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SSS-M-330

February 16, 2016

# Sugar and Sweeteners Outlook

Michael McConnell, coordinator  
michael.mcconnell@ers.usda.gov

## Projected Beet Sugar Reduction Partially Offset by Cane Sugar Increase Results in Lower U.S. Sugar Supplies in 2015/16

The next release is  
March 15, 2016

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Approved by the  
World Agricultural  
Outlook Board.

U.S. sugar production for 2015/16 is projected at 8.849 million short tons, raw value (STRV) in the February *World Agricultural Supply and Demand Estimates* (WASDE), an 85,000-STRV reduction from the previous month. Projected beet sugar production is reduced 148,000 STRV to 5.010 million STRV based on reported sugar extraction rates of sugarbeets sliced for sugar production through December. Cane sugar production is projected to total 3.839 million STRV due to increased sugarcane production forecasts for Florida. Imports are projected to total 3.162 million STRV, a 62,000-STRV increase from the January total due to higher projected cane sugar imports under the re-export program. Projected total supplies are reduced 24,000 STRV, or 0.2 percent, compared with the previous month, totaling 13.778 million STRV.

U.S. domestic sugar deliveries remain unchanged from the previous month's projection at 12.090 million STRV, including 11.955 million STRV projected to be delivered for food and beverage consumption. Total food and beverage deliveries through the first quarter of 2015/16 are 0.4 percent ahead of the previous year. Deliveries for beet sugar have lagged by 9.5 percent, while cane deliveries are 2.8 percent above last year. This has contributed to relatively ample inventories at the end of December 2015 for beet sugar, while cane sugar inventories remain tight by historical standards. Projected ending stocks for 2015/16 are 1.565 million STRV, resulting in a stocks-to-use ratio of 12.8 percent.

Mexico sugar production in 2015/16 is projected to total 6.056 million metric tons, actual value (MT), unchanged from the previous month's projection. Projected total supplies also remain unchanged at 5.957 million MT. Domestic deliveries for domestic consumption are projected at 4.344 million MT, a 44,000-MT decrease from the previous month. Projected exports total 1.150 million MT, unchanged from the previous month, including 1.140 million MT projected to be shipped to the United States. Ending stocks are projected to total 1.125 million MT, an increase of 44,000 MT compared with the January projection, resulting in the stocks-to-consumption ratio increasing from 24.6 percent in the previous projection to 25.9 percent in the current projection.

## Beet Sugar Production Lowered as Reported Sugar Extraction Rates Lower Than Post-Harvest Expectations

In the February *World Agricultural Supply and Demand Estimates* (WASDE), U.S. sugar production in 2015/16 is projected at 8.849 million short tons, raw value (STRV), an 85,000-STRV reduction from January. Projected cane sugar production is 3.839 million STRV, an increase of 63,000 STRV from the previous month due to higher projected production from Florida. The National Agricultural Statistics Service (NASS) increased its forecast for sugarcane for sugar production in Florida by 3.0 percent in the February *Crop Production* report, based on higher sugarcane per acre yields of 41.0 tons. Cane sugar production in Florida is projected at 2.136 million STRV, a 63,000-STRV increase from the previous month's forecast. Cane sugar production from Louisiana, Hawaii, and Texas remains unchanged from the previous month's projection.

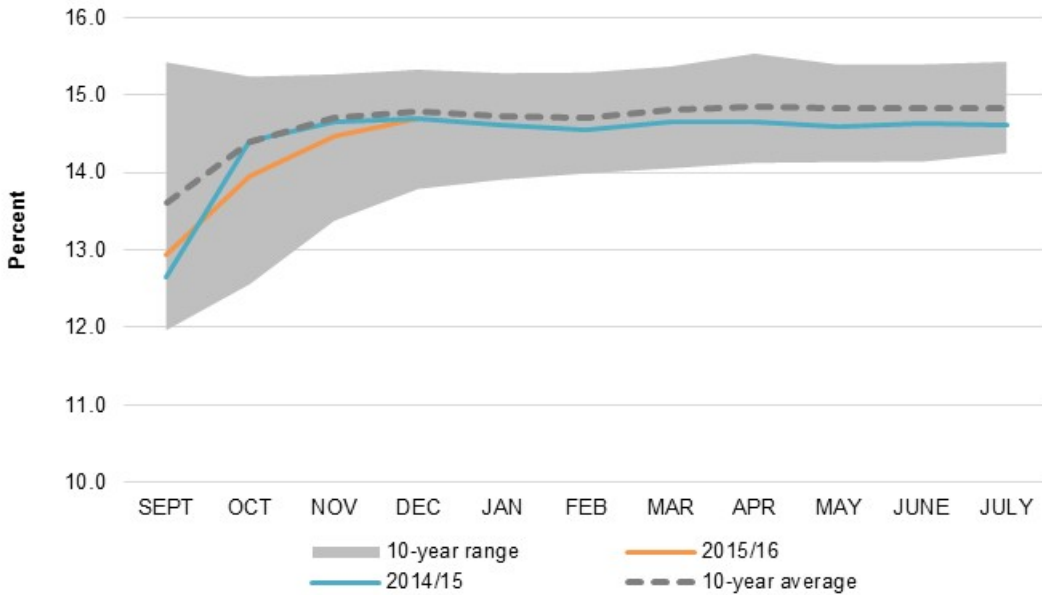
Table 1 -- U.S. sugar: supply and use, by fiscal year (Oct./Sept.), February 2016.

Items	2013/14	2014/15	2015/16	2013/14	2014/15	2015/16
		(estimate)	(forecast)		(estimate)	(forecast)
	1,000 Short tons, raw value			1,000 Metric tons, raw value		
Beginning stocks	2,158	1,810	1,768	1,958	1,642	1,604
Total production	8,462	8,649	8,849	7,676	7,847	8,028
Beet sugar	4,794	4,893	5,010	4,349	4,439	4,545
Cane sugar	3,667	3,756	3,839	3,327	3,408	3,483
Florida	1,763	1,975	2,136	1,599	1,791	1,938
Louisiana	1,591	1,513	1,423	1,444	1,372	1,291
Texas	145	123	115	132	112	104
Hawaii	168	146	165	153	132	150
Total imports	3,742	3,553	3,162	3,394	3,223	2,868
Tariff-rate quota imports	1,302	1,536	1,514	1,181	1,393	1,374
Other program imports	305	471	300	277	427	272
Non-program imports	2,135	1,546	1,348	1,937	1,403	1,222
Mexico	2,130	1,532	1,333	1,932	1,389	1,209
Total supply	14,362	14,012	13,778	13,029	12,712	12,499
Total exports	306	185	123	278	168	112
Miscellaneous	0	0	0	0	0	0
Deliveries for domestic use	12,246	12,060	12,090	11,109	10,941	10,968
Transfer to sugar-containing products						
for exports under re-export program	82	103	100	74	93	91
Transfer to polyhydric alcohol, feed, other alcohol	29	28	35	27	25	32
Commodity Credit Corporation (CCC) sale for ethanol, other	316	0	0	287	0	0
Deliveries for domestic food and beverage use	11,819	11,929	11,955	10,722	10,822	10,845
Total Use	12,552	12,245	12,213	11,387	11,108	11,080
Ending stocks	1,810	1,768	1,565	1,642	1,604	1,419
Private	1,810	1,768	1,565	1,642	1,604	1,419
Commodity Credit Corporation (CCC)	0	0	0	0	0	0
Stocks-to-use ratio	14.42	14.44	12.81	14.42	14.44	12.81

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

Beet sugar production for 2015/16 is projected to be 5.010 million STRV, a 148,000-STRV reduction from the previous month. The change is mainly predicated on lower reported sugar extraction rates from sliced sugarbeets, as reported by processors to the Farm Service Agency's (FSA) *Sweetener Market Data* report through December. Processors' projections for beet sugar have reflected a high sugarbeet yield, as well as strong extraction rates due to high sugar content reported from the crop after the harvest. However, data reported by processors since the harvest have indicated that extraction rates have been more in line with historical averages. Typically, the cumulative sugar extraction rate stabilizes after December, with only marginal changes in the extraction rate expected for the remainder of the year.

Figure 1  
**Cumulative sugar extraction rate, beet sugar produced per sugarbeet sliced, crop**



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

The starting point of the current forecast calculation is the sugarbeet production forecast from NASS of 35.278 million tons. After harvest, sugarbeets are stored in piles over the course of the winter as the processing campaign takes place. During this time, environmental and biological factors can result in sugarbeets being removed from the sugar production process, referred to as “shrink.” The current projection reflects a shrink of 8.2 percent, which aligns with processors’ forecasts provided to FSA, resulting in a forecast of 32.396 million tons of sugarbeets sliced for sugar production. Although this level of shrink is high relative to historical standards, it is consistent with the warm weather experienced throughout sugarbeet producing regions during the harvest and the warm weather continuing through early winter in the significant growing regions in Minnesota and North Dakota.

From August through December 2015, the amount of sugar recovered from sugarbeet sliced compared with the amount sliced has implied an extraction rate of 14.6 percent. As mentioned, historically, the cumulative extraction rate remains stable from December through the end of the campaign. The current projection includes an extraction rate of 14.8 percent, which takes the current cumulative rate and incorporates a one-standard-deviation increase, based on historical variations in extraction rates. This additional increase accounts for any potential upward movement that could result from the large early-season beet slicing, when sugarbeets typically have lower sugar content levels and could create a negative bias in the current extraction rate figures. This rate compares with an implied extraction rate of 15.4 percent in the January projection, which would follow a scenario of record-high sugar recovery levels. The resulting sugar from beets sliced is forecast at 4.806 million STRV for the current projection.

In addition to sugar extracted from beet slicing, additional sugar is recovered from the molasses that is a byproduct of the beet-refining process. The current projection includes an estimate of 380,000 STRV of sugar recovered from molasses, which is based on processor forecasts submitted to FSA. In total for the crop year, U.S. beet sugar production is forecast at 5.186 million STRV. To adjust the projection to a fiscal year basis, August and September 2015 production is subtracted out and a forecast August and September 2016 production based on historical averages is added in.

Finally, because this methodology is predicated on the NASS sugarbeet production forecast, which includes only the United States, an additional 40,000 STRV of sugar was taken into account for sugar from imported beets, which are processed by plants in Michigan. This amount is comparable with 2014/15 sugar production from imported beets.

Table 2: Beet sugar production projection calculation, 2015/16

	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2015/16
						Estimate	January	February
Sugarbeet production (1,000 short tons) 1/	29,783	32,034	28,896	35,224	32,789	31,285	35,278	35,278
Sugarbeet shrink 2/	5.7%	5.9%	5.9%	4.8%	6.8%	5.4%	8.3%	8.2%
Sugarbeets sliced (1,000 short tons)	28,097	30,137	27,184	33,532	30,545	29,595	32,350	32,396
Sugar extraction rate from slice	14.3%	15.4%	15.0%	15.3%	14.3%	14.6%	15.4%	14.8%
Sugar from beets slice (1,000 STRV)	4,023	4,631	4,086	5,142	4,325	4,325	4,988	4,806
Sugar from molasses (1,000 STRV) 2/	325	357	401	327	324	341	385	380
Crop year sugar production (1,000 STRV) 3/	4,348	4,987	4,487	5,469	4,648	4,667	5,373	5,186
August-September sugar production (1,000 STRV)	396	623	294	708	315	461	688	688
August-September sugar production forecast (1,000 STRV) 4/	--	--	--	--	--	--	473	473
Sugar from imported beets (1,000 STRV)	--	--	--	--	--	--	--	40
Fiscal year sugar production (1,000 STRV)	4,575	4,659	4,900	5,076	4,794	4,893	5,158	5,010

Notes: 1/ NASS, USDA. 2/Projections based on processor forecasts published by FSA. 3/ August-July basis. 4/ 2016/17 production for 2015/16 projections based on historical average.

Source: Economic Research Service, USDA; World Agricultural Outlook Board, USDA.

### ***Projected Imports Under Quota Programs Remain Unchanged***

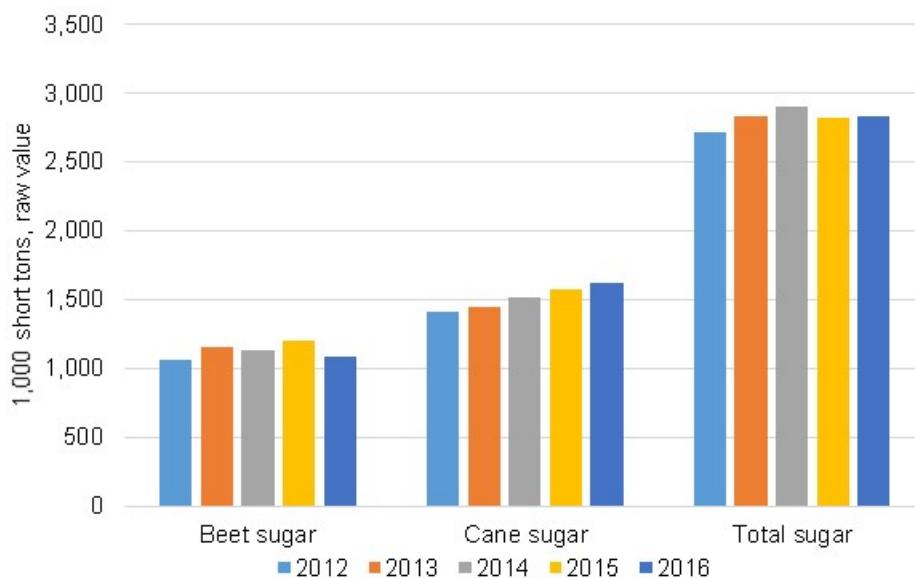
U.S. sugar imports for 2015/16 are projected at 3.162 million STRV, a 62,000-STRV increase from the previous month's forecast. Imports under the various tariff-rate quotas (TRQs) remain unchanged from the previous month's forecast of 1.514 million STRV, which includes a forecast World Trade Organization raw sugar TRQ shortfall of 99,000 STRV. Imports under the re-export program are projected at 300,000 STRV, a 62,000-STRV increase from the previous month's projection. Exports are unchanged from the January projection, still projected lower due to changes made by the Mexican Government relating to duty-free imports of U.S. sugar utilizing the re-export program, but it is expected that licensed refiners will import more program sugar by taking advantage of credits from previous exports.

Imports from Mexico remain unchanged from the previous month's projection at 1.333 million STRV, which is predicated on the supply and use projections of the December WASDE, as specified in the agreement suspending the countervailing duty case for sugar from Mexico signed between the U.S. Department of Commerce (USDOC) and the Government of Mexico in December 2014.

### ***Projected Domestic Deliveries Remain Unchanged; Differing Inventory Conditions for Beet and Cane Refiners***

U.S. domestic sugar deliveries for human consumption are projected at 11.955 million STRV, unchanged from the January figure. From October through December 2015, reported deliveries for consumption were 2.828 million STRV, 0.4 percent higher than the same period in 2014/15. Beet sugar deliveries for consumption have been lagging since the beginning of the 2015/16 fiscal year. Through the first quarter, beet sugar deliveries have been 9.5 percent lower than the previous year. Conversely, cane sugar deliveries for consumption are up 2.8 percent year over year through the first quarter, continuing a multiyear growth trend. The remaining year-over-year growth can be attributed to direct consumption imports (DCI), mostly imported refined sugar from Mexico.

Figure 2  
**October through December deliveries for human consumption, fiscal year**

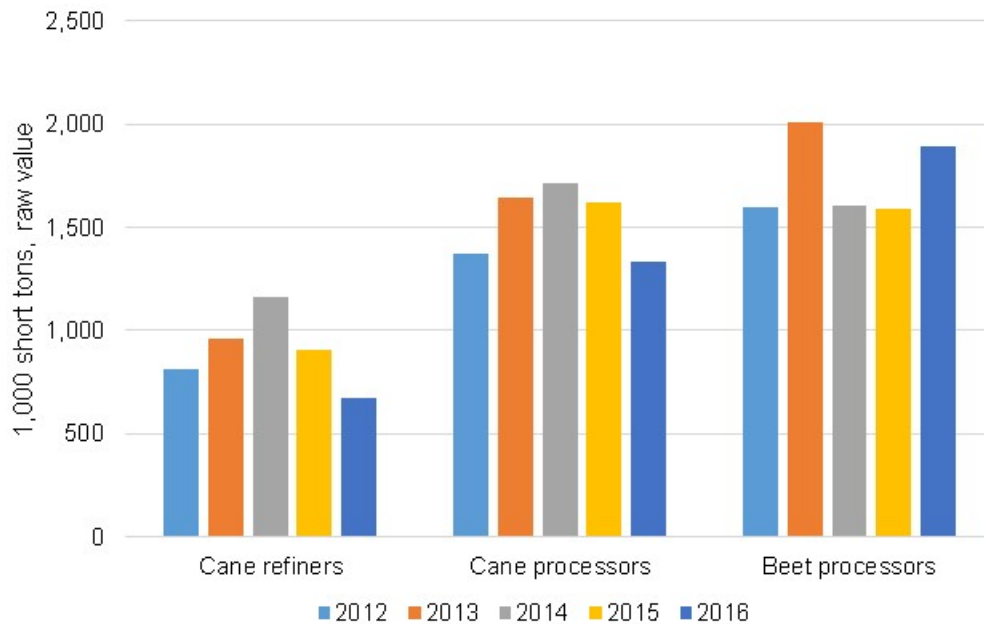


Source: Economic Research Service, USDA.

There are several potential factors contributing to the slow pace in beet deliveries. First, as discussed in more detail in the January Outlook report, there has been increasing awareness of certain large sugar users' preferences for cane sugar due to labeling purposes. Second, due to uncertainties regarding the outcome of the USDOC and U.S. International Trade Commission's anti-dumping and countervailing duty cases for sugar from Mexico and resulting slow pace of shipments from Mexico in the beginning of 2014/15, beet sugar deliveries were relatively strong during that period, potentially distorting any year-over-year comparisons. That being said, October to December beet deliveries in 2015/16 were the third lowest total for that period since 2005/06. Finally, increased DCI at the end of 2014/15 may have resulted in entities that do not report stocks to the USDA marketing sugar in 2015/16 that was counted in deliveries for 2014/15 (see October and December Outlook report for further discussion). While DCI in the fourth quarter (July to September) of 2014/15 were relatively larger than in recent years, initially it was unclear if this would have an impact on 2015/16 deliveries. Data from the first quarter of 2015/16 seem to support the assertion that deliveries in the fourth quarter of 2014/15 impacted marketing patterns for the beginning of 2015/16, complicating the year-over-year comparisons with longer term delivery trends. While the pace of beet deliveries in the first quarter of the year has been slow, the pace did improve in December, perhaps suggesting that deliveries may pick up as the year progresses.

The result of relatively large beet sugar production and the disparity between beet and cane sugar deliveries has been that December 31 inventories of beet refiners were relatively ample, while cane sugar inventories were tight compared with recent years, further supporting the potential for beet deliveries to increase during the remainder of the year. This position could be altered, however, by trade patterns of high-polarity versus low-polarity sugar from Mexico and potential policy decisions regarding the raw sugar tariff-rate quota programs.

**Figure 3**  
U.S. sugar stocks, by distributor, December 31, fiscal year



Source: Economic Research Service, USDA

Total U.S. domestic deliveries in 2015/16 are projected to be 12.090 million STRV, also unchanged from the January report. Projected U.S. sugar exports are 123,000 STRV, also unchanged from the previous month.

Ending stocks in 2015/16 are projected to total 1.565 million STRV, down from January's projection of 1.588 million STRV. The result is the stocks-to-use rate falling to 12.8 percent, compared with the previous projection of 13.0 percent in January.

***Projected Sugar Supplies in Mexico Remain Unchanged***

Projected sugar supplies in Mexico remain at 6.957 million metric tons, actual value (MT), in 2015/16. Sugar production remains unchanged from the previous month's projection of 6.056 million metric tons, actual value (MT), remaining in line with the *Comité Nacional Para Desarrollo de la Caña de Azúcar's* (Conadesuca) current forecasts for this year's crop. Through January 23, the Mexican sugarcane harvest continued to make steady progress, in line with historical rates. Both sugarcane and sugar production remain behind the pace of last year's harvest and this year's initial forecast, while staying at a pace to maintain the current forecast amount.

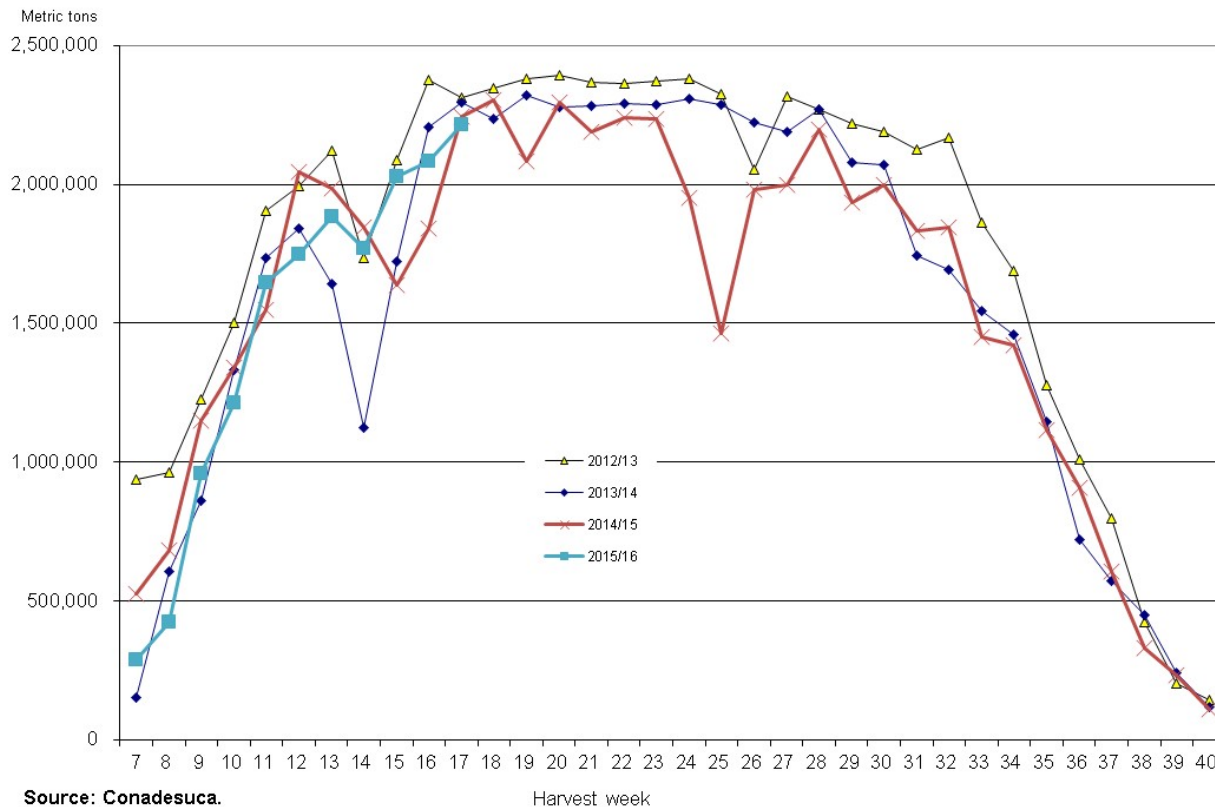
Table 3 -- Mexico sugar supply and use, 2013/14 - 2014/15 and projected 2015/16, February 2016

Items	2013/14	2014/15 (estimate)	2015/16 (forecast)
	1,000 metric tons, actual weight		
Beginning stocks	1,460	831	811
Production	6,021	5,985	6,056
Imports	131	128	90
Imports for consumption	9	8	10
Imports for sugar-containing product exports (IMMEX) 1/	123	121	80
Total supply	7,613	6,944	6,957
Disappearance			
Human consumption	4,098	4,408	4,344
For sugar-containing product exports (IMMEX)	324	337	337
Statistical adjustment	-151	-54	
Total	4,271	4,691	4,681
Exports	2,511	1,442	1,151
Exports to the United States & Puerto Rico	1,823	1,311	1,141
Exports to other countries	689	131	10
Total use	6,782	6,134	5,832
Ending stocks	831	811	1,125
	1,000 metric tons, raw value		
Beginning stocks	1,548	881	859
Production	6,383	6,344	6,419
Imports	139	136	95
Imports for consumption	9	8	11
Imports for sugar-containing product exports (IMMEX)	130	128	85
Total supply	8,069	7,361	7,374
Disappearance			
Human consumption	4,344	4,673	4,605
For sugar-containing product exports (IMMEX)	343	357	357
Statistical adjustment	-160	-57	0
Total	4,527	4,973	4,962
Exports	2,662	1,529	1,220
Exports to the United States & Puerto Rico	1,932	1,389	1,209
Exports to other countries	730	139	11
Total use	7,189	6,502	6,182
Ending stocks	881	859	1,192
Stocks-to-human consumption (percent)	20.3	18.4	25.9
Stocks-to-use (percent)	12.3	13.2	19.3
High fructose corn syrup (HFCS) consumption (dry weight)	1,372	1,444	1,482

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.

Figure 4  
**Mexican sugarcane production, by week of harvest, 2012/13-2015/16**



Mexican sugar imports in 2015/16 are projected to total 90,000 MT, also unchanged from January projections. Imports for the IMMEX program are projected to be 80,000 MT, while the remaining 10,000 MT are expected to be imported for consumption—with both levels unchanged from the previous month’s report.

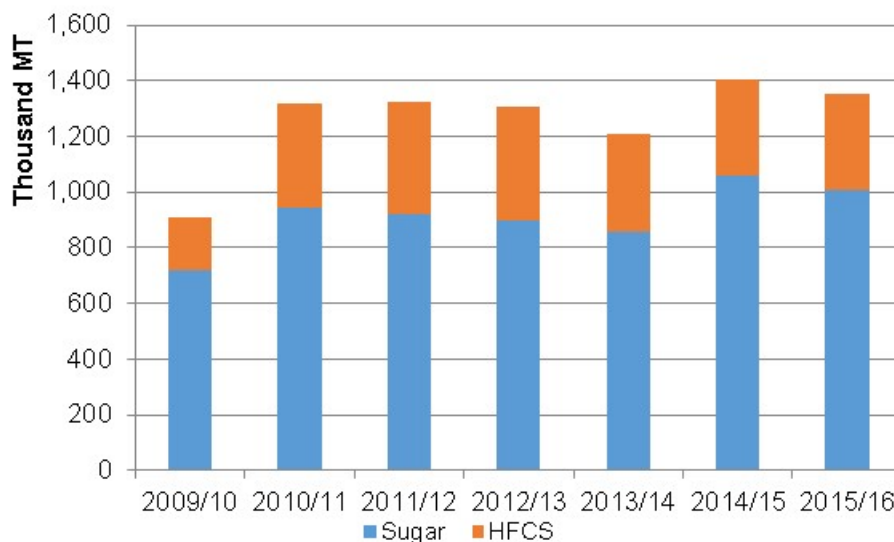
***Projected Mexican Domestic Deliveries for 2015/16 Reduced Slightly, Exports Unchanged***

Total sugar use in Mexico for 2015/16 is projected to be 5.831 million MT, reduced 44,000 STRV from the January projection. The entire reduction is accounted for by Mexican domestic deliveries for consumption, projected to total 4.344 million MT, adopting the updated forecast from Conadesuca. If realized, this would result in a 1.5-percent decline from deliveries in 2014/15. Similarly, high-fructose corn syrup (HFCS) deliveries for consumption are projected to be 1.482 million MT, a 15,000-MT reduction from the previous forecast. This would result in a 2.6-percent increase from the previous year. Projected total sweetener deliveries for consumption are currently projected to be 0.4 percent lower than 2014/15 deliveries.

From October to December 2015, sugar deliveries in Mexico totaled 1.005 million MT—a 5.4 percent decline from the previous year’s total of 1.062 million MT. Totals in 2014/15 were particularly large, however, as sugar deliveries rebounded after a sharp decline in 2013/14. HFCS deliveries have totaled 348,000 MT, a slight 0.9-percent increase. Total sweetener deliveries in the first quarter of 2015/16 are 3.8 percent lower than the previous year.



Figure 5  
**Mexican sweetener consumption October to December, fiscal year**



Source: Conadesuca.

Mexican sugar exports in 2015/16 are projected to total 1.150 million MT, unchanged from the previous month's projection. Exports to the United States remain at 1.140 million MT, based on the calculation of U.S. Needs from the December WASDE, as defined by agreement to suspend the countervailing duty investigation signed between the USDOC and the Government of Mexico.

Ending stocks in Mexico are projected at 1.125 million MT, a 44,000-MT increase from the previous month, as deliveries are reduced and supplies unchanged. The resulting stocks-to-consumption ratio is 25.9 percent, compared with 24.6 percent in the January projection.

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Michael McConnell, (202) 694-5184, [michael.mcconnell@ers.usda.gov](mailto:michael.mcconnell@ers.usda.gov) (coordinator)  
Verna Daniels, (202) 694-5301, [vblake@ers.usda.gov](mailto:vblake@ers.usda.gov) (web publishing)

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