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Sugar and Sweeteners Outlook: February 2023

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U.S. Sugar Supply Higher; Mexican Balance Sheet Mostly Unchanged

In the February 2023 *World Agricultural Supply and Demand Estimates* (*WASDE*), the 2022/23 U.S. total sugar supply is reduced from last month by 10,000 short tons, raw value (STRV) to 14.514 million as the increase in beet sugar production and imports are offset by the decline in cane sugar production. Total imports are increased marginally to incorporate an upward revision in the portion of the 2021/22 World Trade Organization (WTO) raw sugar tariff-rate quota (TRQ) imports that were granted extension and arrived in December. The forecast for high-tier imports remains at 125,000 STRV. With the forecast for total use unchanged at 12.640 million STRV, ending stocks are lowered from last month by 10,000 to 1.874 million. The resulting ending stocks-to-use ratio is 14.8 percent, down by 0.1 percentage point compared with last month.

The 2022/23 Mexican supply and use balance sheet is unchanged from last month, except for a slight increase in exports to countries other than the United States and a concurrent decrease in domestic sugar deliveries. The forecast for Mexican sugar production remains at 5.9 million metric tons (MT). Per the terms of the U.S.-Mexico Sugar Suspension Agreements, the final 2022/23 Mexican Export Limit based on a 13.5-percent U.S. stocks-to-use will be calculated by the U.S. Department of Commerce (DOC) next month using information from the March *WASDE*.

U.S. Outlook Summary

U.S. Sugar Supply Decreased; Use Unchanged

In the February 2023 *WASDE*, the 2022/23 U.S. total sugar supply is reduced by 10,000 short tons, raw value (STRV) to 14.514 million from last month as the increase in beet sugar production and imports are offset by the decline in cane sugar production (table 1).

Beet sugar production in 2022/23 is raised by 52,000 STRV to 5.100 million from last month on an increased forecast of sucrose recovery based on processors data from August–December reported in the USDA, Farm Service Agency *Sweetener Market Data* (*SMD*). The effect of the higher sucrose recovery offsets the projected reduction in early August–September 2023 sugar production due to the closure of the Sidney Sugars beet processing plant. Cane sugar production is reduced by 68,000 STRV to 4.131 million from last month as the 24,000-STRV increase in Florida is countered by the over-the-month reduction in Louisiana and Texas by 83,000 and 10,000, respectively. With the cane sugar production decrease offsetting the beet sugar production increase, total sugar production in 2022/23 is reduced by 16,000 STRV to 9.231 million from last month (figure 1).

Total imports in 2022/23 are increased by 5,000 STRV to 3.463 million from last month. This reflects an upward revision in the 2021/22 raw sugar imports that arrived in December since the entry for the quota was extended through the end of 2022. The rest of the import categories are unchanged, including the 125,000-STRV forecast for high-tier imports.

With the forecast for total use unchanged at 12.640 million STRV, ending stocks are lowered by 10,000 to 1.874 million from last month. The resulting ending stocks-to-use ratio is 14.8 percent, down by 0.1 percentage point compared with last month.

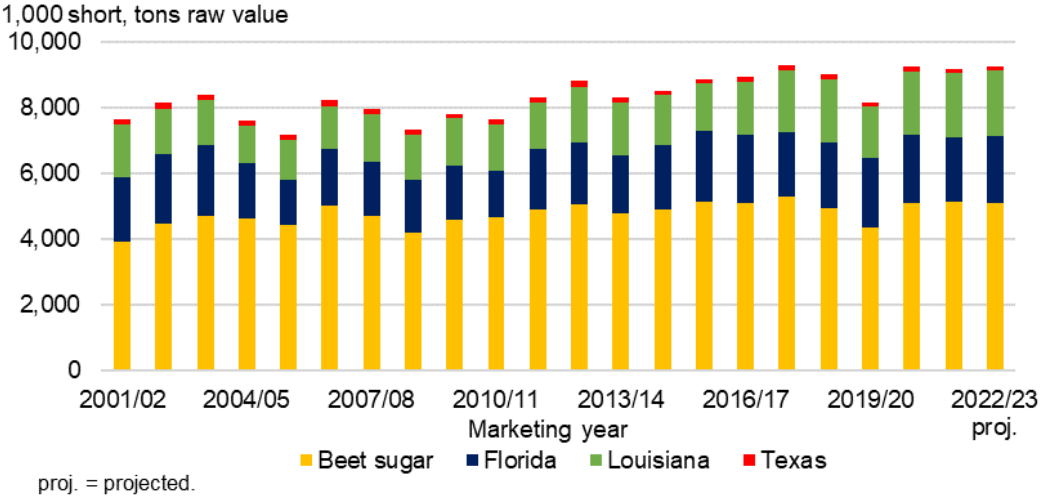
Table 1: U.S. sugar: supply and use by fiscal year (October/September), February 2023

Items	2020/21	2021/22			2022/23		
	Final	January (estimate)	February (estimate)	Monthly change	January (forecast)	February (forecast)	Monthly change
			1,000 short tons raw value				
Beginning stocks	1,618	1,705	1,705	0	1,819	1,820	2
Total production	9,233	9,156	9,157	2	9,248	9,231	-16
Beet sugar	5,092	5,155	5,155	0	5,048	5,100	52
Cane sugar	4,141	4,000	4,002	2	4,199	4,131	-68
Florida	2,090	1,933	1,934	2	1,989	2,014	24
Louisiana	1,918	1,944	1,944	0	2,113	2,030	-83
Texas	134	124	124	0	97	87	-10
Total imports	3,221	3,646	3,646	0	3,458	3,463	5
Tariff-rate quota imports	1,749	1,579	1,579	0	1,606	1,611	5
Other program imports	292	298	298	0	250	250	0
Non-program imports	1,180	1,769	1,769	0	1,602	1,602	0
Mexico	968	1,379	1,379	0	1,477	1,477	0
High-duty	212	390	390	0	125	125	0
Total supply	14,072	14,506	14,508	2	14,525	14,514	-10
Total exports	49	29	29	0	35	35	0
Miscellaneous	40	81	81	0	0	0	0
Total deliveries	12,277	12,578	12,578	0	12,605	12,605	0
Domestic food and beverage use	12,161	12,470	12,470	0	12,500	12,500	0
To sugar-containing products re-export program	89	80	80	0	80	80	0
For polyhydric alcohol, feed, other alcohol	27	27	27	0	25	25	0
Commodity Credit Corporation (CCC) for ethanol	0	0	0	0	0	0	0
Total use	12,367	12,688	12,688	0	12,640	12,640	0
Ending stocks	1,705	1,819	1,820	2	1,885	1,874	-10
Private	1,705	1,819	1,820	2	1,885	1,874	-10
Commodity Credit Corporation	0	0	0	0	0	0	0
Stocks-to-use ratio (percent)	13.8	14.3	14.3	0.0	14.9	14.8	-0.1

Source: USDA, World Agricultural Outlook Board, *World Agricultural Supply and Demand Estimates (WASDE)*.

Figure 1

U.S. production of beet sugar and cane sugar by State, 2001/02–2022/23



proj. = projected.
Source: USDA, Farm Service Agency.

Beet Sugar Production Raised

Beet sugar production in fiscal year 2022/23 is raised by 52,000 STRV to 5.1 million from last month as the 62,000-STRV increase in crop year production offsets the 10,000-STRV reduction in the August–September 2023 production due to the impending closure of the beet facility in Sidney, Montana (table 2). The closing is the topic of a Special Article starting on page 19.

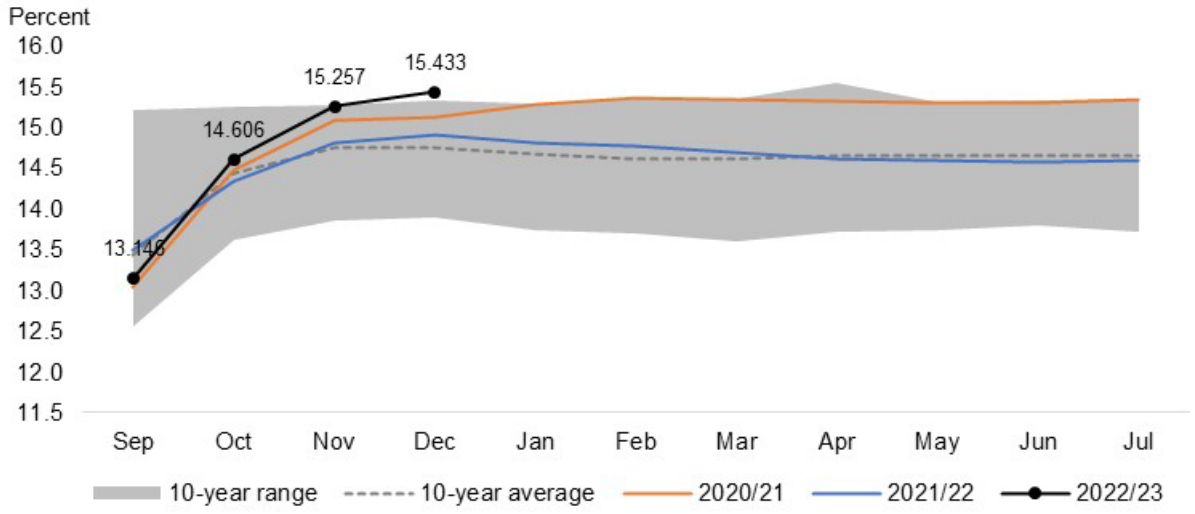
Crop year sugar production increased by 62,000 STRV to 4.614 million STRV from last month due to the increased expectation for sugar recovery. Sucrose recovery is raised from 15 percent last month to 15.204 based on a statistical relationship of the recovery between the 5-month period and the full crop year season. This is still lower than the cumulative sucrose recovery from the August–December *SMD* sugar production data of 15.433 percent–the largest over the 5-month period in the last decade (figure 2). A regional breakdown shows that recovery rates across the major sugarbeet producing regions (Red River Valley, Great Lakes, Great Plains, and Pacific Northwest) are above their respective 10-year averages, indicating that the relatively high recovery is not driven by a single region.

Table 2: Beet sugar production calculations, 2019/20–2020/23

	2020/21 Final	2022/23 February	Monthly change	2022/23 January	2022/23 February	Monthly change
Sugarbeet production (1,000 short tons) 1/	33,610	36,751	0	32,574	32,574	0
Sugarbeet shrink (percent)	6.60	7.9	0.0	6.8	6.83	0.0
Sugarbeet sliced (1,000 short tons)	31,392	33,850	0	30,348	30,348	0
Sugar extraction rate from slice (percent)	15.34	14.63	0	15.00	15.20	0.20
Sugar from beets sliced (1,000 STRV) 2/	4,817	4,954	0	4,552	4,614	62
Sugar from molasses (1,000 STRV) 2/	362	341	0	360	360	0
Crop year sugar production (1,000 STRV) 2/	5,181	5,294	0	4,912	4,974	62
Aug.–Sep. sugar production (1,000 STRV)	765	676	0	537	537	0
Aug.–Sep. sugar production of subsequent crop (1,000 STRV)	676	537	0	643	633	-10
Sugar from imported beets (1,000 STRV) 3/	N/A	N/A	N/A	30	30	0
Fiscal year sugar production (1,000 STRV)	5,092	5,155	0	5,048	5,100	52

STRV = short tons, raw value; NA = not applicable.
1/ USDA, National Agricultural Statistics Service.
2/ August–July.
3/ Sugar from imported beets in 2020/21 and 2021/22 are already included in the crop year production. Typically, this component is separated for projections and included in total once full crop year slice is available.
Source: USDA, Economic Research Service; USDA, World Agricultural Outlook Board; USDA, Farm Service Agency.

Figure 2
Cumulative sugar extraction rate, beet sugar produced per sugarbeet sliced, by crop year, 2012/13–2022/23



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

Cane Sugar Production Lowered

U.S. cane sugar production in fiscal year 2022/23 is reduced by 68,000 STRV to 4.131 million from last month as the 24,000-STRV increase in Florida is offset by the 83,000 and 10,000 decreases in Louisiana and Texas, respectively (table 3). Nonetheless, this reflects a 129,000-STRV increase (3 percent) from last year's cane sugar production (4.002 million) and would be the second largest in the last two decades behind 2020/21 (4.142 million).

Louisiana cane sugar production in fiscal year 2022/23 is reduced by 83,000 STRV to 2.030 million from last month based on USDA's communication with sugar mills; the NASS February *Crop Production* report did not contain updates for Louisiana. With the campaign over by January 21, the revised estimate reflects the processors' final assessment of sugarcane yield reduction due to the freeze in late December when temperatures dropped to 25 degrees Fahrenheit (°F) then warmed to about 65°F. The rapid shift in temperatures led to freeze-affected sugarcane plants deteriorating faster and reduced the recoverable sugar. Despite the reduction, the updated forecast of 2.030 million STRV, if realized, would still be a record. If realized, this would mark the first time that the State produced more than 2 million STRV of sugar and would surpass last year's 1.944 million by 86,000 STRV or 4 percent. Strong sugar production in both 2021/22 and 2022/23 indicates that Louisiana has produced more sugar than

Florida in consecutive years for the first time since 2002/03.

Table 3: U.S. sugarcane and cane sugar production, by State, 2017/18–2022/23

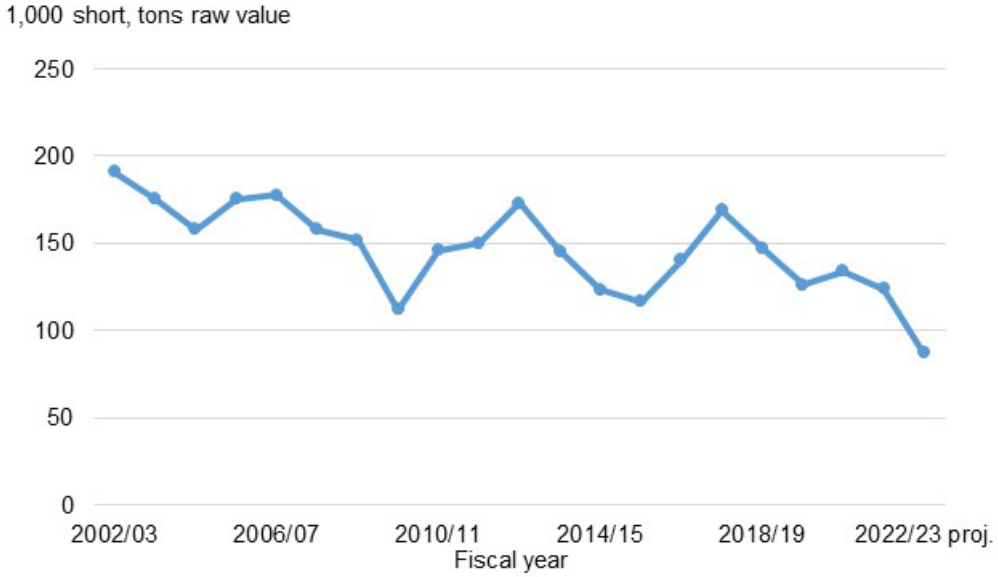
	2020/21	2021/22 Jan.	2021/22 Feb.	2022/23 Jan.	2022/23 Feb.	2022/23 monthly change (percent)
Florida						
Sugarcane harvested for sugar and seed (1,000 acres)	423.3	403.5	403.5	396.5	397.9	0.4
Sugarcane harvested for sugar (1,000 acres)	409.0	388.0	388.0	382.2	382.0	0.0
Sugarcane yield (short tons per acre)	44.3	42.4	42.4	44.0	44.3	0.7
Sugarcane production (1,000 net tons)	18,119	16,451	16,451	16,815	16,923	0.6
Recovery rate (percent)	11.53	11.75	11.76	11.83	11.90	0.6
Sugar production (1,000 STRV)	2,090	1,933	1,934	1,989	2,014	1.2
Louisiana						
Sugarcane harvested for sugar and seed (1,000 acres)	488.4	495.3	495.3	497.8	497.8	0.0
Sugarcane harvested for sugar (1,000 acres)	461.0	466.0	466.0	475.0	475.0	0.0
Sugarcane yield (short tons per acre)	32.9	29.0	29.0	33.3	33.3	0.0
Sugarcane production (1,000 net tons)	15,167	13,514	13,514	15,818	15,818	0.0
Recovery rate (percent)	13.03	13.92	13.92	13.48	12.97	-3.8
Crop year sugar production (1,000 STRV) 1/	1,976	1,881	1,881	2,133	2,051	-3.8
Sep. sugar production (1,000 STRV)	70	12	12	75	75	0.0
Sep. sugar production of subsequant crop (1,000 STRV)	12	56	75	55	55	0.0
Fiscal year sugar production (1,000 STRV) 1/	1,918	1,924	1,944	2,113	2,030	-3.9
Texas						
Sugarcane harvested for sugar and seed (1,000 acres)	35.9	36.4	36.4	32.0	32.0	0.0
Sugarcane harvested for sugar (1,000 acres)	33.4	34.3	34.3	30	30	0.0
Sugarcane yield (short tons per acre)	31.5	30.8	30.8	25.00	25.00	0.0
Sugarcane production (1,000 net tons)	1,052	1,056	1,056	760	760	0.0
Recovery rate (percent)	12.00	11.78	11.72	12.76	11.47	-10.1
Sugar production (1,000 STRV)	134	124	124	97	87	-10.1
United States						
Sugarcane harvested for sugar and seed (1,000 acres)	947.6	935.2	935.2	926.3	927.7	0.2
Sugarcane harvested for sugar (1,000 acres)	903.4	888.3	888.3	887.6	887.4	0.0
Sugarcane production (1,000 net tons)	38.0	34.9	34.9	37.6	37.8	0.3
Sugarcane production (1,000 short tons)	34,338	31,021	31,021	33,393	33,500	0.3
Recovery rate (percent)	12.2	12.69	12.7	12.6	12.4	-1.9
Crop year sugar production (1,000 STRV)	4,200	3,938	3,939	4,219	4,152	-1.6
Fiscal year sugar production (1,000 STRV)	4,142	3,982	4,002	4,199	4,131	-1.6

STRV = short tons, raw value.

1/ Louisiana's harvest and processing of sugarcane begins typically in September, thus the crop year and fiscal year sugar production for this State tend to be slightly different. Fiscal year production is the final value used for official USDA estimates. For Florida and Texas, the crop year is the same as the fiscal year.
Source: USDA, Farm Service Agency; USDA, National Agricultural Statistics Service; USDA, World Agricultural Outlook Board.

Texas cane sugar production in 2022/23 is reduced by 10,000 STRV to 87,000, based on processor reporting of lower sugarcane yield and recovery rate in the *SMD* since NASS did not have updates for the State. This would be a 37,000-STRV reduction (30 percent) from last year's 124,000 and would be 199,000-STRV lower (58 percent) than the State's record-high production of 206,000 STRV since 2000/01 (figure 3)

Figure 3
U.S. cane sugar production in Texas, by fiscal year, 2013/14–2022/23

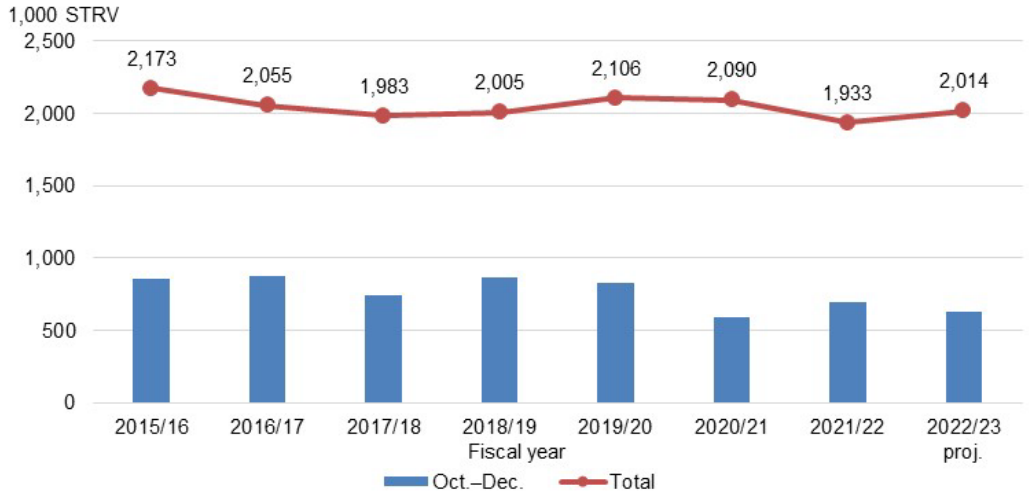


proj. = projected.
Source: USDA, Farm Service Agency.

Florida cane sugar production in fiscal year 2022/23 is increased by 24,000 STRV to 2.014 million from last month based on updated processors' forecast in the *SMD* that reflect higher expectations for harvested acreage and sugarcane yield. This aligns with the NASS *Crop Production* report which likewise increased total harvested area and sugarcane yield for the State. The cane sugar production of 2.014 million-STRV implies a 79,000-STRV increase from last year (1.934 million), which was affected by an unusual freeze event in January 2020. If the 2022/23 sugar production is realized, this would put Florida back to producing at least 2 million tons, which it has been doing for the past decade except for last year and 2017/18 (1.983 million) (figure 4).

In the first fiscal year quarter of the campaign, the Florida produced 632,000 STRV of sugar or 31 percent of the 2.014 million-STRV fiscal year forecast. This is the second lowest October–December production since fiscal year 2015/16 as hurricanes Ian and Nicole caused a brief stoppage to harvest operations in September and November, respectively. But as seen during the 2020/21 campaign–which posted the slowest production pace over the same period also due to a rain-delayed November harvest–the State can ramp up production in the succeeding months to make up for lost time and extend the campaign into June if necessary.

Figure 3
Cane sugar production in Florida, 2015/16–2022/23



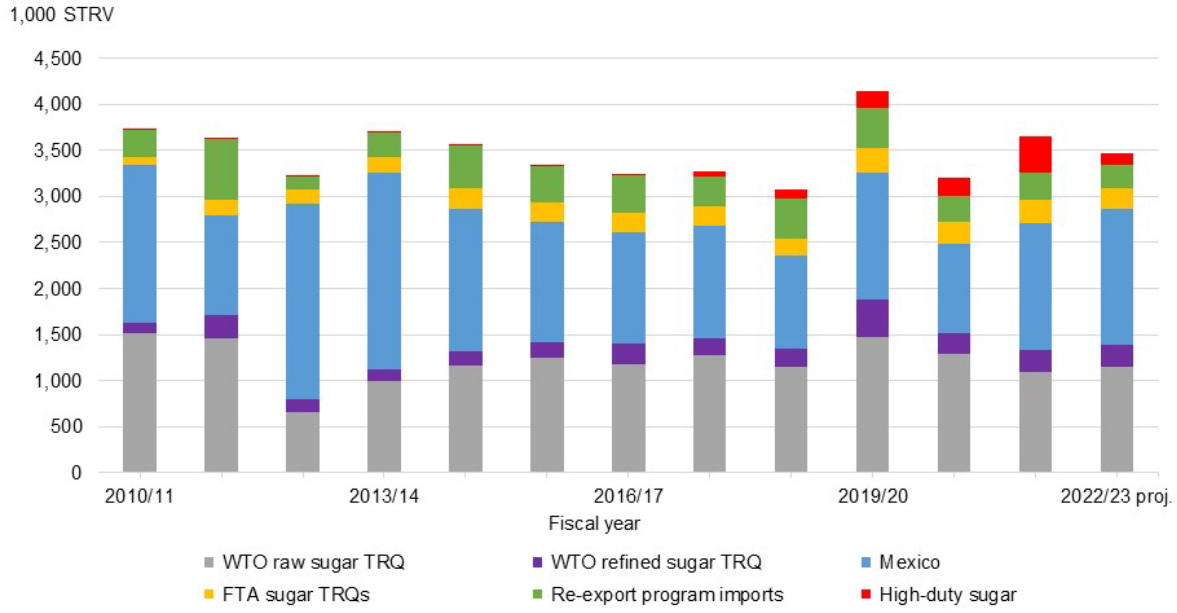
proj. = projected.
Source: USDA, Farm Service Agency.

Minimal Change to Total Imports

The 2022/23 import forecast is revised upwards by 5,000 STRV to 3.463 million, which would be 183,000 lower than last year (3.646 million) (figure 5). The increase is solely attributed to the upward adjustment to the fiscal year 2021/22 World Trade Organization (WTO) raw sugar tariff-rate quota (TRQ) that entered in December 2022. Imports from the prior fiscal year were granted an extension through December, and thus accounted for in the 2022/23 ledger. There were no changes for the other import categories.

Based on the USDA, Foreign Agriculture Service (FAS) *U.S. Sugar Monthly Import and Re-Exports* report in February, total imports between October 2022–January 2023 were 1.115 million STRV (table 4). This volume is larger than the 5-year average (1.073 million STRV) over the same 4 months, but lower than last year's pace by 59,000. Cumulative imports from Mexico (218,000 STRV) are ahead of last year by 41,000, and imports under the WTO raw and refined sugar TRQs are marginally higher; though both are offset by the lower pace of imports under the re-export program, high-duty, and Free Trade Agreement (FTA) TRQs, which are lower than 2021/22 by 70,000 STRV, 21,000 and 18,000, respectively.

Figure 5
U.S. sugar imports by type, 2010/11–2022/23



STRV = short tons, raw value; FTA = free trade agreement; WTO = World Trade Organization; TRQ = tariff-rate quota; proj. = projected.
Source: USDA, Foreign Agricultural Service.

Table 4: Pace to date of U.S. sugar imports by type, October to December, 2017/18 to 2022/23

	2017/18	2018/19	2019/20	2020/21	2021/22 est.	2022/23 proj.	5-year average	Over-the-year change	
To-date: October to January			1,000 short tons, raw value (STRV)					STRV	Percent
Mexico	128	86	85	81	177	218	111	41	23.3
WTO raw sugar TRQ	700	522	587	644	594	598	610	3	0.6
WTO refined sugar TRQ	120	124	131	101	142	146	124	4	3.0
FTA sugar TRQ	41	45	68	44	57	39	51	-18	-31.3
Re-export program	96	191	207	50	94	24	127	-70	-74.0
High-duty sugar	5	33	29	71	112	91	50	-21	-18.9
Total	1,090	1,001	1,107	991	1,175	1,115	1,073	-59	-5.1
Fiscal year: October to September			1,000 short tons, raw value (STRV)					STRV	Percent
Mexico	1,223	1,000	1,376	968	1,379	1,477	1,189	98	7.1
WTO raw sugar TRQ	1,272	1,144	1,468	1,296	1,096	1,146	1,272	50	4.5
WTO refined sugar TRQ	190	207	408	217	237	241	248	4	1.8
FTA sugar TRQ	202	190	276	236	246	223	223	-22	-9.0
Re-export program	326	438	432	292	298	250	382	-48	-16.1
High-duty sugar	64	91	183	186	390	125	107	-265	-68.0
Total	3,277	3,070	4,143	3,195	3,646	3,463	3,387	-183	-5.0
Share of to-date to fiscal year total				Percent				Percentage	
Mexico	10	9	6	8	13	15	11	2	
WTO raw sugar TRQ	55	46	40	50	54	52	46	-2	
WTO refined sugar TRQ	63	60	32	47	60	60	50	1	
FTA sugar TRQ	20	24	25	19	23	17	24	-6	
Re-export program	29	44	48	17	32	10	33	-22	
High-duty sugar	8	36	16	38	29	72	25	44	
Total	33	33	27	31	32	32	31	0	

WTO = World Trade Organization; TRQ = tariff-rate quota; FTA = free trade agreement; est. = estimated; proj. = projected.

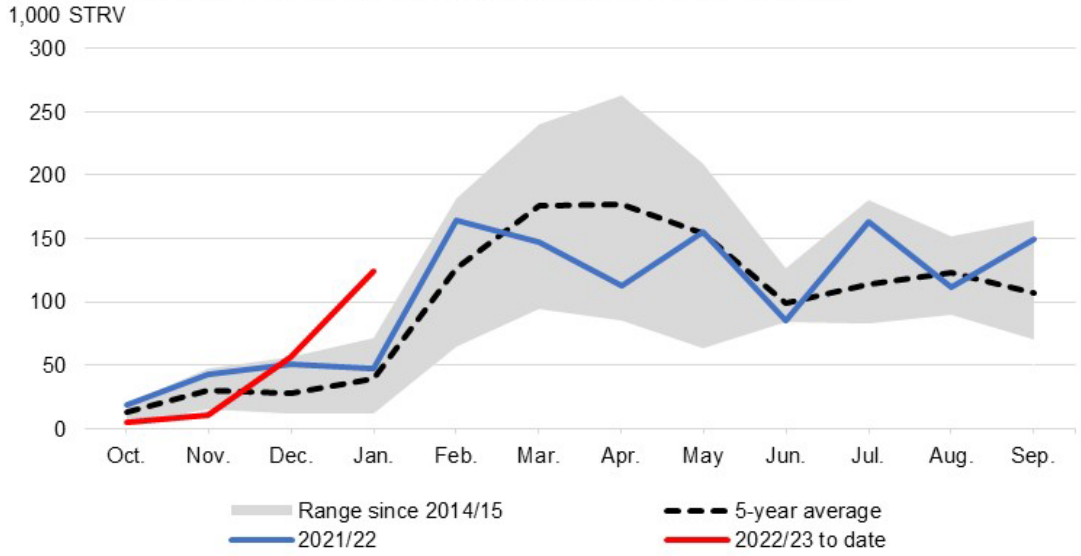
Note: Using the "Total" category, the share is interpreted as follows: The total imports of 494,000 STRV from October to November represent 14 percent of the total fiscal year imports.

Source: USDA, Foreign Agricultural Service.

Imports From Mexico Surged in January

The cumulative imports from Mexico between October 2022 and January 2023 of 218,000 STRV is the strongest during this period since 2017/18. This pace to date volume is larger than last year and the 5-year average by 41,000 and 106,000, respectively. The strong pace is mainly driven by imports during the last two months (figure 6). While the pace was relatively slow in October and November, it picked up in December and particularly in January. The volume in December (63,000 STRV) came close to matching last year's 56,000, the 5-year high. The 137,000-STRV of sugar imports in January is almost twice the amount of the prior 5-year high in 2017/18 (71,000). At 218,000 STRV, imports from Mexico to date would represent 15 percent of the projected 2022/23 U.S. Needs (1.477 million) that the U.S. Department of Commerce's (DOC) calculated in December 2022. Per the terms of the U.S.-Mexico Sugar Suspension Agreements, the final 2022/23 Mexican Export Limit will be calculated by DOC next month using the information from the March *WASDE*.

Figure 6
U.S. sugar imports from Mexico, monthly, fiscal year 2014/15–2022/23



STRV = short tons, raw value.
Source: USDA, Foreign Agricultural Service.

Fiscal Year 2022/23 Sugar Deliveries Unchanged

No changes are made to the fiscal year 2022/23 projected sugar use of 12.605 million STRV. The major subcomponent, domestic food and beverage use deliveries, remains at 12.500 million STRV, reflecting a 27,000-STRV increase (0.2 percent) from 12.470 million in 2021/22. Pace-to-date methods using average monthly and quarterly shares, as well as a suite of regression analyses, provide no compelling evidence to change the forecast of sugar deliveries for food and beverage use based on the October–December deliveries data.

The first quarter (Q1) of fiscal year 2022/23 deliveries amounts to 3.121 million STRV, which are 68,000-STRV lower (2 percent) than last year as the stronger pace of the cane refiners is offset by the slower pace of beet processors and particularly of non-reporters (table 5). However, while lower than last year, this Q1 volume would be the second largest since 2012/13, and reflect a continuity of a trend, starting in 2016/17, characterized by the increased volume in fiscal Q1 deliveries relative to the other quarters (figure 9)

Table 5: Food and beverage deliveries, October–December, 2017/18–2022/23

	2017/18	2018/19	2019/20	2020/21	2021/22 est.	2022/23 proj.	Annual change	
	1,000 short tons, raw value (STRV)						1,000 STRV	Percent
Beet sugar processors	1,372	1,222	1,277	1,242	1,319	1,279	-40	-3
Cane sugar refiners	1,491	1,597	1,612	1,590	1,559	1,668	109	7
Non-reporter (direct consumption)	180	221	107	95	311	175	-137	-44
Total	3,043	3,039	2,995	2,927	3,189	3,121	-68	-2
			Percent share in total				5-year average	
Beet sugar processors	45	40	43	42	41	41	42	
Cane sugar refiners	49	53	54	54	49	53	52	
Non-reporter (direct consumption)	6	7	4	3	10	6	6	
Total	100	100	100	100	100	100	100	

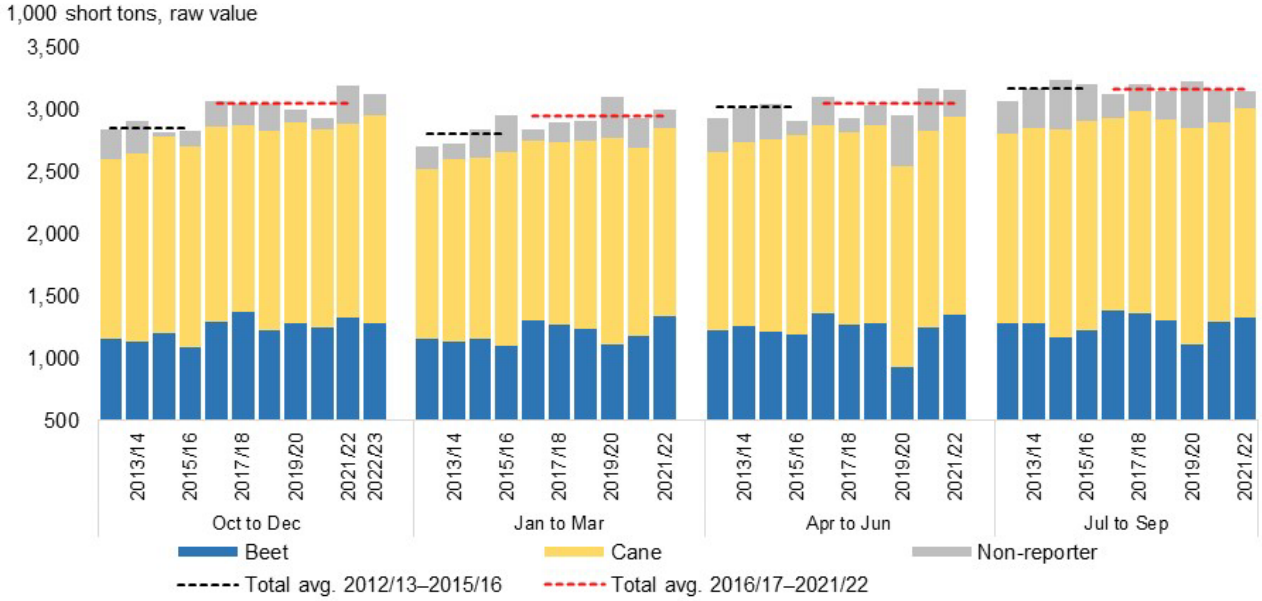
est. = estimated; proj. = projected.
Source: USDA, Farm Service Agency.

Cane sugar deliveries in December amounted to 525,000 STRV, which is second only to 2019/20's record-high of 536,000 (figure 10). The uptick was perceptible since deliveries in December tend to be slower relative to the other months because of the holiday season slowdown.

Combined with the similarly high October deliveries, cane sugar cumulative deliveries during the first 3 months of the fiscal year were 1.668 million STRV. This volume represents a new high for the quarter overtaking the previous record of 1.629 million STRV in 2015/16 and is 109,000-STRV (4 percent) more than last year's 311,000. The strong pace in cane sugar deliveries is

supported by the elevated pattern of the cane refiners' melt over the same 3-month period (figure 11) since cane refiners typically melt raw cane sugar when there is a contemporaneous customer delivery to be fulfilled. It is costly to store and maintain the quality of refined sugar in inventory for uncontracted needs. The cane refiners' record-high raw sugar stock holding at the end of December (590,000-STRV) reflects an adequate raw sugar supply, partly due to USDA's actions and larger-than-usual high-tier raw sugar imports last year, which in turn is expected to enable the sector to fulfill orders particularly during the busy spring and summer seasons.

Figure 9
U.S. sugar deliveries for food and beverage use, quarterly, 2012/13–2022/23



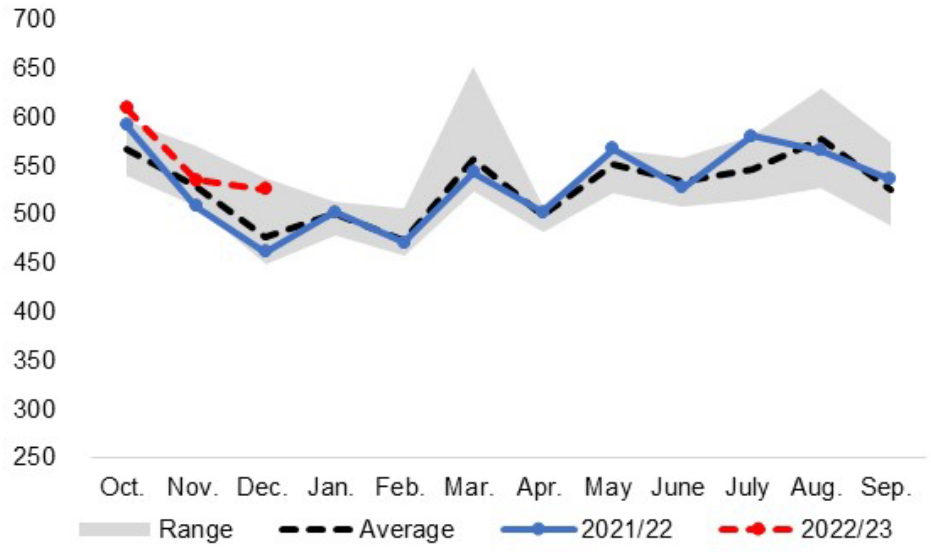
avg. = average.
Source: USDA, Farm Service Agency.

On the other hand, cumulative beet sugar deliveries through December are 1.279 million STRV, 40,000-STRV less (2 percent) compared with last year's pace. The slower pace can be attributed to several factors including this year's lower-than-average beginning stocks (figure 12), delays in the 2022/23 harvest start dates, and the lack of spot sales. Non-reporters delivered 175,000 STRV of sugar through December, which is 137,000-STRV lower (44 percent) than last year's Q1 record of 311,000, but in line with the 5-year average (183,000).

Figure 10

Cane sugar deliveries, monthly, 2017/18 to 2022/23

1,000 short tons, raw value

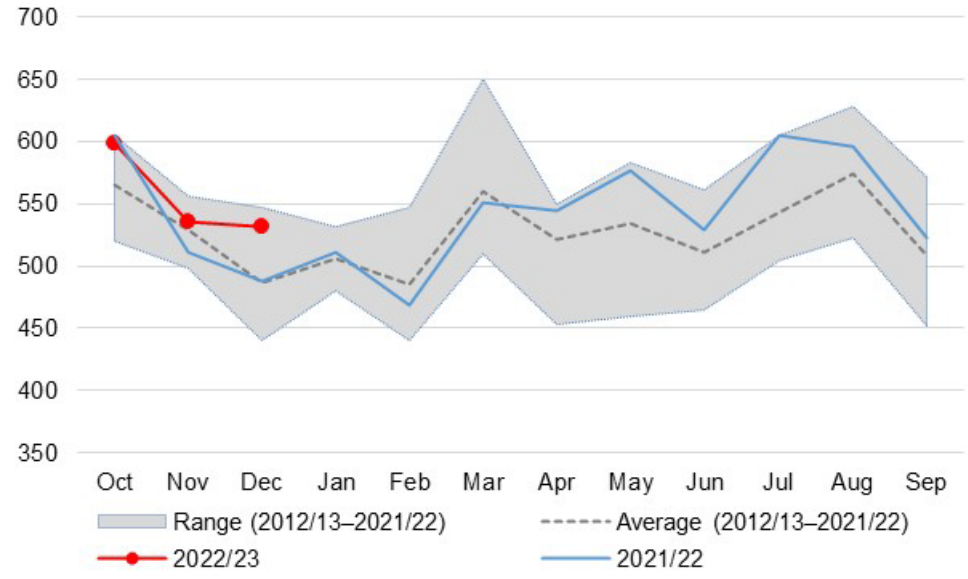


Source: USDA, Farm Service Agency.

Figure 11

Sugarcane refiners' melt, monthly, 2012/13 to 2022/23

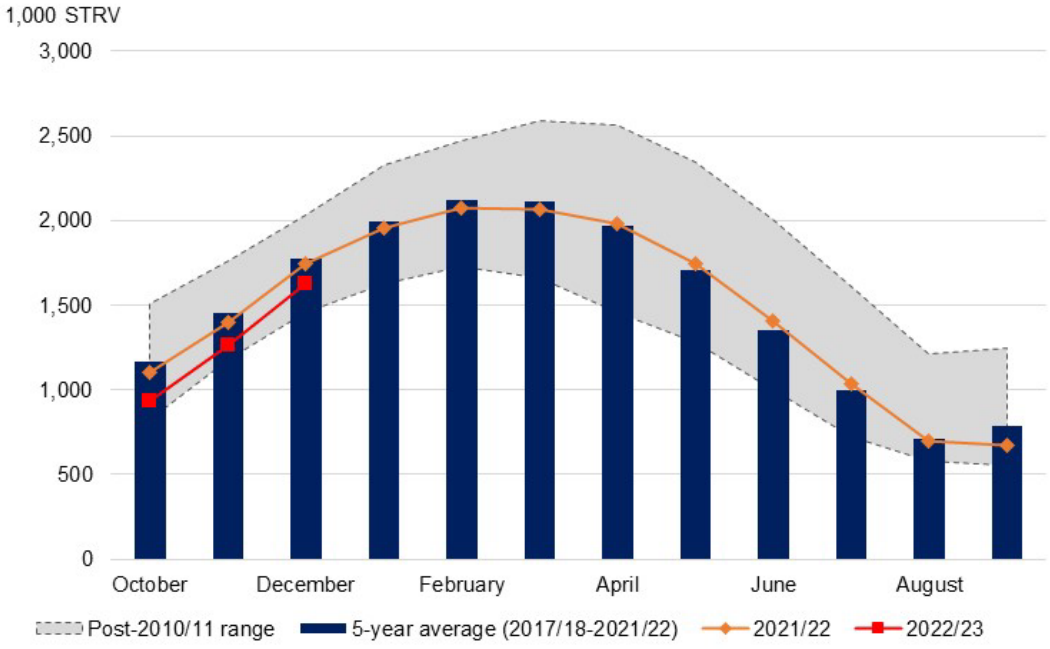
1,000 short tons, raw value



Melt = quantity of raw sugar processed.
Source: USDA, Farm Service Agency.

Figure 12

Sugarbeet processors' total sugar inventories, monthly, 2010/11 to 2022/23



Note: STRV = short tons, raw value.
Source: USDA, Farm Service Agency.

Mexico Outlook

Sugar Production Unchanged; Pace to Date Continues to Lag

The 2022/23 Mexican supply and use balance sheet is unchanged from last month, except for a slight 1000-metric ton (MT) increase in exports to countries other than the United States based on pace- to- date information from the Mexican National Committee for the Sustainable Development of Sugarcane (CONADESUCA). Consequently, with the 2022/23 stocks pegged to a 2.5-months' worth of supply (971,000 MT), deliveries to the *Industria Manufacturera, Maquiladora y de Servicios de Exportación* (IMMEX) program are adjusted down by the same amount to accommodate the increase in exports.

Table 6: Mexican sugar: supply and use by fiscal year (October/September), February 2023

Items	2020/21	2021/22			2022/23		
	Final	January (estimate)	February (estimate)	Monthly change	January (forecast)	February (forecast)	Monthly change
	1,000 metric tons, actual weight						
Beginning stocks	858	1,053	1,053	0	964	964	0
Production	5,715	6,185	6,185	0	5,900	5,900	0
Imports	65	31	31	0	35	35	0
Imports for consumption	32	7	7	0	10	10	0
Imports for sugar-containing product exports (IMMEX) 1/	33	24	24	0	25	25	0
Total supply	6,638	7,269	7,269	0	6,899	6,899	0
Disappearance							
Human consumption	3,935	4,113	4,113	0	4,168	4,168	0
For sugar-containing product exports (IMMEX)	485	532	532	0	493	493	-1
Other deliveries and end-of-year statistical adjustment		-16	-16				
Total	4,420	4,629	4,629	0	4,661	4,660	-1
Exports	1,165	1,676	1,676	0	1,267	1,268	1
Exports to the United States and Puerto Rico	828	1,180	1,180	0	1,264	1,264	0
Exports to other countries	337	495	495	0	3	4	1
Total use	5,585	6,305	6,305	0	5,928	5,928	0
Ending stocks	1,053	964	964	0	971	971	0
Stocks-to-human consumption (percent)	26.8	23.4	23.4	0	23.3	23.3	0
Stocks-to-use (percent)	18.9	15.3	15.3	0	16.4	16.4	0
High-fructose corn syrup (HFCS) consumption (dry weight)	1,320	1,291	1,291	0	1,291	1,291	0

1/ IMMEX = Industria Manufacturera, Maquiladora y de Servicios de Exportación.
Sources: USDA, World Agricultural Outlook Board; Mexico's National Committee for the Sustainable Development of Sugarcane (CONADESUCA).

The forecast for Mexican sugar production remains at 5.9 million MT, a 2.6-percent decline from last year's 6.185 million MT, and lower than CONADESUCA's 6.025 million-MT forecast. The cumulative sugar production of 2.065 million MT through the nineteenth week of campaign (as

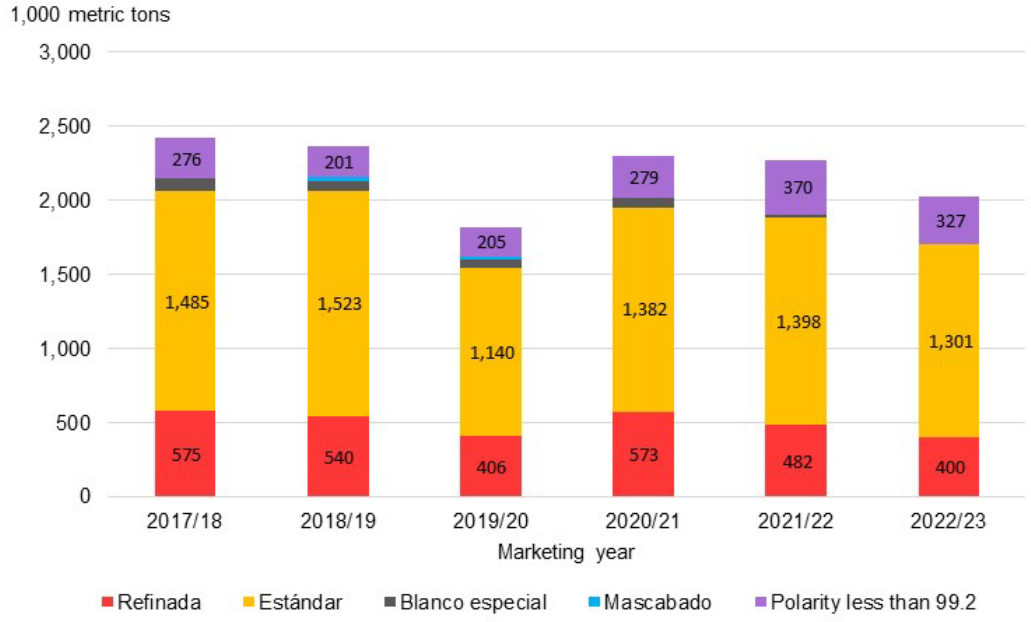
of February 4) is about 9 percent behind last year's 2.275 million and is second lowest in the last 5 years after 2019/20 (table 7). As noted by the USDA Foreign Agricultural Service (FAS) post in Mexico City, most mills' start dates were delayed this season due to unfavorable late rains that prevented the timely harvest of sugarcane and its transportation to mills. While this year's harvested area finally caught up and surpassed both last year and the 5-year average through the same date, cumulative sugarcane yields, and sucrose recovery are behind (table 4). As such, production across the different sugar types, particularly for *refinada* (refined sugar), remains lagging (figure 13).

Table 7: Mexican sugar production as of week 18, 2021/22, 2022/23, and five-year average

	As of week 19			Difference vs. 2021/22		Difference vs. 5-year average	
	2021/22	2022/23	5-year average (2017/18–2021/22)	Level	Percent	Level	Percent
Area harvested (ha)	277,823	288,572	282,712	10,749	4	5,860	2
Sugarcane processed (MT)	21,588,105	20,194,670	21,552,663	-1,393,435	-6	-1,357,993	-6
Sugarcane yield (MT per ha)	77.70	69.98	76.16	-7.7	-10	-6.2	-8
Number of mills in operation	49	48	50	-1	-2	-2	-3
Extraction rate (percent)	10.54	10.23	10.35	-0.31	-3	-0.12	-1
Total factory yield (MT per sugar ha)	8.19	7.16	7.89	-1.03	-13	-0.73	-9
Sugar production (metric tons)	2,274,491	2,065,174	2,234,947	-209,317	-9	-169,773	-8

ha = hectares; MT = metric tons.
Source: USDA, Economic Research Service calculations using data from Mexico's National Committee for the Sustainable Development of Sugarcane (CONADESUCA).

Figure 13
Mexican sugar production by type of sugar, as of week 19, 2017/18–2022/23



Source: Mexico's National Committee for the Sustainable Development of Sugarcane (CONADESUCA).

USDA and CONADESUCA production forecasts have comparable expectations for yield (64.06 MT per hectare) and sucrose recovery (11.3 percent). The forecasts differ in area harvested, with USDA at 814,850 hectares and the latter at 832,245 hectares. Both of which, if realized, would be new records overtaking the prior high of 804,060 hectares in 2018/19. Given the relatively slower pace to date, achieving either would require acceleration in the coming weeks and/or extension of the campaign beyond the normal timeline.

Historically, Mexico's sugar production typically winds down by mid-April and concludes by late June. Production is highly determined by the length of the harvest campaign, which in turn, is dependent on the onset of the rainy season. Wet conditions make it very challenging to continue harvest operations and complicates the transportation of sugarcane to the mills in areas with poor road conditions. If dry conditions continue into May and June, the season can be extended which allows for additional area to be harvested and supports more sugar production. The FAS post in Mexico City, however, noted that the climatological forecast for April to June indicates above average precipitation in most sugarcane producing regions, which may reduce the possibility for an extended season. A sensitivity analysis, assuming an 11.3 percent sucrose recovery, demonstrates that the forecast can be as low as 5.600 million MT if harvested acres and sugarcane yields turned out be smaller (table 8). A concern is whether Mexico can produce enough sugar, particularly the type below the 99.2 polarity, to fill its export quota to the U.S. The current USDA projection will be reevaluated next month as additional data are expected to increase the statistical validity of forecast based on progress to date.

Table 8: Mexican sugar production scenarios for the 2022/23 crop year assuming an 11.3 percent sucrose recovery

		Yield (metric ton per hectare)								
		63.00	63.50	64.06	64.50	65.00	65.50	66.00	66.50	67.00
		1,000 metric tons, actual value								
Harvested area (hectares)	785,000	5,588	5,633	5,682	5,721	5,766	5,810	5,855	5,899	5,943
	790,000	5,624	5,669	5,719	5,758	5,803	5,847	5,892	5,936	5,981
	795,000	5,660	5,705	5,755	5,794	5,839	5,884	5,929	5,974	6,019
	800,000	5,695	5,740	5,791	5,831	5,876	5,921	5,966	6,012	6,057
	804,060 1/	5,724	5,770	5,820	5,860	5,906	5,951	5,997	6,042	6,088
	810,000	5,766	5,812	5,863	5,904	5,949	5,995	6,041	6,087	6,133
	814,850 2/	5,801	5,847	5,899	5,939	5,985	6,031	6,077	6,123	6,169
	820,000	5,838	5,884	5,936	5,977	6,023	6,069	6,116	6,162	6,208
	825,000	5,873	5,920	5,972	6,013	6,060	6,106	6,153	6,199	6,246
	832,245 3/	5,925	5,972	6,024	6,066	6,113	6,160	6,207	6,254	6,301

1/ The largest planted area since 2000/01 was 2018/19's 804,060 hectares.

2/ USDA's forecast for harvested area is 814,850 hectares.

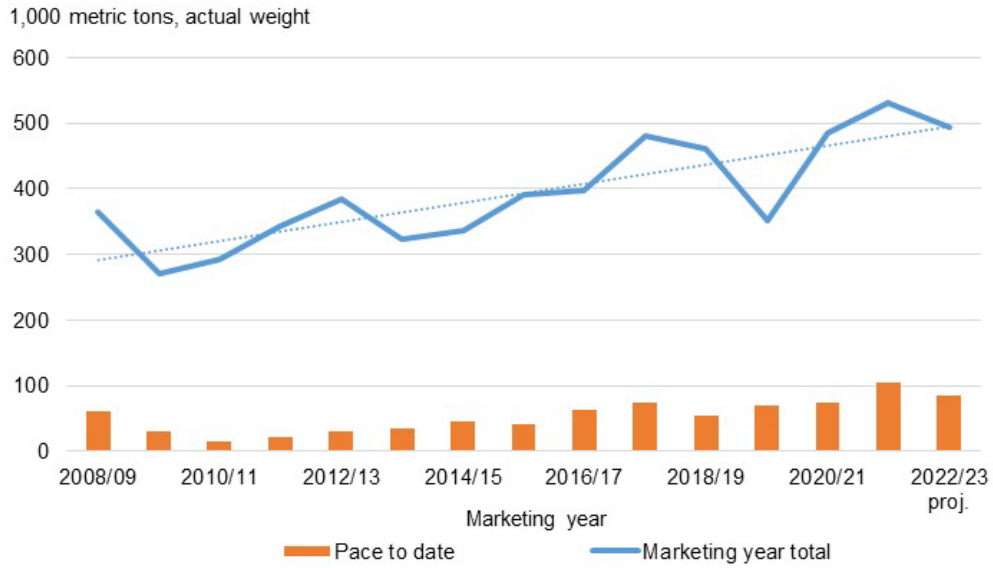
3/ CONADESUCA's forecast for harvested area is 832,245 hectares.

Note: Shaded area represents sugar production that is below the current USDA projection of 5.9 million metric tons.

Source: USDA, Economic Research Service calculations; Mexico's National Committee for the Sustainable Development of Sugarcane (CONADESUCA).

Considering its current supply and use balance forecast, Mexico would be able to meet its export quota to the U.S. if its exports to non-U.S. destinations would equal 4,000 MT – last year's volume was 495,000 MT– and if deliveries to the IMMEX program would be at 493,000 MT, which is lower than last year's 532,000. IMMEX is a federal program that allows manufacturers of sugar-containing products to use imported and domestically produced sugar as inputs so long as the products are exported within six months. Sugar delivered to IMMEX participants have been trending upwards since 2008/09. This year's pace through December (84,000 MT) is relatively strong and second only to last year's 105,000 over the same period (figure 14). If Mexico's sugar production turns out to be lower than the current 5.9-million MT forecast or if the U.S. requires additional sugar, sugar destined for IMMEX, can be adjusted to fulfill U.S. export commitments. In that case, the ability to meet the minimum or additional U.S. exports commitments would likely be balanced with IMMEX commitments such that IMMEX-dependent companies, which include Mexico-based U.S. manufacturing companies, have adequate supplies.

Figure 14
Mexican domestic IMMEX deliveries, 2008/09–2022/23



IMMEX = Industria Manufacturera, Maquiladora y de Servicios de Exportación; proj. = projected.
Source: USDA, Economic Research Service calculations using data from Mexico's National Committee for the Sustainable Development of Sugarcane (CONADESUCA).

Special Article: Sidney Sugars Beet Sugar Factory to Close

On February 6, 2023, the American Crystal Sugar Company (ACSC) announced that the nearly century-old Sidney Sugars beet sugar processing plant in Sidney, Montana will start shutdown operations on April 14. Sidney Sugars was built in January 1925 and was originally called Midland Sugar Company, which was later changed to Holly Sugar Corporation. In 1988, Imperial Sugar Company, then headquartered in Sugar Land, Texas, merged with Holly Sugar. The resulting company, Imperial Holly Corporation, became a public company that same year. In October 2022, ACSC purchased the Holly Sugar factor from Imperial and named it Sidney Sugars Incorporated.

ACSC's media release referred to the continued decline in contracted acres necessary for a financially sustainable operations as the main reason for the closure. While refined beet sugar prices have been historically high since 2020, production costs have also been relatively high due to increasing prices of farm inputs such as fertilizers and fuel. Given that sugarbeets are grown in a 2- or 3-year rotation (as opposed to sugarcane which is on a multi-year planting cycle), alternative crops, such as wheat and corn that likewise have attractive prices and require less intensive crop management, have taken acreage away from sugarbeets in the eastern Montana (MT) and western North Dakota (ND) regions.

Historically, growers in 5 counties in eastern MT and 2 counties in western ND supply sugarbeets to Sidney Sugars (figure 15). County sugarbeet planted acreage in these regions is available from USDA, National Agricultural Statistics Service (NASS) starting with crop year 1944 until NASS ceased reporting the data in 2018.

Since 1944, total planted sugarbeet acreage in these counties steadily increased before peaking at 45,000 acres between 1998–2002 (figure 16). Since then, acreage has declined and stabilized at around 30,000 acres between 2010 and 2018, and presumably into 2021 based on the ACSC's media release which indicated that 30,774 acres were planted during that year. The only exception was in 2008 when sugarbeet planted area in these counties dropped to 15,200 acres due to high prices of alternative crops. Richland County, MT has the largest planted acreage, averaging about 13,200 acres, or 44 percent of the total, over the same 2010–2018

period[1], followed by McKenzie County, ND with 8,800 acres (29 percent), and the rest with 8,300 acres (27 percent).

Per ACSC, planted area in 2022 went down to 18,400 acres, 40 percent lower than 2021's 30,774 acres, and the contracted area offered for the 2023 season increased by just 6 percent to 19,500 acres.

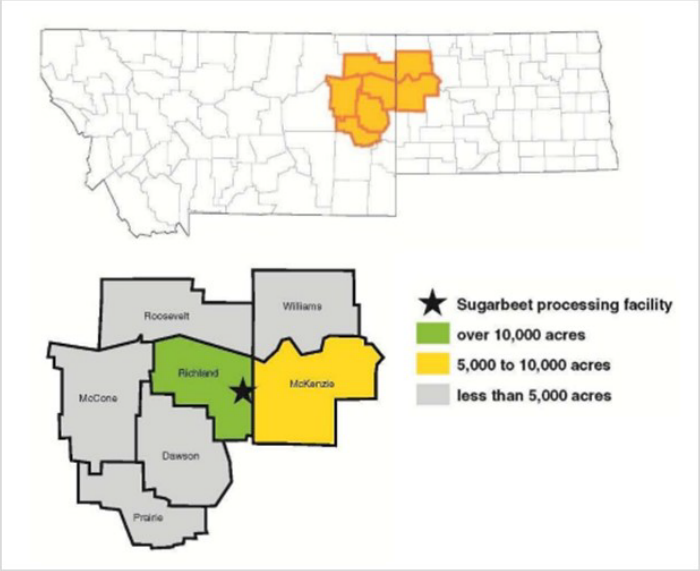
Based on the 19,500 acres that ACSC contracted for the 2023 season, the NASS' 5-year average (2014–2018) for yield (31.3 tons per acre) and for sucrose recovery (18.2 percent) in these counties, and the February *WASDE*'s 6.8 percent forecast for the national sugarbeet shrink (6.8 percent), it is estimated that the closure of Sidney would reduce crop year 2023/24 beet sugar production by around 105,000 short tons, raw value (STRV). Of this total, 10,000 STRV (10 percent) is expected to be produced during the early season (August–September 2023), which would be accounted for in the fiscal year 2022/23 forecast. Thus, this month, the *WASDE* forecast for August–September 2023 beet sugar production is reduced by 10,000 STRV to 643,000 from last month.

The impact of the processing facilities' closure on planted area will likely be reflected in the NASS' March 31 *Prospective Plantings* report and/or the June 30 *Acreage* report. The Farm Service Agency, which oversees the U.S. sugar marketing allotment program, would potentially review ACSC's marketing allocation for fiscal year 2024 because of Sidney Sugar's closure.

ACSC indicated that Sidney Sugars finished processing the 2022 crop in December, and that cleanup at the factory will continue until April. The warehouse will continue operations through the summer.

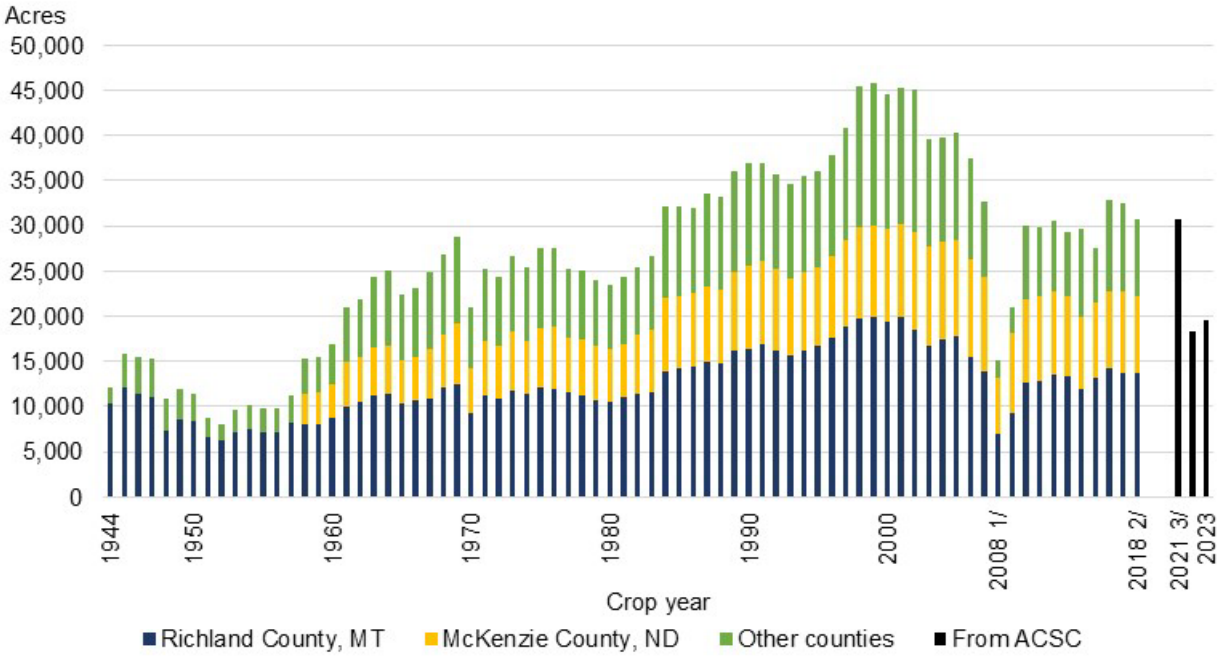
[1] In 2008, NASS combined the data for Richland County, MT with the rest of the counties in the Northeast agricultural district to avoid disclosure of individual information. See Appendix 1 for a snippet of the physical copy of the 2010 *Agricultural Statistics* bulletin for Montana. For simplicity of graphing the data in figure 16, all of the 6,900 planted acres in the Northeast district is assigned to Richland County.

Figure 15
Sugarbeet planted acres in eastern Montana and western Dakota counties in crop year 2010



Source: Bangsund, Dean A., Nancy M. Hodur, and F. Larry Leistritz. 2012. Economic Contribution of the Sugarbeet Industry to Eastern Montana and Western, North Dakota. Agribusiness and Applied Economics Report No. 678, Department of Agribusiness and Applied Economics, North Dakota State University, Fargo.

Figure 16
Sugarbeet area planted in counties surrounding the Sidney Sugars beet sugar factory, crop year 1944–2023



ASCS = American Crystal Sugar Company; MT = Montana; ND = North Dakota.
Notes: 1/ In 2008, NASS combined the data for Richland County, MT with the rest of the counties in the Northeast agricultural district to avoid disclosure of individual information. Across the U.S., sugarbeet area planted in 2008 decreased due to high prices of alternative crops.
2/ After 2018, NASS ceased publishing county-level data on sugarbeets.
3/ The area planted in 2021–2023 is from the ACSC's media release.
Source: USDA, National Agricultural Statistics Service (NASS); ACSC media release dated February 6, 2023.

Appendix

Appendix 1: Snippet of the 2010 *Agricultural Statistics* bulletin for Montana showing the suppressed data for Richland, County

Sugar Beets Acreage, Yield, and Production by Counties and Districts, 2008-2009

County And District	2008					2009				
	Planted	Harvested	Yield	Production	Sucrose	Planted	Harvested	Yield	Production	Sucrose
	Acres	Acres	Tons	Tons	Percent	Acres	Acres	Tons	Tons	Percent
Richland	--	--	--	--	--	9,200	9,100	26.7	242,600	16.72
Other	6,900	6,900	24.9	171,900	18.32	2,800	2,500	27.0	67,600	17.70
NORTHEAST	**6,900**	**6,900**	**24.9**	**171,900**	**18.32**	**12,000**	**11,600**	**26.7**	**310,200**	**16.93**
Big Horn	9,100	8,800	28.8	253,000	16.91	8,900	8,400	32.4	272,000	15.83
Carbon	3,500	3,500	24.0	83,900	16.84	3,500	2,500	29.9	74,800	15.42
Yellowstone	6,700	6,000	25.9	155,200	16.98	7,100	5,100	30.0	152,800	15.87
Other	3,500	3,500	28.8	100,700	17.18	3,600	2,900	31.4	91,000	16.06
SOUTH CENTRAL	**22,800**	**21,800**	**27.2**	**592,800**	**16.96**	**23,100**	**18,900**	**31.2**	**590,600**	**15.83**
Rosebud	2,000	2,000	29.2	58,300	17.36	2,100	1,900	33.3	63,200	16.67
Other	--	--	--	--	--	1,200	1,200	30.8	37,000	17.39
SOUTHEAST	**2,000**	**2,000**	**29.2**	**58,300**	**17.36**	**3,300**	**3,100**	**32.3**	**100,200**	**16.93**
MONTANA	**31,700**	**30,700**	**26.8**	**823,000**	**17.27**	**38,400**	**33,600**	**29.8**	**1,001,000**	**16.28**

Acreage is all irrigated.
-- Counties with no acres planted or counties that are combined into "other" counties/districts to avoid disclosure of individual information.

Source: USDA, National Agricultural Statistics Service.

Suggested Citation

Abadam, Vidalina. *Sugar and Sweeteners Outlook: February 2023*, SSS-M-414, U.S. Department of Agriculture, Economic Research Service, February 14, 2023.