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Sugar and Sweeteners Outlook

Stephen Haley, coordinator
shaley@ers.usda.gov

U.S. Sugar March 2014

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The U.S. Department of Agriculture (USDA) changed its projection of 2013/14 cane sugar production in two States based on revised forecasts made by sugarcane millers: in Florida by a decrease of 15,000 short tons, raw value (STRV), to 1.765 million STRV, and in Hawaii by an increase of 5,000 STRV to 190,000 STRV. Beet production remains projected at 5.025 million STRV. The USDA made no changes to imports but did raise exports by 75,000 STRV to 325,000 STRV. The USDA increased its projection of deliveries for human consumption by 110,000 STRV to 11.600 million STRV, but at the same time it lowered sugar deliveries made under the sugar-containing products component of re-export imports program by 50,000 STRV to 100,000 STRV. Ending stocks are projected at 1.682 million STRV, 142,000 STRV below last month's projection. The stocks-to-use ratio is projected at 13.6 percent, reduced from last month's 14.9 percent.

The USDA made no changes to Mexico 2013/14 sugar supply and use. Nonetheless, the lower than average pace of production and even consumption suggests close attention to forthcoming estimates by Mexico's *Comite Nacional Para El Desarrollo Sustentable de la Caña de Azucar (Conadesuca)* over the next several months.

Recent *Sugar and Sweeteners Outlook* Special Articles

"Long-term Projection of U.S. and Mexico Sugar Supply and Use through 2024/25," pdf pages 3-17 of the *Sugar and Sweetener* report
(<http://www.ers.usda.gov/publications/sssm-sugar-and-sweeteners-outlook/sssm306.aspx>)

"The Road to Forfeitures," pdf pages 12-17 of the *Sugar and Sweetener* report
(<http://www.ers.usda.gov/publications/sssm-sugar-and-sweeteners-outlook/sssm-303.aspx>)

Sugar and Sweeteners in the North American Free Trade Agreement (NAFTA) Area

On March 10, 2014, the U.S. Department of Agriculture (USDA) published in the *World Agricultural Supply and Demand Estimates* (WASDE) its latest sugar supply and use projections for the United States and Mexico for fiscal year 2012/13 and projections for 2013/14. Table 1 shows the latest estimates and projections for the United States, and table 3 reports comparable data for Mexico.

U.S. Sugar

The Farm Service Agency (FSA) made several small revisions to *Sweetener Market Data* (SMD) for 2012/13 based on corrected data. Florida cane sugar production was increased by 1,220 short tons, raw value (STRV) to 1.867 million STRV. The ending stocks estimate was increased by 3,050 STRV to 2.160 million STRV. Beginning stocks for 2013/14 are the same as ending stocks for 2012/13.

Table 1 -- U.S. sugar: supply and use, by fiscal year (Oct./Sept.), March 2014.

Items	2011/12	2012/13	2013/14	2011/12	2012/13	2013/14
	1,000 short tons, raw value			1,000 metric tons, raw value		
Beginning stocks	1,378	1,979	2,160	1,250	1,796	1,959
Total production	8,488	8,981	8,715	7,700	8,148	7,906
Beet sugar	4,900	5,076	5,025	4,446	4,605	4,559
Cane sugar	3,588	3,905	3,690	3,255	3,543	3,348
Florida	1,828	1,867	1,765	1,658	1,694	1,601
Louisiana	1,438	1,686	1,600	1,305	1,530	1,451
Texas	150	173	135	136	157	122
Hawaii	172	179	190	156	163	172
Total imports	3,632	3,224	3,184	3,295	2,925	2,888
Tariff-rate quota imports	1,883	957	1,319	1,709	868	1,197
Other program Imports	664	136	110	602	124	100
Non-program imports	1,085	2,131	1,755	984	1,933	1,592
Mexico	1,071	2,124	1,745	972	1,927	1,583
Total supply	13,498	14,185	14,059	12,245	12,868	12,754
Total exports	269	274	325	244	249	295
Miscellaneous	-64	-24	0	-58	-22	0
Deliveries for domestic use	11,313	11,776	12,051	10,263	10,683	10,933
Transfer to sugar-containing products						
for exports under reexport program	140	80	100	127	73	91
Transfer to polyhydric alcohol, feed, other alcohol	33	32	35	30	29	32
Commodity Credit Corporation (CCC) sale for ethanol	0	153	316	0	139	287
Deliveries for domestic food and beverage use	11,141	11,511	11,600	10,107	10,442	10,523
Total use	11,519	12,025	12,376	10,450	10,909	11,227
Ending stocks	1,979	2,160	1,683	1,796	1,959	1,526
Private	1,979	1,844	1,683	1,796	1,672	1,526
Commodity Credit Corporation (CCC)	0	316	0	0	287	0
Stocks-to-use ratio	17.18	17.96	13.60	17.18	17.96	13.60

Source: United States Dept. of Agriculture, Economic Research Service, *Sugar and Sweetener Outlook*.

The USDA changed its projection of 2013/14 cane sugar production in two States based on revised forecasts made by sugarcane millers: in Florida, a decrease of 15,000 STRV to 1.765 million STRV; and in Hawaii, an increase of 5,000 STRV to 190,000 STRV. As reported last month, the Florida crop has been hurt by rain and freezing temperatures in January. Although the National Agricultural Statistics Service (NASS) increased its Florida sugarcane for sugar area by 1,000 acres to 398,000 acres, it reduced its forecast of yield from 36.6 to 34.6 tons/acre in March. The sugarcane for sugar crop is forecast at 13.771 million tons, down 759,000 tons from last month, or 5.2 percent.

The USDA made no changes to imports. The Foreign Agricultural Service (FAS) estimates that sugar imports from Mexico have totaled 839,169 metric tons, raw value (MTRV), or 925,025 STRV, through the end of February. This amounts to about 53 percent of projected total year imports from Mexico. For the 7 months remaining in the fiscal year, the average level of imports would have to equal 117,139 STRV per month to reach but not exceed the full-year forecast. This monthly average would be about 37 percent lower than the average for the first 5 months.

Sugar imports entering under the 2013/14 raw sugar tariff-rate quota (TRQ) have summed to 226,571 MTRV (or 249,752 STRV) through the end of February, or only about 25 percent of the 2013/14 forecast. The Sugar and Sweetener Outlook estimates that, similar to last year, most sugar from Mexico—about 70 percent through the end of January—has been imported by cane sugar refiners. This is in stark contrast to the 42 percent estimated for the first 5 years since the implementation of the North American Free Trade Agreement (NAFTA) sweetener provisions. With the expected decrease in imports from Mexico for the rest of the year, the pace of raw sugar TRQ imports should pick up. There was no change to the raw sugar TRQ shortfall forecast, which is still at 250,000 STRV.

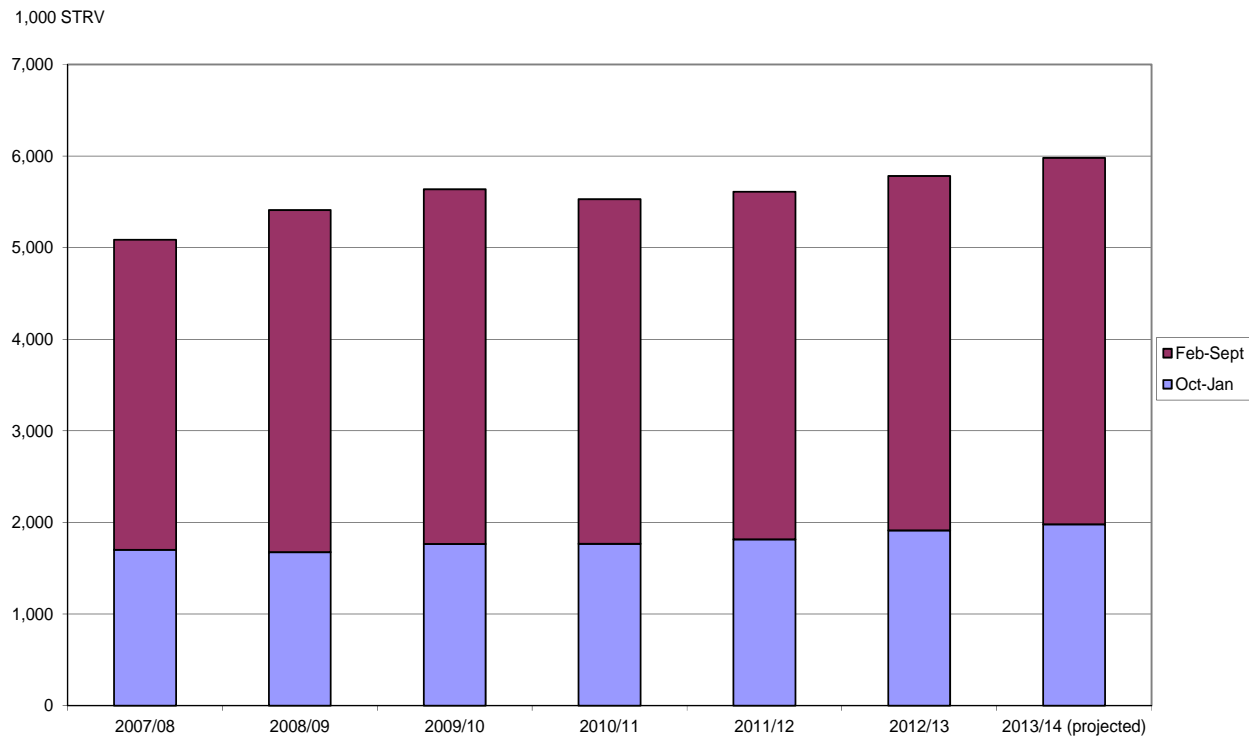
The USDA increased its projection of 2013/14 sugar exports by 75,000 STRV to 325,000 STRV. According to SMD, exports in January 2014 were 94,473 STRV, about five times the average of the first 3 months of the fiscal year. The surge was the result of an expected to be one-time shipment to a destination other than Mexico. The pace for the remaining 8 months of the fiscal year should be in the range of the first 3 months.

The USDA decreased its projection of 2013/14 sugar deliveries made under the sugar-containing products component of the re-export imports program. Because of extremely low deliveries of 11,731 STRV through January, the USDA reduced its full-year projection by 50,000 STRV to 100,000 STRV. Even with this reduction, the pace of deliveries will have to pick up substantially.

The USDA increased its projection of deliveries for human consumption by 110,000 STRV to 11.600 million STRV. The increase was supported by the pace through the first 4 months of the fiscal year. Table 2 shows a revised version of the Sugar and Sweetener Outlook consumption model that also confirms the basis for the increase. The point of the revision was to include an upward adjustment to the equation for cane sugar deliveries. As seen in figure 1, these deliveries were only about 5 million STRV in 2007/08 but have grown substantially since then. If the delivery pace for the remaining 8 months of the 2013/14 year parallels the pace for the first 4 months, total deliveries by cane sugar refiners and processors should be about 6 million STRV, about the same as projected in the table 2 model. As indicated in table 2, direct consumption imports (DCI) by entities that do not report to USDA would total under a million STRV. The previous version of the table 2 model supported the 11.600 million STRV total but also forecast DCI at over 1.200 million STRV. Given the higher proportion of imports from Mexico going to refiners, the higher DCI projection did not seem realistic. As it stands now, 2013/14 DCI should be about 4.5 percent higher relative to 2012/13, reaching 970,000 STRV.

Ending stocks are projected as the difference between total supply (14.057 million STRV) and total use (12.376 million STRV) for 1.682 million STRV. This projection is 142,000 STRV below last month's projection. The stocks-to-use ratio is projected at 13.6 percent, reduced from last month's 14.9 percent.

Figure 1
Cane sugar deliveries for human consumption, Oct-Jan and Feb-Sept, 2007/08-2013/14



Source: USDA, FSA, Sweetener Market Data (data); ERS, *Sugar and Sweetener Outlook* (projection).

Table 2 -- Sugar and Sweetener Outlook March 2014 projection model of U.S. sugar deliveries for human consumption in fiscal year (FY) 2014

Model coefficients		Total deliveries (I)	Beet deliveries (II)	Cane deliveries (III)	Direct Cons. Imports (IV)
Constant	A	779,005	407,328	548,142	Residual = I - (II+III)
Shifter	B	-88,666	0	35,026	
Trend (value in FY 2014)	C	15,716	0	0	
Beet deliveries	D	0	0	-0.1923	
Oct	E	0	0	0	
Nov	F	-77,408	-42,215	-24,478	
Dec	G	-192,100	-86,023	-93,706	
Jan	H	-184,674	-62,521	-99,627	
Feb	I	-191,450	-65,166	-102,959	
Mar	J	-64,161	-21,930	-20,408	
Apr	K	-119,686	-38,595	-63,440	
May	L	-76,611	-17,160	-33,781	
Jun	M	-54,046	0	-20,204	
Jul	N	-67,055	-18,315	-33,302	
Aug	O	0	0	0	
Sept	P	0	0	0	
Shifter for FY 2014	Q	0	0	35,026	

FY 2014: Model projections of monthly deliveries: total, beet sugar, cane sugar, and direct consumption imports (short tons, raw value).

Delivery months		Total deliveries	Beet deliveries	Cane deliveries	Direct Cons. Imports
Oct 1/	A+B+C+D*(II)+E+Q	979,612	428,873	554,562	-3,823
Nov 1/	A+B+C+D*(II)+F+Q	1,080,231	384,235	521,883	174,113
Dec 1/	A+B+C+D*(II)+G+Q	829,616	314,767	438,814	76,035
Jan 1/	A+B+C+D*(II)+H+Q	872,586	354,171	463,360	55,055
Feb	A+B+C+D*(II)+J+Q	860,349	342,161	449,442	68,746
Mar	A+B+C+D*(II)+J+Q	987,638	385,397	523,679	78,562
Apr	A+B+C+D*(II)+K+Q	932,113	368,733	483,851	79,529
May	A+B+C+D*(II)+L+Q	975,188	390,168	509,389	75,632
Jun	A+B+C+D*(II)+M+Q	997,753	407,328	519,666	70,760
Jul	A+B+C+D*(II)+N+Q	984,744	389,012	510,089	85,642
Aug	A+B+C+D*(II)+O+Q	1,051,799	407,328	539,870	104,602
Sept	A+B+C+D*(II)+P+Q	1,051,799	407,328	539,870	104,602
FY 2014: Total projected deliveries	Sum	11,603,427	4,579,500	6,054,474	969,454

1/ This month uses estimated deliveries from *Sweetener Market Data* published USDA's Farm Service Agency.

Forecast: FY 2014.

Source: United States Dept. of Agriculture, Economic Research Service, *Sugar and Sweetener Outlook*.

Mexico Sugar and High Fructose Corn Syrup

Although the USDA made no changes to 2013/14 Mexico sugar supply and use (table 3), production and consumption trends through week 22 of the crop year (March 1) are not encouraging that this will remain the case next month. Figure 2 shows weekly sugarcane production for 2013/14 compared with 2010/11 and 2012/13. As the figure shows, harvested sugarcane was well below the trends of the other years in 3 consecutive weeks in late December – early January (weeks 13-15) and has not fully recovered. According to Mexico's *Comite Nacional Para El Desarrollo Sustentable de la Caña de Azúcar (Conadesuca)*, sugarcane production is running about 5.6 percent lower than forecast (26.924 million metric tons (mt) compared with 28.529 million mt). One question is whether this gap can be closed before the end of the season in June. For this to occur, weekly production will have to resemble the shape of 2012/13 production with its large-sized right tail. Even so, another question is whether the sucrose content of the crop to be harvested is sufficiently high for recovery to reach expected production.

Table 4 shows components of three projections of Mexico sugar production: the first (and only) estimate made by Conadesuca in November 2013, the USDA forecast made last month, and a recent forecast made by the Sugar and Sweetener Outlook. The Conadesuca and USDA forecasts retain the early-season harvested area projection of 819,065 hectares. The Sugar and Sweetener projection lowers the area projection based on the trends exhibited in figure 3. That figure shows the percentage of the crop harvested through comparable harvest weeks 16-22 for

Table 3 -- Mexico sugar supply and use, 2012/13 and projected 2013/14, March 2014

Items	2012/13	2013/14
	1,000 metric tons, actual weight	
Beginning stocks	966	1,460
Production	6,975	6,350
Imports	217	226
Imports for consumption	9	10
Imports for sugar-containing product exports (IMMEX) 1/	207	216
Total supply	8,157	8,036
Disappearance		
Human consumption	4,287	4,306
For sugar-containing product exports (IMMEX)	384	384
Statistical adjustment	53	0
Total	4,724	4,690
Exports	1,973	2,399
Exports to the United States & Puerto Rico	1,818	1,494
Exports to other countries	155	905
Total use	6,697	7,089
Ending stocks	1,460	947
	1,000 metric tons, raw value	
Beginning stocks	1,024	1,548
Production	7,393	6,731
Imports	230	240
Imports for consumption	10	11
Imports for sugar-containing product exports (IMMEX)	220	229
Total supply	8,646	8,519
Disappearance		
Human consumption	4,544	4,564
For sugar-containing product exports (IMMEX)	407	407
Statistical adjustment	56	0
Total	5,007	4,971
Exports	2,091	2,543
Exports to the United States & Puerto Rico	1,927	1,584
Exports to other countries	164	960
Total use	7,099	7,515
Ending stocks	1,548	1,004
Stocks-to-Human Consumption (percent)	34.1	22.0
Stocks-to-Use (percent)	21.8	13.4
High Fructose Corn Syrup (HFCS) Consumption (dry weight)	1,573	1,491

Source: United States Dept. of Agriculture, World Agricultural Supply and Demand Estimates and Economic Research Service, *Sugar and Sweeteners Outlook*; Conadesuca.

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

Figure 2
Sugarcane production, by week of harvest, 2010/11-2013/14

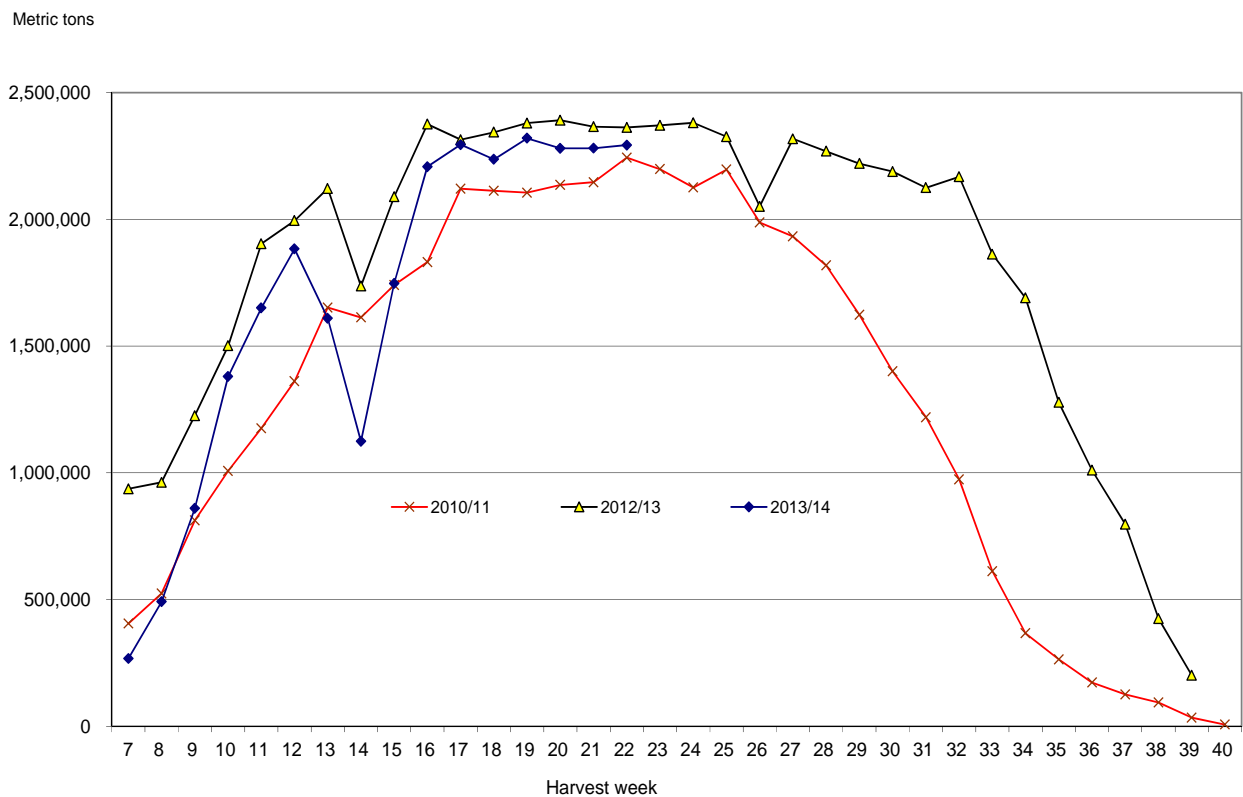
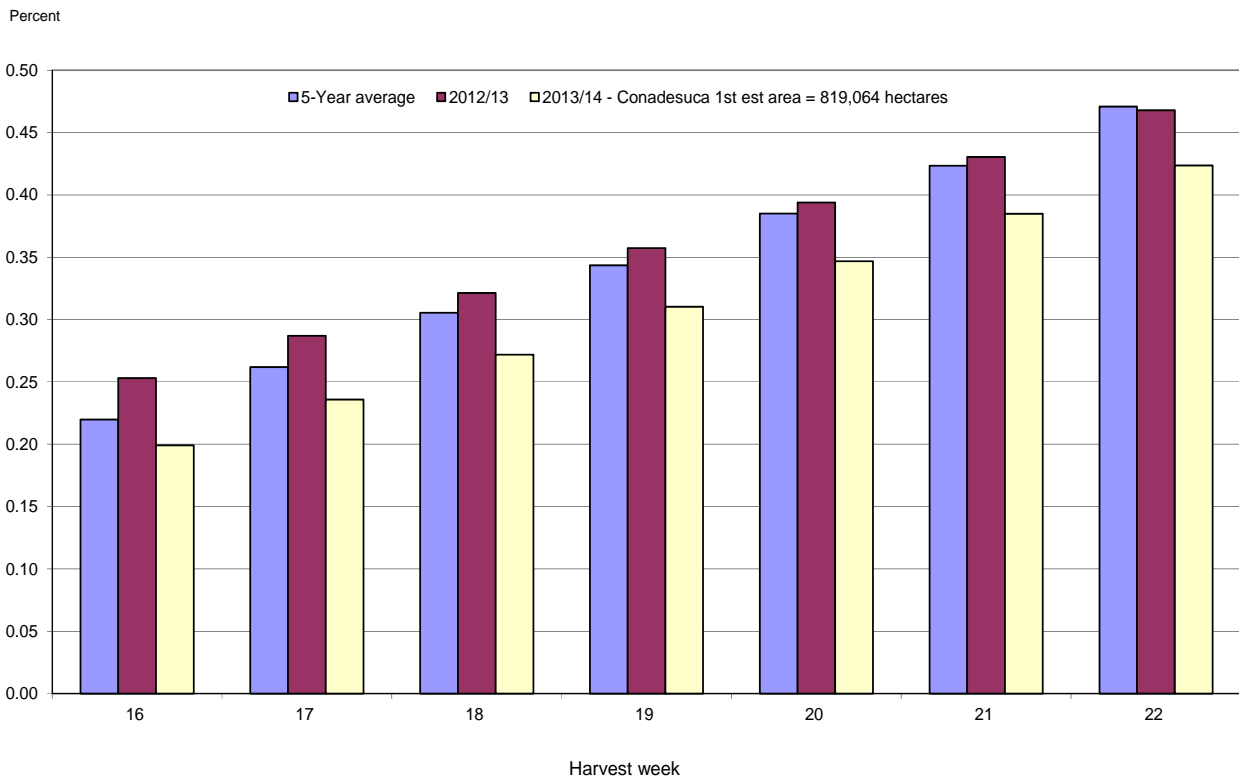


Table 4 -- Mexico 2013/14 sugar projections: Conadesuca, USDA WASDE, March 2014 Sugar and Sweetener Outlook

	Conadesuca: 1st est. - 11/12/2013	WASDE	March 2014 Sugar and Sweetener Outlook	
			*** Average	***Standard Deviation
Area (hectares:ha)	819,065	819,065	789,930	19,834
Yield (metric ton:mt/hectare)	70.8590	70.9672	69.7052	0.6046
Sugarcane (mt)	58,038,127	58,126,719	55,062,248	1,461,940
Recovery (percent)	11.5360	10.9110	11.0031	0.0842
Sugar (mt)	6,695,310	6,342,206	6,058,546	167,506

Source: Conadesuca; Economic Research Service, *Sugar and Sweetener Outlook*.

Figure 3
Mexico sugarcane: percent of crop harvested, weeks 16-22



Source: Conadesuca.

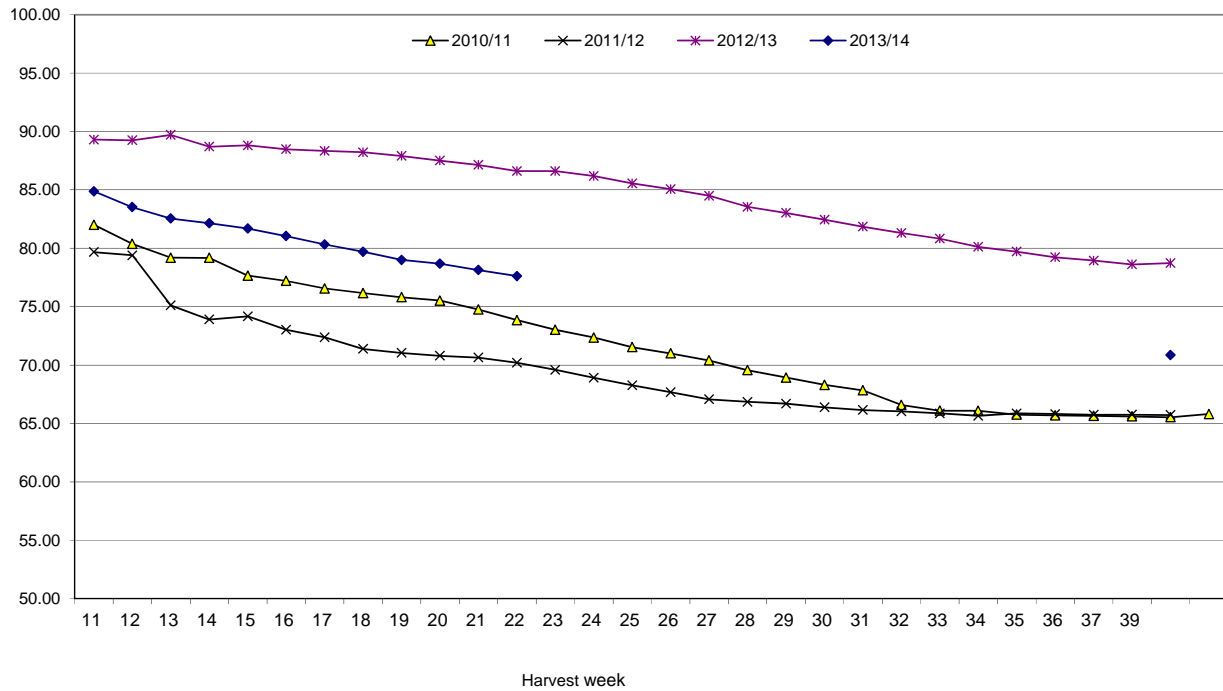
for 2013/14, the previous year 2012/13, and the average of the 5 preceding years. If one assumes 2013/14 total area at 819,065 hectares, there is a substantially lower percentage of 2013/14 area harvested during comparable weeks in previous years. Unless the pace begins to accelerate beyond that shown in the figure, the 2013/14 harvested area projection is unlikely to be met. Based on an optimistic assumption (that is, that 819,065 is the most likely outcome but that a lower total is possible, given historical patterns), the Sugar and Sweetener Outlook projects area at 789,930 hectares, about 3.6 percent lower than the Conadesuca or current USDA estimate.

Figure 4 shows cumulative sugarcane yields throughout the harvest since 2010/11. The cumulative yields decline as the season progresses. The yield profile for 2012/13 was strong, but those for 2010/11 and 2011/12 were substantially weaker. The 2013/14 profile is in between the other years. Based on the average ratio of the week 22 yield to the final yield, and allowing for some statistical adjustments, the Sugar and Sweetener Outlook projects a 2013/14 final yield of 69.7 mt/ha, over 1 mt/ha lower than the others. Projected area and yield combine to imply sugarcane production at 55.062 million mt, about 5.2 percent lower than the other projections.

A fourth component of Mexico sugar projection is sucrose recovery. Last month, the USDA and Conadesuca estimates were close for sugarcane production but differed significantly for recovery: 10.91 percent for USDA and 11.54 percent for Conadesuca. Figure 5 shows the trend pattern for cumulative recovery through the harvest season. The cumulative rate rises at a declining rate before completely flattening out toward the end of the season. Figure 5 also contrasts the expected Conadesuca recovery profile with the actual profile through week 22. Based on average interim-to-final ratios and associated variance, the Sugar and Sweetener Outlook projects a final recovery of 11.00 percent. The USDA and Sugar and Sweetener projections are about a standard deviation apart, but both are substantially below the Conadesuca projection.

Figure 4
Cumulative sugarcane yield in metric tons (mt) per hectare (ha) during harvest season

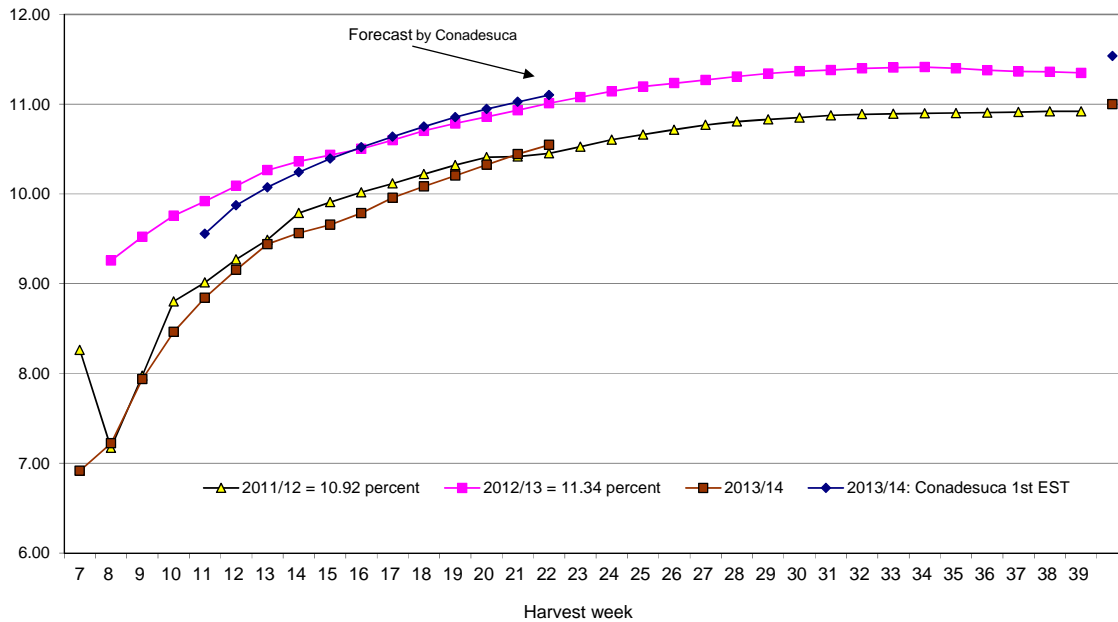
Sugar mt per hectare



Source: Conadesuca.

Figure 5
Intra-seasonal, cumulative sugar recovery rates in Mexico, recent crop years

Percentage



Source: Conadesuca.

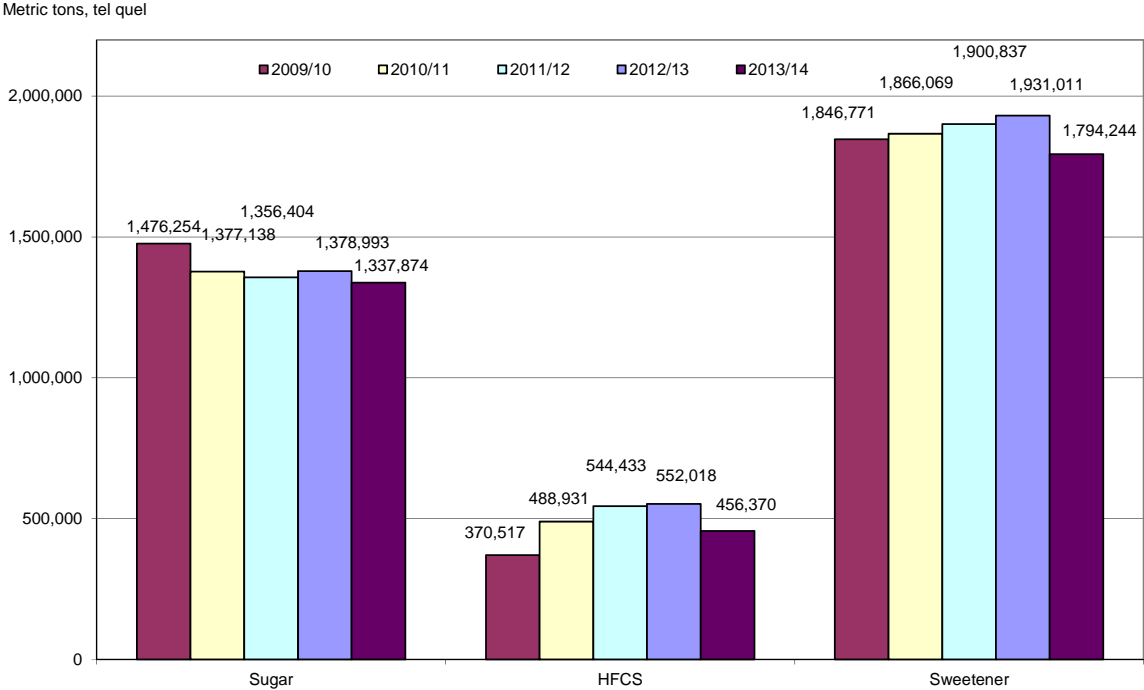
Putting all the components together, the Sugar and Sweetener Outlook analysis suggests 2013/14 production at 6.058 million mt. Because there is still much time left in the season, the USDA decided to retain its February projection for the March 2014 WASDE.

Last month the USDA lowered its projection of sugar deliveries for human consumption by 100,000 mt to 4.306 million mt, and this projection was kept for March. Conadesuca’s estimate of deliveries October through January total 1.338 million mt (fig. 6). This total is about 97 percent of the last year’s corresponding total through the same 4-month period but seems to represent a gain because the 3-month ratio was 95.5 percent.

High Fructose Corn Syrup (HFCS) deliveries have totaled only 456,370 mt (dry weight) through the end of January, down 17.3 percent compared with last year. USDA’s full-year 2013/14 projection of HFCS deliveries is 1.491 million mt, about 4.9 percent lower than last year. Although USDA expects the pace of deliveries to pick up, this revival will have to start soon for the USDA projection to hold.

Combined sugar and HFCS deliveries for human consumption have totaled 1.794 million mt through January, down 7.1 percent compared with the same period last year. Although January was the target implementation date for the new special tax on sweetened soda drinks and select food items, it does not seem likely that a reduction this large could be attributable to the tax. Because HFCS deliveries are more readily verifiable because most HFCS is imported, sugar deliveries may be understated. The data ambiguity will not likely be resolved until the data are fully audited under Conadesuca direction.

Figure 6
Sweetener consumption in Mexico, 4-months into marketing year, 2009/10 – 2013/14



Source: Conadesuca.

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Stephen Haley, (202) 694-5247, shaley@ers.usda.gov (coordinator)
Erma J. McCray, (202) 694-5306, ejmccray@ers.usda.gov (web publishing)

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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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