



Sugar and Sweeteners Outlook: December 2022

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Minimal Increase to 2022/23 U.S. Sugar Supply; Mexican Exports to U.S. Raised

In the December 2022 *World Agricultural Supply and Demand Estimates (WASDE)*, the 2022/23 U.S. total sugar supply slightly increased from last month by 5,720 short tons, raw value (STRV) to 14.347 million as lower beet sugar production is offset by higher cane sugar production and imports from Mexico. As such, total supply would be 140,000-STRV lower (1 percent) than 2021/22's 14.486 million since the year-over-year increase in beginning stocks is offset by decline in production and imports. There were no changes to the import categories except those coming from Mexico, which are raised by 53,000 STRV to 1.477 million to fulfill a December stocks-to-use ratio at 13.5 percent per the terms of the U.S.-Mexico Suspension Agreements.

The 2022/23 Mexican exports to the U.S. are raised by 45,000 metric tons (MT) to 1.264 million (1.477 million STRV) to meet its export quota to the U.S. as stipulated in the suspension agreements. Based on the December *WASDE*'s supply and use components for both countries, exports to the U.S. can be fulfilled if all of Mexico's exports directed to the U.S. and if the Mexican domestic deliveries to the *Industria Manufacturera, Maquiladora y de Servicios de Exportación (IMMEX)* program are reduced by 39,000 MT to 494,000.

On November 28, 2022, the United States Sugar Corporation's wholly owned subsidiary—United States Sugar Savannah Refinery LLC—completed the purchase of Imperial Sugar Company from the Louis Dreyfus Company.

U.S. Outlook Summary

2022/23 U.S. Sugar Supply Mostly Unchanged

In the December 2022 *WASDE*, the 2022/23 U.S. total sugar supply slightly increased from last month by 5,720 short tons, raw value (STRV) to 14.347 million as lower beet sugar production is offset by higher cane sugar production and imports from Mexico (table 1). As such, total supply would be 140,000-STRV lower (1 percent) than 2021/22's 14.486 million since the year-over-year increase in beginning stocks is offset by decline in production and imports (figure 1).

Total domestic sugar production is lowered by 47,000-STRV from last month to 9.039 million and would be lower than the previous 2 years. Beet sugar production is down by 67,000 STRV to 4.927 million based on processors' reduced forecast of sugarbeets available for slicing reported in the USDA, Farm Service Agency (FSA) *Sweetener Market Data (SMD)*. This would represent a 228,000 STRV reduction (or 4.4 percent) from last year's 5.155 million and would be the second lowest since 2015/16.

Louisiana cane sugar production is raised by 18,460 STRV to 2.025 million on processor reporting of an increased estimate of sucrose recovery and of cane area dedicated to sugar relative to seedcane. If realized, this would be 100,000-STRV higher than last year's 1.924 million (5.2 percent) and would set a record for the State, surpassing the prior record of 1.938 million in 2018/19 by 86,000 (4.5 percent). Cane sugar production in Texas is increased slightly by 1,000 STRV to 97,000 on processor reporting but is still the lowest since 1997/98.

There were no changes to the import categories except those coming from Mexico, which are raised by 53,000 STRV to 1.477 million to fulfill a December stocks-to-use ratio at 13.5 percent per the terms of the U.S.-Mexico Suspension Agreements. This brings the total imports to 3.494 million STRV, which is 152,000-STRV lower (4.2 percent) than last year. The total sugar use forecast of 12.640 million STRV is unchanged from last month, reflecting a 32,000-STRV decline (0.3 percent) from 2021/22. These changes result in ending stocks of 1.707 million STRV, up marginally by 5,720 from last month but down 108,000 (6 percent) from last year.

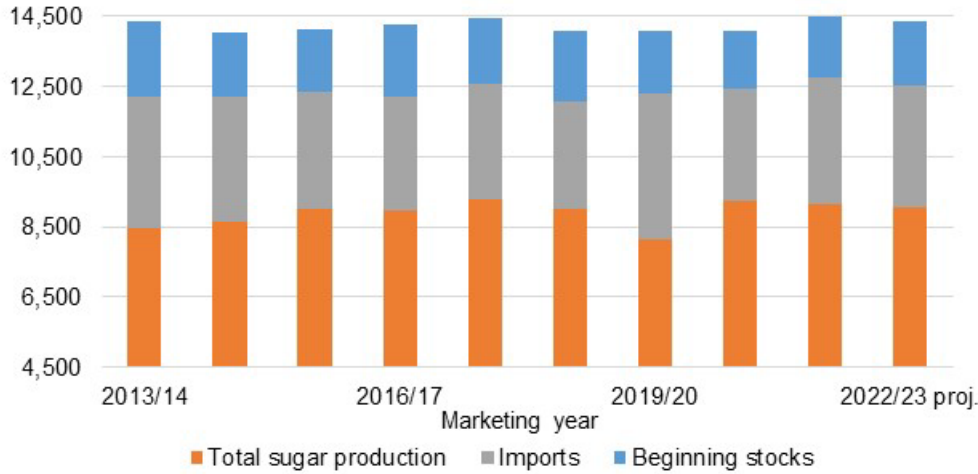
Table 1: U.S. sugar: supply and use by fiscal year (October/September), December 2022

Items	2020/21		2021/22		2022/23		
	Final	November (estimate)	December (estimate)	Monthly change	November (forecast)	December (forecast)	Monthly change
	1,000 short tons raw value						
Beginning stocks	1,618	1,705	1,705	0	1,814	1,814	0
Total production	9,233	9,135	9,136	2	9,086	9,039	-47
Beet sugar	5,092	5,155	5,155	0	4,994	4,927	-67
Cane sugar	4,141	3,979	3,981	2	4,091	4,111	20
Florida	2,090	1,933	1,933	0	1,989	1,989	0
Louisiana	1,918	1,923	1,924	2	2,006	2,025	18
Texas	134	124	124	0	96	97	1
Total imports	3,221	3,646	3,646	0	3,441	3,494	53
Tariff-rate quota imports	1,749	1,579	1,579	0	1,691	1,691	0
Other program imports	292	298	298	0	250	250	0
Non-program imports	1,180	1,769	1,769	0	1,500	1,552	53
Mexico	968	1,379	1,379	0	1,425	1,477	53
High-duty	212	390	390	0	75	75	0
Total supply	14,072	14,485	14,487	2	14,341	14,347	5
Total exports	49	29	29	0	35	35	0
Miscellaneous	40	65	66	1	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	12,671	12,673	2	12,640	12,640	0
Ending stocks	1,705	1,814	1,814	0	1,701	1,707	5
Private	1,705	1,814	1,814	0	1,701	1,707	5
Commodity Credit Corporation	0	0	0	0	0	0	0
Stocks-to-use ratio (percent)	13.8	14.3	14.3	0.0	13.5	13.5	0.0

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

Figure 1
U.S. sugar supply components, 2013/14–2022/23

1,000 short tons, raw value



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

Beet Sugar Production Reduced in 2022/23

Beet sugar production in fiscal year 2022/23 is down by 67,000 STRV to 4.927 million based on processors’ reduced forecast of sugarbeets available for slicing reported in the USDA, FSA *SMD* (table 2). This would represent a 228,000-STRV reduction (4.4 percent) from last year’s 5.155 million and would be lower than that of the previous 2 years. With no updated numbers from this month’s NASS *Crop Production* report, sugarbeet production remained at 33.462 million short tons. There are no changes made to sucrose recovery (14.63 percent), sugar produced from desugared molasses (360,000 STRV), and August–September 2023 production (643,000 STRV). The cumulative sucrose recovery through October of 14.61 percent appears to be in line with the current estimate and recent years (figure 2). Both the sugar from desugared molasses and August–September 2023 production are based on recent historical average. NASS’ next update will be released in the final production report in January 2023.

The sugar beet harvest campaign concluded with most of the States able to pick up the pace after a relatively slow start (figure 3). Among the 4 largest producing States, harvest wrapped up in Minnesota during the week ending in October 30 (week 43), then in North Dakota a week later. Idaho and Michigan followed suit in week 45 and week 47, respectively, just before the Thanksgiving holiday. The Michigan harvest was delayed relative to the other States because of

the too warm temperatures for placement in piles. Attention turned to pile management to ensure that the quality of the beets hold up until slicing wraps in the spring. So far, the cold weather has been sufficient in helping the outside beet piles stay cool.

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

	2020/21 Final	2021/22 November	2021/22 December	Monthly change	2022/23 November	2022/23 December	Monthly change
Sugarbeet production (1,000 short tons) 1/	33,610	36,751	36,751	0	33,462	33,462	0
Sugarbeet shrink (percent)	6.60	7.9	7.9	0.0	8.1	9.5	1.4
Sugarbeet sliced (1,000 short tons)	31,392	33,850	33,850	0	30,757	30,299	-458
Sugar extraction rate from slice (percent)	15.34	14.63	14.63	0	14.63	14.63	0
Sugar from beets sliced (1,000 STRV) 2/	4,817	4,954	4,954	0	4,498	4,431	-67
Sugar from molasses (1,000 STRV) 2/	362	341	341	0	360	360	0
Crop year sugar production (1,000 STRV) 2/	5,181	5,294	5,294	0	4,858	4,791	-67
Aug.–Sep. sugar production (1,000 STRV)	765	676	676	0	537	537	0
Aug.–Sep. sugar production of subsequent crop (1,000 STRV)	676	537	537	0	643	643	0
Sugar from imported beets (1,000 STRV) 3/	N/A	N/A	N/A	N/A	30	30	0
Fiscal year sugar production (1,000 STRV)	5,092	5,155	5,155	0	4,994	4,927	-67

STRV = short tons, raw value; NA = not applicable.

1/ USDA, National Agricultural Statistics Service.

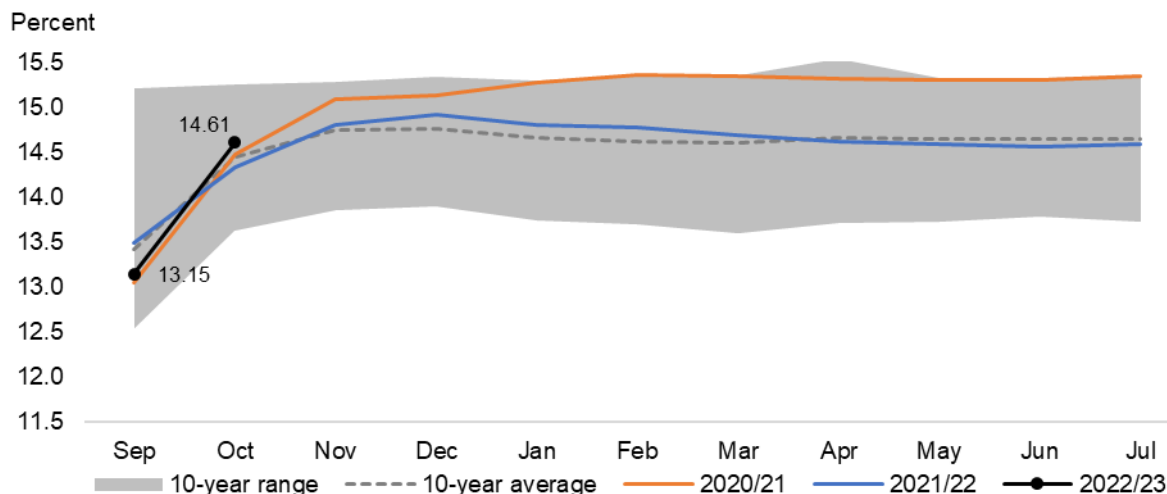
2/ August–July.

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.

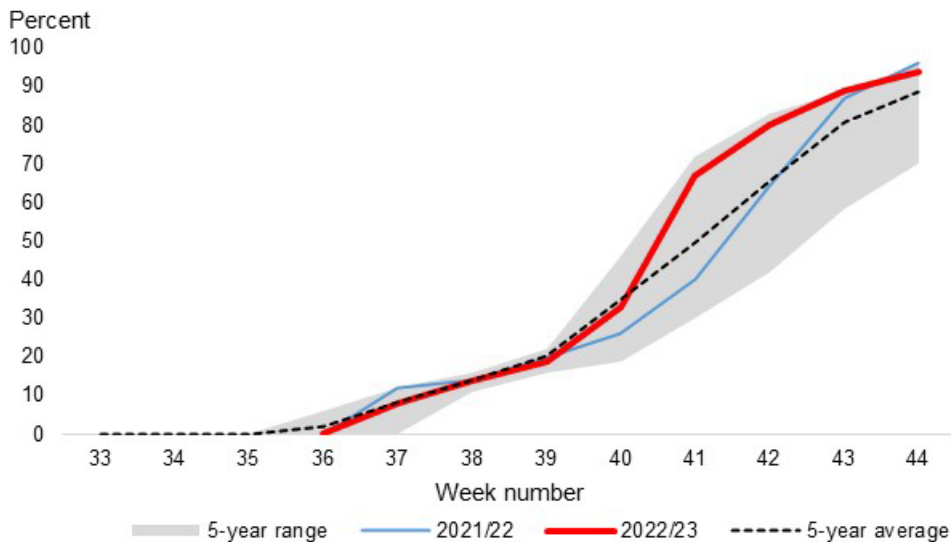
Figure 2

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.

Figure 3
Sugarbeet weekly harvest progress in the 4 largest producing States, 2017/18–2022/23



Note: The four largest producing States are Idaho, Michigan, Minnesota, and North Dakota.
 Source: USDA, National Agricultural Statistics Service.

Cane Sugar Production Up in 2022/23 Driven by Record-high Expectation in Louisiana

The fiscal year 2022/23 cane sugar production is raised from last month by 20,000 STRV to 4.111 million, a 130,000-STRV increase from last year (3.3 percent) and would be the second highest below 2021/22’s 4,142 million (table 3). The upward adjustment is mainly driven by increased production expectations for Louisiana, which offsets projections for a relatively low production in Texas.

Louisiana cane sugar production in fiscal year 2022/23 is raised from last month by 18,460 STRV to 2.025 million. If realized, the 2.025 million STRV would be 100,000 higher than last year’s 1.924 million (5.2 percent) and would set a record for the State, surpassing the prior record of 1.938 million in 2018/19 by 86,000 (4.5 percent) (figure 4). USDA, National Agricultural Statistics Service (NASS) reduced the Louisiana sugarcane yield in its Crop Production report from last month’s 32.4 tons per acre to 32.2 tons, but crop year 2022/23 cane sugar production is raised 20,000 STRV to 2.030 million on processor reporting of increased sucrose recovery and cane area dedicated to sugar relative to seedcane¹. To convert this to

¹ Sugarcane is a grass and a single planting of seedcane generally allows for a 3- to 4-year harvest cycle, with the successive years’ crop referred to as “stubble” or “ratoon crop” because the harvested stalks are from regrowth. Since

fiscal year 2022/23 basis of 2.025 million STRV, the actual early season September 2022 (54,204 STRV) is subtracted, and the projected September 2023 based on a 5-year Olympic² average including the September 2022 data (50,226 STRV). Early season production for both years are slightly adjusted upward from last month because of yearend production adjustments made by cane processors for September 2022.

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

	2017/18	2018/19	2019/20	2020/21	2021/22 Nov.	2021/22 Dec.	2022/23 Nov.	2022/23 Dec.	2022/23 monthly change (percent)
Florida									
Sugarcane harvested for sugar and seed (1,000 acres)	412.7	412.3	410.7	423.3	403.5	403.5	396.5	396.5	0.0
Sugarcane harvested for sugar (1,000 acres)	397.0	397.0	397.0	409.0	388.0	388.0	382.2	382.2	0.0
Sugarcane yield (short tons per acre)	40.9	41.7	42.8	44.3	42.4	42.4	44.0	44.0	0.0
Sugarcane production (1,000 short tons)	16,237	16,555	16,992	18,119	16,451	16,451	16,815	16,815	0.0
Recovery rate (percent)	12.21	12.11	12.39	11.53	11.75	11.75	11.83	11.83	0.0
Sugar production (1,000 STRV)	1,983	2,005	2,106	2,090	1,933	1,933	1,989	1,989	0.0
Louisiana									
Sugarcane harvested for sugar and seed (1,000 acres)	449.6	448.5	469.0	488.4	495.3	495.3	495.0	495.0	0.0
Sugarcane harvested for sugar (1,000 acres)	414.0	425.0	442.0	461.0	466.0	466.0	464.9	467.6	0.6
Sugarcane yield (short tons per acre)	32.5	35.3	27.7	32.9	29.0	29.0	32.4	32.2	-0.6
Sugarcane production (1,000 short tons)	13,455	15,003	12,243	15,167	13,514	13,514	15,062	15,057	0.0
Recovery rate (percent)	13.84	12.71	12.73	13.03	13.92	13.92	13.35	13.48	1.0
Crop year sugar production (1,000 STRV) 1/	1,862	1,907	1,558	1,976	1,881	1,881	2,011	2,030	1.0
Sep. sugar production (1,000 STRV)	35	32	63	70	12	12	54	56	3.0
Sep. sugar production of subsequent crop (1,000 STRV)	32	63	70	12	54	56	50	50	1.1
Fiscal year sugar production (1,000 STRV) 1/	1,859	1,938	1,566	1,918	1,923	1,924	2,006	2,025	0.9
Texas									
Sugarcane harvested for sugar and seed (1,000 acres)	41.8	38.9	33.5	35.9	36.4	36.4	32.0	32.0	0.0
Sugarcane harvested for sugar (1,000 acres)	40.5	37.6	31.3	33.4	34.3	34.3	30.4	30	0.0
Sugarcane yield (short tons per acre)	36.8	36.6	33.6	31.5	30.8	30.8	25.0	25.00	0.0
Sugarcane production (1,000 short tons)	1,490	1,376	1,052	1,052	1,056	1,056	760	760	0.0
Recovery rate (percent)	10.06	11.33	10.70	12.00	11.78	11.78	12.61	12.76	1.1
Sugar production (1,000 STRV)	169	147	126	134	124	124	96	97	1.1
United States									
Sugarcane harvested for sugar and seed (1,000 acres)	904.1	899.7	913.2	947.6	935.2	935.2	923.5	923.5	0.0
Sugarcane harvested for sugar (1,000 acres)	851.5	859.6	870.3	903.4	888.3	888.3	877.4	880.2	0.3
Sugarcane yield (short tons per acre)	36.6	38.3	34.8	38.0	34.9	34.9	37.2	37.1	-0.3
Sugarcane production (1,000 short tons)	31,182	32,934	30,287	34,338	31,021	31,021	32,637	32,632	0.0
Recovery rate (percent)	12.9	12.3	12.5	12.2	12.69	12.69	12.6	12.6	0.5
Crop year sugar production (1,000 STRV)	4,014	4,060	3,790	4,199	3,938	3,938	4,096	4,117	0.5
Fiscal year sugar production (1,000 STRV)	4,011	4,091	3,798	4,141	3,980	3,982	4,091	4,111	0.5

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.

Cane sugar production in Texas is increased slightly from last month by 1,000 STRV to 97,000 on processor reporting but reflects a 27,000-STRV decrease from last year and would still be the lowest since 1997/98.

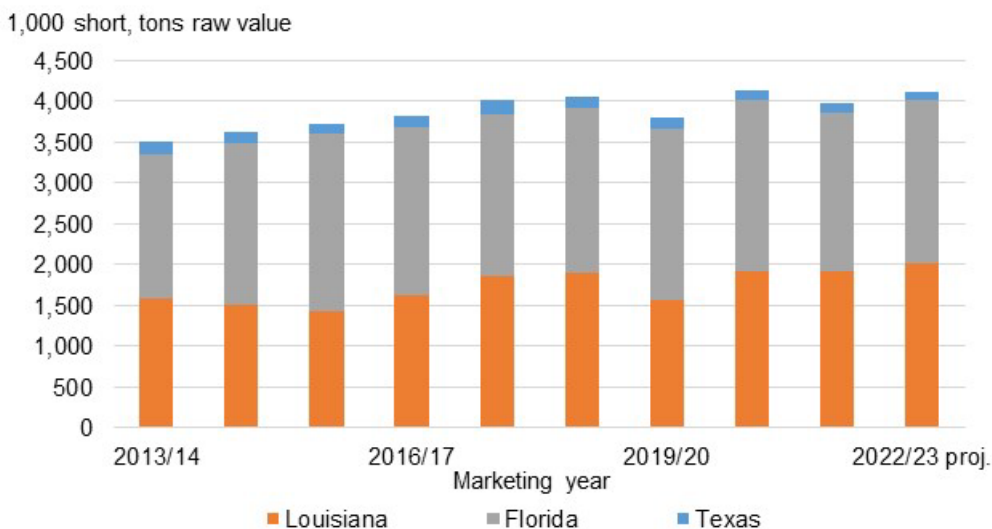
Florida cane sugar production is unchanged from last month at 1.989 million STRV. This reflects a 57,000-STRV increase (2.9 percent) from last year's crop that was affected by an

yields tend to diminish with each crop, farmers typically replace about 20 to 25 percent of their cane crop with seedcane each planting season, which will be then used as materials for the first year's plant cane crop.

² While the simple average uses all observations, the Olympic average eliminates the high and low observations, and then averages the remaining observations.

unusual freeze event in January 2022. Harvest of this year's crop has faced delays due to rain events around Thanksgiving and hurricanes Ian and Nicole made landfall on September 28 and November 10, respectively. While neither hurricane caused damage to cane fields and factories, the wet conditions briefly paused harvest operations.

Figure 4
U.S. cane sugar production by State, 2013/14–2022/23



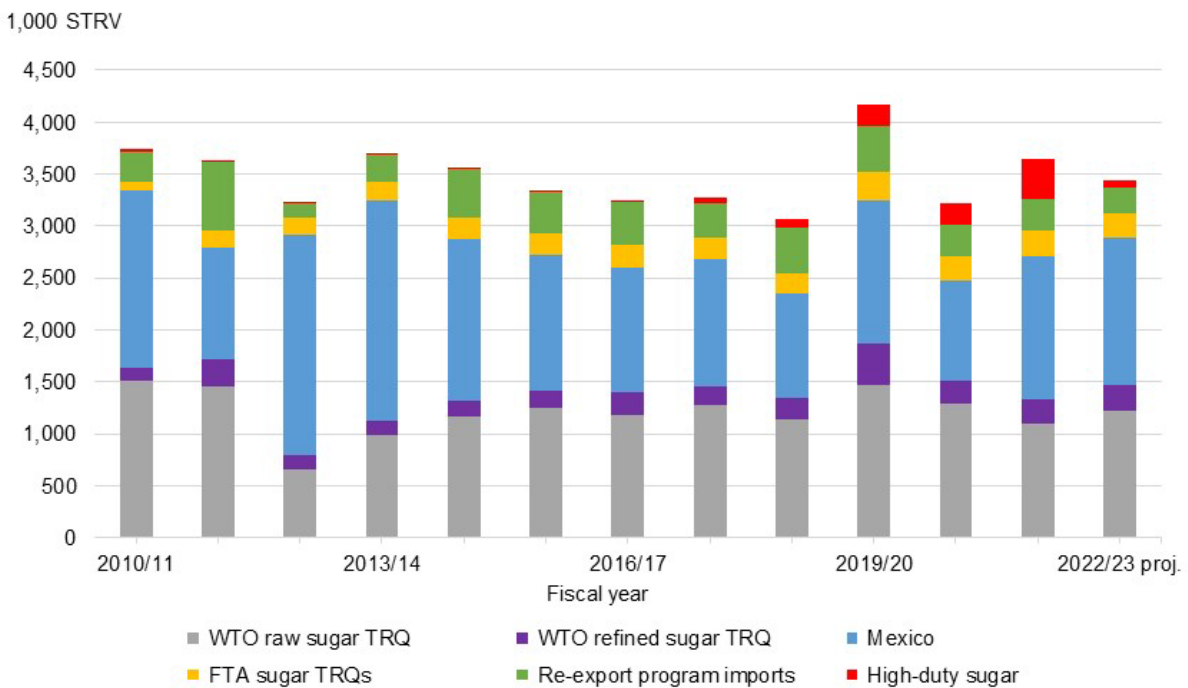
proj. = projected.
 Source: USDA, Farm Service Agency.

Total Imports in 2022/23 Raised on Account of Mexico

There were no changes to the 2022/23 import categories except for those coming from Mexico. Mexican imports are raised 53,000 STRV to 1.477 million to fulfill a December stocks-to-use ratio at 13.5 percent per the terms of the U.S.-Mexico Suspension Agreements. This brings the total imports to 3.494 million STRV, which is about 152,000-STRV lower (4.2 percent) than last year (figure 5, table 4). This is mostly due to an over-the-year decline among several import categories, led by a 315,000-STRV (81 percent) decline in high-tier imports, followed by 48,000-STRV (16 percent) in re-export program imports, and 23,000-STRV (9 percent) in free trade agreements (FTA). The decline is partially offset by over-the-year increases from the World Trade Organization (WTO) raw sugar tariff-rate quota (TRQ) (131,000 STRV or 12 percent), WTO refined sugar TRQ (4,000 or 2 percent), and Mexico (98,000 or 7.1 percent).

Aside from a lower import level projected in 2021/22, the pace of entry is also behind compared with last year (table 5). The total imports entered between October–November are 494,000 STRV, down 222,000 from the same time last year, and represents 14 percent of the total fiscal year projection of 3.494 million—lower than the 20-percent share of October–November in 2021/22. The import categories in 2021/22 are behind compared with last year’s pace, mostly for the WTO raw sugar TRQ (behind by 141,000) and Mexico (behind by 50,000). The WTO refined sugar TRQ is the sole category that is up year-over-year, but only by 1,000 STRV (table 5).

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: U.S. sugar imports by type, 2017/18 to 2022/23

	2017/18	2018/19	2019/20	2020/21	2021/22 est.	2022/23 proj.	Over-the-year change	
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	98	7.1
WTO raw sugar TRQ	1,272	1,144	1,468	1,296	1,096	1,227	131	12.0
WTO refined sugar TRQ	190	207	408	217	237	241	4	1.8
FTA sugar TRQ	202	190	276	236	246	223	-23	-9.2
Re-export program	326	438	432	292	298	250	-48	-16.1
High-duty sugar	64	91	183	186	390	75	-315	-80.8
Total	3,277	3,070	4,143	3,195	3,646	3,494	-152	-4.2
Share of fiscal year total	Percent						Percentage point	
Mexico	37	33	33	30	38	42	4	
WTO raw sugar TRQ	39	37	35	41	30	35	5	
WTO refined sugar TRQ	6	7	10	7	7	7	0	
FTA sugar TRQ	6	6	7	7	7	6	0	
Re-export program	10	14	10	9	8	7	-1	
High-duty sugar	2	3	4	6	11	2	-9	
Total	100	100	100	100	100	100	N/A	

WTO = World Trade Organization; TRQ = tariff rate quota; FTA = free trade agreement; est. = estimated; proj. = projected.
Source: USDA, Foreign Agricultural Service.

Table 5: Pace to date of U.S. sugar imports by type, October to November, 2017/18 to 2022/23

	2017/18	2018/19	2019/20	2020/21	2021/22 est.	2022/23 proj.	Over-the-year change	
To-date: October to November	1,000 short tons, raw value (STRV)						STRV	Percent
Mexico	35	62	32	19	68	19	-50	-72.8
WTO raw sugar TRQ	437	253	391	460	447	306	-141	-31.5
WTO refined sugar TRQ	64	66	68	52	75	76	1	1.0
FTA sugar TRQ	25	25	41	36	31	22	-8	-27.2
Re-export program	65	110	92	36	44	24	-19	-44.3
High-duty sugar	2	21	11	44	51	47	-5	-9.0
Total	629	537	635	648	717	494	-222	-31.0
Share of to-date to fiscal year total	Percent						Percentage point	
Mexico	3	6	2	2	5	1	-4	
WTO raw sugar TRQ	34	22	27	36	41	25	-16	
WTO refined sugar TRQ	34	32	17	24	32	31	0	
FTA sugar TRQ	12	13	15	15	12	10	-2	
Re-export program	20	25	21	12	15	10	-5	
High-duty sugar	4	23	6	23	13	62	49	
Total	19	17	15	20	20	14	-6	

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.

If realized, this year's projection of 1.477 million-STRV imports from Mexico would be 98,000-STRV higher (7 percent) than last year's 1.379 million and would be the largest since 2014/15 (1.532 million), which was about the first year of the suspension agreements (table 4). This translates to Mexico's 42-percent share of the projected total 2022/23 imports of 3.494 million STRV, which is 4 percentage points larger than 2021/22's 38 percent and the largest share

since 2014/15. In addition, 2022/23 would mark the first time, also since 2014/15, that the Mexican share of total projected U.S. imports (42 percent) would be larger than the WTO TRQ (35 percent).

However, being the residual supplier of imports to the U.S. market to achieve a U.S. stocks-to-use ratio of 13.5 percent as stipulated in the suspension agreements, Mexico's quota is largely affected by any changes in the U.S. supply and use balance sheet. For instance, holding U.S. total sugar use constant, if the forecast for U.S. sugar production increased or if the projected imports from other sources such as high-tier sugar are raised, Mexico's quota would be reduced. But while the U.S. Needs³ calculation can change in March when it will be recalculated using the March *WASDE*, Mexico is guaranteed a minimum export volume of at least 1.182 million STRV—the Export Limit equal to 80 percent of the December U.S. Needs (Table 6).

Table 6. U.S. Needs and Mexico's Export Limit determination by U.S. Department of Commerce

Fiscal year	Period	U.S. Needs (STRV) 1/	Percent to derive Mexico's Export Limit	Export Limit (STRV)
2022/23	Jul 2022	1,900,775	50	950,388
	Sep 2022	1,618,775	70	1,133,143
	Dec 2022	1,477,400	80	1,181,920
	Mar 2023	N/A	100	N/A

STRV = short tons, raw value; N/A = not applicable.

1/ Per the U.S.-Mexico Sugar Suspension Agreements, "U.S. Needs" is calculated 4 times a year (first in July, then September, December, and lastly in March) using the components of the USDA *WASDE* for that month. The formula is: U.S. Needs = (Total use * 1.135) – Beginning stocks – Production – TRQ imports – Other Program imports – High-tier tariff/other Source: U.S. Dept. of Commerce, ACCESS.

Mexico's capacity to fulfill U.S. Needs is also highly a function of its supply-and-use balance sheet. With Mexican cane sugar production projected to be 333,000-STRV lower (equivalent to 285,000 metric tons, actual weight) than last year, the 1.477 million-STRV of U.S. Needs calculated off of the December *WASDE*'s components can be fulfilled only if all of Mexico's exports are directed to the U.S. and if Mexican domestic deliveries for sugar-containing product re-export program known as *Industria Manufacturera, Maquiladora y de Servicios de Exportación (IMMEX)* program are lowered (see "Mexico Outlook" section).

Raw sugar TRQ imports entering in 2022/23 are unchanged from last month at 1.227 million

³ Per the U.S.-Mexico Sugar Suspension Agreements, "U.S. Needs" is calculated 4 times a year (first in July, then September, December, and lastly in March) using the components of the USDA *WASDE* for that month. The formula is: U.S. Needs = (Total use * 1.135) – Beginning stocks – Production – TRQ imports – Other Program imports – High-tier tariff/other imports.

STRV, which is 131,000-STRV higher (12 percent) than last year's 1.096 million. The over-the-year increase is mainly due to USDA's action to extend the entry of fiscal year 2021/22 WTO raw sugar TRQ through December 31, 2022. The extension applies to the additional sugar expected from 2 USDA actions on WTO raw sugar TRQ: 222,172 STRV from the shortfall reallocation on April 18 and 100,000 STRV from the increase on July 11. The USDA, Foreign Agricultural Service (FAS), in its *Sugar Monthly Import and Re-Export Data* report⁴, estimates that 250,167 STRV of fiscal year 2021/22 WTO raw sugar TRQ will instead enter in fiscal year 2022/23 (between October to December 2022), thus serving to offset a projected 254,632-STRV shortfall out of the 2022/23 WTO minimum quantity of 1,231,497 STRV (1,117,195 metric tons, raw value on the Federal Register announcement).

Note that the 2022/23 WTO raw sugar TRQ forecast did not change despite the Customs and Border Protection's (CBP) issuance of a Withhold Release Order (WRO) of raw sugar imports and sugar-based products from a major sugar producer—Central Romana Corporation—in the Dominican Republic (DR). The import ban was announced on alleged labor violations. Regardless, USDA has determined that the DR's Dominican Sugar Institute (INAZUCAR), the official body that regulates that country's sugar industry, is planning to institute measures to fulfill the DR's full 2022/23 raw sugar TRQ allocation. INAZUCAR plans to reconfigure the distribution in the local sugar market and rearrange the company level allotments of the TRQ so other domestic mills will be asked to reduce their refined sugar production and instead produce raw sugar to meet DR's full 2022/23 TRQ. Correspondingly, Central Romana Corporation will reduce its production of raw sugar and increase production of refined sugar to be sold in the domestic markets instead.

The 2022/23 high-tier sugar is also unchanged from last month at 75,000 STRV, of which 47,000 STRV have already entered through the first 2 months of the fiscal year (Table 5). This is comparable to the quantities entered in the prior 2 years during the same period: 51,000 STRV in 2021/22 and 44,000 STRV in 2019/20. Of the 47,000 STRV total high-tier imports through November, raw sugar makes up 25,000 or 54 percent (Table 7). Even though the 2022/23 pace to date is lower than 2021/22 in terms of quantity (35,000 STRV) and share in total October–November (69 percent), the current market conditions—continued tightness of the beet sugar supplies and the current arbitrage between the U.S. and world prices—can potentially incentivize more of these imports despite paying out-of-quota tariff of (15.36 cents

⁴ The *Sugar Monthly Import and Re-Export Data* report is available from the USDA, FAS *Data and Analysis* website.

per pound for raw and 16.21 cents for refined).

Table 7. High-tier sugar imports by type of sugar, U.S. port, and country of origin, 2021/22

	2021/22 est.	2022/23 proj.
To date: October to November	Short tons, raw value	
Raw	35	25
Refined/Specialty/Organic	16	21
Total	51	47
Share of total	Percent	
Raw	69	54
Refined/Specialty/Organic	31	46
Total	100	100

est. = estimated; proj. = projected.

Note: The Harmonized Tariff Schedule (HTS) lines are 1701.12.5000, 1701.13.5000, and 1701.14.5000 for raw sugar; 1701.91.3000, 1701.99.5025, 1701.99.5050, 1702.90.2000, and 2106.90.4600 for refined sugar; 1701.99.5015 and 1701.99.5017 for specialty sugar including organic.

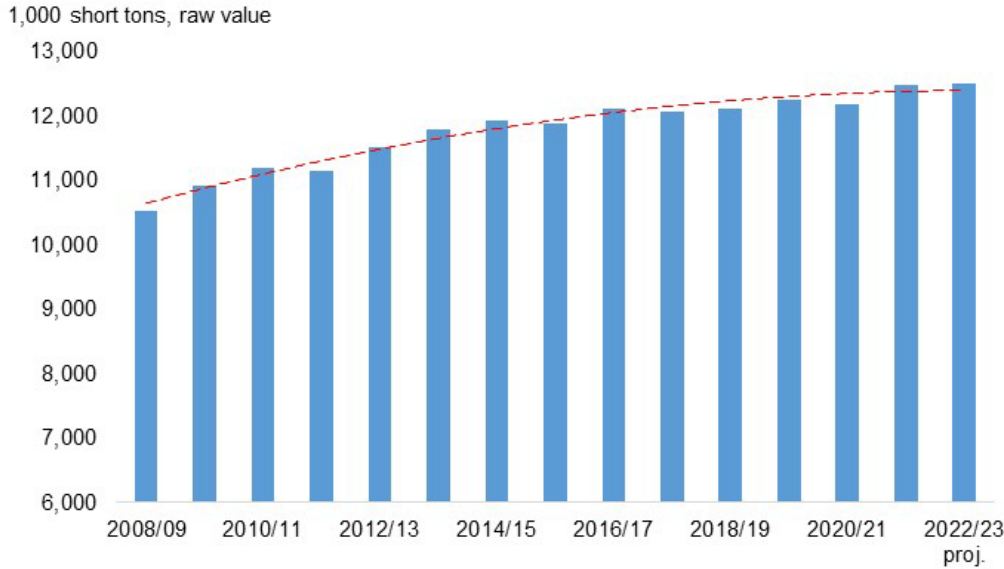
Source: USDA, Economic Research Service calculation using U.S. Department of Commerce, Bureau of the Census trade data downloaded from the U.S. International Trade Commission's *DataWeb*.

Sugar Deliveries Unchanged in 2022/23

The 2022/23 food and beverage use deliveries remains at 12.500 million STRV, reflecting a 27,000-STRV increase (0.2 percent) from 2021/22's 12.470 million (figure 6). With the other delivery components unchanged at 105,000 STRV, total food use deliveries are also unchanged at 12.605 million.

Cane refiners posted very strong deliveries at the start of fiscal year 2022/23. In October, cane sugar deliveries amounted to 609,000 STRV, which is 17,000 more than last year (3 percent) and would be the new record topping 2018/19's 596,000 STRV (table 8). This is confirmed by the elevated cane refiners' melt for this month, which is just below the record high of 605,000 STRV delivered in October 2021 (figure 7). There is a strong, positive correlation between cane sugar deliveries and melt because 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 strong cane sugar deliveries are partly driven by a relatively abundant raw sugar inventory and the tight supply situation of the beet processors, which could prompt sugar customers to switch to cane sugar for supplies.

Figure 6
**U.S. sugar deliveries for food and beverage use, fiscal year,
 2008/09 to 2022/23**



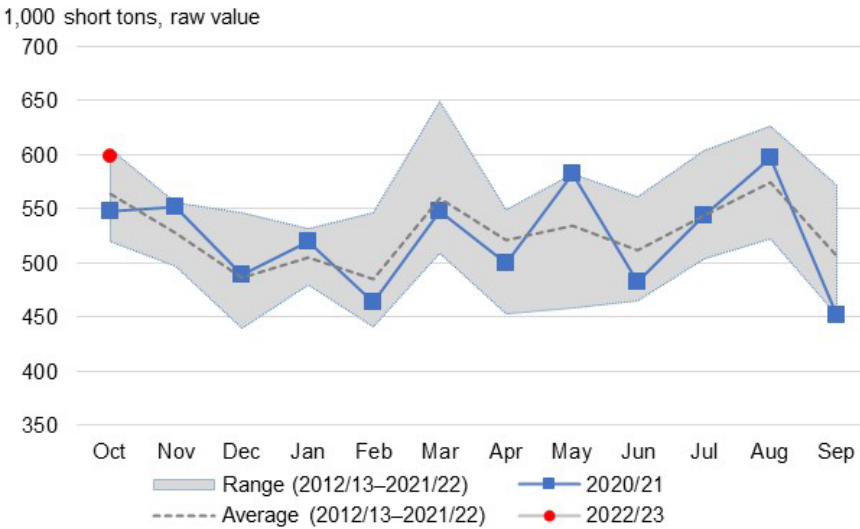
proj. = projected.
 Source: USDA, Economic Research Service.

Table 8: Food and beverage deliveries, October, 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	518	473	501	462	481	487	6	1
Cane sugar refiners	538	596	547	555	591	609	17	3
Non-reporter (direct consumption)	117	89	145	77	182	145	-37	-20
Total	1,174	1,158	1,193	1,095	1,254	1,241	-13	-1
	Percent share in total						5-year Average	
Beet sugar processors	44	41	42	42	38	39	42	
Cane sugar refiners	46	51	46	51	47	49	48	
Non-reporter (direct consumption)	10	8	12	7	15	12	10	
Total	100	100	100	100	100	100	100	

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

Figure 7
Sugarcane refiners' melt, monthly, 2012/13 to 2022/23



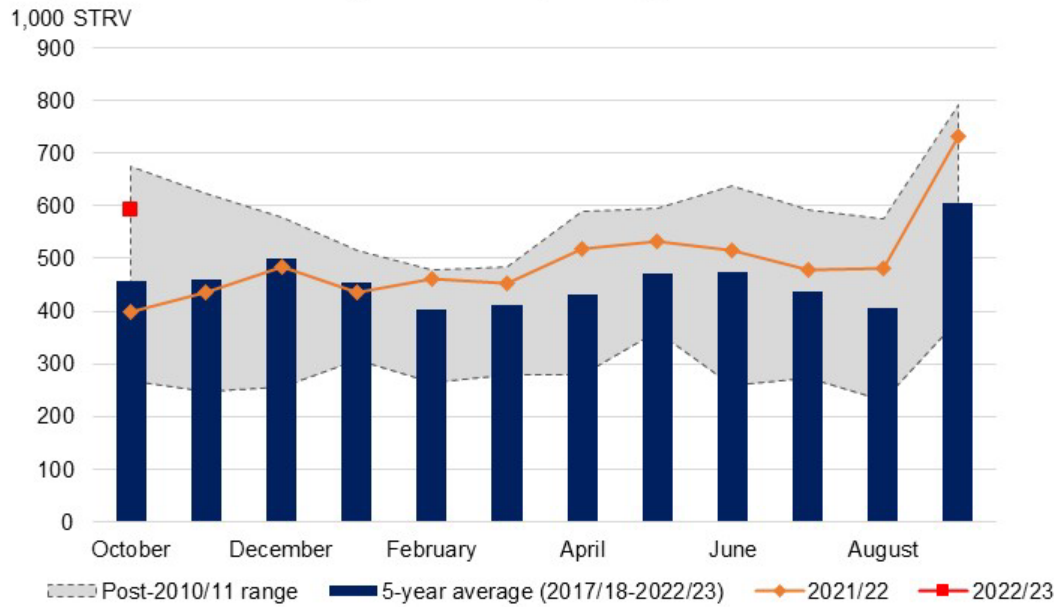
Melt = quantity of raw sugar processed.
 Source: USDA, Farm Service Agency.

The availability of throughput, as reflected in the relatively high cane refiners' raw cane sugar stocks in October (figure 8) allows the cane refiners to respond to demand. This is partly the result of the action taken by USDA to extend the entry of fiscal year 2022 WTO TRQ raw sugar imports thru December 31, 2022, to overcome the limited availability of imported sugar, particularly from Mexico, where the sugar campaign is just taking off. The cane refining sector has shown in the past—such as the record-setting years of 2015/16 and 2019/20—that it can step in when beet sugar deliveries are down when provided ample lead time to maximize refining capacity and shipping logistics.

On the other hand, the 487,000-STRV beet sugar deliveries in October are mostly the same as last year's and track the 5-year average. This amount translates to 39 percent share of the total October deliveries, which is about 3 percentage points lower compared with the 5-year average (42 percent). Except for a small quantity of imported beets from Canada (estimated to be 30,000 STRV for 2022/23), all of U.S. beet sugar is produced from domestically grown sugarbeets. Thus, the domestic beet sugar production and beginning stocks largely determine beet sugar deliveries. With this year's pace of production falling below expectations and beet processors' historically low inventories (figure 9), it is likely that beet sugar deliveries will be impacted. On November 9, just as the fiscal year 2022/23 started, one processor declared force majeure citing weather-reduced production. The Midwest refined beet sugar spot price has

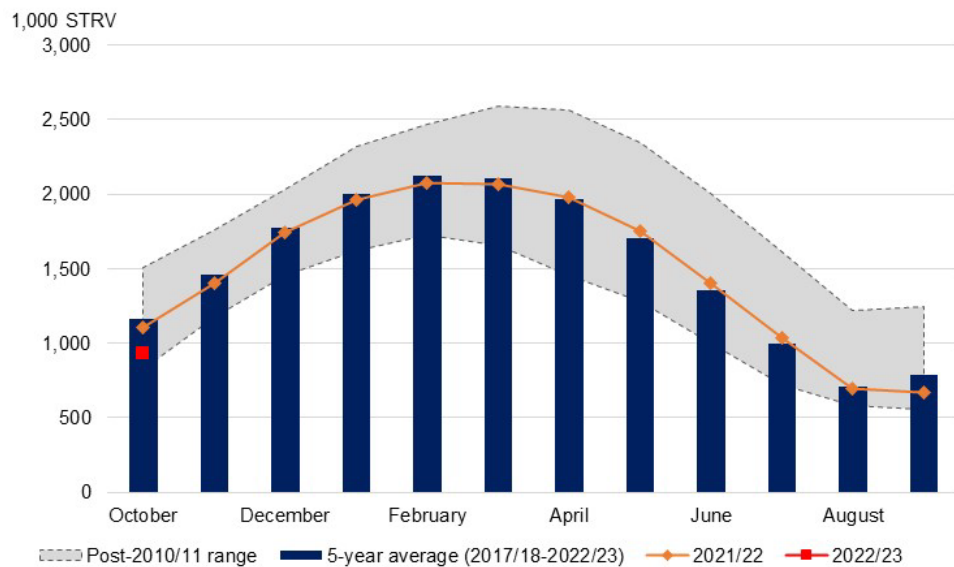
again been unquoted since then—more than a month now—as most processors have already booked the potential sugar relatively early and are already out of the 2022/23 market.

Figure 8
Sugarcane refiners' raw sugar inventories, monthly, 2010/11 to 2022/23



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

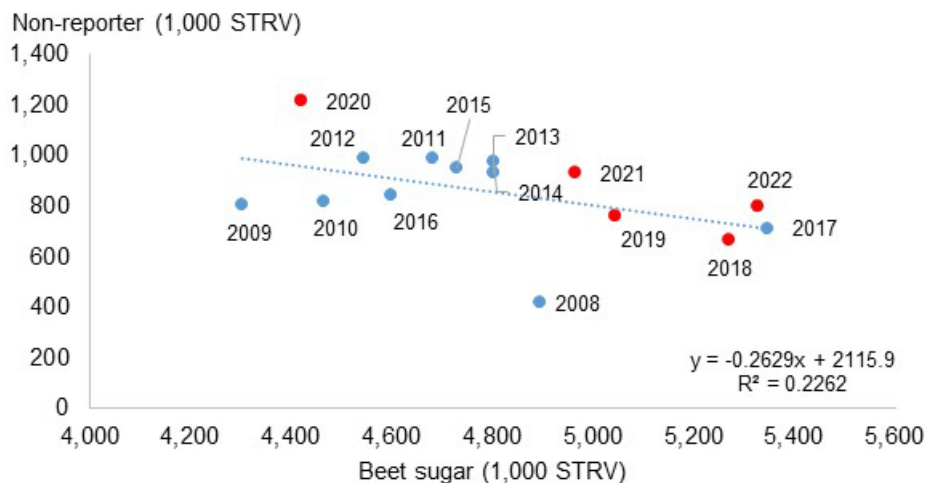
Figure 9
Sugarbeet processors' total sugar inventories, monthly, 2010/11 to 2022/23



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

Non-reporter deliveries were 145,000 STRV in October. Non-reporter deliveries are sugar imports mostly composed of cane sugar that is neither refined nor marketed by beet processors or cane refiners covered under the sugar program. While reflecting an over-the-year decline of 37,000-STRV (20 percent), this level is relatively large considering that it ties with 2019/20 as the second largest October number in the last 5 years behind last year's 182,000. It represents 12 percent of the total October deliveries, which is 2 percentage points higher than the 5-year average. Given the lower projection of beet sugar production and uncertainty regarding additional raw sugar imports, which are dependent on USDA actions during the marketing year, some users with unmet sugar supplies might source from non-reporters. In the last 15 years, non-reporter deliveries tend to have a negative correlation with beet sugar deliveries (figure 10) and a positive correlation with cane sugar deliveries (figure 11). These charts tend to imply that when beet sugar deliveries are lower, non-reporter entities complements the domestic cane refining sector by providing an alternative source for users.

Figure 10
Correlation between beet sugar deliveries and non-reporter deliveries, 2008/09 to 2021/22

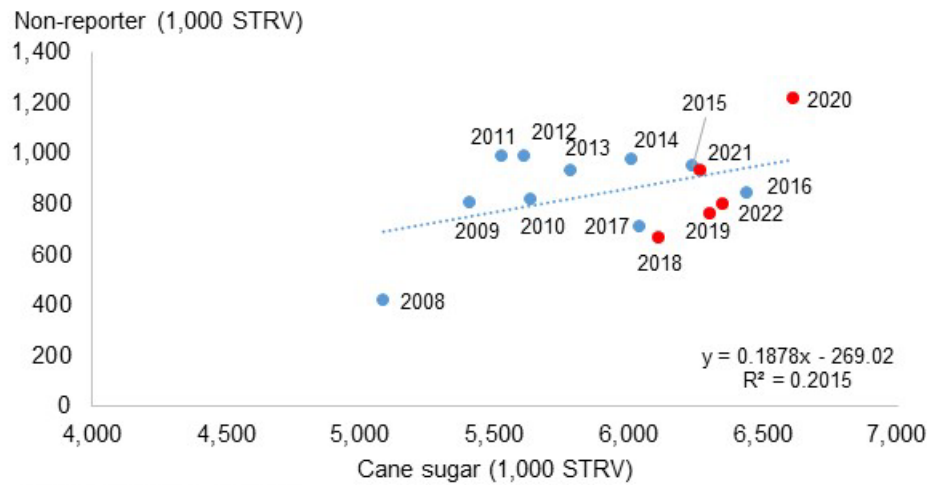


STRV = short tons, raw value.

Note: The years correspond to fiscal year, e.g. 2022 is fiscal year 2021/22. The 5 red dots represent the last 5 years. $R^2 = 0.2262$ indicates that 23 percent of the variation in non-reporter deliveries can be explained the variation in beet sugar deliveries.

Source: USDA, Farm Service Agency.

Figure 11
Correlation between cane sugar deliveries and non-reporter deliveries,
2008/09 to 2021/22



STRV = short tons, raw value.

Note: The years correspond to fiscal year, e.g. 2022 is fiscal year 2021/22. The 5 red dots represent the last 5 years. $R^2 = 0.2262$ indicates that 23 percent of the variation in non-reporter deliveries can be explained the variation in beet sugar deliveries. .

Source: USDA, Farm Service Agency.

U.S. Sugar–Imperial Sugar Merger Finalized

After almost 2 years, the merger between the United States Sugar Corporation (U.S. Sugar) and United States Sugar Savannah Refinery LLC (Imperial Sugar) has been finalized.

The process started on March 24, 2021, when Florida-based U.S. Sugar announced its plan to acquire Imperial Sugar, which is owned by the Louis Dreyfus Company. U.S. Sugar grows sugarcane and operates a sugarcane milling and a cane sugar refining facility in Clewiston, Florida. Imperial Sugar operates a cane sugar refining facility in Savannah, Georgia, as well as an intermediate sugar transfer and liquification facility in Ludlow, Kentucky. In its March 24 press release, U.S. Sugar explained that the acquisition provides both companies' customers "with increased production and distribution, a full suite of sugar products, and a more secure sugar supply". The March 24 letter sent by Imperial Sugar to its customers noted that "by combining U.S. Sugar's presence in sugar cane growing, milling and cane sugar refining, with Imperial Sugar's operations in cane sugar refining and marketing, we will increase the competitiveness and reliability of both businesses in order to deliver the best possible value and service to our customers over the long run".

On November 23, 2021, under Section 7 of the Clayton Act, the U.S. Department of Justice (DOJ) filed a civil antitrust lawsuit to block the proposed acquisition. DOJ argued that the proposed acquisition, if allowed, will be anti-competitive because it will leave only two companies as the primary suppliers of refined sugar in the Southeast United States, lessening competition and raising prices to customers.

A 4-day bench trial held in the U.S. District Court of Delaware concluded on April 21, 2022. On September 23, 2022, the presiding judge ruled in favor of the sugar companies, allowing the acquisition to proceed. DOJ filed a notice of appeal and sought an injunction on September 26, which was denied by the Delaware District Court 2 days later. The next day, DOJ elevated its request for injunction with the Third Circuit Court of Appeals in Philadelphia but was also denied.

On November 28, 2022, the U.S. Sugar's wholly owned subsidiary–United States Sugar Savannah Refinery LLC–completed the purchase of Imperial Sugar from the Louis Dreyfus Company.

Mexico Outlook

Production in 2022/23 Unchanged; Deliveries to *IMMEX* Lowered to Meet Export Quota to U.S.

The December 2022 *WASDE* projection for Mexico's sugar production in 2022/23 is unchanged at 5.9 million metric tons (MT), representing a 2.6-percent decline from last year's 6.185 million MT (table 9). This is about 126,000-MT lower than 6.025 million MT, which is the first official 2022/23 production forecast that the Mexican National Committee for the Sustainable Development of Sugarcane (CONADESUCA) released on November 11. The *WASDE* forecast this month adopts CONADESUCA's projected sugarcane field yield of 64.06 MT per hectare—lower than last year's 68.37 MT (figure 12)—and recovery rate of 11.30 percent, which is almost the same as last year's 11.31 percent. The lower yield projection likely reflects the effect of lower rainfall in some growing areas during the critical growing season, higher prices for fertilizers and other inputs, and field labor shortages. However, *WASDE*'s projection for area harvested of 814,850 hectares—up 15,000 from last month—is about 21,000 lower than CONADESUCA's 832,245 hectares. While USDA is more conservative, either projection if realized, would be a new record overtaking the prior high of 805,511 hectares in 2018/19 (figure 12).

CONADESUCA's report as of December 3, the tenth week of the campaign, indicates that sugar production to date—162,777 MT from 24 out of the 49 mills—is progressing slower than expected (table 10). This time last year, 30 mills made 231,748 MT of sugar. The rest of the cumulative production metrics, including area harvested, are also down compared with the same period as last year.

Table 9: Mexican sugar: supply and use by fiscal year (October/September), December 2022

Items	2020/21	2021/22		2022/23			
	Final	November (estimate)	November (estimate)	Monthly change	November (forecast)	November (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	533	494	-39
Other deliveries and end-of-year statistical adjustment		-16	-16				
Total	4,420	4,629	4,629	0	4,701	4,662	-39
Exports	1,165	1,676	1,676	0	1,219	1,266	47
Exports to the United States and Puerto Rico	828	1,180	1,180	0	1,219	1,264	45
Exports to other countries	337	495	495	0	0	2	2
Total use	5,585	6,305	6,305	0	5,920	5,928	8
Ending stocks	1,053	964	964	0	979	971	-8
Stocks-to-human consumption (percent)	26.8	23.4	23.4	0	23.5	23.3	0
Stocks-to-use (percent)	18.9	15.3	15.3	0	16.5	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).

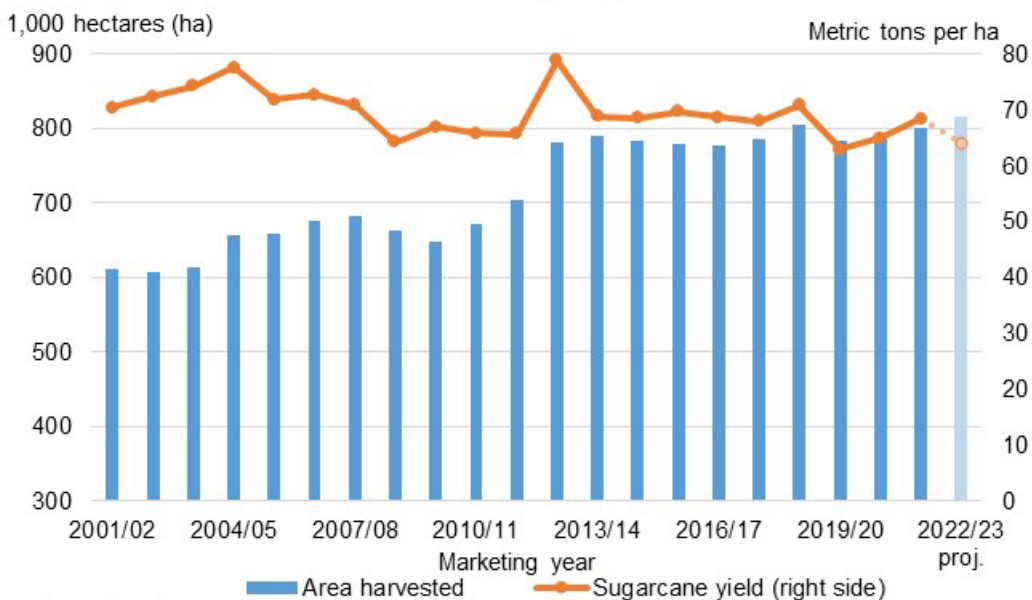
Table 10: Mexican sugar production as of week 10, 2021/22 and 2022/23

	As of week 10		Difference	
	2021/22	2022/23	Level	Percent
Area harvested (hectares)	30,358	23,935	-6,423	-21
Sugarcane processed (metric tons)	2,530,186	1,864,849	-665,337	-26
Sugarcane yield (metric tons per hectare)	83.34	77.91	-5.43	-7
Number of mills in operation	30	24	-6	-20
Extraction rate (percent)	9.16	8.70	-0.46	-5
Total factory yield (metric tons sugar per hectare)	7.63	6.78	-0.85	-11
Sugar production (metric tons)	231,748	162,277	-69,471	-30

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

Figure 12

Mexican sugarcane area harvested and yield, 2001/02–2022/23



proj. = projected.

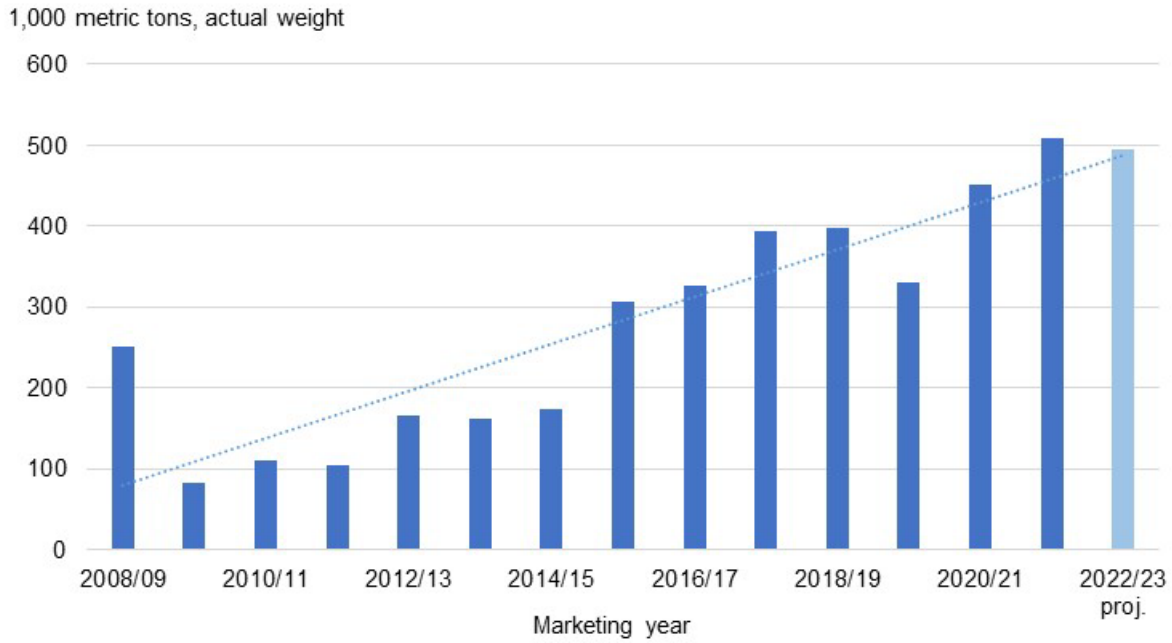
Source: Mexico's National Committee for the Sustainable Development of Sugarcane (CONADESUCA).

Based on the December *WASDE*'s supply and use components for both countries, exports to the U.S. can be fulfilled if all of Mexico's exports are directed to the U.S. while Mexican domestic deliveries to the *Industria Manufacturera, Maquiladora y de Servicios de Exportación (IMMEX)* program are reduced by 39,000 MT to 494,000. Though this updated 2022/23 *IMMEX* projection is 39,000-MT lower (7 percent) than last year's 523,000, it aligns with the trend (figure 13); CONADESUCA's initial 2022/23 *IMMEX* projection of 430,000 MT in its November 15 *National Sugar Balance* report also shows a year-over-year reduction.

Given the relatively higher-priced U.S. market, Mexican mills tend to prioritize exporting their sugar to the U.S. under the auspices of the suspension agreements terms. In the same principle, Mexican mills also tend to export to the U.S. over other countries because they receive higher prices.

The changes in the 2022/23 Mexican exports and deliveries to *IMMEX* result in a net increase to total use from last month of 8,100 MT to 5.928 million. With no other balance sheet changes, a 2.5-months' worth of ending stocks—a target used by Mexican officials in their sugar program management—is projected at 971,000 MT million, down 8,100 from last month's 979,000.

Figure 13
Mexican domestic IMMEX deliveries, 2008/09–2022/23



IMMEX = Industria Manufacturera, Maquiladora y de Servicios de Exportación; proj. = projected.
 Note: The numbers inside the bars represent the percent share of cumulative deliveries out of the total.
 Source: Mexico's National Committee for the Sustainable Development of Sugarcane (CONADESUCA).

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