



# Sugar and Sweeteners Outlook

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## U.S. Sugar Production Down on Reduced Sugar Beet Yields; Ending Stocks Tighten

Sugar production is lowered in 2020/21, driven primarily by reduced sugar beet yields, particularly in Minnesota, North Dakota, and Michigan. Also contributing to the reduction is a record amount of August-September sugar production, which is allocated into 2019/20. Cane sugar production for 2020/21 is forecast up slightly with less early sugarcane harvest in Louisiana than previously expected.

Total supply for 2020/21 is cut substantially as imports and beginning stocks are also reduced. Beginning stocks in 2020/21 are lowered based on final 2019/20 data from the Sweetener Market Data (SMD) report, which is published by USDA's Farm Service Agency (FSA). October 2020 imports from the extended 2019/20 raw sugar tariff-rate quota (TRQ) were smaller than expected, leading total projected 2020/21 imports to be smaller than previously forecast. With total use unchanged in 2020/21, ending stocks are tightened substantially.

Mexico's 2020/21 production is lowered from the previous estimate. Projected deliveries of sugar are unchanged, but deliveries of high-fructose corn syrup (HFCS) are reduced. With the lower production more than offsetting a small boost in beginning stocks, total supplies are decreased. Projected 2020/21 ending stocks are unchanged, leaving exports slightly lower as a residual.

# United States Outlook

## Production Down and Stocks Tighten

In the USDA's November *World Agricultural Supply and Demand Estimates* (WASDE), U.S. supplies of sugar in 2020/21 totaled 13.649 million short tons, raw value (STRV), a 441,000-STRV decrease from the previous month, primarily due to downward revisions to production and imports. Tighter beginning stocks from the finalized 2019/20 data also contributed to the reduction in domestic supplies. Domestic deliveries are boosted for 2019/20, but unchanged for 2020/21. Projected ending stocks are also cut 441,000 STRV to 1.309 million residually, which results in a projected stocks-to-use ratio of 10.6 percent, sharply below the 14.2 percent projected last month.

**Table 1: U.S. sugar: Supply and use by fiscal year (Oct./Sept.), November 2020**

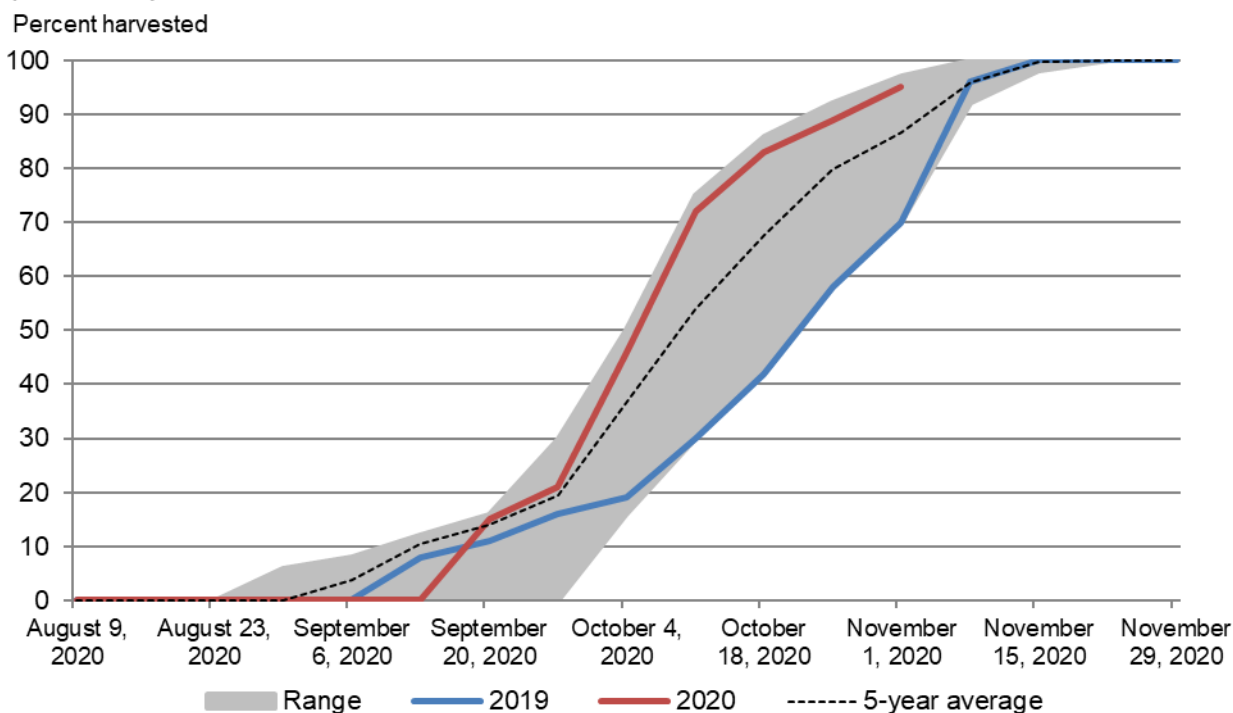
Items	2018/19	2019/20 (estimate)	2020/21 (forecast)	2018/19	2019/20 (estimate)	2020/21 (forecast)
	1,000 Short tons, raw value			1,000 Metric tons, raw value		
Beginning stocks	2,008	1,783	1,623	1,822	1,617	1,473
Total production	8,999	8,149	9,001	8,163	7,393	8,165
Beet sugar	4,939	4,351	4,899	4,480	3,947	4,445
Cane sugar	4,060	3,798	4,101	3,683	3,445	3,721
Florida	2,005	2,106	2,135	1,819	1,910	1,937
Louisiana	1,907	1,566	1,824	1,730	1,420	1,655
Texas	147	126	142	134	115	129
Hawaii	0	0	0	0	0	0
Total imports	3,070	4,154	3,025	2,785	3,768	2,744
Tariff-rate quota imports	1,541	2,071	1,711	1,398	1,878	1,553
Other program imports	438	432	350	397	392	318
Non-program imports	1,092	1,651	963	990	1,498	874
Mexico	1,000	1,376	888	908	1,248	806
High-duty	91	275	75	83	250	68
Total supply	14,077	14,085	13,649	12,770	12,778	12,382
Total exports	35	61	35	31	55	32
Miscellaneous	28	68	0	26	62	0
Deliveries for domestic use	12,231	12,333	12,305	11,096	11,188	11,163
Transfer to sugar-containing products for exports under re-export program	98	78	80	89	71	73
Transfer to polyhydric alcohol, feed, other alcohol	27	20	25	25	18	23
Commodity Credit Corporation (CCC) sale for ethanol, other	0	0	0	0	0	0
Deliveries for domestic food and beverage use	12,106	12,235	12,200	10,982	11,099	11,068
Total use	12,294	12,462	12,340	11,153	11,305	11,195
Ending stocks	1,783	1,623	1,309	1,617	1,473	1,187
Private	1,783	1,623	1,309	1,617	1,473	1,187
Commodity Credit Corporation (CCC)	0	0	0	0	0	0
Stocks-to-use ratio	14.50	13.03	10.60	14.50	13.03	10.60

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

## Beet Sugar Production Slashed on Lower Yield

U.S. 2020/21 sugar production from beets was reduced this month by 307,000 STRV to 4.899 million, primarily due to lower sugar beet yields. USDA's National Agricultural Statistics Service (NASS) revised production downward with lower yields in Minnesota, North Dakota, and Michigan, which more than offset a slightly higher yield in the Great Plains. At 33.958 million tons, the projected sugar beet crop is up 19 percent from last year, but right in line with the 5-year average. Notably, the year-to-year boost in production is almost fully accounted for by the larger area harvested, as a sizable area of last year's sugar beet crop was not harvested at all due to wet fall conditions. Overall, yields in 2020 are projected up only 1 percent from 2019, while area harvested is forecast up 17 percent.

Figure 1  
**United States sugar beet harvest progress, 2019, 2020, and 5-year average (2015-2019)**



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

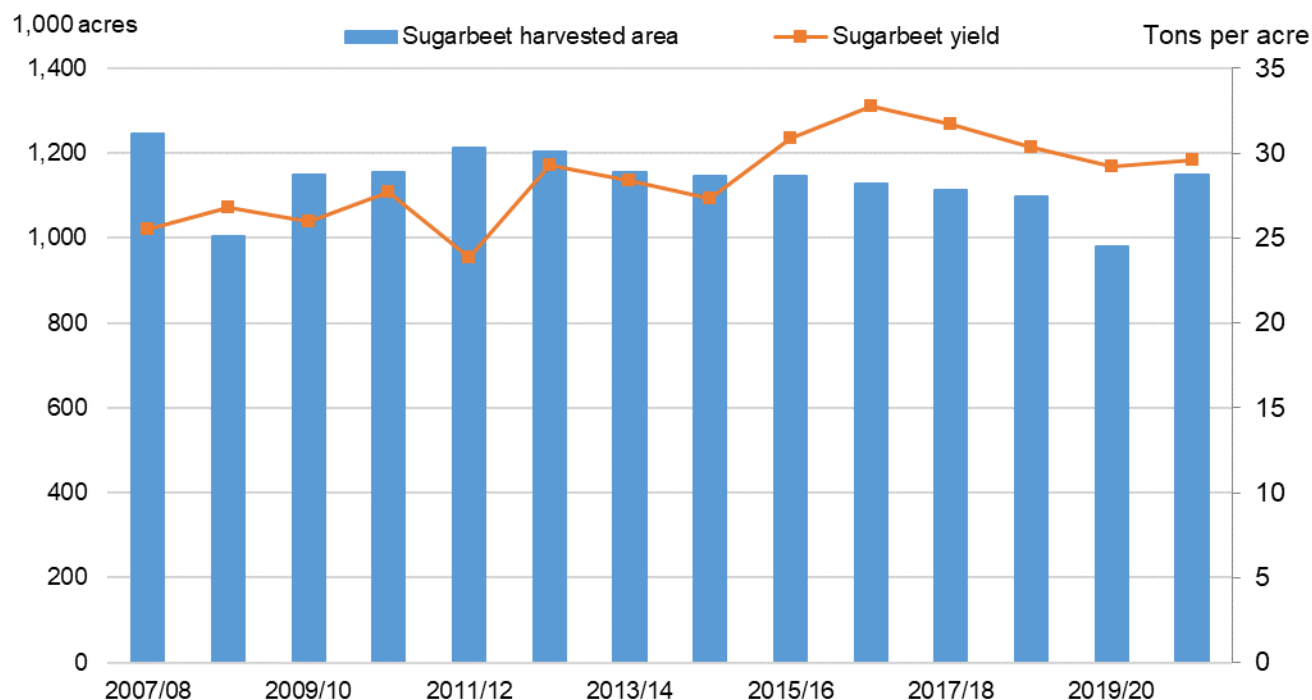
Also affecting beet sugar production for 2020/21 is the early start to the sugar beet harvest, especially in the Upper Midwest. Consequently, beet sugar production for the months of August and September hit a record of about 765,000 STRV this year, which was higher than the previous projection of 683,000 for those 2 months. In addition to the early harvest, price differentials between old-crop and new-crop sugar provided an incentive to start production

early in the season. Furthermore, some processors were in a rush to fulfill old-crop contracts, which provided additional impetus for early-season production. Overall, this larger-than-expected start resulted in an upward revision to 2019/20 beet sugar production, which is now finalized at 4.351 million STRV. While the upward revision to August-September 2020 beet sugar production did contribute to reduced 2020/21 production, this effect is partly offset by a slightly raised expectation for August-September 2021 production, which is revised higher based on an updated 5-year average.

**Table 2: U.S. sugar beet area harvested, yield, and production, by region**

<i>Area harvested by region (1,000 Acres)</i>	2016/17	2017/18	2018/19	2019/20	October 2020/21	November 2020/21	Monthly Change (Percent)
Great Lakes (MI)	149.0	143.0	147.0	145.0	154.0	154.0	0.00
Upper Midwest (MN, ND)	620.0	621.0	607.0	506.0	644.0	644.0	0.00
Great Plains (CO, MT, NE, WY)	150.1	148.5	142.7	127.0	143.3	143.3	0.00
NW (ID, OR, WA)	182.1	176.9	174.1	176.8	183.3	183.3	0.00
California	25.2	24.7	24.6	24.5	23.9	23.9	0.00
United States	1,126.4	1,114.1	1,095.4	979.3	1,148.5	1,148.5	0.00
<i>Yield by region (short tons per acre)</i>							
Great Lakes (MI)	30.80	25.20	29.30	28.60	29.20	28.30	-3.09
Upper Midwest (MN, ND)	30.26	30.53	26.72	25.34	28.40	25.66	-9.66
Great Plains (CO, MT, NE, WY)	32.48	32.05	31.56	28.74	31.84	32.18	1.05
NW (ID, OR, WA)	41.50	39.16	40.52	39.04	40.27	40.27	0.00
California	45.12	43.16	48.78	44.08	45.31	45.31	0.00
United States	32.78	31.70	30.38	29.20	31.18	29.57	-5.18
<i>Production by region (1,000 short tons)</i>							
Great Lakes (MI)	4,589.0	3,604.0	4,307.0	4,147.0	4,497	4,358	-3.09
Upper Midwest (MN, ND)	18,762.0	18,960.0	16,217.0	12,820.0	18,290	16,524	-9.66
Great Plains (CO, MT, NE, WY)	4,875.0	4,759.0	4,503.0	3,650.0	4,563	4,611	1.05
NW (ID, OR, WA)	7,557.0	6,928.0	7,055.0	6,903.0	7,382	7,382	0.00
California	1,137.0	1,066.0	1,200.0	1,080.0	1,083	1,083	0.00
United States	36,920.0	35,317.0	33,282.0	28,600.0	35,815	33,958	-5.18

Figure 2  
**Sugar beet harvested area and yields, 2007/08 to 2020/21**



Source: USDA, National Agricultural Statistics Service.

**Table 3: Beet sugar production projection calculation, 2019/20 and 2020/21**

	2015/16	2016/17	2017/18	2018/19	2019/20	2019/20	2020/21	2020/21
					October	November	October	November
Sugar beet production (1,000 short tons) 1/	35,371	36,881	35,325	33,282	28,600	28,600	35,815	33,958
Sugar beet shrink (percent)	6.52	8.26	7.31	5.17	5.34	5.34	6.58	6.58
Sugar beet sliced (1,000 short tons)	33,066	33,834	32,742	31,561	27,072	27,072	33,457	31,723
Sugar extraction rate from slice (percent)	14.58	13.72	15.18	14.77	14.22	14.14	14.51	14.51
Sugar from beets slice (1,000 STRV) 2/	4,820	4,643	4,970	4,660	3,851	3,828	4,855	4,603
Sugar from molasses (1,000 STRV) 2/	380	352	368	352	342	341	360	360
Crop-year sugar production (1,000 STRV) 2/	5,201	4,995	5,338	5,012	4,192	4,169	5,215	4,963
August-September sugar production (1,000 STRV)	688	606	715	655	582	582	683	765
August-September sugar production of subsequent crop (1,000 STRV)	606	715	655	582	683	765	638	665
Sugar from imported beets (1,000 STRV) 3/	--	--	--	--	--	--	36	36
Fiscal year sugar production (1,000 STRV)	5,119	5,103	5,279	4,939	4,293	4,351	5,206	4,899

1/ USDA, National Agricultural Statistics Service for historical data. 2/ August-July basis. 3/ Sugar from imported beets split out for projections only, included in total once full crop-year slice is recorded. Sugar from imported beets is incorporated into total production in historical data.

Note: STRV = short tons, raw value.

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

## Cane Sugar Production for 2020/21 Raised on Smaller-than-Expected Early Sugarcane Harvest in Louisiana

Cane sugar production is projected to be 4.101 million STRV in 2020/21, up 40,000 from the previous month with Louisiana accounting for the entire change. Louisiana's September 2020 production was only about 70,415 STRV, down from the 120,000 that was previously expected, which results in a reallocation of the difference between those figures into 2020/21. Projected

September 2021 production is 44,837 STRV based on the 5-year average, down from last month's projection of 54,754. Overall, U.S. 2020/21 cane sugar production is forecast up 8 percent from the 2019/20 final figure of 3.798 million.

**Table 4: U.S. sugarcane and cane sugar production, by State, 2015/16 to 2020/21**

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	Annual change Percent
<b>Florida</b>							
Sugarcane harvested for sugar (1,000 acres)	398	392	397	397	397	399	0.6
Sugarcane yield (short tons per acre)	42.5	40.3	40.9	41.7	42.8	43.9	2.6
Sugarcane production (1,000 short tons)	16,915	16,120	16,237	16,555	16,992	17,526	3.1
Recovery rate (percent)	12.8	12.7	12.2	12.1	12.4	12.2	-1.7
Sugar production (1,000 STRV)	2,173	2,055	1,983	2,005	2,106	2,135	1.4
<b>Louisiana</b>							
Sugarcane harvested for sugar (1,000 acres)	385	400	414	425	441	455	3.2
Sugarcane yield (short tons per acre)	29.6	28.8	32.5	35.3	27.8	30.5	9.8
Sugarcane production (1,000 short tons)	11,396	11,520	13,455	15,003	12,243	13,868	13.3
Recovery rate (percent)	12.5	14.2	13.8	12.5	12.8	13.2	2.9
Sugar production (1,000 STRV)	1,428	1,632	1,862	1,875	1,566	1,824	16.5
<b>Texas</b>							
Sugarcane harvested for sugar (1,000 acres)	35	38	41	38	31	34	7.3
Sugarcane yield (short tons per acre)	31.4	37.0	36.8	36.6	33.6	33.7	0.3
Sugarcane production (1,000 short tons)	1,105	1,395	1,490	1,376	1,052	1,132	7.6
Recovery rate (percent)	10.5	9.9	11.3	10.7	12.0	12.5	4.5
Sugar production (1,000 STRV)	116	138	169	148	126	142	12.5

Note: STRV = short tons, raw value.

Source: USDA, Farm Service Agency; USDA, National Agricultural Statistics Service; USDA, World Agricultural Outlook Board.

## U.S. Food and Beverage Deliveries Little Changed

Food and beverage deliveries in the United States are finalized at 12.235 million STRV for 2019/20, up 35,000 from the previous estimate and up 1.1 percent from 2018/19. Projected food and beverage deliveries for 2020/21 are unchanged from last month at 12.200 million STRV, which is lower than 2019/20, but would still be the second largest on record.

Consequent to the small beet sugar production in 2019/20, deliveries from beet processors that year were down 12.3 percent from 2018/19. Deliveries from cane refiners were 5.0 percent higher than the previous year. Deliveries from non-reporters were 57.6 percent higher than the year prior, more than compensating for the reduced deliveries from reporting companies. One major driver of this fast pace was the growth of high-tier imports due to price differentials between the world futures markets and the U.S. wholesale market. Furthermore, a higher proportion of sugar entering under Free Trade Agreements was higher polarity sugar that did not require additional refining.

**Table 5: Food and beverage deliveries, 2014/15 to 2019/20, October through September**

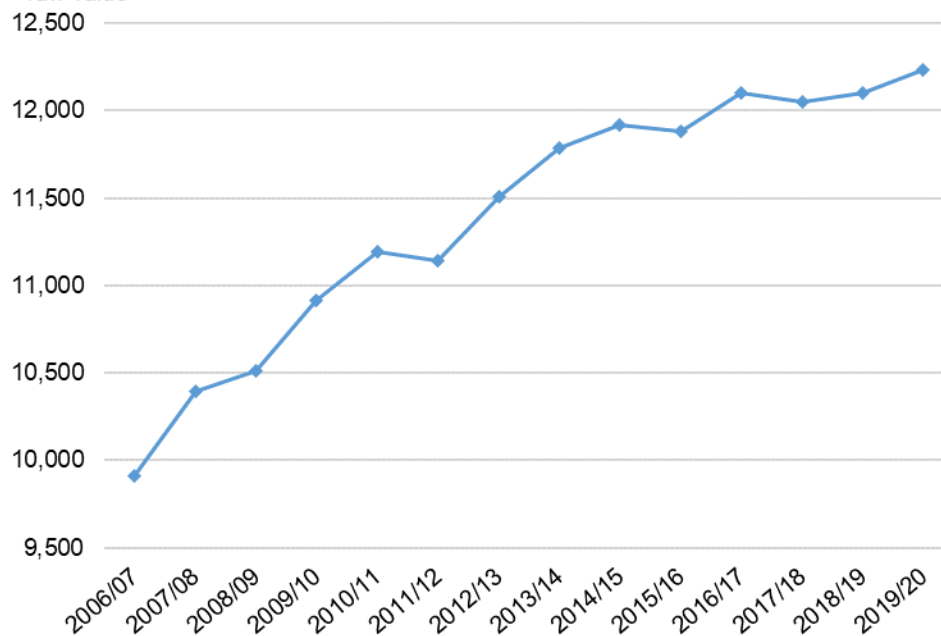
	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	Annual change
	1,000 short tons, raw value						Percent
Beet sugar processors	4,730	4,598	5,348	5,271	5,044	4,422	-12.3
Cane sugar refiners	6,241	6,444	6,044	6,113	6,302	6,615	5.0
Total reporters	10,972	11,042	11,392	11,384	11,346	11,037	-2.7
Non-reporter, direct consumption	950	839	710	664	760	1,197	57.6
Final fiscal year deliveries	11,921	11,881	12,102	12,048	12,106	12,235	1.1

Source: USDA, Farm Service Agency.

Figure 3

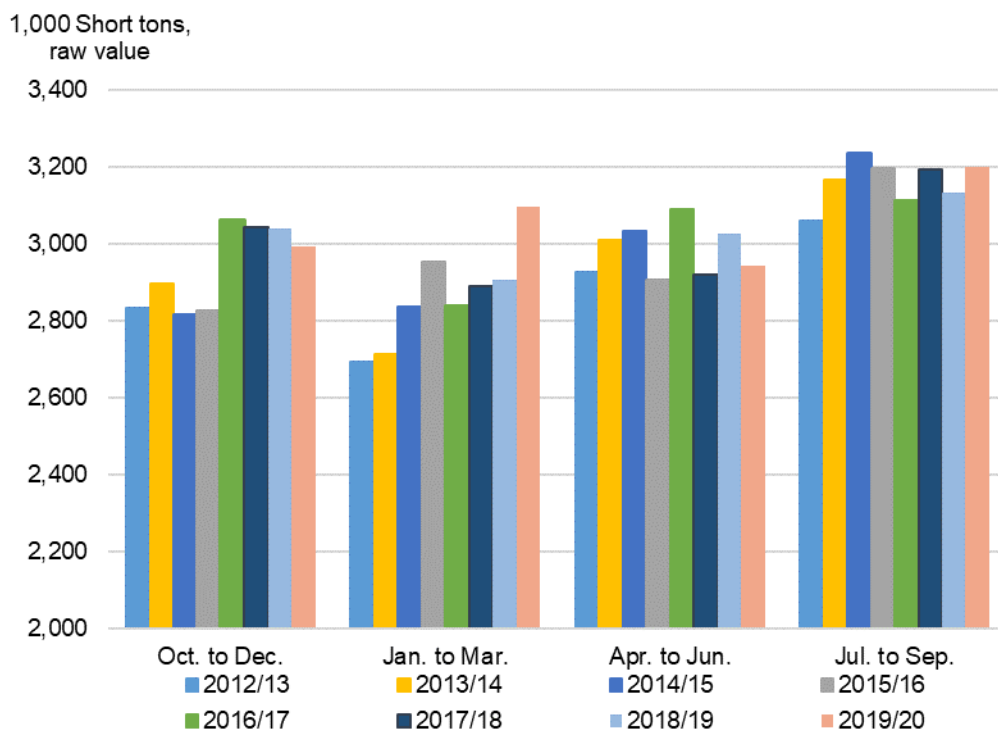
**U.S. sugar deliveries for food and beverage use, 2007/08 through 2019/20**

1,000 Short tons,  
raw value



Source: USDA, Farm Service Agency.

Figure 4  
**Total U.S. sugar deliveries, quarterly, 2012/13 to 2019/20**

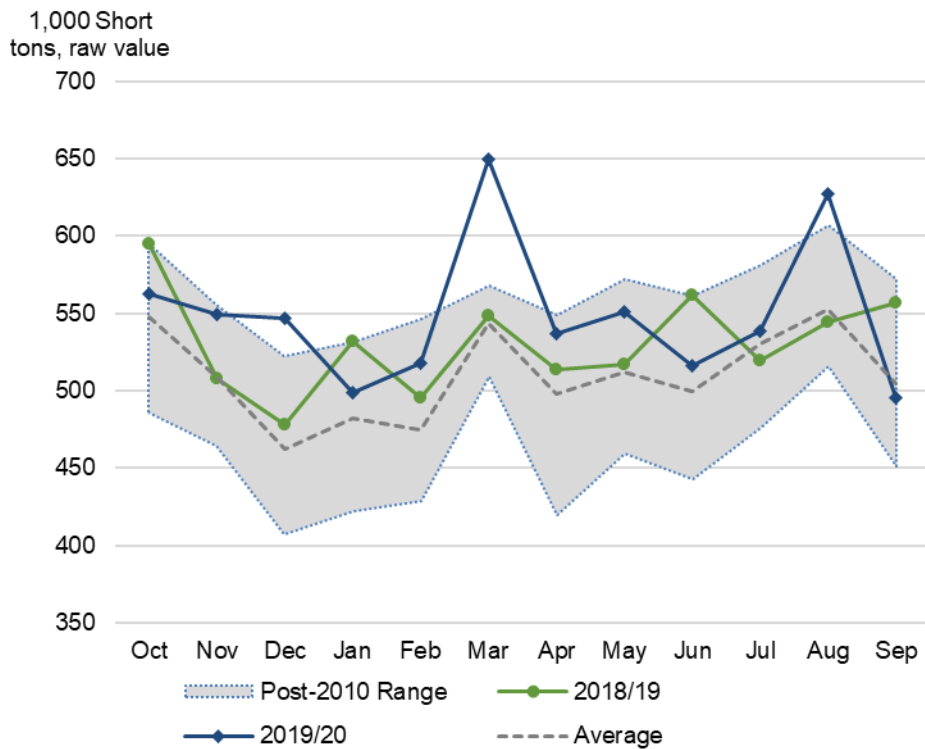


Source: USDA, Farm Service Agency.

The quarterly pace of deliveries in 2019/20 followed a roughly similar trend as seen in recent years. As has been typically the case, the July-September quarter represented the largest portion of deliveries, although it was smaller than the same period in some previous years. Notably, the next largest quarter was January-March. By March, the cane refining sector was ramping up its output to make up for shortages in the beet sugar sector. Cane refiners' refined sugar stocks built up temporarily. However, consumers altered their behavior stemming from public policy restrictions related to COVID-19, which resulted in weaker demand in subsequent months. April-June represented the lowest quarter of the 2019/20 year for deliveries as sugar consumption slowed while overall consumer spending was down. At the same time, refiners reduced output in order to work stocks back to a more manageable level.

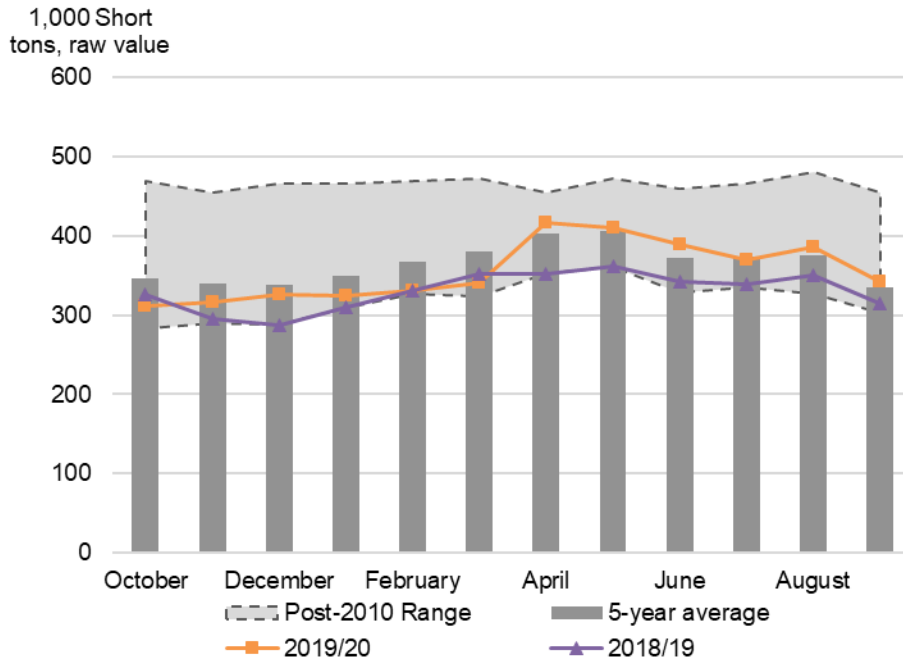


Figure 5  
**Sugarcane refiners' melt, monthly, 2009/10 to 2019/20**



Source: USDA, Farm Service Agency.

Figure 6  
**Sugarcane refiners' refined sugar inventories, monthly, 2016/17 to 2019/20**



Source: USDA, Farm Service Agency.

## 2020/21 TRQ Imports Decreased on Slower-than-Expected October 2020 Trade

On September 10, 2020, USDA increased the FY 2020 U.S. World Trade Organization (WTO) raw sugar TRQ by 100,000 STRV and extended the quota period by 1 month, to October 31, 2020. Along with the April 2020 increase of 350,000 STRV, this action brought the total TRQ to 1.681 million STRV. On September 22, 2020, the United States Trade Representative announced that the 100,000 STRV increase to the quota would be allocated entirely to Brazil (roughly 88,000) and Australia (about 12,000).

Imports during the month of October under the 2019/20 raw sugar TRQ are estimated at 151,898 STRV, a reduction of 120,136 from what was previously expected to enter during that month, mainly due to Australia and Brazil not filling their available quota. In view of this development, total TRQ imports during 2020/21 are lowered by about 120,000 STRV to 1.711 million. Total projected imports are lowered by about 95,000 STRV to 3.025 million as larger high-tier imports partly offset the reduction in TRQ imports. Total imports for 2019/20 are finalized at 4.153 million tons, up by about 18,000 from last month's estimate as larger high-tier imports more than offset a small reduction in imports from Mexico.

## Tight U.S. Sugar Supplies in 2019/20 Result in Record-Large High-Tier Imports

High-tier imports for 2019/20 are raised from 250,631 STRV to a final 275,313 STRV, which is the largest high-tier imports since the NAFTA sweetener provisions went into effect in 2008. High-tier imports were heavily concentrated in the latter part of the marketing year as more than 190,000 STRV were imported from July through September alone. For much of the past year, U.S. prices have remained elevated mainly due to the small size of the U.S. 2019/20 beet crop. Even with expanded TRQ imports and larger shipments from Mexico, the spread between U.S. and world sugar prices has been wider than the high-tier tariff. Note that for raw sugar, the tariff is set at 33.87 cents per kilogram or 15.4 cents per pound; for refined sugar, it is set at 35.74 cents per kilogram or 16.2 cents per pound. Depending upon the country of origin, the usual cost of freight and associated logistics can be as low as 2-4 cents per pound for raw sugar, and 5-6 cents per pound for refined sugar. Figure 7 shows that the nominal refined sugar price

spread has averaged more than 27 cents per pound during the first 9 months of calendar year 2020, providing ample incentive for imports of high-tier sugar.

However, this price spread is narrowing significantly in FY 2021 as contracting for U.S. refined sugar is reported at much lower price levels, and world refined sugar futures prices are expected to remain relatively stable. October high-tier imports are estimated at 26,000 STRV, which is down from recent months but still relatively large. Consequent to the strong level of high-tier imports in the first month of 2020/21, projected high-tier imports for the year are up 25,000 from the previous month to 75,000 STRV. High-tier trade during the month of October may be a bit elevated due to sales carried over from the previous year, but subsequent months are expected to be smaller as the tighter price spread will provide less incentive for this trade.

Figure 7  
**U.S. and world refined sugar prices, monthly, January 2008 to October 2021**

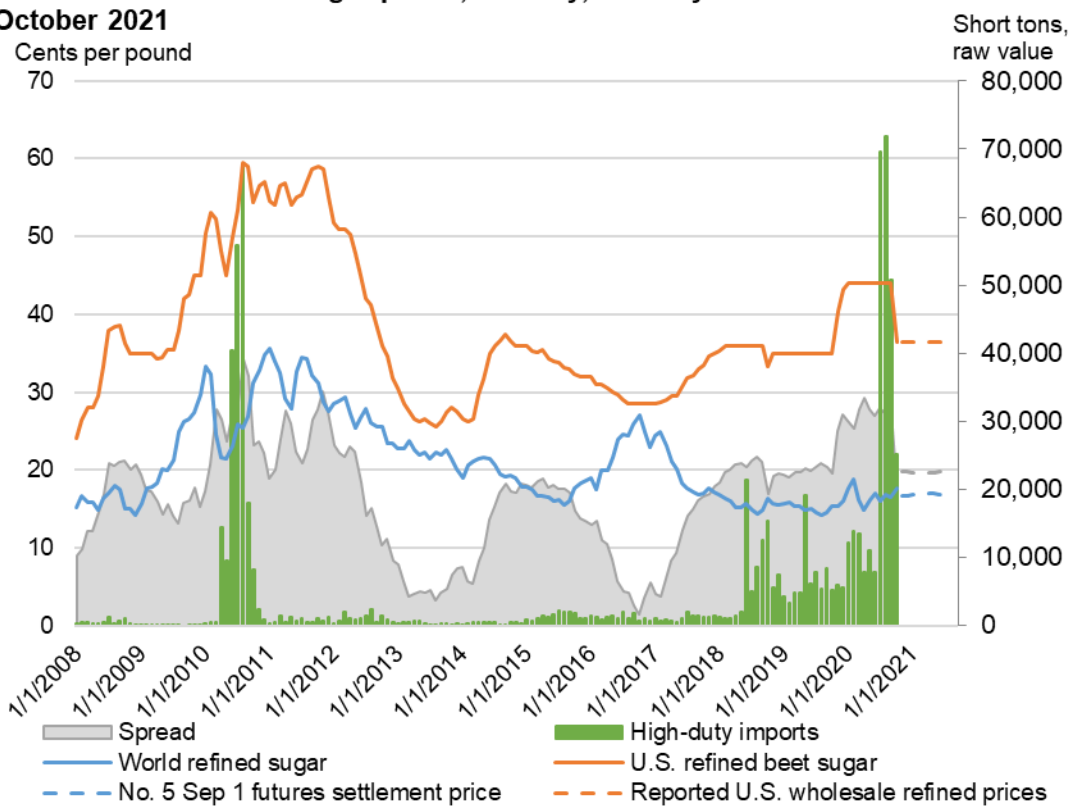
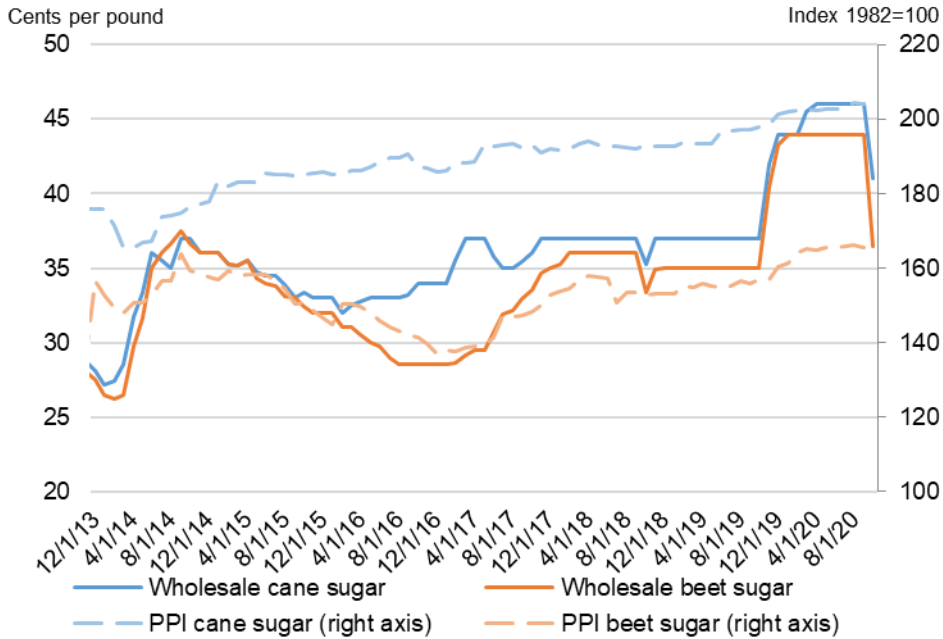


Figure 8  
**Refined sugar prices, wholesale and Producer Price  
 Indexes, monthly**



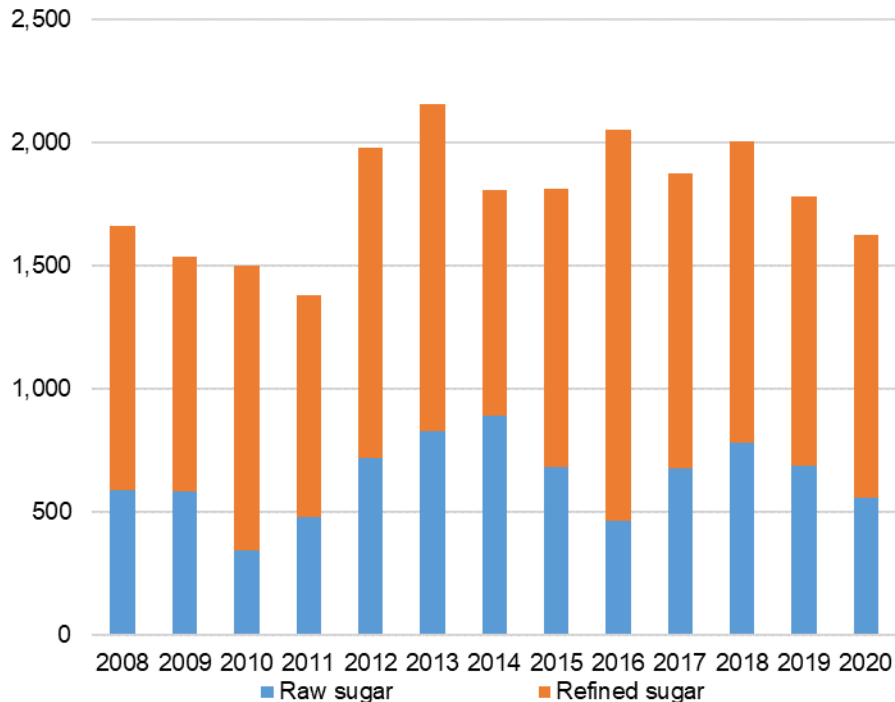
Note: Producer Price Index (PPI).  
 Source: USDA, Economic Research Service.

## Ending Stocks Down Marginally for 2019/20 and Slashed for 2020/21

U.S. ending stocks held by processors and refiners in 2019/20 are revised downward by about 78,000 STRV to a final 1.623 million. This represents a 9 percent decline from the previous year and is the lowest stock total in 9 years. Total supplies held by cane refiners at the end of the year are 1 percent lower than the previous year, while beet sugar processors' stocks were 7 percent down. Raw sugar represents 34 percent of the total, down from the previous year's level of 38 percent. The stocks-to-use ratio is 13.03 percent, down from 14.50 percent the previous year and the lowest since 2011.

Figure 9  
**September 30 sugar inventories, fiscal year**

1,000 Short  
 tons, raw value  
 2,500



Source: USDA, Farm Service Agency.

For 2020/21, ending stocks are lowered 441,000 STRV to 1.309 million as a residual effect of smaller production, imports, and beginning stocks. The U.S. stocks-to-use ratio is projected at 10.60 percent, well below the October forecast of 14.18 percent. This is also down significantly from the final 13.03 percent stocks-to-use ratio for the 2019/20 year. After the next WASDE scheduled to be published on December 10, 2020, the U.S. Department of Commerce will use the target U.S. sugar ending stocks-to-use ratio of 13.5 percent provided for in the U.S.-Mexico sugar Suspension Agreements to calculate a revised U.S. Needs amount.

# Mexico Outlook

## Production Forecast Slightly Lower on Reduced Area

The WASDE projection for Mexico's sugar production in 2020/21 is now 5.95 million metric tons (MT), down 50,000 from last month's forecast, but still up 13 percent from the previous year and close to the 5-year average. Mexico's National Committee for the Sustainable Development of Sugarcane (CONADESUCA) published its first official production forecast for 2020/21, estimating the crop at 6.14 million MT. The WASDE forecast is slightly lower because it assumes the same sugarcane yield (67.18 MT/ha) and recovery rate (11.27 percent) as CONADESUCA, but forecasts a lower area harvested at about 785,000 hectares. This area harvested projection is close to 2019/20, but slightly below CONADESUCA's estimate of 811,148. Supporting the lower sugar production estimate at this time are observations that in some regions, sugarcane fields are still recovering from drought. Furthermore, an ongoing locust infestation in Veracruz is affecting crops in that sector.

**Table 6: Mexico sugar supply and use 2018/19 - 2019/20 and projected 2020/21, November 2020**

Items	2018/19	2019/20	2020/21 (forecast)
		1,000 metric tons, actual weight	
Beginning stocks	1,395	1,169	858
Production	6,426	5,278	5,950
Imports	85	77	86
Imports for consumption	22	55	21
Imports for sugar-containing product exports, IMMEX 1/, other	63	23	65
Total supply	7,905	6,524	6,894
Disappearance			
Human consumption	4,092	4,101	4,073
For sugar-containing product exports (IMMEX)	460	352	415
Other deliveries and end-of-year statistical adjustment	-20	1	0
Total	4,532	4,455	4,488
Exports	2,204	1,212	1,471
Exports to the United States & Puerto Rico	856	1,177	760
Exports to other countries	1,348	35	710
Total use	6,737	5,667	5,959
Ending stocks	1,169	858	935
		1,000 metric tons, raw value	
Beginning stocks	1,478	1,239	909
Production	6,811	5,595	6,307
Imports	90	82	91
Imports for consumption	23	58	22
Imports for sugar-containing product exports (IMMEX)	67	24	69
Total supply	8,380	6,916	7,307
Disappearance			
Human consumption	4,337	4,347	4,317
For sugar-containing product exports (IMMEX)	488	373	440
Other deliveries and end-of-year statistical adjustment	-21	1	0
Total	4,804	4,722	4,757
Exports	2,337	1,285	1,559
Exports to the United States & Puerto Rico	908	1,248	806
Exports to other countries	1,429	37	753
Total use	7,141	6,007	6,316
Ending stocks	1,239	909	991
Stocks-to-human consumption (percent)	28.6	20.9	23.0
Stocks-to-use (percent)	17.3	15.1	15.7
High-fructose corn syrup (HFCS) consumption (dry weight)	1,528	1,388	1,377

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

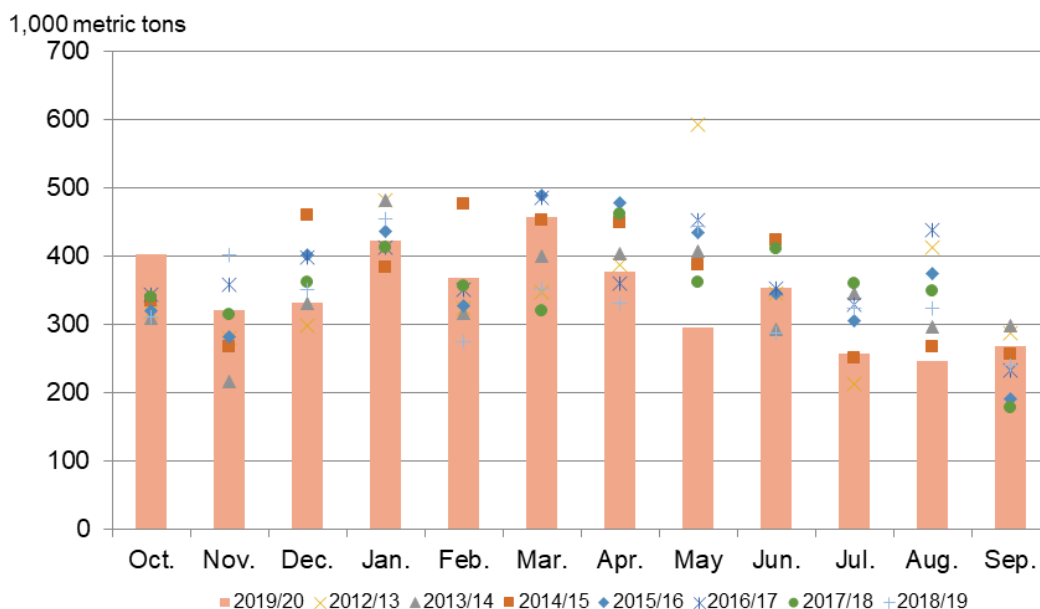
Sources: USDA, World Agricultural Outlook Board; USDA, Economic Research Service; CONADESUCA.

## Sugar Use Mostly Unchanged

Total sugar use in Mexico for 2019/20 is finalized at 5.667 million MT, down 39,000 from the previous month with both deliveries and exports revised lower. Deliveries for human use are finalized at 4.101 million MT in 2019/20, down marginally from the previous month's projection, while deliveries for the *Industria Manufacturera, Maquiladora y de Servicios de Exportación* program (IMMEX) are lowered 33,000 MT to 352,000. Sugar use in 2020/21 is unchanged.

Demand for HFCS is finalized at 1.388 million MT (dry basis) in 2019/20, up 8,000 MT from the previous month. HFCS consumption in 2020/21 is lowered by 93,000 MT to 1.377 million in light of large expected sugar supplies, COVID-19 related consumption effects, and a relatively weak peso relative to the U.S. dollar. Furthermore, health-related campaigns to reduce sugar intake are seen as likely having an impact on consumption of HFCS.

Figure 10  
**Mexican sugar deliveries for consumption, monthly, 2012/13 to 2019/20**

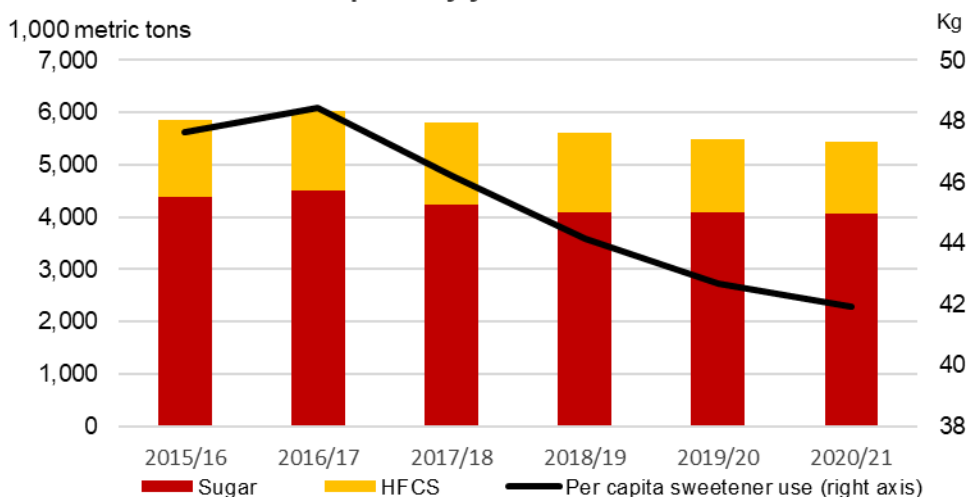


Source: CONADESUCA.

Total sweetener demand in 2019/20 is projected slightly higher from the previous forecast, but down from the previous year. The large year-to-year reduction in HFCS more than offsets marginally higher sugar consumption. The 2019/20 per capita sweetener (sugar and HFCS combined) consumption is finalized at 42.67 kg, up slightly from the previous projection of 42.62. With both sugar and HFCS use down in 2020/21, per capita sweetener consumption is projected at 41.94, declining for the fourth consecutive year.



Figure 11  
**Mexico sweetener consumption by year**



Source: USDA, World Agricultural Outlook Board.

## Mexico's Exports and Imports Lowered Slightly

Exports for 2019/20 are lowered 6,000 MT to a final 1.212 million MT, with exports to the United States down to 1.177 million and exports to other destinations unchanged at 35,000 MT. Total imports in 2019/20 are down 33,000 MT to 77,000 as reduced imports for IMMEX more than offset a slight boost in imports for consumption. Total exports in 2020/21 are projected down 47,000 MT to 1.471 million as a residual. Forecast exports to the United States are unchanged at 760,000 MT, while exports to other countries are lowered to 710,000 MT. Imports in 2020/21 are projected 3,000 MT lower to 86,000 on lower projected imports for consumption.

## Ending Stocks for 2019/20 Boosted, but Still Tight

Mexico's 2019/20 ending stocks are estimated at 858,000 MT, up 6,000 from the previous month as smaller deliveries and exports more than offset a reduction to imports. Even with this increase, Mexico's projected stocks are still below the 2.5-month consumption target that domestic authorities use to monitor and manage domestic programs. The stocks-to-human consumption ratio is estimated at 20.9 percent, which would be the smallest since 2014/15. Mexico's 2020/21 ending stocks are unchanged at 935,000 MT based on the calculated stock level needed to arrive at 2.5 months of consumption.

# Special Article: U.S. Refined Beet Sugar Prices

## Twenty Years of Refined Beet Sugar Prices

Between 2001 and 2020, the annual average U.S. wholesale refined beet sugar price, as measured by the Midwest fob beet factory price quote from *Milling and Baking News*, ranged from 23.2 to 57.3 cents per pound (figure 12). In 2001, USDA was still working off surplus stocks that had been forfeited to the Commodity Credit Corporation (CCC), and the beet sugar price was close to the minimum price support level under the U.S. sugar loan program. The principal factor contributing to the surplus stocks in 2001-2003 was an unexpected decline in U.S. sugar domestic food and beverage use, which fell from 10 million short tons raw value (STRV) in FY 2001 to 9.5 million STRV in FY 2003.



After 2003, U.S. sugar demand growth returned to a pace of between 1-2 percent per year. In early August 2005, just as the sugar beet harvest season was beginning in most of the United States, U.S. beet processors realized that their upcoming 2005/2006 crop would be well short, in many cases below levels of output they had already contracted. The beet sugar price rose from an average of 26 cents per pound in August to 40 cents per pound in September. A few weeks later, on August 29, Hurricane Katrina damaged a cane refiner in New Orleans, and in October Hurricane Wilma damaged cane refineries in Florida, further restricting the availability

of refined sugar in the U.S. market. USDA took a series of actions to address the shortage of refined sugar, including increasing both raw and refined sugar TRQs and permitting early entry of the FY 2006 TRQ sugar prior to the normal opening date of October 1. USDA again increased raw and refined sugar TRQs in December 2005 and February 2006, bringing the total refined sugar TRQ for FY 2006 to 638,934 STRV, compared to the initially announced level of 47,400 STRV. Under NAFTA rules at the time, Mexico was authorized for a FY 2006 TRQ of 276,000 STRV. Total U.S. sugar imports in FY 2005 had been 2.1 million STRV, but due to the domestic beet sugar production shortfall, rose by 1.3 million STRV to 3.4 million STRV in FY 2006. In addition to more TRQ sugar, as part of this increase in imports, there were also about 450,000 STRV of high-tier imports from Mexico. The duty on Mexican sugar had declined to 3.0 cents per pound in 2006 under NAFTA provisions, and the high U.S. prices were more than enough to cover this duty. In FY 2007 the beet sugar price returned to its historic range, averaging 25.5 cents per pound, and imports fell back to 2.1 million STRV.

In February 2008 a cane refinery exploded in Georgia, wiping out about 12 percent of U.S. cane sugar refining capacity. The refined beet sugar price rose from 24 cents per pound in January to 38 cents in July. In August, USDA increased the FY 2008 refined sugar TRQ by 300,000 and extended the arrival deadline to December 31, 2008. Although the intent was for this to be limited to type of refined sugar most commonly used in the United States, much of it was filled by very-high polarity raw sugar in bulk at ports where U.S. refineries are located, or organic and specialty sugar that had been already in bonded warehouses.

Beginning January 1, 2008, Mexican sugar and U.S. HFCS each were granted duty-free and quota-free status to the other country. Many U.S. industry observers had anticipated a flood of Mexican sugar creating an over-supply in the United States. However, HFCS use in Mexico took a few years to ramp up, and the U.S. import requirements were steadily increasing. Also, U.S. sugar demand was robust and rose from 10.4 million STRV in FY 2009 to 11.8 million in FY 2014, an average increase of 240,000 STRV per year for those 5 years. Instead of a surplus and declining price, the United States entered a period of rising prices.

U.S. beet sugar prices averaged 48 cents per pound during the 4-year period 2009-2012. In part, U.S. prices during this period were supported by a run-up in the world sugar price, from an average of 10 cents per pound in 2008 to almost 30 cents per pound in 2011. The U.S. high tariff on over-quota refined sugar imports is about 16 cents per pound and, theoretically, when U.S. prices exceed the import-parity levels, arbitragers could gain by importing over-quota sugar. While some over-quota imports did occur, the difficulties of managing the freight and logistics of the sugar supply chain create significant barriers to entry for this type of trading.

Estimates at the time of the cost of importing containers of refined sugar were in the range of 6-10 cents per pound.

The relatively high returns to beet and cane farmer and processors during 2009-2012 would normally be a strong incentive to invest in expanded area or higher productivity. However, it should be noted that the marketing allotment limits that U.S. producers face as part of the U.S. sugar program can limit the incentive to expand sugar output, so investments have tended to focus more on cost reduction. Since Mexican sugar producers received the U.S. price for their exports to the United States, they also received very high average prices during this period. Those producers, however, are not subject to marketing allotment limitations, which provides a stronger incentive for those farms and factories to invest in additional productivity.

In 2013 sugar production in both the United States and Mexico rose dramatically, driven by both ideal weather and investments in the sectors. On a crop year (August/July) basis, U.S. beet sugar production in 2012/13 was 5.440 million STRV, 21.2 percent higher than the previous year. And total U.S. beet and cane sugar production was 16.5 percent, or 1.330 million STRV, higher. Mexican sugar production rose to almost 7 million MT commercial weight (about 8.1 million STRV), almost 1.9 million tons up from the prior year.

In FY 2013 U.S. sugar imports from Mexico rose to about 2.1 million STRV, even as total U.S. imports fell about 400,000 STRV from 3.6 million to 3.2 million. The world sugar price fell from about 30 cents per pound in 2011 to 23 cents in 2012 and then 18 cents in 2013, steadily lowering any supportive impact on U.S. sugar prices. As U.S. sugar prices fell, U.S. cane and beet processors voiced concerns that prices might fall to levels at which forfeiting their sugar to the CCC and keeping their loans might provide a higher return than the market. In the spring, summer, and fall of 2013, USDA engaged in a series of actions, including domestic sugar purchases and exchanges, designed to reduce supply and support prices. Toward the end of the summer of 2013, some sugar was forfeited to the CCC. By 2014, the beet sugar price was rising, and by April exceeded 30 cents per pound.

At the time, ERS published this analysis regarding the forfeitures (on page 12 of Sugar and Sweeteners Outlook/SSS-M-303/November 15, 2013):

“Sugar loan forfeitures were the result of excess domestic sugar production, large imports of sugar from Mexico contributing to narrow U.S.-world raw sugar price margins, and world prices falling below U.S. price support levels for the first time in several years. Not directly important were the overall level of sugar imports, any loss of domestic market share by domestic sugar

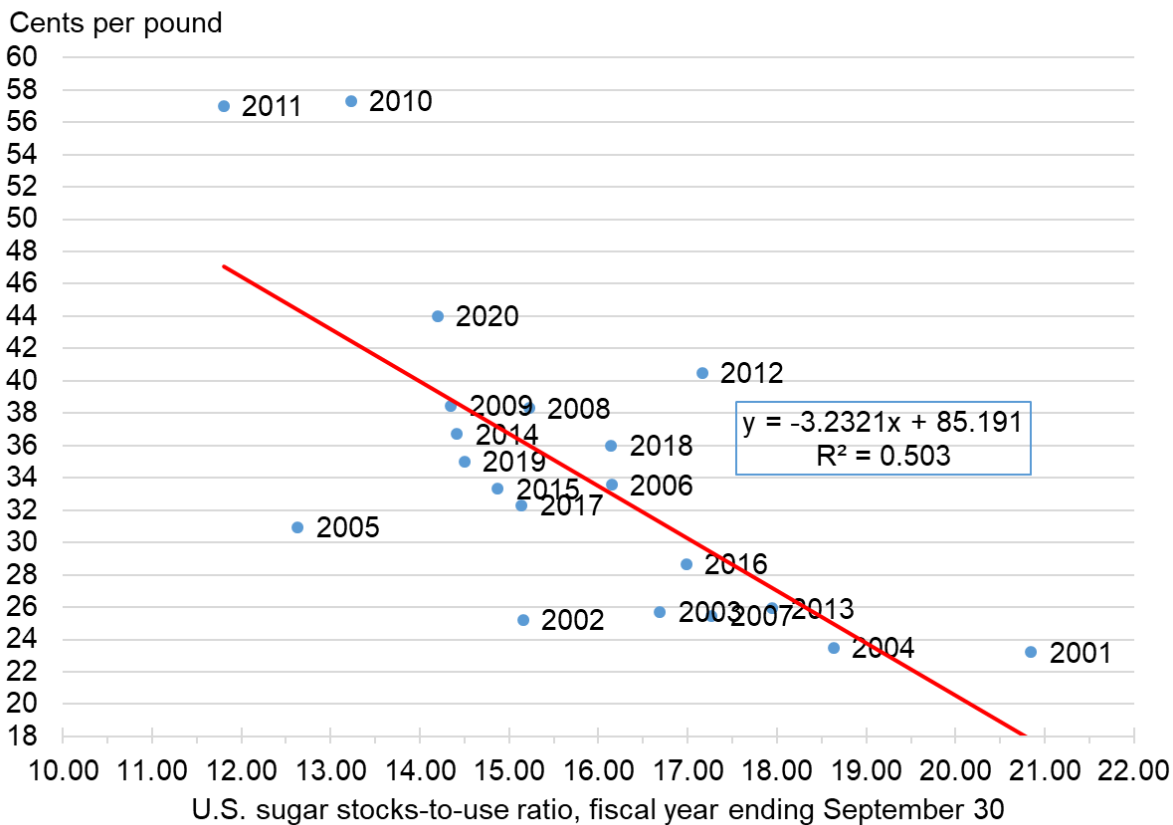
processors or refiners, or large carryover stocks from the previous year. The marketing allotment program had no role in reducing the risk of forfeiture.”

In March 2014, a group of U.S. sugar producers filed an anti-dumping and countervailing duty case of injury to domestic producers caused by Mexican sugar imports. The U.S. International Trade Commission issued a finding that there had been injury, and the U.S. Department of Commerce (DOC) calculated the duties. However, the DOC and the Mexican industry and government agreed to negotiate agreements under which all duties would be suspended, which were published in December 2014 and revised in 2017. By the terms of these agreements, Mexican sugar must be accompanied by an export certificate issued by the Mexican government, cannot exceed the Export Limit quantity established by the DOC, and cannot be sold below certain price levels.

While the suspension agreements are generally quite supportive to U.S. beet sugar prices, other factors can come into play nonetheless, as indeed happened in 2016. Many large U.S. industrial sugar users grew seriously concerned over the potential effects of proposed labelling laws requiring the display of any genetically engineered ingredient. All U.S. beet sugar is produced from seeds produced through genetic engineering, which is not true of U.S. cane sugar (so far). Thus, many large sugar users switched to cane sugar, or mostly cane sugar, for at least some of their product lines. For a period, this resulted in an excess supply of beet sugar and a widening price gap between refined cane and refined beet sugar. However, the worst fears of industrial sugar users did not come to pass, the regulations that came into being were not overly restrictive, and consumer reaction to the new labels did not materialize in the most negative way that had been feared. By 2018 the margin between U.S. cane and beet sugar was very close to its historic, relatively low level.

In October 2019 a series of weather events prevented a significant fraction of the sugar beets in the Red River Valley area of Minnesota and North Dakota from being harvested. With a sudden and sharp drop in U.S. beet sugar production and force majeure being declared on many contracts, refined beet sugar prices spiked from 35 cents per pound in September to 44 cents per pound in November, where they remained until September 2020. With the prospect of a good FY 2021 harvest ahead, prices have softened to 36.50 cents per pound in October and November 2020.

Figure 13  
**U.S. refined beet sugar price, Jul-Sep average, vs. stocks-to-use ratio, 2001-2020**



Source: USDA, Economic Research Service.

This 20-year survey has highlighted many factors that have influenced the U.S. beet sugar price. When building models to explain variations in commodity prices, economists often prefer to start with the ending stocks-to-use ratio, since it is a residual or focal point of many of the other factors affecting supply and demand. During this period the U.S. sugar ending stocks-to-use ratio published in USDA’s World Agricultural Supply and Demand Estimates (WASDE) report ranged from 11.8 to 20.8 percent. Figure 13 shows the July-September average beet sugar price on the vertical axis, with each year’s price point matched to its respective U.S. sugar ending stocks-to-use ratio, which is displayed on the horizontal axis. The linear regression equation of the price on the stocks-to-use ratio is shown in the textbox in figure 13, and the R-squared of 0.503 indicates that the stocks-to-use ratio alone can explain about half the variation in the price. The July-September beet sugar price is chosen for this purpose, since it provides a better statistical fit than the annual average price. Each 1 percent decline in the stocks-to-use ratio would cause a 3.2 cents per pound increase in the July-August beet sugar price, if all other things could be held constant, which of course is never the case.

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