



# Sugar and Sweeteners Outlook

Outlook

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## Lower Expected Domestic Production Reduces U.S. Stocks-to-Use Ratio for 2018/19

The April *World Agricultural Supply and Demand Estimates* (WASDE) projects U.S. sugar ending stocks for 2018/19 at 1.625 million short tons, raw value (STRV)—a 42,000-STRV reduction from the previous month's forecast. The reduction is due to lower expected production from both the cane and beet sugar sectors. No changes are made to projected total use for 2018/19.

There are no changes to the Mexico supply and use projection from the March WASDE. Ending stocks are projected to be 1.420 million metric tons, actual value (MT). A stocks-to-consumption ratio of 30.8 percent is relatively high by historical standards, but lower than the 33.0 percent level estimated for 2017/18. Exports to non-U.S. destinations will be an important component for the Mexican sugar market heading into the summer for 2018/19.

U.S. high-fructose corn syrup (HFCS) production was 2.8 percent lower in the 2018 calendar year compared with 2017. Domestic deliveries of HFCS fell 2.4 percent in 2018, as exports continue to account for a larger share of U.S. supplies.

# U.S. Domestic Outlook

## Adjustments to Domestic Production Lower Projected Supplies

Relatively small changes to the April 2019 *World Agricultural Supply and Demand Estimates* (WASDE) leave the outlook for U.S. sugar markets mostly unchanged. U.S. sugar supplies for 2018/19 are projected to total 13.930 million short tons, raw value (STRV), a 42,000-STRV reduction from the March report, reflecting less domestic production expected for 2018/19.

**Table 1: U.S. sugar: supply and use, by fiscal year (Oct./Sept.), April 2019**

Items	1,000 Short tons, raw value			1,000 Metric tons, raw value		
	2016/17	2017/18 (estimate)	2018/19 (forecast)	2016/17	2017/18 (estimate)	2018/19 (forecast)
Beginning stocks	2,054	1,876	2,008	1,863	1,702	1,822
Total production	8,969	9,293	9,060	8,137	8,430	8,219
Beet sugar	5,103	5,279	4,997	4,629	4,789	4,533
Cane sugar	3,866	4,014	4,063	3,507	3,641	3,686
Florida	2,055	1,983	2,043	1,864	1,799	1,853
Louisiana	1,628	1,862	1,875	1,477	1,689	1,701
Texas	140	169	145	127	153	132
Hawaii	43	0	0	39	0	0
Total imports	3,244	3,277	2,862	2,943	2,973	2,596
Tariff-rate quota imports	1,611	1,663	1,560	1,462	1,509	1,415
Other program imports	419	326	350	380	296	318
Non-program imports	1,213	1,287	952	1,101	1,168	863
Mexico	1,201	1,223	897	1,090	1,110	813
High-duty	12	64	55	11	58	50
Total supply	14,267	14,445	13,930	12,943	13,105	12,637
Total exports	95	170	35	86	154	32
Miscellaneous	38	82	0	35	75	0
Deliveries for domestic use	12,258	12,185	12,270	11,121	11,054	11,131
Transfer to sugar-containing products						
for exports under re-export program	127	110	120	115	100	109
Transfer to polyhydric alcohol, feed, other alcohol	29	28	25	27	25	23
Commodity Credit Corporation (CCC) sale for ethanol, other	0	0	0	0	0	0
Deliveries for domestic food and beverage use	12,102	12,048	12,125	10,979	10,930	11,000
Total use	12,391	12,438	12,305	11,241	11,283	11,163
Ending stocks	1,876	2,008	1,625	1,702	1,822	1,474
Private	1,876	2,008	1,625	1,702	1,822	1,474
Commodity Credit Corporation (CCC)	0	0	0	0	0	0
Stocks-to-use ratio	15.14	16.14	13.21	15.14	16.14	13.21

Source: USDA, Economic Research Service, Sugar and Sweetener Outlook.

Beet sugar production is projected to total 4.997 million STRV, a slight 7,000-STRV reduction from the previous month. The change reflects less sugar produced from imported sugarbeets, based on current reports from processors. The national cumulative sucrose extraction rate remains stable from the past few months, as is typical in most years. At 14.7 percent, the

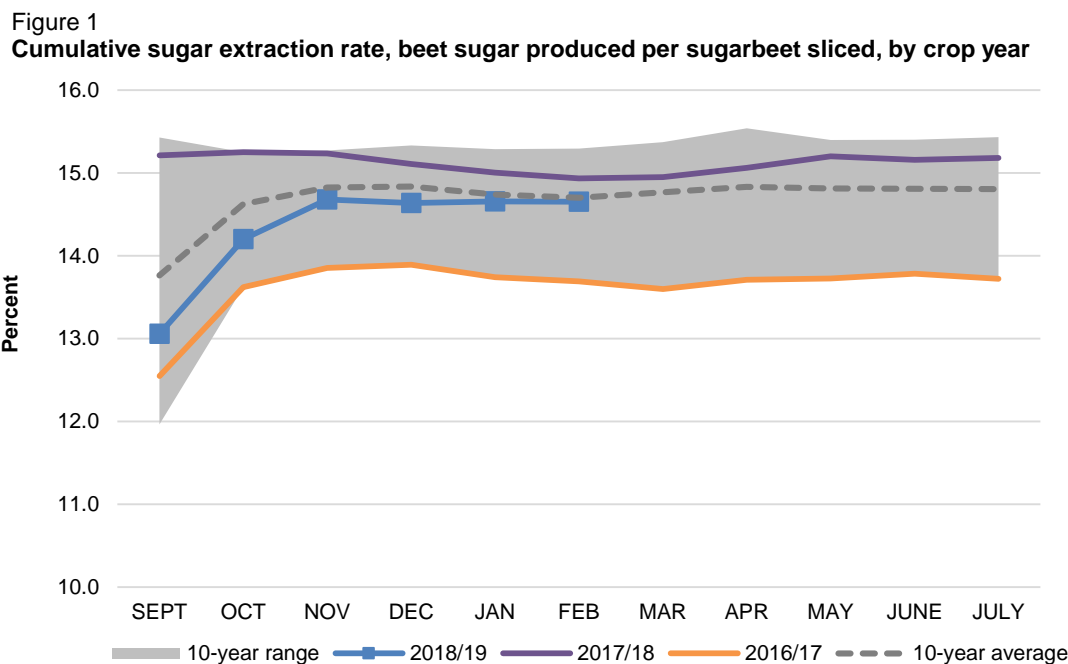
cumulative rate appears to be on a track that is lower than the previous year's relatively high results, but still in line with long term averages.

**Table 2: Beet sugar production projection calculation, 2018/19**

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19 March	2018/19 April
Sugarbeet production (1,000 short tons) 1/	35,224	32,789	31,285	35,371	36,881	35,325	33,145	33,145
Sugarbeet shrink 2/	4.8%	6.8%	5.4%	6.5%	8.3%	7.3%	5.0%	5.0%
Sugarbeet sliced (1,000 short tons)	33,532	30,545	29,595	33,066	33,834	32,742	31,488	31,488
Sugar extraction rate from slice	15.3%	14.3%	14.6%	14.6%	13.7%	15.2%	14.7%	14.7%
Sugar from beets slice (1,000 STRV)	5,142	4,325	4,325	4,820	4,643	4,970	4,626	4,626
Sugar from molasses (1,000 STRV) 2/	327	324	341	380	352	368	368	368
Crop-year sugar production (1,000 STRV) 3/	5,469	4,648	4,667	5,201	4,995	5,338	4,994	4,994
August-September sugar production (1,000 STRV)	708	315	461	688	606	715	655	655
August-September sugar production forecast (1,000 STRV)	315	461	688	606	715	655	625	625
Sugar from imported beets (1,000 STRV) 4/	--	--	--	--	--	--	40	33
Fiscal year sugar production (1,000 STRV)	5,076	4,794	4,893	5,119	5,103	5,279	5,004	4,997

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/ 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: USDA, Economic Research Service and World Agricultural Outlook Board.



Source: USDA, Economic Research Service and Farm Service Agency.

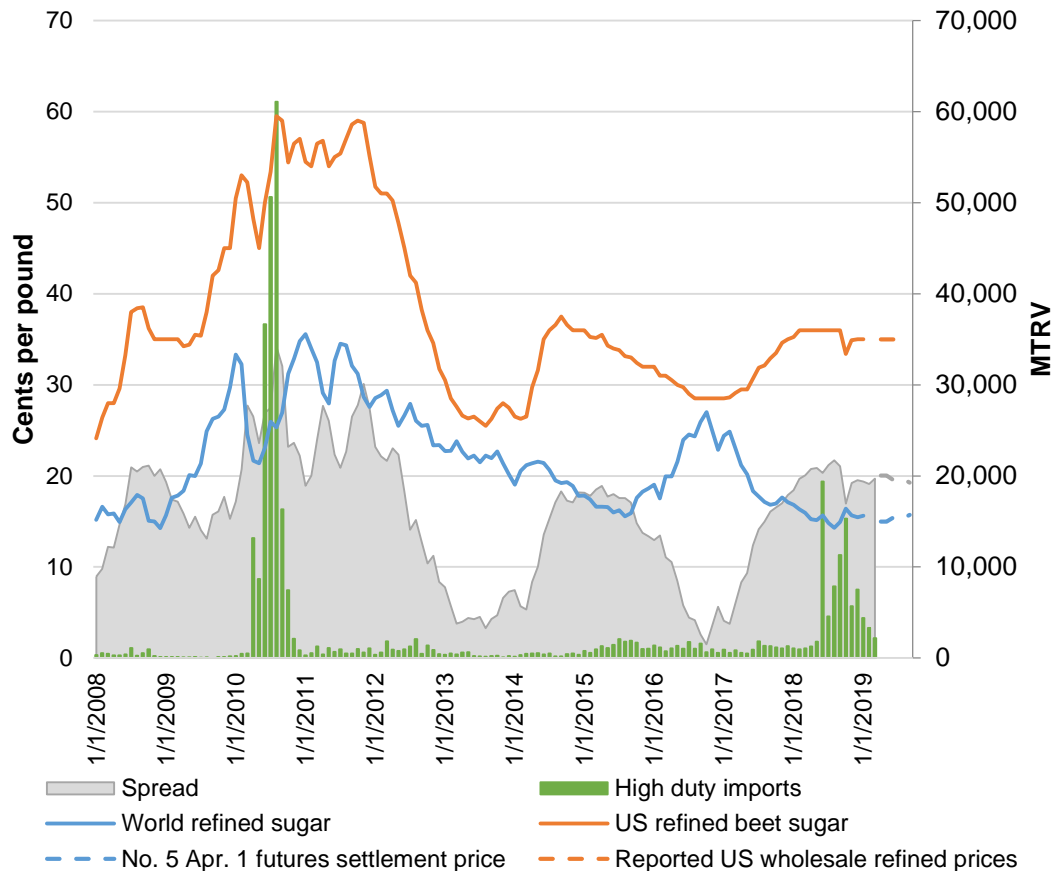
Expected cane sugar production is reduced 35,000 STRV from the March projection, totaling 4.063 million STRV for 2018/19. The reduction is due to lower projected production in Florida of 2.043 million STRV, based primarily on lower harvested area expected from processors in the region. The harvest campaign in Florida is reaching its final weeks but is currently expected to continue until early-to-mid May if weather and conditions allow. Production in Louisiana and Texas remains unchanged from the previous month.

## No Changes to Projected Sugar Imports for 2018/19

U.S. sugar imports for 2018/19 are projected to total 2.862 million STRV, unchanged from the previous month. Imports from Mexico remain unchanged at 897,000 STRV, based on the Export Limit published by the U.S. Department of Commerce (USDOC) from the March WASDE—as prescribed by the Suspension Agreements signed by the USDOC and Government of Mexico in December 2014 and amended in July 2017. Imports under quota programs also remain unchanged at 1.560 million STRV, which includes an expected 99,000 STRV shortfall in the WTO raw sugar tariff-rate quota (TRQ).

High-duty imports are currently projected to total 55,000 STRV, also unchanged from the previous month's forecast. The USDA's Foreign Agricultural Service (FAS), estimates that 38,000 STRV of high-duty sugar imports have entered through March—more than five times the amount that entered through the same period in 2017/18. The increase in high-duty imports began in the summer of 2018, as sustained price differentials between U.S. and world futures market prices improved the economic feasibility of supplies entering the United States at the full tariff rate. Monthly totals have been lower than the initial levels seen between June and December 2018, but remain large by historical standards. The current projection reflects a continuation of the trend—relatively large but declining monthly high-duty entries. Market dynamics could impact the outlook for high-duty imports for future projections, however. In addition to the price spread between U.S. and world futures contract markets, the availability of sugar supplies for specific market segments, such as organic markets and smaller-scale refineries focused primarily on liquid sugar products, could result in additional shipments that would require an adjustment to the current forecast levels.

Figure 2  
**U.S. and World refined sugar prices, monthly, January 2008 to September 2019**



Source: USDA, Economic Research Service.

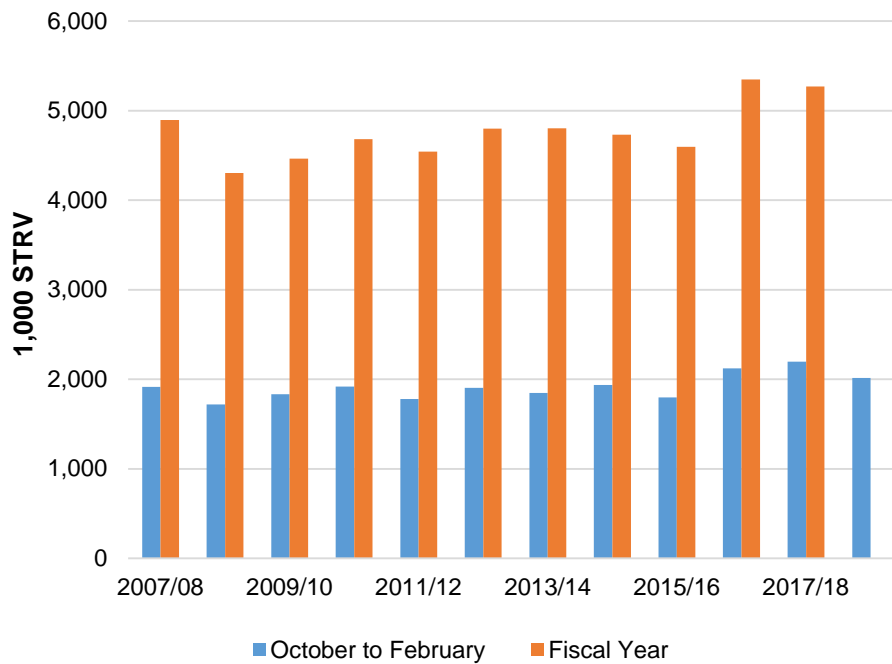
## Projected Use Expected To Increase, but at a Modest Rate

Projected total sugar use for 2018/19 remains unchanged at 12.305 million STRV. This includes 12.125 million STRV of deliveries expected for food and beverage use, which would be an 0.6-percent increase from 2017/18 estimates. Through February, the USDA, Farm Service Agency's (FSA) *Sweetener Market Data* (SMD) shows deliveries for food and beverage use at 4.958 million STRV, or 2.3-percent larger than the same period the previous year.

Deliveries from beet processors are 8.1-percent lower than the previous year, totaling 2.016 million STRV through February. Coming off of record-breaking deliveries for the sector in both 2016/17 and 2017/18, the current year appears to be a significant dropoff. This is only the third time the sector has shipped more than 2.0 million STRV to customers through February, so

deliveries remain relatively low compared to the past 2 years but are still strong by historical standards.

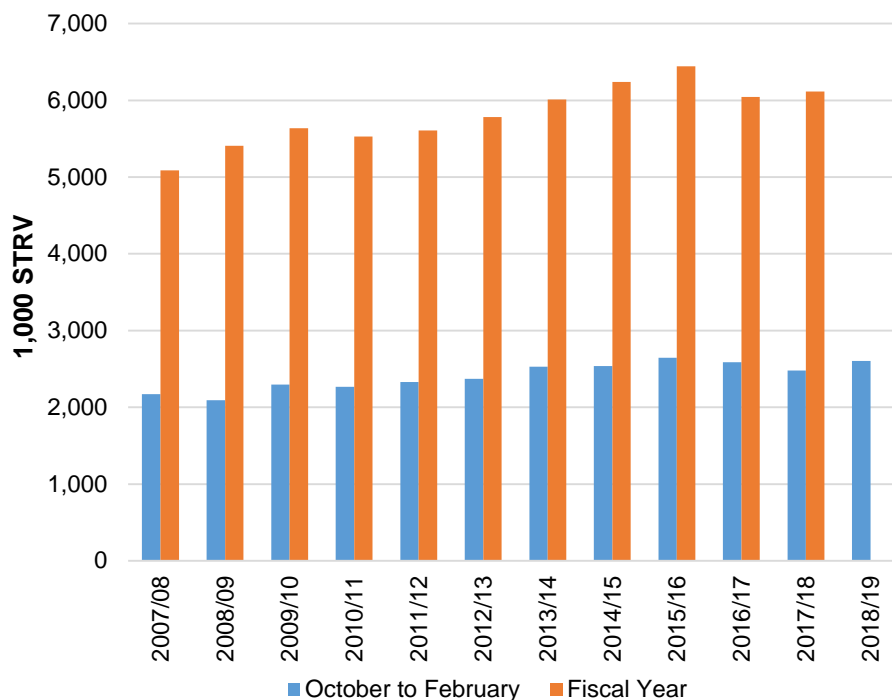
Figure 3  
**U.S. sugar deliveries by beet processors, fiscal year, 2007/08 to 2018/19**



Source: USDA, Farm Service Agency.

Deliveries from cane refineries totaled 2.603 million STRV through February, a 6.8-percent increase from the previous year. In contrast to the beet sector, cane refiners' deliveries were relatively low in 2016/17 and 2017/18. The current pace in 2018/19 demonstrates a recovery in deliveries from the cane sector, which had fallen below historical trends, coinciding with low raw sugar inventories in late 2016/17.

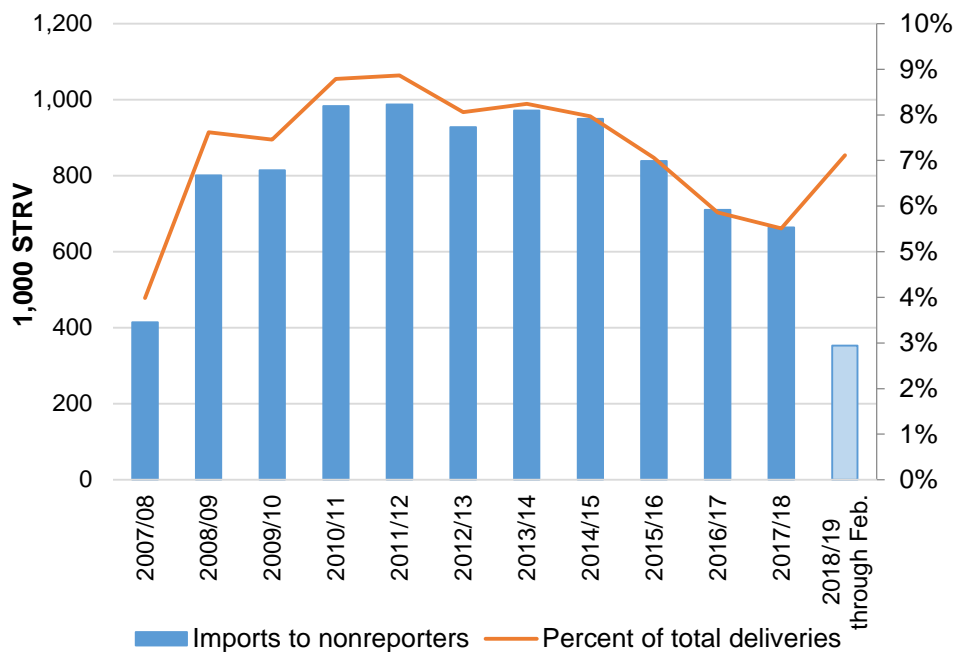
Figure 4  
**U.S. sugar deliveries by cane refiners, fiscal year, 2007/08 to 2018/19**



Source: USDA, Farm Service Agency.

Deliveries from nonreporters through February totaled 353,000 STRV—57.0-percent larger than the previous year. Deliveries to nonreporters typically represent only 5.0 to 9.0 percent of total food and beverage deliveries. Additionally, monthly totals of nonreporter deliveries are much more volatile than deliveries from reporters. If the current pace continues, however, it would represent a larger share of total deliveries than those in the past few years, which have been steadily declining since 2014/15.

Figure 5  
**U.S. imports from nonreporters, fiscal year, 2007/08 to 2018/19**

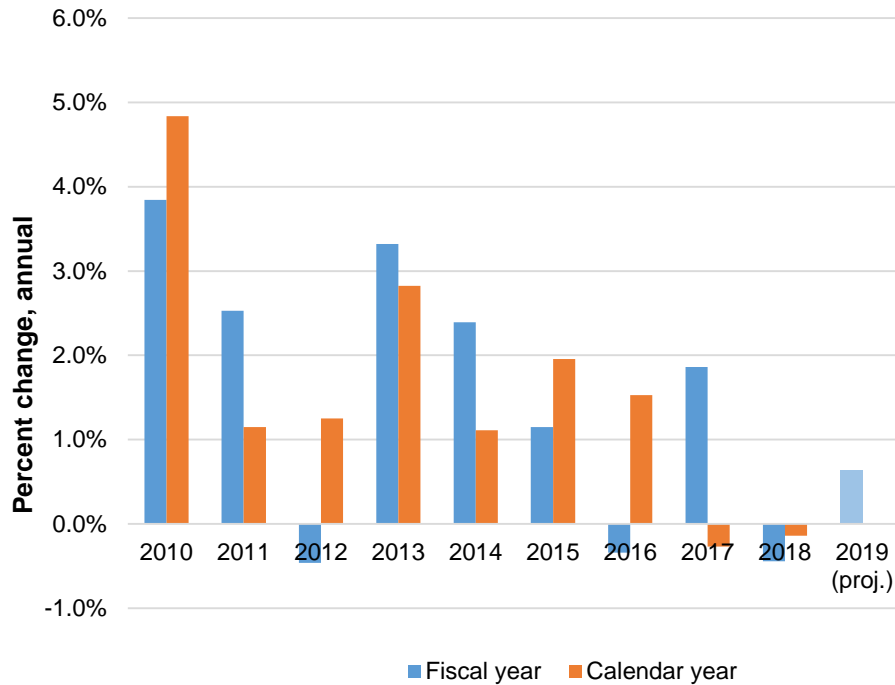


Source: USDA, Economic Research Service.

The outlook for total food and beverage deliveries for 2018/19 continues to be driven by several factors; some of which conflict. First, per capita delivery rates and population growth provide an underlying force for continued growth. The magnitude of this growth appears to be lessening in recent years, however, as per capita deliveries for all caloric sweeteners have declined at a faster rate and the rates of substitution from other sweeteners to refined sugar have not been as strong in recent years. Second, seasonal delivery patterns have been less stable in recent years, with a larger share of deliveries occurring in the October to December quarter of the fiscal year, and unexpected declines for a single month or quarter during the spring and summer have become more frequent. The patterns that are irregular compared to historical trends have complicated analysis of year-to-date pacing as a forecasting tool. Finally, through February, the growth in deliveries can be entirely attributed to deliveries by nonreporters. Deliveries by reporters are 1.2-percent lower than the same period in 2017/18. Given the variability of the monthly series for nonreporters and trends in factors that can affect deliveries of nonreporters—such as the amount of high-duty imports- it would be tenuous to extrapolate higher growth rates based primarily on this segment of the market. As a result of these complicating factors, the April WASDE’s delivery projection continues to show positive growth, but at a lower rate than has been occurred over the past decade.



Figure 6  
**Annual growth in U.S. sugar deliveries for food and beverage use, 2010 to 2019**



Source: USDA, Economic Research Agency.

## Lower Supply Reduces the Stocks-to-Use Ratio

Ending stocks for 2018/19 are projected to total 1.625 million STRV in the April WASDE. This is a 43,000-STRV reduction from the previous month, due to the lower outlook for domestic production and no changes to projected use. The resulting stocks-to-use ratio projection is 13.2 percent, compared with 13.6 percent projected the previous month.

# Mexico Outlook

## Ample Supplies Still Projected for Mexico Market in 2018/19

The outlook for Mexico's sugar market for 2018/19 remains largely unchanged from the previous month. No changes were made to the projected supply and use table for Mexico in the April WASDE, leaving ending stocks projected at 1.420 million metric tons, actual value (MT).

**Table 3: Mexico sugar supply and use, 2016/17 - 2017/18 and projected 2018/19, April 2019**

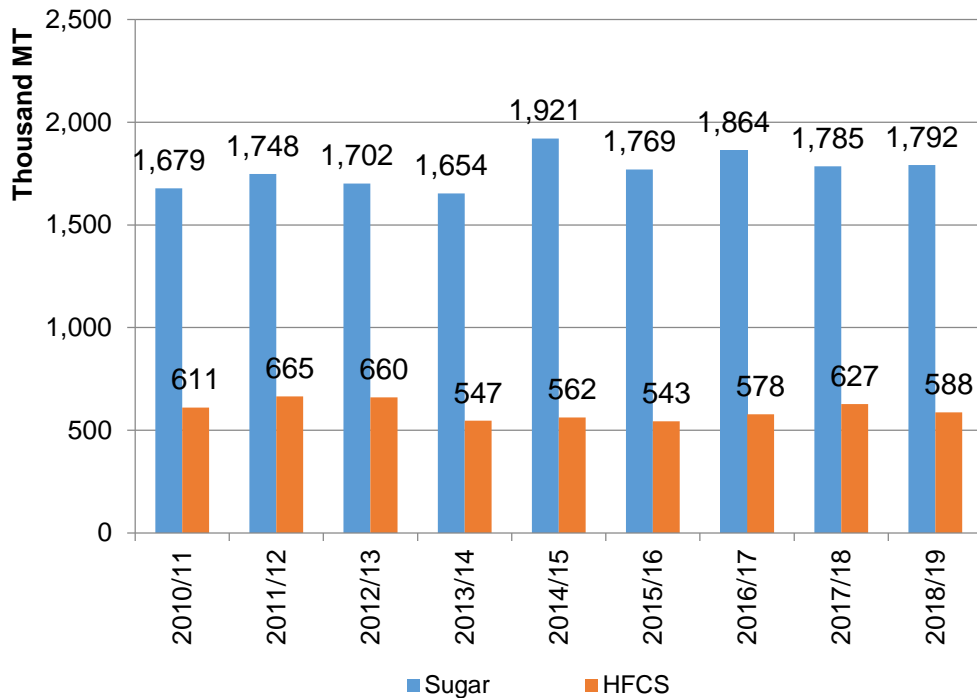
Items	2016/17	2017/18 (estimate)	2018/19 (forecast)
	1,000 metric tons, actual weight		
Beginning stocks	1,037	1,002	1,395
Production	5,957	6,010	6,152
Imports	93	220	70
Imports for consumption	48	132	20
Imports for sugar-containing product exports, IMMEX 1/, other	45	88	50
Total supply	7,087	7,232	7,617
Disappearance			
Human consumption	4,515	4,228	4,615
For sugar-containing product exports (IMMEX)	397	482	480
Other deliveries and end-of-year statistical adjustment	-61	29	0
Total	4,851	4,739	5,095
Exports	1,234	1,099	1,102
Exports to the United States & Puerto Rico	1,028	1,047	767
Exports to other countries	205	52	335
Total use	6,085	5,838	6,197
Ending stocks	1,002	1,395	1,420
	1,000 metric tons, raw value		
Beginning stocks	1,099	1,062	1,478
Production	6,315	6,370	6,522
Imports	98	234	74
Imports for consumption	51	140	21
Imports for sugar-containing product exports (IMMEX)	47	93	53
Total supply	7,512	7,666	8,074
Disappearance			
Human consumption	4,786	4,482	4,892
For sugar-containing product exports (IMMEX)	420	510	509
Other deliveries and end-of-year statistical adjustment	-64	31	0
Total	5,142	5,023	5,400
Exports	1,308	1,165	1,168
Exports to the United States & Puerto Rico	1,090	1,110	813
Exports to other countries	218	55	355
Total use	6,450	6,188	6,569
Ending stocks	1,062	1,478	1,505
Stocks-to-human consumption (percent)	22.2	33.0	30.8
Stocks-to-use (percent)	16.5	23.9	22.9
High-fructose corn syrup (HFCS) consumption (dry weight)	1,522	1,593	1,555

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.

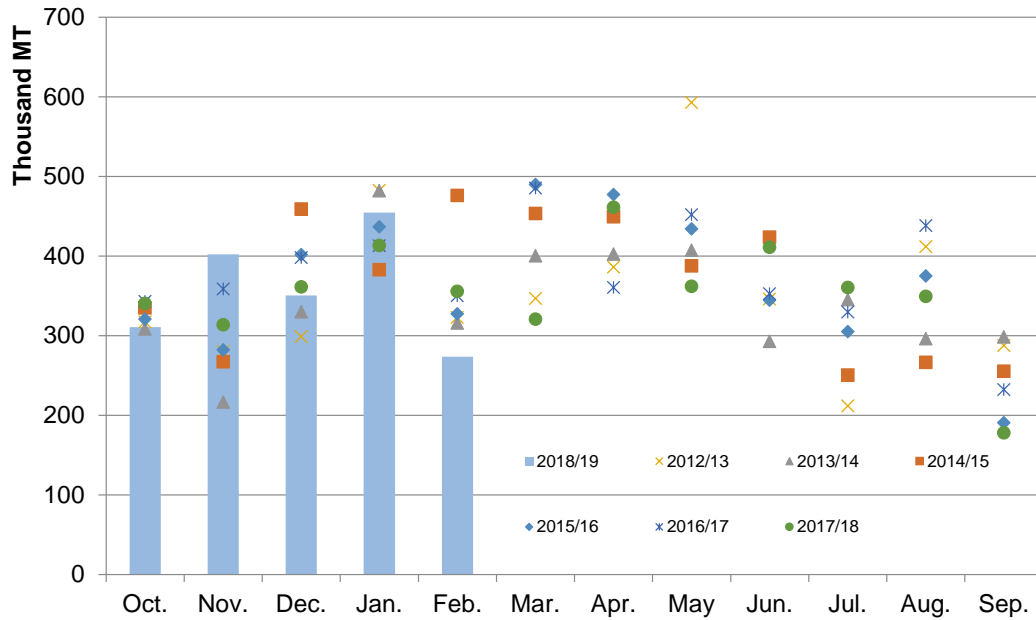
Domestic deliveries for human consumption are projected to total 4.615 million metric tons, actual value (MT). This would represent a 9.1-percent increase from 2017/18, when there was a dramatic decline in deliveries relative to recent trends. Through February, Mexico's Conadesuca reported that domestic deliveries of sugar totaled 1.792 million MT, which is only a 0.4 percent increase year-over-year. The tepid yearly increase is primarily due to unusually low levels of deliveries for the month of February; previous deliveries were reported well above the prior year's levels. Conversely, deliveries of HFCS for 2018/19 are projected to total 1.555 million MT—a 2.4-percent decline from the previous year. Through February, HFCS deliveries totaled 588,000 MT—6.2 percent below the same period in 2017/18. The current delivery projections assume that the February sugar deliveries figure is an outlier, although subsequent reports from Conadesuca will demonstrate whether there is a need to adjust the outlook.

Figure 7  
**Mexican sweetener consumption October to February, 2010/11 to 2018/19**



Source: Conadesuca.

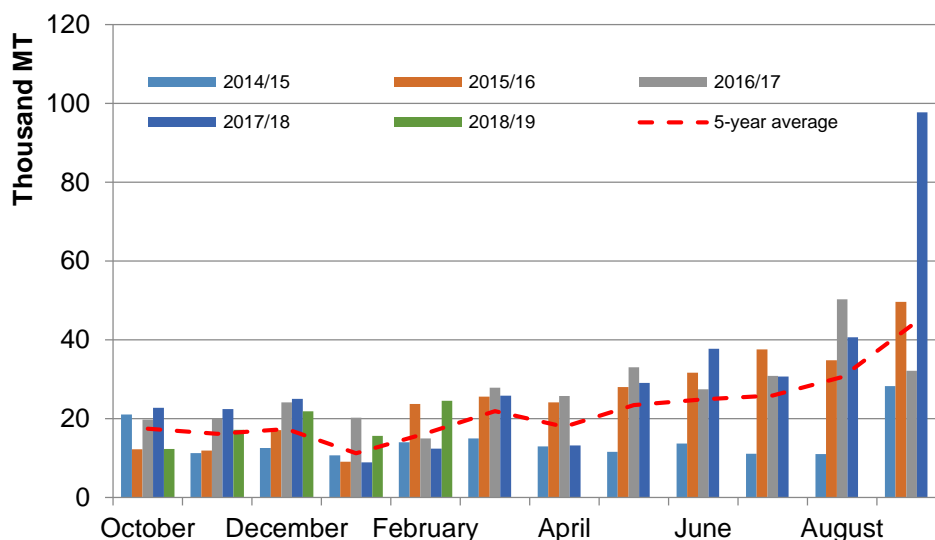
Figure 8  
**Mexican sugar consumption October to December, monthly**



Source: Conadesuca.

Domestic deliveries to the IMMEX program are projected to total, 480,000 MT—including 50,000 MT of sugar imported for IMMEX product manufacturing. This level would be consistent with the levels reported for 2017/18, which had similar market conditions of large supplies and constrained outlets for sugar exports. Through February, 91,000 MT of Mexican-produced sugar has been delivered for the IMMEX program, just slightly behind the previous year’s pace. It is important to note, however, that a large portion of 2017/18 deliveries for the program came in the final months of the fiscal year—particularly in September.

Figure 9  
**Mexico domestic IMMEX deliveries, monthly, 2009/10 to 2017/18**



Source: Conadesuca.

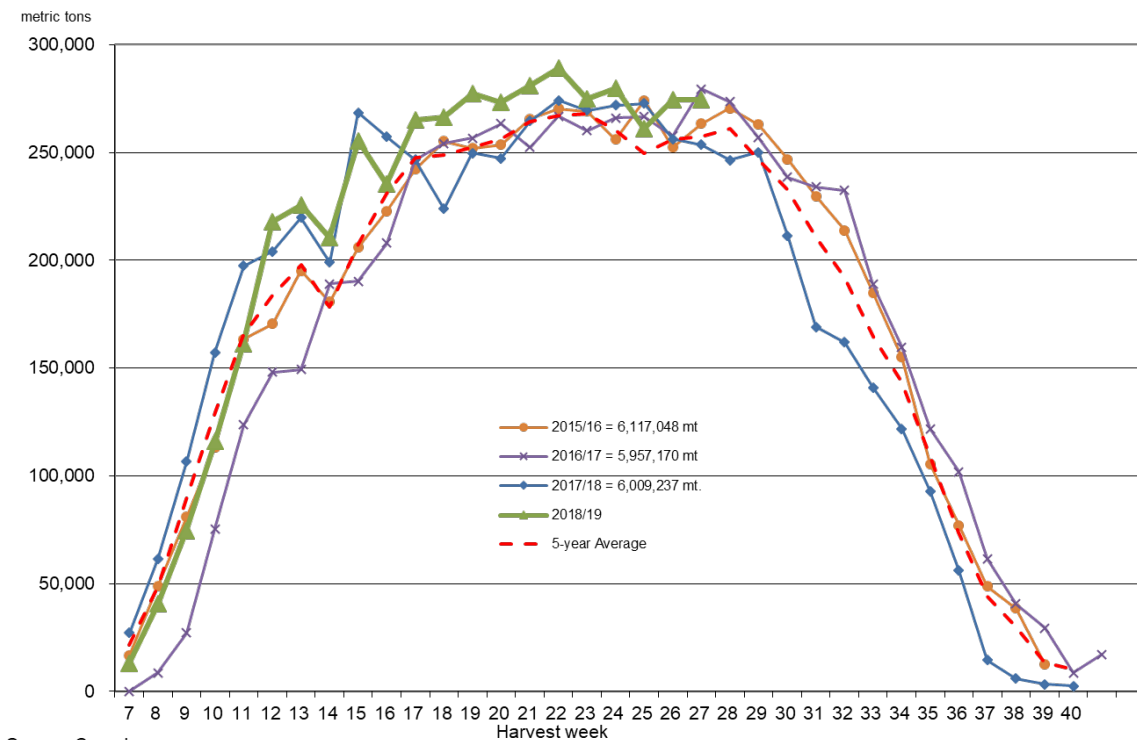
Mexico is projected to export 1.102 million MT of sugar in 2018/19. Shipments to the United States under the Suspension Agreements are expected to be 767,000 MT, in line with the published Export Limit from USDOC subsequent to the March WASDE. Exports to other destinations are projected to be 335,000 STRV. Conadesuca shows that the CEDES program, which provides certificates to processors for supplies that are dedicated for future export to the world market, have increased in recent months. The current projections are based on the assumption that these supplies will be exports, but likely between October and December 2019, and therefore would be included in the 2019/20 fiscal year.

## Mexico Sugarcane Harvest Continues Strong Pace as Conclusion of Harvest Season Approaches

The sugarcane harvest in Mexico has continued to progress smoothly, according to weekly reports from Conadesuca. Through April 6, Mexican mills have produced 4.570 million MT of sugar from 41.567 million MT of sugarcane—both now ahead of the pace of the 2017/18 harvest campaign. After beginning the campaign behind the previous year’s pace, strong figures from the past few months have buoyed prospects for Mexico production. Sugarcane yields have been higher than most years, while recovery rates are on track to be within average rates.

How long mills continue to process sugarcane will be an important variable in whether production meets or exceeds the current projection of 6.152 million MT—which would be 2.4 percent higher than the previous year, if realized. For instance, the 2017/18 campaign started off strongly, but also concluded earlier. History suggests that peak levels of around 225,000 to 275,000 MT of sugar production per week can be sustained through April, and in some cases through May as well. Through April 6, mills have harvested about 543,000 hectares of sugarcane, or about 9,000 hectares less than the same week the previous year. With more area potentially remaining for harvest and strong yields indicated from the crop that has been reported—and assuming there are no weather disruptions—there is potential for the pace of the campaign to continue.

Figure 10  
**Mexico sugar production, by week of harvest, 2015/16-2018/19**



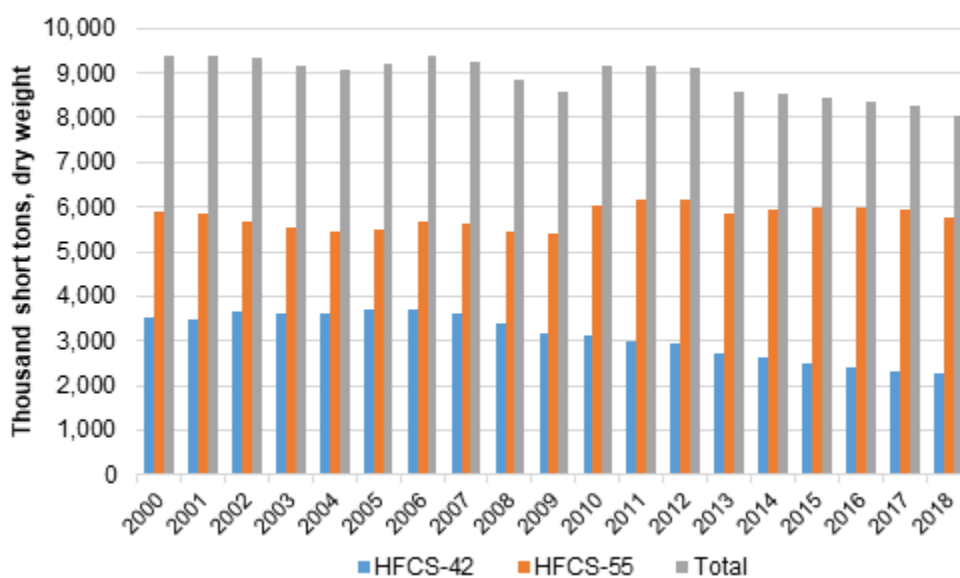
Source: Conadesuca.

# U.S. Corn Sweeteners Market

## High-Fructose Corn Sweetener Production and Domestic Use Continue To Decline in 2018

Domestic production of high fructose corn syrup (HFCS) in 2018 was 8.048 million short tons dry weight, down 232,000 tons from 2017 production of 8.280, a 2.8-percent decrease. This decrease is in line with the trend of less HFCS produced since 2000.

Figure 11  
Domestic production of HFCS from 2000 to 2018

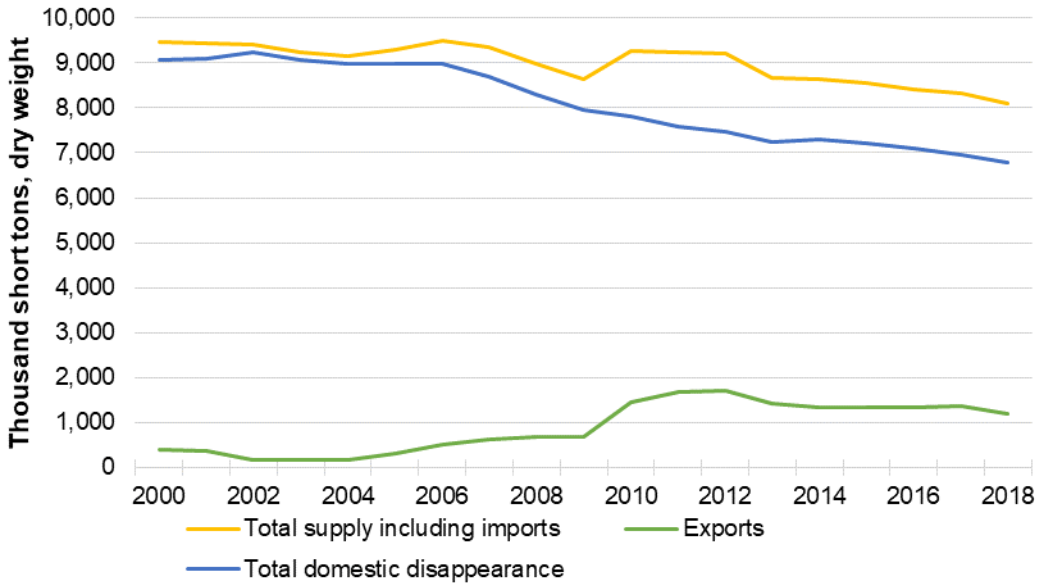


Source: USDA, Economic Research Service.

Imports marginally added to total supplies, with 48,000 short tons dry weight being imported in 2018. This led to a total supply of 8.095 million short tons, a 2.8-percent decrease over the 2017 total supply of 8.327 million short tons.

Domestic deliveries in 2018 totaled 6.787 short tons, dry weight. This represented a 2.4-percent decrease over 2017 deliveries, which totaled 6.955 million short tons. This continues the downward trend in use that began in 2002, when deliveries totaled 9.203 million short tons. Deliveries in 2018 compared to 2002 were down by over 26.4 percent. Much of this is due to users of HFCS and processed food and drink manufacturers changing their ingredients to meet perceived consumer preference for non-HFCS sweeteners.

Figure 12  
**U.S. HFCS supply, use, and exports 2000 to 2018**



Source: USDA, Economic Research Service.

The main trading partner for the U.S. industry is Mexico, where roughly 84 percent of total exports were delivered in 2018. This is in line with the average proportion, which has been 77.4 percent since 2006. Exports to Mexico totaled 1.057 million short tons, dry weight, or 15.6 percent of total production. Exports to the world, including Mexico, totaled 1.253 million short tons dry weight, or 16.6 percent of total HFCS production.

Spot prices of HFCS remained constant throughout 2018, with HFCS-55 at 39.29 cents per pound on a dry weight basis. For 2019, however, prices have fractionally increased to 41.23 cents per pound. The annual increase is likely due to changes in the capacity and utilization of the industry, as several wet mills have ceased operation or changed their portfolios. The most notable recent development was the July 2018 announcement that the corn wet mill plant in Stockton, CA would cease its milling operations by the end of 2018. The plant primarily produced HFCS and industrial starch. Lower capacities and higher industrial utilization rates typically allow prices to remain firm in the market.

Although corn is the input into the HFCS production process, HFCS is not always the desired output. HFCS is typically created in a wet mill that can produce a wide range of products, including corn oil, corn gluten feed, corn gluten meal, corn starch, and HFCS. When production decisions are made, it is the profitability of this mix of coproducts that determines the wet mill's production and profitability possibilities. On average for every bushel of corn that is processed



through the mill, 31.5 pounds of recoverable starch, 1.55 pounds of corn oil, 13.5 pounds of corn gluten feed, and 2.65 pounds of corn gluten meal are created. The 31.5 pounds of starch can in turn be used for many secondary processes to create additional products, including 33.33 pounds of corn sweetener at a dry weight basis. A detailed breakdown of the input and output prices can be seen in detail in Tables 31a and 31b of ERS's *Sugar and Sweetener Yearbook Tables*.

Production and consumption trends have been shown to be stable, and without an external shock to the market they are likely to continue into 2019.

## Suggested Citation

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