758	4,933	5,120	5,283
TRQ	1,611	1,756	1,899	1,804	1,967	2,134	2,260	2,459	2,592	2,739	2,889	3,002
Mexico	1,204	1,694	1,651	1,730	1,779	1,819	1,869	1,866	1,906	1,934	1,970	2,022
Other imports	431	260	260	260	260	260	260	260	260	260	260	260
Total supply	14,268	14,380	14,560	14,838	15,114	15,389	15,661	15,931	16,199	16,464	16,727	16,986
Exports	95	50	50	50	50	50	50	50	50	50	50	50
Total domestic deliveries	12,286	12,555	12,778	13,023	13,267	13,508	13,748	13,986	14,222	14,456	14,687	14,916
Deliveries for food and beverage use	12,130	12,400	12,623	12,868	13,112	13,353	13,593	13,831	14,067	14,301	14,532	14,761
Other deliveries	156	155	155	155	155	155	155	155	155	155	155	155
Total Use	12,434	12,605	12,828	13,073	13,317	13,558	13,798	14,036	14,272	14,506	14,737	14,966
Ending stocks	1,834	1,775	1,732	1,765	1,798	1,830	1,863	1,895	1,927	1,958	1,989	2,020
Stocks-to-use ratio	14.75	14.09	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50
	cents per pound											
World raw sugar price	13.94	15.25	16.09	18.40	21.75	19.42	18.10	19.99	20.14	21.98	24.20	25.20
U.S. raw sugar price - 3rd quarter	26.26	27.76	28.72	29.75	31.08	30.17	29.62	30.40	30.46	31.16	31.96	32.30
Refined beet sugar spot price - 3q quarter	32.30	33.56	33.68	34.42	35.38	34.73	34.33	34.89	34.94	35.44	36.00	36.24
Sugarbeet price (Dollars/ton)	35.50	47.10	47.02	46.74	48.07	48.83	48.87	48.69	48.95	49.27	50.17	51.11
Sugarcane price (Dollars/ton)	32.50	35.22	37.02	38.59	39.02	40.16	40.14	40.66	41.69	42.21	42.96	43.77

Source: U.S. Department of Agriculture, Sugar and Sweetener Interagency Commodity Estimate Committee.

Domestic sugar deliveries for the United States are projected to increase from 12.623 million STRV in 2018/19 to 14.761 million STRV by 2027/28, a 1.7-percent average annual increase. This projection is based on recent trends in the U.S. caloric sweetener market, with per capita sweetener consumption declining slightly but per capita HFCS consumption declining at a faster rate. The result is projected to be a per capita increase in sugar consumption, with sugar deliveries driven by population growth and a higher per capita consumption rate. Historically, these trends have not been price-sensitive, indicating that they are related to preferences of food manufacturers and their customers rather than being endogenous to yearly supply and use developments.

Domestic sugar production is projected to increase at an annual rate of 0.9 percent over the projection period, from 8.975 million STRV in 2018/19 to 9.713 million STRV by 2027/28. Both domestic beet and cane sugar producers

benefit from stable and increasing prices projected over the period, which should provide adequate revenue for processors and increasing grower prices to spur production growth. The difference in growth rates between projected domestic consumption and projected domestic production demonstrate the need for increased imports, however, explained later in this section.

Domestic beet sugar production is projected to grow from 5.019 million STRV in 2018/19 to 5.302 million STRV—a 0.6-percent annual increase. The increase is due to steadily increasing sugarbeet yields, as harvested acres of sugar beets are projected to be lower by 2027/28. Harvested area is expected to increase through 2019/20 before steadily declining for the remainder of the projection period. This is due to projected higher costs to grow sugarbeets. Input costs are closely tied to oil prices, which are projected to increase in the underlying macroeconomic conditions. As a result, beet sugar production growth is dependent upon the growth in sugarbeet yields and improved sucrose recovery from harvested sugarbeets. This would come from a continuation of technological improvements from seed varieties and field technologies, improved storage management of sugarbeets during the processing season, and improvement in processing efficiency.

Domestic cane sugar production is also projected to increase, but at a rate of 1.2 percent per year—from 3.956 million STRV in 2018/19 to 4.411 million STRV by the end of the projection period. Sugarcane production is expected to come from increased harvested area—a 0.7 average annual increase—along with improved recovery rates from processors. Sugarcane yields are projected to stay relatively level over the duration, following recent historical performance in national yields. Like sugarbeet growers, sugarcane growers will also face higher input costs due to higher projected oil prices; however, sugarcane production is less sensitive to changes in cost, partially due to the multi-year planting cycle that occurs for sugarcane.

Total imports are projected to increase at an annual rate of 3.6 percent, from 3.810 million STRV in 2018/19 to 5.283 million STRV. This growth is necessary for supply to meet the growth in deliveries. Imports from Mexico, the largest foreign supplier of sugar to the United States, are projected to grow at 2.3 percent. The terms of the suspension agreements, signed between the USDOC and Government of Mexico in December 2014 and amended in June 2017, govern imports from Mexico. However, the Export Limit is not projected to be the main constraint for volumes. Mexico is projected to increase production over the next 10 years, but it is also projected to see increasing domestic deliveries that will limit supplies available for export. As a result, additional imports under TRQ programs are projected in order to have enough supplies to meet demand, as well as a minimum amount of sugar held as ending stocks to carry into the following year—with a 13.5 percent stocks-to-use ratio as a floor level of ending stocks within the projections.

The resulting ending stocks level means that U.S. sugar markets are projected to be relatively tight by historical standards for the duration of the projection period. This is expected to provide support for prices in the raw and refined sugar markets, as well as prices received by sugarcane and sugarbeet growers for their crops.

Similar dynamics are projected for the Mexico sugar market, with production growth projected at a rate lower than the rate of use. Mexico sugar production is projected to grow from 6.411 million MT in 2018/19 to 7.039 million MT by the end of the projection period. The growth comes from both increased harvested area and improved yields. Harvested area is expected to increase by 41,000 hectares between 2018/19 and 2027/28, supported by prices and returns from both domestic and export markets. Yields are projected to increase at an annual rate of 0.7 percent but to remain at levels below the 2012/13 sugarcane yield of 78.7 MT per hectare, which stands as a relative outlier due to exceptional growing conditions in that year.



Table 5 -- Mexico sugar and high fructose corn syrup supply and use projections base specifications

	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Sugarcane harvested area (1,000 ha.)	777	790	802	814	819	827	830	830	833	834	838	843
Sugarcane yield (metric tons/acre)	68.6	69.1	69.6	70.2	70.7	71.2	71.7	72.3	72.8	73.4	73.9	74.5
	1,000 metric tons, actual value											
Beginning stocks	1,037	1,002	825	834	843	852	861	870	878	886	894	902
Sugar production	5,957	6,100	6,292	6,411	6,503	6,586	6,676	6,721	6,800	6,868	6,941	7,039
Imports	85	95	94	94	94	94	94	94	94	94	94	94
Total supply	7,079	7,197	7,211	7,339	7,440	7,533	7,632	7,685	7,773	7,849	7,930	8,035
Domestic disappearance	4,889	4,912	4,964	5,015	5,065	5,114	5,162	5,209	5,254	5,298	5,341	5,393
Consumption	4,515	4,582	4,634	4,685	4,735	4,784	4,832	4,879	4,924	4,968	5,011	5,063
Other disappearance	390	330	330	330	330	330	330	330	330	330	330	330
Exports	1,160	1,460	1,413	1,481	1,523	1,557	1,600	1,598	1,632	1,656	1,687	1,731
To the United States	1,030	1,450	1,413	1,481	1,523	1,557	1,600	1,598	1,632	1,656	1,687	1,731
To other countries	184	10	0	0	0	0	0	0	0	0	0	0
Ending stocks	1,002	825	834	843	852	861	870	878	886	894	902	911
Stocks-to-consumption ratio	22.20	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00
High fructose corn syrup deliveries	1,531	1,531	1,555	1,579	1,603	1,627	1,651	1,674	1,697	1,720	1,742	1,764

Source: U.S. Department of Agriculture, Sugar and Sweetener Interagency Commodity Estimate Committee.

Domestic disappearance growth in Mexico is expected to be driven by the population. Domestic deliveries for human consumption are projected to grow 1.0 percent per year. Some of the growth is dampened by increased HFCS deliveries, which are projected to increase by 1.4 percent over the same period. On a per capita basis, projected HFCS deliveries increase but remain below the levels set between 2009/10 and 2012/13, when U.S. and Mexican sugar markets initially became integrated.

Export growth is projected to be strong during the projection period—increasing by 2.3 percent annually—but will be constrained by the growth in the domestic market. Exports are projected to go exclusively to the United States to fulfill as much of the Export Limit as possible and provide a better return than exports to other countries.

With relatively tight supplies, Mexico is expected to prioritize meeting domestic demand—including holding at least 18 percent of domestic deliveries for consumption as ending stocks to meet market demands between the end of the fiscal year and the beginning of the harvest season in December. With those demands met, Mexico is projected to next ship volumes to the United States, meeting the terms of the suspension agreements. Once its market access to the United States is fulfilled, Mexico would then build ending stocks to further bolster domestic inventories up to 22 percent of deliveries for consumption. Historical performance shows that supplies beyond this level are usually mitigated by shipments to other countries, which keeps market prices favorable for sugarcane growers and sugar processors. Under the baseline scenario, however, there are only enough supplies to satisfy minimum domestic needs and partially fulfill market access to the United States. As in the U.S. projections, this results in a relatively tight market for Mexico, which facilitates an expansion of production.

### ***Unchanged per capita sugar deliveries lessen, delay the tight supply situation in North America***

The first alternative scenario analyzed is one with relatively slower growth for sugar deliveries in the United States. This analysis keeps per capita sugar deliveries in the United States unchanged, rather than using the baseline scenario that has sugar consumption increasing as HFCS consumption continues to decline. This alternate scenario simulates a market with less demand, either from less caloric sweetener consumption or a less severe decline in HFCS consumption. The results provide some stark differences from the baseline scenario, but some of the overall result remains relatively unchanged.

Table 6 -- U.S. sugar supply and use projections, flat per capita consumption scenario

	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Sugarbeet harvested area (1,000 acres)	1,126	1,113	1,162	1,194	1,168	1,149	1,133	1,118	1,105	1,093	1,079	1,069
Sugarbeet yield (short tons/acre)	32.7	32.4	29.9	30.4	30.9	31.4	31.9	32.4	32.9	33.4	33.9	34.4
Sugarcane harvested area (1,000 acres)	853	845	862	873	880	884	887	888	888	889	890	890
Sugarcane yield (short tons/acre)	35.6	36.1	35.5	35.8	35.9	35.8	35.8	35.8	35.8	35.8	35.8	35.8
	1,000 short tons, raw value											
Beginning stocks	2,054	1,834	1,775	1,691	1,703	1,716	1,729	1,741	1,753	1,766	1,778	1,790
Total production	8,967	8,836	8,975	9,306	9,341	9,355	9,404	9,428	9,474	9,517	9,541	9,587
Beet sugar	5,101	4,950	5,019	5,243	5,212	5,206	5,217	5,226	5,247	5,267	5,274	5,301
Cane sugar	3,866	3,886	3,956	4,063	4,129	4,149	4,187	4,202	4,228	4,251	4,267	4,286
Total imports	3,247	3,710	3,464	3,324	3,383	3,462	3,505	3,573	3,617	3,664	3,728	3,770
TRQ	1,611	1,756	1,553	1,553	1,557	1,558	1,559	1,561	1,562	1,563	1,565	1,573
Mexico	1,204	1,694	1,651	1,511	1,566	1,643	1,686	1,752	1,795	1,840	1,904	1,937
Other imports	431	260	260	260	260	260	260	260	260	260	260	260
Total supply	14,268	14,380	14,214	14,321	14,427	14,533	14,638	14,742	14,845	14,947	15,047	15,147
Exports	95	50	50	50	50	50	50	50	50	50	50	50
Total domestic deliveries	12,286	12,555	12,474	12,568	12,661	12,754	12,847	12,938	13,029	13,119	13,208	13,295
Deliveries for food and beverage use	12,130	12,400	12,319	12,413	12,506	12,599	12,692	12,783	12,874	12,964	13,053	13,140
Other deliveries	156	155	155	155	155	155	155	155	155	155	155	155
Total Use	12,434	12,605	12,524	12,618	12,711	12,804	12,897	12,988	13,079	13,169	13,258	13,345
Ending stocks	1,834	1,775	1,691	1,703	1,716	1,729	1,741	1,753	1,766	1,778	1,790	1,802
Stocks-to-use ratio	14.75	14.09	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50
	cents per pound											
World raw sugar price	13.94	15.25	16.09	18.40	21.75	19.42	18.10	19.99	20.14	21.98	24.20	25.20
U.S. raw sugar price - 3rd quarter	26.26	27.76	28.72	29.75	31.08	30.17	29.62	30.40	30.46	31.16	31.96	32.30
Refined beet sugar spot price - 3q quarter	32.30	33.56	33.68	34.42	35.38	34.73	34.33	34.89	34.94	35.44	36.00	36.24
Sugarbeet price (Dollars/ton)	35.50	47.10	46.42	47.26	48.09	48.83	48.80	48.60	49.05	49.24	50.12	51.04
Sugarcane price (Dollars/ton)	32.50	35.22	37.32	37.47	37.69	38.40	38.02	38.16	38.70	38.90	39.25	39.66

Source: U.S. Department of Agriculture, Sugar and Sweetener Interagency Commodity Estimate Committee.

With per capita sugar consumption unchanged throughout the projection period, the growth of deliveries for food and beverage use is driven exclusively by population growth. The result is an annual growth rate of 0.7 percent, compared with 1.7 percent in the baseline scenario. Due to trade policies with Mexico, the projected stocks-to-use ratio remains at 13.5 percent and U.S. prices are only moderately impacted. Production in this scenario is relatively lower than the baseline scenario due to the lower returns. In particular, cane sugar production is projected to grow at an annual rate of 0.9 percent due to fewer harvested acres.

The largest differences, however, come from the amount and structure of imports. Imports grow at a slower rate, and imports from Mexico are projected to fully meet the Export Limit in most years of the projection period. Imports from TRQ programs do not grow at the same rate, and there would be a lower probability that mechanisms in the TRQ programs would need to be utilized by USDA to increase imports.

A significant result of the alternate scenario, from a policy standpoint, is that despite less use, inventories and prices do not reach a level in any year that would incentivize a forfeiture of sugar and produce Government outlays. Projected supply and use keep the market relatively tight, supporting prices for growers and processors.

Projections in Mexico under this scenario differ, as well. Projected production is lower than in the baseline scenario, with annual growth at 1.0 percent due to reduced harvested area from lower returns. Despite lower production, the reduced demand from the United States allows Mexico exporters to fully meet the volume of the Export Limit—except in the final year—and to have enough supplies available to build ending stocks and even ship sugar to other countries in some years. By the end of the projection period, however, the growth in domestic deliveries results in a constraint in exportable supplies. The results of this scenario for Mexico eventually lead to a relatively tight market situation, as well.

Table 7 -- Mexico sugar and high fructose corn syrup supply and use projections, flat per capita consumption scenario

	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Sugarcane harvested area (1,000 ha.)	777	790	802	814	816	820	821	818	819	819	821	827
Sugarcane yield (metric tons/acre)	68.6	69.1	69.6	70.2	70.7	71.2	71.7	72.3	72.8	73.4	73.9	74.5
	1,000 metric tons, actual value											
Beginning stocks	1,037	1,002	825	834	1,031	1,042	1,053	1,063	1,073	1,065	1,029	961
Sugar production	5,957	6,100	6,292	6,411	6,482	6,537	6,603	6,626	6,689	6,743	6,808	6,908
Imports	85	95	94	94	94	94	94	94	94	94	94	94
Total supply	7,079	7,197	7,211	7,339	7,607	7,673	7,750	7,784	7,857	7,903	7,931	7,963
Domestic disappearance	4,889	4,912	4,964	5,015	5,065	5,114	5,162	5,209	5,254	5,298	5,341	5,393
Consumption	4,515	4,582	4,634	4,685	4,735	4,784	4,832	4,879	4,924	4,968	5,011	5,063
Other disappearance	390	330	330	330	330	330	330	330	330	330	330	330
Exports	1,160	1,460	1,413	1,294	1,500	1,506	1,524	1,501	1,537	1,575	1,630	1,658
To the United States	1,030	1,450	1,413	1,293	1,341	1,407	1,443	1,500	1,537	1,575	1,630	1,658
To other countries	184	10	0	0	159	99	81	2	0	0	0	0
Ending stocks	1,002	825	834	1,031	1,042	1,053	1,063	1,073	1,065	1,029	961	911
Stocks-to-consumption ratio	22.20	18.00	18.00	22.00	22.00	22.00	22.00	22.00	21.64	20.71	19.17	18.00
High fructose corn syrup deliveries	1,531	1,531	1,555	1,579	1,603	1,627	1,651	1,674	1,697	1,720	1,742	1,764

Source: U.S. Department of Agriculture, Sugar and Sweetener Interagency Commodity Estimate Committee.

### *A yield shock in Mexico would result in short-term changes in projections*

The final scenario shows results of a market that experiences the baseline scenario conditions, but shows what would happen if Mexico experienced a one-time production increase due to a higher sugarcane yield—occurring mid-projection period in 2022/23—to a degree similar to that which occurred in 2012/13.

Table 8 -- U.S. sugar supply and use projections, Mexico yield shock scenario

	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Sugarbeet harvested area (1,000 acres)	1,126	1,113	1,162	1,195	1,167	1,148	1,133	1,118	1,105	1,093	1,078	1,068
Sugarbeet yield (short tons/acre)	32.7	32.4	29.9	30.4	30.9	31.4	31.9	32.4	32.9	33.4	33.9	34.4
Sugarcane harvested area (1,000 acres)	853	845	862	872	882	889	896	900	903	908	912	916
Sugarcane yield (short tons/acre)	35.6	36.1	35.5	35.8	35.9	35.8	35.8	35.8	35.8	35.8	35.8	35.8
	1,000 short tons, raw value											
Beginning stocks	2,054	1,834	1,775	1,732	1,765	1,798	1,830	1,863	1,895	1,927	1,958	1,989
Total production	8,967	8,836	8,975	9,309	9,346	9,378	9,442	9,483	9,545	9,605	9,648	9,712
Beet sugar	5,101	4,950	5,019	5,248	5,206	5,206	5,216	5,226	5,246	5,264	5,273	5,299
Cane sugar	3,866	3,886	3,956	4,061	4,140	4,172	4,225	4,256	4,299	4,341	4,375	4,413
Total imports	3,247	3,710	3,810	3,797	4,003	4,213	4,389	4,586	4,759	4,933	5,120	5,284
TRQ	1,611	1,756	1,899	1,807	1,965	2,134	1,559	1,923	2,670	2,809	2,955	3,062
Mexico	1,204	1,694	1,651	1,730	1,779	1,819	2,569	2,403	1,829	1,863	1,905	1,962
Other imports	431	260	260	260	260	260	260	260	260	260	260	260
Total supply	14,268	14,380	14,560	14,838	15,114	15,389	15,661	15,931	16,199	16,464	16,727	16,986
Exports	95	50	50	50	50	50	50	50	50	50	50	50
Total domestic deliveries	12,286	12,555	12,778	13,023	13,267	13,508	13,748	13,986	14,222	14,456	14,687	14,916
Deliveries for food and beverage use	12,130	12,400	12,623	12,868	13,112	13,353	13,593	13,831	14,067	14,301	14,532	14,761
Other deliveries	156	155	155	155	155	155	155	155	155	155	155	155
Total Use	12,434	12,605	12,828	13,073	13,317	13,558	13,798	14,036	14,272	14,506	14,737	14,966
Ending stocks	1,834	1,775	1,732	1,765	1,798	1,830	1,863	1,895	1,927	1,958	1,989	2,020
Stocks-to-use ratio	14.75	14.09	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50
	cents per pound											
World raw sugar price	13.94	15.25	16.09	18.40	21.75	19.42	18.10	19.99	20.14	21.98	24.20	25.20
U.S. raw sugar price - 3rd quarter	26.26	27.76	28.72	29.75	31.08	30.17	29.62	30.40	30.46	31.16	31.96	32.30
Refined beet sugar spot price - 3q quarter	32.30	33.56	33.68	34.42	35.38	34.73	34.33	34.89	34.94	35.44	36.00	36.24
Sugarbeet price (Dollars/ton)	35.50	47.10	46.72	46.90	48.04	48.79	48.80	48.58	48.91	49.16	50.03	50.93
Sugarcane price (Dollars/ton)	32.50	35.22	37.17	38.52	39.03	40.18	40.18	40.71	41.71	42.26	43.02	43.85

Source: U.S. Department of Agriculture, Sugar and Sweetener Interagency Commodity Estimate Committee.

Overall, the impacts on the U.S. projections are relatively limited and short-lived. Due to the terms of the suspension agreement, the stocks-to-use ratio remains at 13.5 percent, which limits the impact on prices and domestic production. The largest changes come from imports. Imports from Mexico increase in the year of the production increase, as well as in subsequent years, as supplies in Mexico are sufficient to better meet the Export Limit. This also results in fewer imports from TRQ programs for several years. This impact is temporary, however. By the end of the projection period, imports from Mexico are relatively less than the baseline scenario and TRQ imports are larger. This is due to the impact that a surge in supplies would have in Mexico's market after the yield shock. Ultimately, the projections suggest that prices would not be impacted enough to result in Government outlays under the sugar program.

Table 9 -- Mexico sugar and high fructose corn syrup supply and use projections, Mexico yield shock scenario

	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Sugarcane harvested area (1,000 ha.)	777	790	802	814	819	827	830	822	825	827	831	837
Sugarcane yield (metric tons/acre)	68.6	69.1	69.6	70.2	70.7	71.2	85.4	72.3	72.8	73.4	73.9	74.5
	1,000 metric tons, actual value											
Beginning stocks	1,037	1,002	825	834	843	852	861	1,393	878	886	894	902
Sugar production	5,957	6,100	6,292	6,411	6,503	6,586	7,943	6,657	6,734	6,807	6,886	6,988
Imports	85	95	94	94	94	94	94	94	94	94	94	94
Total supply	7,079	7,197	7,211	7,339	7,440	7,533	8,899	8,144	7,707	7,788	7,874	7,984
Domestic disappearance	4,889	4,912	4,964	5,015	5,065	5,114	5,162	5,209	5,254	5,298	5,341	5,393
Consumption	4,515	4,582	4,634	4,685	4,735	4,784	4,832	4,879	4,924	4,968	5,011	5,063
Other disappearance	390	330	330	330	330	330	330	330	330	330	330	330
Exports	1,160	1,460	1,413	1,481	1,523	1,557	2,343	2,057	1,566	1,595	1,631	1,680
To the United States	1,030	1,450	1,413	1,481	1,523	1,557	2,200	2,057	1,566	1,595	1,631	1,680
To other countries	184	10	0	0	0	0	144	0	0	0	0	0
Ending stocks	1,002	825	834	843	852	861	1,393	878	886	894	902	911
Stocks-to-consumption ratio	22.20	18.00	18.00	18.00	18.00	18.00	28.83	18.00	18.00	18.00	18.00	18.00
High fructose corn syrup deliveries	1,531	1,531	1,555	1,579	1,603	1,627	1,651	1,674	1,697	1,720	1,742	1,764

Source: U.S. Department of Agriculture, Sugar and Sweetener Interagency Commodity Estimate Committee.

In Mexico, the increase in yields in 2022/23 would immediately increase supplies. This would translate into increased exports to the United States, as well as exports to other countries that may be constrained due to the unexpected nature of a market shock. This substantially increases ending stocks and carries additional supplies into future years. The one-time increase in supplies would aid in filling the Export Limit in the subsequent year, as well. The longer term impacts of the yield shock would actually be less production in Mexico, as the surge in supplies would lower domestic prices and dampen returns for sugarcane growers. As a result, by the end of the projection period, production would be lower than in the baseline scenario and there would be fewer exportable supplies ready to be shipped to the U.S. market.

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### **Tgrv'gf'Y'gdul'gu''**

Sugar and Sweeteners Outlook <http://www.ers.usda.gov/Publications/SSS/WASDE> <http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documented=1194>  
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