



# Sugar and Sweeteners Outlook: November 2022

## In this report:

[U.S. Sugar Outlook](#)  
[Mexico Sugar Outlook](#)

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## U.S. Sugar Supply Reduced in 2022/23; Total Mexican Exports Reduced on Larger Mexican Consumption

In the November 2022 *World Agricultural Supply and Demand Estimates (WASDE)* report, the 2022/23 U.S. total sugar supply is reduced from last month as lower sugar production and imports offset the higher beginning stocks. Deliveries for human consumption are reduced by 25,000 short tons, raw value (STRV) to 12.500 million in light of the reduction in 2021/22 deliveries. The 2022/23 ending stocks are lowered by 171,000 STRV to 1.701 million, resulting in a stocks-to-use ratio of 13.5 percent, down from last month's 14.8 percent.

The 2021/22 U.S. and Mexican supply and use balance sheets are finalized based on complete fiscal year data. Final sugar production and imports raised the 2021/22 total supply from last month. High-tier imports are finalized at a record high of 390,000 STRV. Deliveries for human consumption are adjusted downward by 80,000 STRV to 12.470 million on lower-than-expected September deliveries. Despite this decrease, the 2021/22 deliveries are a new record, overtaking the prior high of 12.250 million STRV in 2019/20 by 1.8 percent. The 2021/22 final ending stocks are increased to 1.814 million, implying a stocks-to-use ratio of 14.3 percent, 0.3 percentage points higher than last month.

Total Mexican exports in 2021/22 and 2022/23 are both reduced on account of increased sugar consumption in Mexico. The U.S. Department of Commerce (DOC) will calculate the Mexican export quota after the publication of the December *WASDE* based on a 13.5 percent stocks-to-use ratio.

# U.S. Outlook Summary

## Balance Sheet for 2021/22 Finalized; Lower Outlook for 2022/23 U.S. Sugar Supply

In the November 2022 *WASDE*, the 2021/22 U.S. supply and use balance sheet was revised based on complete fiscal year data from the USDA, Farm Service Agency (FSA) *Sweetener Market Data* (SMD) report; the USDA, Foreign Agricultural Service (FAS) *Sugar Monthly Import and Re-Export Data*; and the Department of Commerce, Bureau of the Census (Census) (table 1). Beet sugar production is increased from last month by 78,000 STRV to 5.155 million as higher-than-expected production in August and September is accounted for in fiscal year 2021/22. Louisiana cane sugar production is decreased by 59,000 STRV to 1.923 million on lower-than-expected September production. Slight adjustments are made to finalize total imports at 3.646 million STRV, of which 1.379 million were imported from Mexico under the suspension agreements. High-tier imports are finalized at a record high of 390,000 STRV. Deliveries for human consumption are reduced by 80,000 STRV to 12.470 million on lower-than-expected September deliveries. Despite this decrease, the 2021/22 deliveries are a new record, overtaking the prior high of 12.250 million STRV in 2019/20 by 1.8 percent and represents a 2.5 percent increase from last year—the largest over-the-year percent change since 2012/13. The 2021/22 ending stocks are increased by 41,000 STRV to 1.814 million, implying a stocks-to-use ratio of 14.3 percent, about a 0.3 percentage point higher than last month.

The 2022/23 U.S. total sugar supply is lowered from last month by 196,000 STRV to 14.341 million STRV as lower sugar production and imports offset the higher beginning stocks. The 43,000-STRV increase in sugar production—based on the USDA, National Agricultural Statistics Service (NASS) updated forecasts for Louisiana and Florida—compensates the 111,000-STRV reduction in beet sugar production. Total imports in 2022/23 are down 169,000 STRV to 3.441 million due to a 194,000-STRV decline in imports from Mexico that is partially countered by a 25,000-STRV increase in high-tier imports on entry of raw sugar imports by a refiner in early November. Deliveries for human consumption in 2022/23 are reduced 25,000 STRV to 12.500 million in light of the reduction in 2021/22 deliveries. Ending stocks are lowered by 171,000 STRV to 1.701 million, resulting in a stocks-to-use ratio of 13.5 percent, down from last month's 14.8 percent. The U.S. Department of Commerce will calculate the Mexican export quota based on a 13.5 percent stocks-to-use ratio after the publication of the December *WASDE*.

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

Items	2020/21		2021/22		2022/23		
		October (estimate)	November (estimate)	Monthly change	October (forecast)	November (forecast)	Monthly change
	1,000 short tons raw value						
Beginning stocks	1,618	1,705	1,705	0	1,773	1,814	41
Total production	9,233	9,117	9,135	18	9,154	9,086	-68
Beet sugar	5,092	5,078	5,155	78	5,106	4,994	-111
Cane sugar	4,141	4,039	3,979	-59	4,048	4,091	43
Florida	2,090	1,933	1,933	0	1,968	1,989	21
Louisiana	1,918	1,982	1,923	-59	1,984	2,006	23
Texas	134	124	124	-1	96	96	0
Total imports	3,221	3,644	3,646	2	3,610	3,441	-169
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	1,767	1,769	2	1,669	1,500	-169
Mexico	968	1,379	1,379	0	1,619	1,425	-194
High-duty	212	388	390	2	50	75	25
Total supply	14,072	14,465	14,485	20	14,537	14,341	-196
Total exports	49	35	29	-6	35	35	0
Miscellaneous	40	0	65	65	0	0	0
Total deliveries	12,277	12,657	12,578	-79	12,630	12,605	-25
Domestic food and beverage use	12,161	12,550	12,470	-80	12,525	12,500	-25
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	12,692	12,671	-21	12,665	12,640	-25
Ending stocks	1,705	1,773	1,814	41	1,872	1,701	-171
Private	1,705	1,773	1,814	41	1,872	1,701	-171
Commodity Credit Corporation	0	0	0	0	0	0	0
Stocks-to-use ratio (percent)	13.8	14.0	14.3	0.3	14.8	13.5	-1.3

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

## Beet Sugar Production Lowered in 2022/23

The 2022/23 crop year beet sugar production was reduced this month by 14,000 STRV to 4.858 million as the NASS higher yield forecast is offset by beet processors' expectation of larger beet pile shrink (table 2). In its November 9 *Crop Production* report, NASS increased the national yield forecast from last month's 28.8 tons per acre to 29.1. Yields were raised in all States except in Colorado and Nebraska which saw a 1.6- and 0.8-ton-per-acre decline, respectively (table 3). NASS did not update its estimate of beet area planted and harvested; the next update will be released in the final production report in January 2023.

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

	2020/21	2021/22	2021/22	Monthly	2022/23	2022/23	Monthly
		October	November	change	October	November	change
Sugarbeet production (1,000 short tons) 1/	33,610	36,751	36,751	0	33,069	33,462	393
Sugarbeet shrink (percent)	6.60	7.9	7.9	0.0	6.7	8.1	1.4
Sugarbeet sliced (1,000 short tons)	31,392	33,850	33,850	0	30,852	30,757	-96
Sugar extraction rate from slice (percent)	15.34	14.587	14.634	0	14.6	14.6	0
Sugar from beets sliced (1,000 STRV) 2/	4,817	4,938	4,954	16	4,512	4,498	-14
Sugar from molasses (1,000 STRV) 2/	362	341	341	0	360	360	0
Crop year sugar production (1,000 STRV) 2/	5,181	5,278	5,294	16	4,872	4,858	-14
Aug.–Sep. sugar production (1,000 STRV)	765	676	676	0	475	537	62
Aug.–Sep. sugar production of subsequent crop (1,000 STRV)	676	475	537	62	678	643	-36
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	5,078	5,155	78	5,106	4,994	-111

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.

**Table 3: Sugarbeet yields, 2018/19–2022/23**

State	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23 est.		Monthly change	Annual change
	Tons per acre						October		
Minnesota	30.6	25.7	25.0	26.1	31.0	25.3	25.7	0.4	-17
North Dakota	30.4	28.8	26.0	24.9	29.2	25.7	26.1	0.4	-11
Idaho	39.2	40.5	39.0	40.5	39.5	39.0	39.0	0.0	-1
Michigan	25.2	29.1	28.6	28.3	37.4	29.9	30.5	0.6	-18
Nebraska	31.8	31.9	25.4	31.0	31.9	25.8	25.0	-0.8	-22
Montana	32.7	31.1	31.6	31.3	29.8	29.5	31.0	1.5	4
Wyoming	28.2	30.8	28.3	29.6	29.5	27.9	29.6	1.7	0
Colorado	35.7	32.6	30.7	31.3	33.7	27.9	26.3	-1.6	-22
California	43.7	48.8	45.4	46.6	46.0	46.7	46.7	0.0	1
Oregon	36.7	39.4	38.5	40.9	37.9	37.9	38.0	0.1	0
Washington	48.3	48.3	45.5	47.9	45.8	45.5	45.5	0.0	-1
U.S. total	31.7	30.4	29.2	29.4	33.2	28.8	29.1	0.3	-12

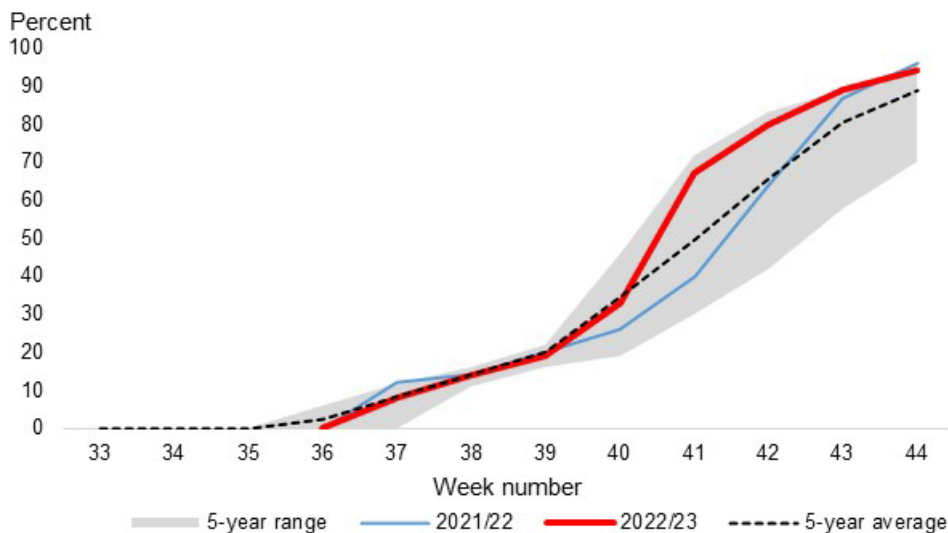
est. = estimated.

Source: USDA, National Agricultural Statistics Service.

If realized, the national yield of 29.1 ton per acre would be down 12.2 percent from last year's record (33.2 tons per acre). It would also be the lowest since 2017/18, just below the weather-reduced 2019/20's 29.2 tons per acre, reflecting a string of unfavorable events across beet growing areas. These include the rain-delayed spring planting primarily in the Red River Valley that then delayed the harvest start date to allow the beets more time to mature. During May and June, there were freeze and hail events in Colorado and Nebraska that damaged young crop in existing and replanted acres. These were cited as major contributing factors to Western Sugar Cooperative's November 9 force majeure announcement that it would be unable to fulfill existing contracts. In addition, the warm weather in Michigan halted harvest operations because it is not ideal for outside beet piles. While harvest was completed in Minnesota and North Dakota, and

92 percent done in Idaho as of November 6 (week 44 of the harvest campaign), Michigan lags at 71 percent. As such, the aggregate harvest pace in the four largest producing States is 94 percent, which is above the 5-year average (89 percent) but below that of the prior two years (figure 1).

Figure 1  
**Sugarbeet weekly harvest progress in the four 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.

The over-the-month yield increase from 28.8 tons per acre to 29.1 raised the expected sugarbeet production by 393,000 short tons to 33.462 million. However, this was offset by the processors' lower projection of sugarbeets available for slicing due to increased expectation of beet pile shrink reported in the *SMD*. Given that extraction rate (14.6 percent) and sugar production from molasses (4.858 million STRV) were unchanged, the 2022/23 crop year production amounted to 4.858 million STRV. While this would be a slight decrease from last month's 4.872 million STRV (0.3 percent), it would reflect a 436,000-STRV reduction (8.2 percent) from 2021/22's 5.294 million.

On fiscal year terms, the 2022/23 beet sugar production is reduced from last month by 111,000 STRV (2.2 percent) to 4,994 million. This is 161,000-STRV lower (3.1 percent) than last fiscal year's 5.155 million STRV, which was adjusted upward by 78,000 STRV from last month with the availability of full fiscal year data in *SMD*. The fiscal year conversion is done by subtracting the early sugar production that occurred in August–September 2022 (537,000 STRV) from the

crop year 2021/22 (4.872 million), then by adding both the estimate for early sugar production in August–September 2023 (643,000) and sugar produced from imported beets (30,000) (table 2).

With the availability of the complete 2021/22 fiscal year survey data in the *SMD* report, early sugar production in 2022 is finalized at 537,000 STRV. While this represents a 62,000-STRV increase from last month’s estimate, it would be the lowest since 2014/15 (table 4). The early season share of August and September 2022 to the projected crop year sugar production of 4.858 million STRV—11 percent—would also be the lowest since 2014/15. The forecast for the August–September 2023 of 643,000 STRV is equal to the 5-year average, which with the inclusion of the August–September 2022 is reduced 36,000 STRV from last month.

**Table 4. Early season beet sugar production, 2013/14–2022/23**

	August	September	Early season total	August share	September share	Crop year (August to July)	Early season share in crop year
	Short tons, raw value (STRV)			Percent		STRV	Percent
2013/14	45,583	269,811	315,394	14	86	4,648,342	7
2014/15	62,024	399,291	461,315	13	87	4,666,547	10
2015/16	175,392	512,684	688,076	25	75	5,200,773	13
2016/17	147,579	458,837	606,416	24	76	4,994,713	12
2017/18	172,783	541,872	714,655	24	76	5,338,224	13
2018/19	144,269	510,996	655,265	22	78	5,012,018	13
2019/20	144,068	437,992	582,060	25	75	4,168,665	14
2020/21	190,998	573,647	764,645	25	75	5,180,707	15
2021/22 est.	113,744	561,938	675,682	17	83	5,294,318	13
2022/23 proj.	105,134	431,619	536,753	20	80	4,858,351	11
5-yr avg. (2018/19–2022/23)	139,643	503,238	642,881	22	78	4,902,812	13

est. = estimated; proj. = projected; avg. = average.

Source: USDA, Farm Service Agency.

## Cane Sugar Production Raised in 2022/23; Record-high Expected in Louisiana

U.S. 2022/23 fiscal year cane sugar production is raised 43,000 STRV (1.1 percent) from last month to 4.091 million on increased expectation in Louisiana and Florida (table 5). This would represent a 2.8-percent increase from 2021/22 and would tie 2018/19 as the second highest behind 2020/21’s record high of 4.141 million STRV.

Louisiana sugar production in fiscal year 2022/23 is increased by 23,000 STRV from last month to 2.006 million STRV on updated area harvested in the *NASS Crop Production* report and availability of actual data September 2022 sugar production in the *SMD*. If realized, this would be a new record, surpassing the fiscal year 2018/19’s 1.938 million STRV, and would be the first time that sugar produced in Louisiana would be larger than Florida (figure 2). *NASS*

increased Louisiana's total area harvested for sugar and seed from 492,000 acres last month to 495,000, on par with 2021/22's record high 495,300 acres. Louisiana has experienced an almost continuous acreage expansion since 2015/16 for several reasons (figure 2). These include the development of cold-tolerant varieties that permits cultivation in parishes farther north, stability of sugar prices relative to other crops, improved risk management offerings of crop and hurricane insurance plans, and the establishment of custom harvest groups that reduce high entry costs (e.g., investment in cane-specific harvest machinery) for potential growers.

**Table 5: U.S. sugarcane and cane sugar production, by State, 2017/18–2022/23**

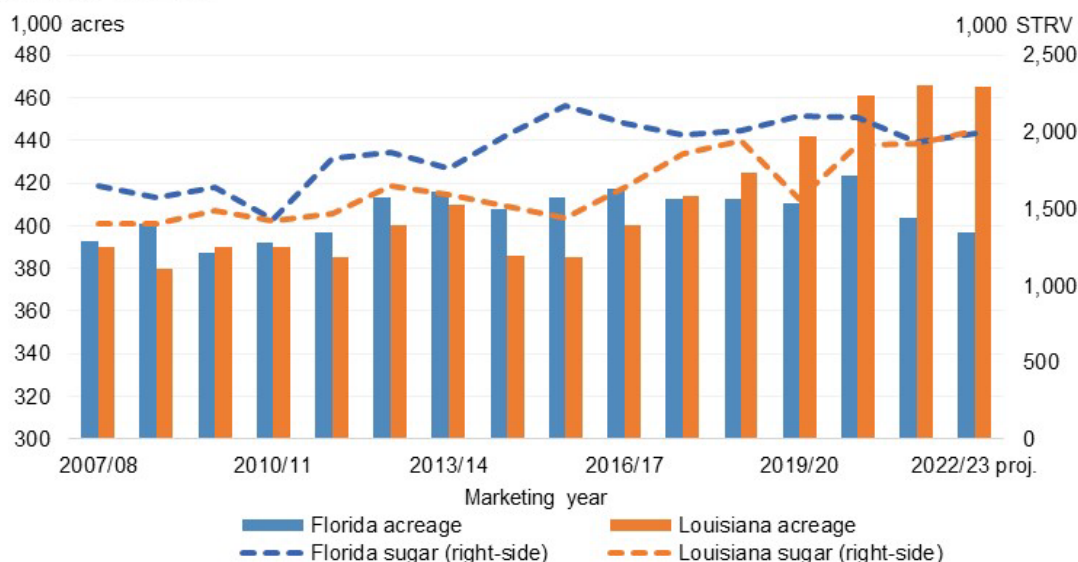
	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23 Oct.	2022/23 Nov.
<b>Florida</b>							
Sugarcane harvested for sugar and seed (1,000 acres)	412.7	412.3	410.7	423.3	403.5	396.5	396.5
Sugarcane harvested for sugar (1,000 acres)	397.0	397.0	397.0	409.0	388.0	382.2	382.2
Sugarcane yield (short tons per acre)	40.9	41.7	42.8	44.3	42.4	43.8	44.0
Sugarcane production (1,000 short tons)	16,237	16,555	16,992	18,119	16,451	16,739	16,815
Recovery rate (percent)	12.21	12.11	12.39	11.53	11.75	11.76	11.83
Sugar production (1,000 STRV)	1,983	2,005	2,106	2,090	1,933	1,968	1,989
<b>Louisiana</b>							
Sugarcane harvested for sugar and seed (1,000 acres)	449.6	448.5	469.0	488.4	495.3	492.0	495.0
Sugarcane harvested for sugar (1,000 acres)	414.0	425.0	442.0	461.0	466.0	462.0	464.9
Sugarcane yield (short tons per acre)	32.5	35.3	27.7	32.9	29.0	32.5	32.4
Sugarcane production (1,000 short tons)	13,455	15,003	12,243	15,167	13,514	15,017	15,062
Recovery rate (percent)	13.84	12.71	12.73	13.03	13.92	13.35	13.35
Crop year sugar production (1,000 STRV) 1/	1,862	1,907	1,558	1,976	1,881	2,005	2,011
Sep. sugar production (1,000 STRV)	35	32	63	70	12	76	54
Sep. sugar production of subsequent crop (1,000 STRV)	32	63	70	12	54	55	50
Fiscal year sugar production (1,000 STRV) 1/	1,859	1,938	1,566	1,918	1,923	1,984	2,006
<b>Texas</b>							
Sugarcane harvested for sugar and seed (1,000 acres)	41.8	38.9	33.5	35.9	36.4	32.0	32.0
Sugarcane harvested for sugar (1,000 acres)	40.5	37.6	31.3	33.4	34.3	30.4	30.4
Sugarcane yield (short tons per acre)	36.8	36.6	33.6	31.5	30.8	25.0	25.0
Sugarcane production (1,000 short tons)	1,490	1,376	1,052	1,052	1,056	760	760
Recovery rate (percent)	10.1	11.3	10.7	12.0	11.78	12.6	12.6
Sugar production (1,000 STRV)	169	147	126	134	124	96	96
<b>United States</b>							
Sugarcane harvested for sugar and seed (1,000 acres)	904.1	899.7	913.2	947.6	935.2	920.5	923.5
Sugarcane harvested for sugar (1,000 acres)	851.5	859.6	870.3	903.4	888.3	874.6	877.4
Sugarcane yield (short tons per acre)	36.6	38.3	34.8	38.0	34.9	37.2	37.2
Sugarcane production (1,000 short tons)	31,182	32,934	30,287	34,338	31,021	32,516	32,637
Recovery rate (percent)	12.9	12.3	12.5	12.2	12.69	12.5	12.6
Crop year sugar production (1,000 STRV)	4,014	4,060	3,790	4,199	3,938	4,069	4,096
Fiscal year sugar production (1,000 STRV)	4,011	4,091	3,798	4,141	3,980	4,048	4,091

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.

Figure 2  
**Florida and Louisiana harvested area for sugar and sugar production, fiscal year  
 2007/08–2022/23**



STRV = short tons, raw value; proj. = projected.  
 Source: USDA, National Agricultural Statistics Service.

The expectation of a relatively strong tonnage and sugar recovery is partly attributed to dry weather and sunny days post-Hurricane Ida throughout last year’s harvest until spring, and the absence of tropical storms or hurricanes to date. While NASS reduced the expected Louisiana sugarcane yield from last month’s 32.5 tons per acre to 32.4, it is above the 5-year average of 31.5. The larger projection for harvested acreage offset the yield decline, thereby raising sugarcane produced by 45,100 short tons to 15.062 million. Given that the projection for recovery rate is unchanged at 13.35 percent, which is above the 5-year average (13.24), the 2022/23 crop year sugar production is increased by 6,000 STRV to 2.011 million STRV. As such, the bulk of the 23,000-STRV over-the-month increase to 2.006 million for the 2022/23 fiscal year sugar production is mostly driven by downward adjustments to early season production, namely reductions in September 2022 (from 76,000 STRV to 54,000) and September 2023 (from 55,000 to 50,000) numbers. As with the fiscal year conversion for beet sugar production, the former is subtracted from the 2022/23 crop year estimate of 2.011 million STRV since this amount is accounted for in the 2021/22 fiscal year, then the latter is added.

Florida cane sugar production in fiscal year 2022/23 is raised 21,000 STRV last month to 1.989 million based on a higher sugarcane yield projection by NASS, which was echoed by cane processor reporting to *SMD*. NASS raised the sugarcane yield from 43.8 net tons per acre to 44, 3.8 percent higher than last year and just behind the record 44.3 seen in 2020/21 (table 5,



figure 2). Unlike Louisiana, two hurricanes have already made landfall in Florida—Ian on September 28 and Nicole on November 10. The storms mostly missed the cane fields, which are mainly along and below the southern half of Lake Okeechobee in Southern Florida and did not result in significant damage to any of the four mills and two refineries. However, the heavy rains halted harvest operations for a short while.

Texas 2022/23 cane sugar production is unchanged 96,000 STRV. This would be the State's lowest level since 2000/01 and the first time sugar production has fallen below 100,000 STRV since 1997/98, primarily on reduced projection of acreage and yield (table 4).

## Imports Lowered in 2022/23 Mostly on Mexico's Account

Total imports in 2022/23 are adjusted downward from last month by 169,000 STRV to 3.441 million, mainly on a 194,000-STRV reduction of imports from Mexico, which offsets a 25,000-STRV increase in high-tier tariff imports to 75,000 STRV (figure 3). High-tier tariff imports in 2022/23 is raised from 50,000 STRV to 75,000 based on raw sugar imported by a refiner that paid the high duty in early November. There are no changes to the rest of the import categories.

The projection of Mexico's 2022/23 available supply of sugar for exports to the U.S. is lowered from last month's 1.619 million STRV to 1.425 million on a higher forecast of Mexican domestic consumption. Despite the reduction to 1.425 million STRV, if realized, this would be the largest volume since 2014/15, the year suspension agreements were put in place. Next month, the U.S. Department of Commerce (DOC) will calculate the Mexican export quota using the December *WASDE* based on the terms of the suspension agreements' 13.5-percent stocks-to-use target.

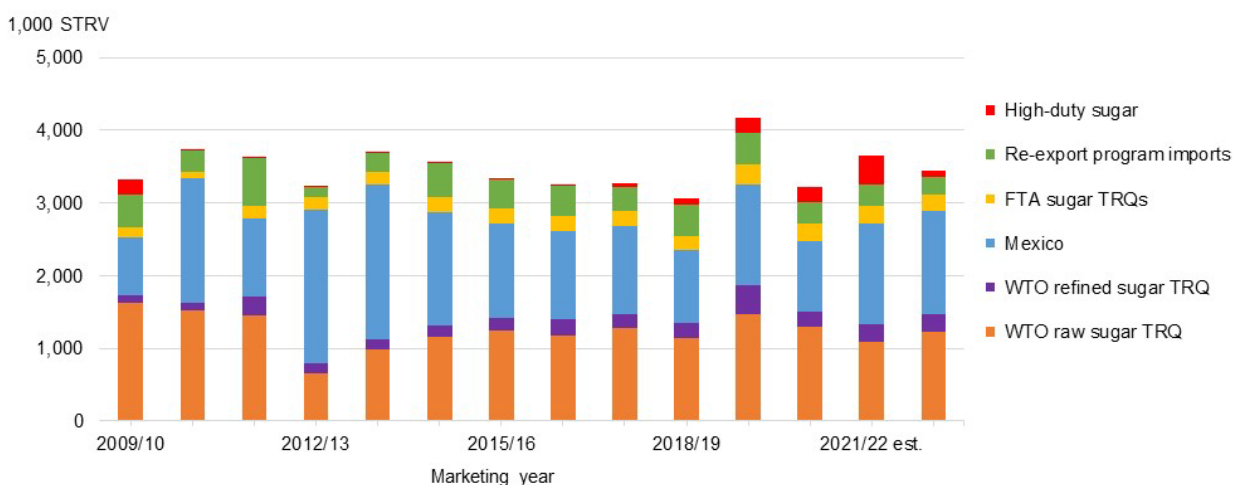
With the complete fiscal year trade data from the Census, the FAS *Sugar Monthly Import and Re-Export Data* report revised the 2021/22 by 2,000 STRV to 3.646 million. Imported sugar from Mexico and those paying high duty are both finalized. Based on the Census trade data, final imports from Mexico are slightly adjusted by 204 STRV to 1.379 million<sup>1</sup>, overtaking 2019/20 (1.377 million). Note that the Census data is not the official record for the purposes

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<sup>1</sup> The final 2021/22 Mexican export quota to the U.S. that was calculated by the Department of Commerce on July 1 was 1,342,400 STRV, 36,504-STRV lower than the 1,378,904 total U.S. imports from Mexico based on the Census trade data. The unit conversion from the Mexican metric tons, *tel quel* (or actual weight) to metric tons, raw value terms may be contributory since a fixed factor of 1.06 is used, which does not account for polarity adjustments.

of the agreements because they apply to U.S. imports, not Mexican exports, and the DOC-recognized official Mexican exports data are not publicly available. The high volume can be attributed to this year's relatively high projection of U.S. sugar use and 3 USDA requests to increase the Mexican import quota for raw sugar—amounting to 455,000 STRV, the largest since the inception of the suspension agreements in 2014/15 (table 6).

Figure 3  
U.S. sugar imports by type, 2007/08–2022/23



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

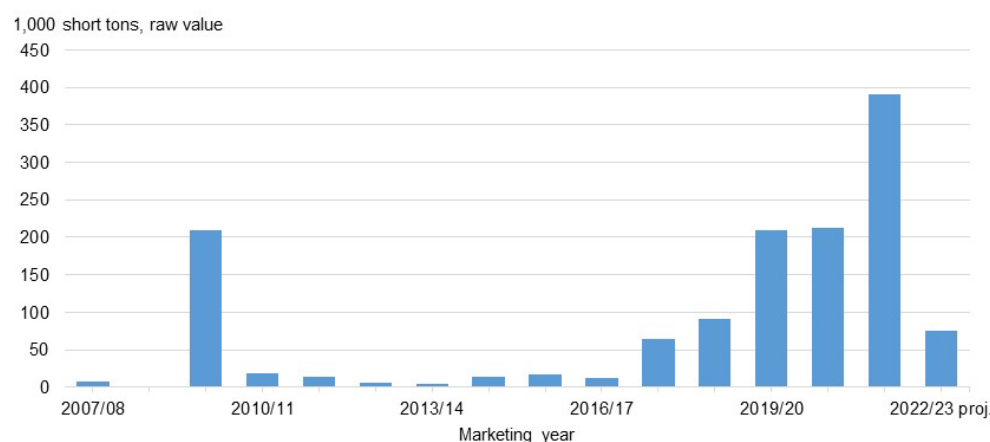
Table 6. USDA requests for additional Mexican imports, 2015/16–2021/22

Fiscal year	Date	Amount (STRV)	Sugar polarity
2015/16	05/18/2016	60,000	<99.2
2016/17	07/21/2017	28,932	<99.2
	Total	75,000	<99.5
2018/19	06/27/2019	100,000	<99.5
2019/20	11/25/2019	100,000	≥99.2
	03/09/2020	200,000	≥99.2
	Total	300,000	
2020/21	04/30/2021	50,000	<99.2
	08/26/2021	17,527	<99.5
	Total	67,527	
2021/22	11/23/2021	150,000	<99.2
	04/28/2022	170,000	<99.2
	07/01/2022	135,000	<99.5
	Total	455,000	

Note: STRV = short tons, raw value.  
Source: U.S. Dept. of Commerce, ACCESS.

FAS slightly raised the 2021/22 estimate of high-tier sugar imports by 1,796 STRV to 390,000, surpassing 2020/21's previous record high of 212,000 by 178,000 (84 percent) (figure 4). This implies that importers paid about \$114 million of high-tier duty in 2021/22. High-tier sugar imports are not subject to any U.S. quota import restrictions and can be brought into the country as long as the out-of-quota tariff is paid (15.36 cents per pound for raw sugar and 16.21 cents per pound for refined sugar). Traditionally, high-tier imports are composed of high-value, refined sugar that is difficult to source domestically. But based on Census trade data<sup>2</sup>, 250,279 STRV or 64 percent of the total 2021/22 high-tier imports are raw cane sugar<sup>3</sup>, followed by 108,673 STRV of refined sugar (28 percent) and 31,067 STRV of specialty sugar including organic sugar (8 percent) (table 7).

Figure 4  
U.S. imports of high-tier tariff sugar, 2007/08 to 2022/23



proj. = projected.  
Sources: USDA, Foreign Agricultural Service; U.S. Department of Commerce, Bureau of the Census.

Relatively large quantities of high-duty raw sugar, ranging between 39,000 to 78,000 STRV, arrived in 5 out of the 12 months (figure 5). Virtually all the raw sugar was brought into ports where import-dependent refiners are located: Savannah, Georgia (67 percent); Philadelphia, Pennsylvania (17 percent); and San Francisco, California (15 percent). Unlike the vertically integrated refiners, import-dependent refiners do not have dedicated domestic cane processors to reliably provide the raw throughput. The top 3 origins of the high-duty raw are sugar are Brazil (46 percent), Guatemala (20 percent), and Nicaragua (13 percent).

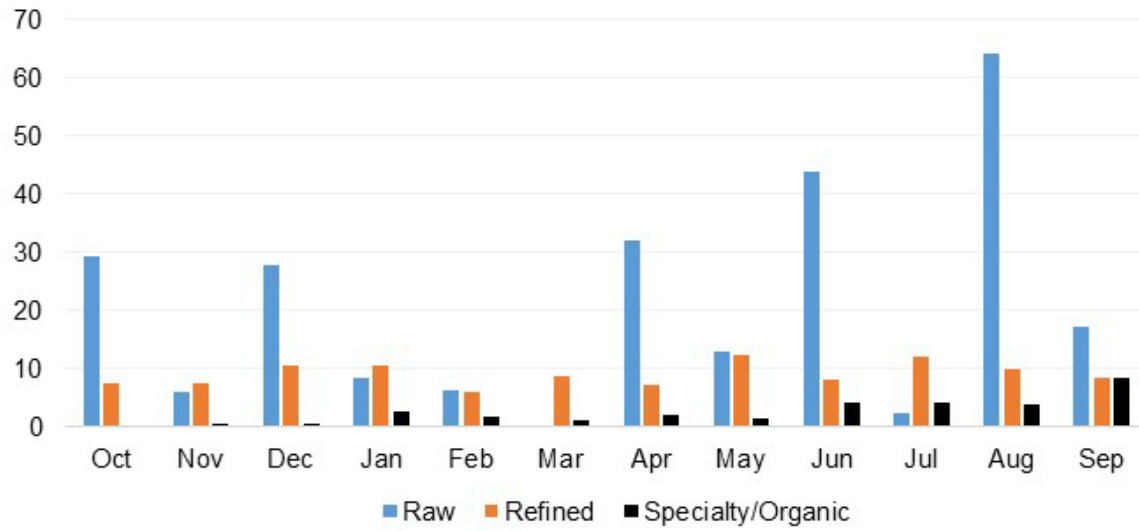
<sup>2</sup> The data can be downloaded from the U.S. International Trade Commission's *DataWeb*.

<sup>3</sup> The Harmonized Tariff Schedule (HTS) lines for high-tier sugar imports 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 sugar.

Figure 5

**High-tier sugar imports by type of sugar, Oct. 2021–Sep. 2022**

1,000 short tons, raw value



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

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

	Oct. 2021–Sep. 2022 Short tons, raw value	Share in total Percent
<b>Type</b>		
Raw	250,279	64
Refined	108,673	28
Specialty/Organic	31,067	8
<b>Total</b>	<b>390,019</b>	<b>100</b>
<b>U.S. port</b>		
Raw		
Savannah, GA	167,931	67
Philadelphia, PA	43,794	17
San Francisco, CA	37,149	15
Rest	1,404	1
<b>Total</b>	<b>250,279</b>	<b>100</b>
Refined		
Seattle, WA	37,902	35
Philadelphia, PA	16,833	15
Buffalo, NY	9,440	9
Rest	44,499	41
<b>Total</b>	<b>108,673</b>	<b>100</b>
Specialty/Organic		
New York, NY	10,764	35
Houston-Galveston, TX	9,853	32
Los Angeles, CA	3,875	12
Rest	6,575	21
<b>Total</b>	<b>31,067</b>	<b>100</b>
<b>Country of origin</b>		
Raw		
Brazil	115,898	46
Guatemala	49,501	20
Nicaragua	31,807	13
Rest	53,073	21
<b>Total</b>	<b>250,279</b>	<b>100</b>
Refined		
Brazil	33,049	30
Guatemala	27,059	25
El Salvador	17,751	16
Rest	30,813	28
<b>Total</b>	<b>108,673</b>	<b>100</b>
Specialty/Organic		
Brazil	19,416	62
China	3,040	10
Paraguay	2,818	9
Rest	5,793	19
<b>Total</b>	<b>31,067</b>	<b>100</b>

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's calculation using U.S. Department of Commerce, Bureau of the Census trade data downloaded from the U.S. International Trade Commission's *DataWeb*.

## Lower Final Deliveries in 2021/22; 2022/23 Also Revised Downward

Total sugar deliveries in 2021/22 are finalized at 12.578 million STRV, 79,000 lower than last month's 12.657 million. This decline is primarily driven by an 80,000-STRV reduction in deliveries for food and beverage use, which now stands at 12.470 million (table 8; figure 6) based on lower-than-expected deliveries in September, particularly for non-reporters (figure 7). Despite this decrease, the 2021/22 deliveries are a new record, overtaking the prior high of 12.250 million STRV in 2019/20 by 1.8 percent and represents a 2.5 percent increase from last year—the largest over-the-year percent change since 2012/13.

In light of the reduction to the 2021/22, the 2022/23 food and beverage use deliveries are correspondingly reduced by 25,000 STRV to 12.500 million, but still reflects a 0.2 percent increase from 2021/22. With the projection for other delivery categories unchanged at 107,000 STRV, the 2022/23 total sugar deliveries are also down 25,000 to 12.605 million from 2021/22.

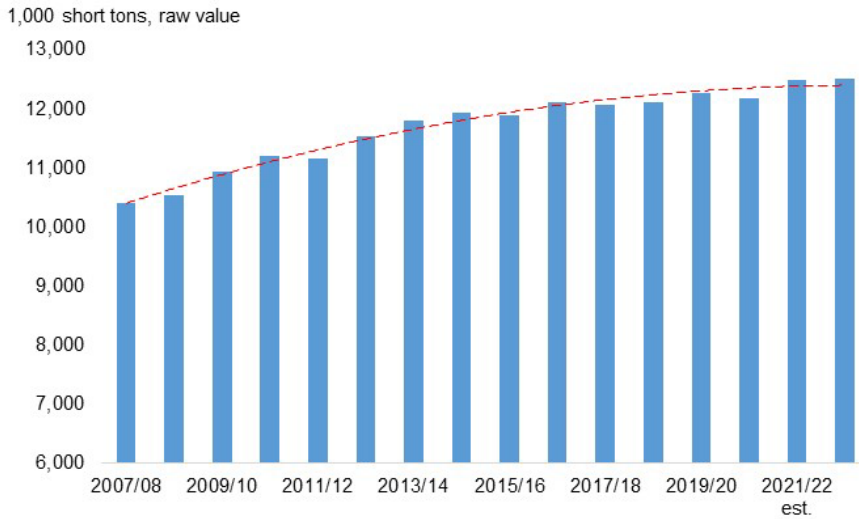
**Table 8: Food and beverage deliveries, October–September, 2016/17–2021/22**

	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22 est.	Annual change	
	1,000 short tons, raw value (STRV)						1,000 STRV	Percent
Beet sugar processors	5,348	5,271	5,044	4,422	4,966	5,326	361	7.3
Cane sugar refiners	6,044	6,113	6,302	6,615	6,265	6,349	84	1.3
Non-reporter (direct consumption)	710	664	760	1,213	930	795	-135	-14.5
<b>Total</b>	<b>12,102</b>	<b>12,048</b>	<b>12,106</b>	<b>12,250</b>	<b>12,161</b>	<b>12,470</b>	<b>309</b>	<b>2.5</b>

est. = estimated.

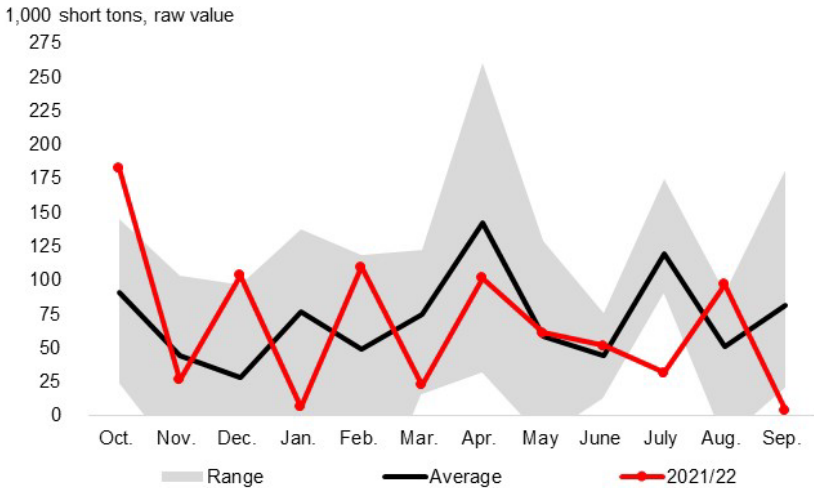
Source: USDA, Farm Service Agency.

Figure 6  
**U.S. sugar deliveries for food and beverage use, fiscal year,  
 2007/08 to 2022/23**



est. = estimated.  
 Source: USDA, Economic Research Service.

Figure 7  
**Non-reporter deliveries (direct consumption imports), monthly, 2016/17 to 2021/22**



Source: USDA, Farm Service Agency.

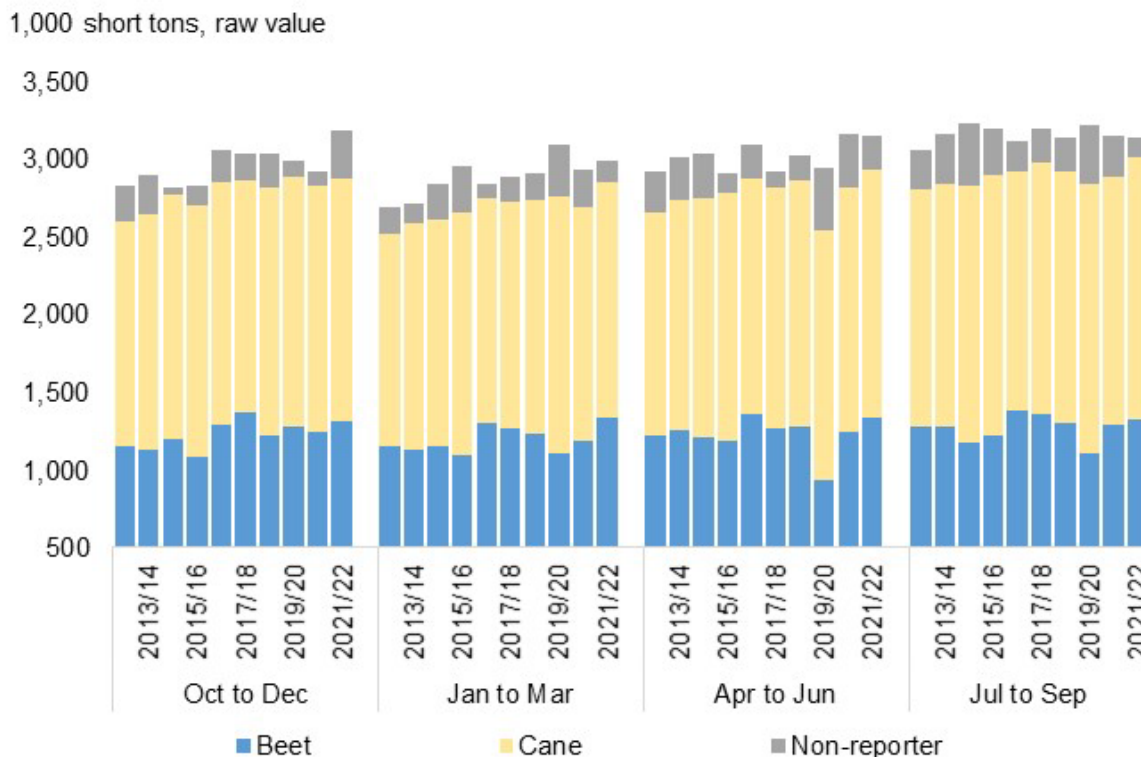
Large 2021/22 beet sugar deliveries, made possible by strong beet sugar production, were the primary driver of the record high 2021/22 deliveries. At 5.326 million STRV, beet sugar deliveries reflect the largest over-the-year increase (7.3 percent) among the 3 categories (table 8). It came just below the record high of 5.348 million STRV in 2016/17. The amounts of beet sugar delivered are also consistently strong throughout the fiscal year, surpassing the 5-year average (2016/17–2020/21) at each fiscal year quarter (figure 8).

Cane refiners' sugar deliveries in 2021/22 are 6.349 million STRV, an increase of 84,000 (1.3 percent) from the previous year and only second to the record-high 6.615 million in 2019/20 when cane refiners ratcheted up their deliveries to compensate for the weather-reduced beet sugar production. Together, beet processors and cane refiners delivered 11.675 million STRV in 2021/22, overtaking 2016/17's 11.392 million.

Non-reporter deliveries—representing refined sugar imports that are not refined or marketed by beet processors or cane refiners covered under the sugar program, totaled 795,000 STRV in 2021/22, 135,000 lower (14.5 percent) than last year. While below the levels set in the last 2 years, non-reporter deliveries remain relatively high when a longer period is considered. While they started out strong during the first fiscal year quarter—and contributed to that quarter's highest delivery—deliveries in the succeeding quarters were below the 5-year average (figure 8). One explanation, based on the recent years' patterns, is that strong deliveries by U.S. program participants crowd out non-reporter deliveries. Except in 2017/18, year-over-year change in deliveries by non-reporters in recent years is negatively correlated with that of the beet processors and cane refiners (figure 9). That is, when deliveries by beet processors and cane refiners increase from the previous year, non-reporter deliveries go down and vice-versa. Another likely contributing factor to the lower-than-expected non-reporter deliveries is that a company recently started reporting to the *SMD*, and thus its deliveries are now accounted under the reporting companies' ledger.

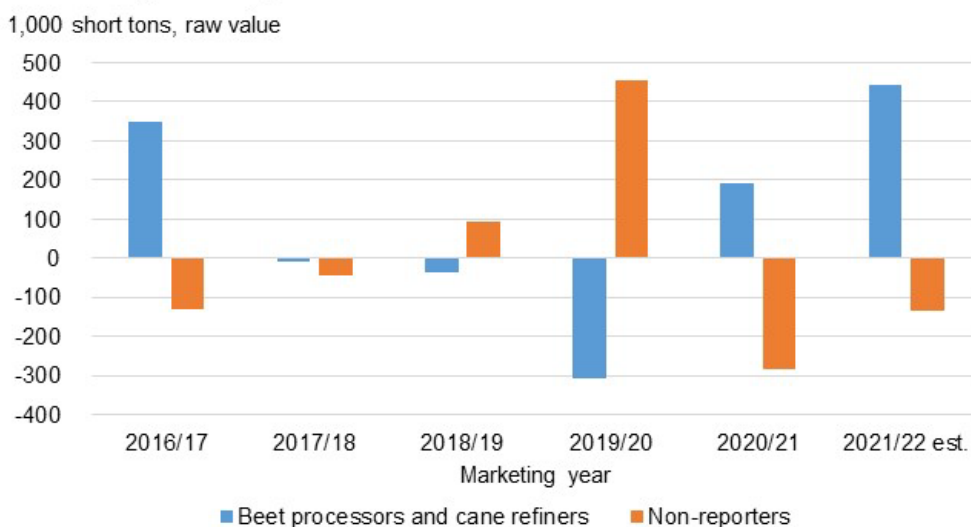


Figure 8  
**U.S. sugar deliveries for food and beverage use, quarterly, 2012/13–2021/22**



Source: USDA, Farm Service Agency.

Figure 9  
**Over-the-year change in deliveries, 2016/17 to 2021/22**



est. = estimated.

Source: USDA, Farm Service Agency.

In a fiscal year basis, the fourth quarter (Q4, July-September) has seasonally represented the largest portion of deliveries leading up to the holiday season. However, the 2022/23 Q4 deliveries of 3.141 million STRV only came in third, behind Q1's (October-December 2021) 3.189 million and Q3's (April-June 2022) 3.151 million (figure 8). This can be indicative of the tightness in refined beet sugar stocks towards the end of 2021/22 and a lower-than-expected early season beet sugar production. These factors may have made it challenging for processors, such as Michigan Sugar, to fulfill the orders for their force majeure-affected customers.

The October-to-December 2021 period is notable for the relatively strong deliveries particularly by cane refiners and non-reporter categories. For instance, the relatively high cane sugar deliveries particularly in October 2021 may have stemmed from the USDA's actions on August 2021 that brought in additional raw sugar throughput from tariff-rate quota (TRQ) holders and extended the entry through December 31. Non-reporter deliveries in October 2021 were also relatively high, surpassing the maximum amount for that month in the recent 5 years. As this variable is calculated using different data sources, this can partly be influenced by the timing of import arrivals. Nonetheless, deliveries in the first half of the fiscal year 2021/22 ended up being lower, following the pattern on recent years, primarily due to the relatively low deliveries between April-June 2021.

Following the pattern of recent years, deliveries in the second half of the fiscal year were lower relative to the typical seasonal patterns. While the July-to-September quarter was the largest of the year for deliveries, its performance was 1.9 percent lower than the previous year. As has been the trend since 2016/17, the most recent year had a more significant share of deliveries in the first half of the fiscal year compared with the prior decade.

## Ending Stocks Higher In 2021/22; Lower in 2022/23

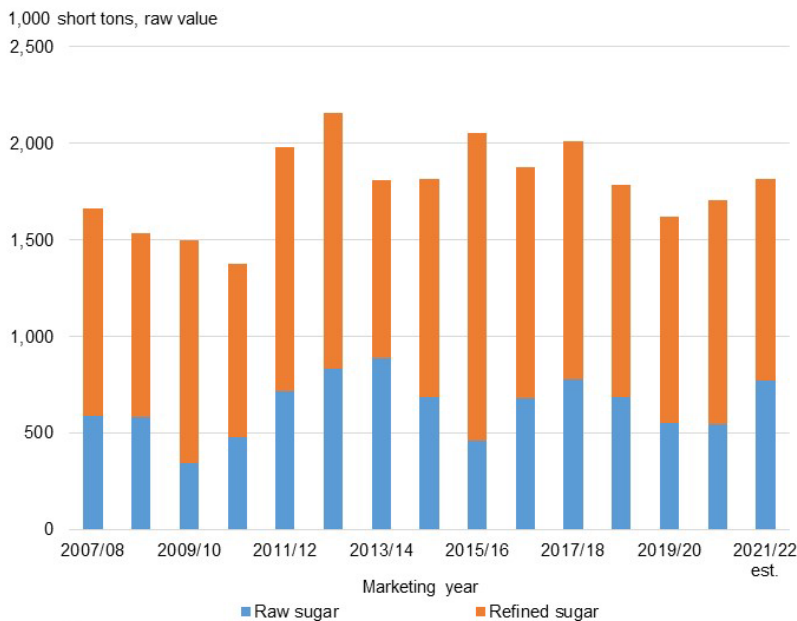
At the end of 2021/22, total U.S. ending stocks held by processors and refiners totaled 1.814 million STRV, a 6.4-percent increase from the previous year's 1.705 million (figure 10). Raw sugar stocks were 773,000 STRV, representing 43 percent of the total ending stock figures, and the largest since 2017/18.

Given their relatively strong deliveries, beet processors' stocks as of September 30 were 670,000 STRV, about 20 percent lower than the 10-year average (840,000) (figure 11). It would

be the lowest beet sugar inventory since 2013/14's 553,000 STRV. Conversely, raw sugar and refined sugar inventories held by cane sugar refiners were 733,000 STRV and 370,000, respectively (figure 11). The former represents a raw sugar inventory that is 19 percent larger than the 10-year average's 617,000 STRV. Several USDA actions to increase imports from TRQ-holding countries and Mexico likely provided adequate supplies of raw sugar stock throughput for refiners at the onset of the 2022/23 fiscal year particularly when there is limited availability of Mexican sugar.

For 2022/23, ending stocks are projected lower by 172,000 STRV to 1.260 million as a residual effect of larger beginning stocks that are mostly offset by smaller forecast of production, imports, and domestic deliveries. This translates to a coincidental projection of stocks-to-use ratio of 13.5 percent, which is lower than last month's forecast of 14.8 percent and below the 2021/22 final stocks-to-use ratio of 14.3 percent. The *WASDE* is scheduled to be published on December 9, 2022, after which 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.

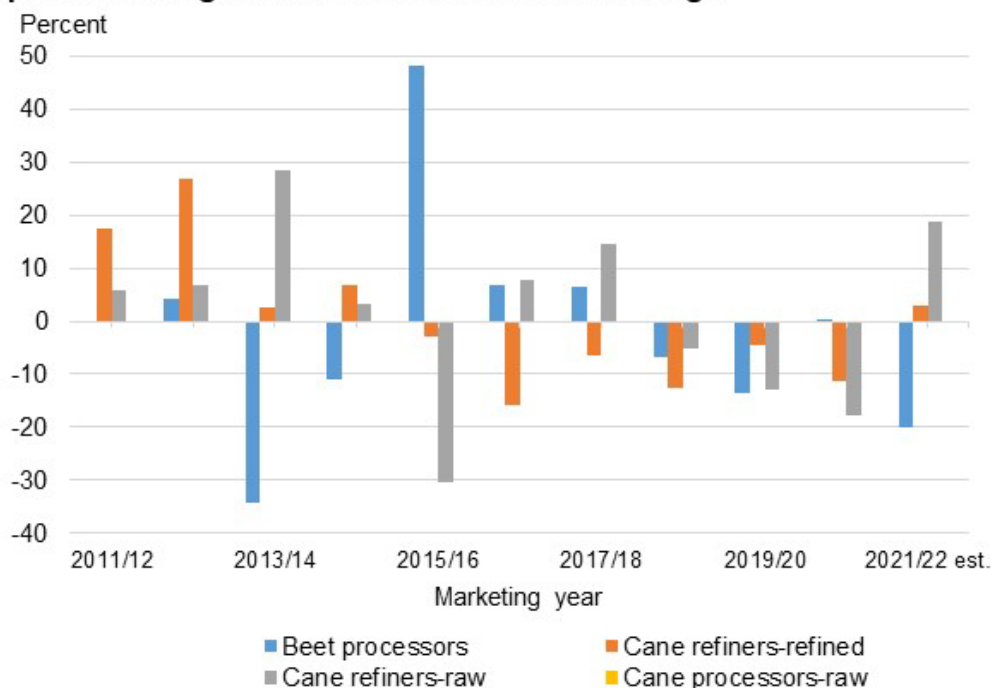
Figure 10  
September 30 sugar inventories, fiscal years 2007/08–2021/22



est. = estimated.  
Source: USDA, Farm Service Agency.

Figure 11

**Ending stocks, by processor type, as of September 30,  
percent change from the 2011/12-2020/21 average**



est. = estimated.

Source: USDA, Farm Service Agency.

## U.S. Prices Likely to Remain High

Using the weekly quotes for Midwest refined beet in the Sosland’s *Milling and Baking*, fiscal year 2021/22 prices averaged 48 cents per pound—11 cents higher than last year (23 percent). Prices have not been this high since the period between 2009/10-2011/12 (figure 12). In 2021/22, prices reached 70 cents per pound—the highest monthly price on record—during July-September 2022. This year is also the first time, since 1960, that the beet sugar price went unquoted for 12 weeks (May to third week of July) after processors retreated from making offers. At the start of the new fiscal year 2022/23, nominal beet prices were quoted, averaging 58 cents per pound in October 2022. However, this was short-lived as both Midwest and Michigan beet sugar were again unquoted on Sosland’s November 9 following the Western Sugar Cooperative’s force majeure notice citing weather-reduced production. The less-than-ideal warm weather for outside piles in Michigan has delayed the pace of harvest in the State relative to the other major-producing regions that have already finished, raising concerns that actual beet tonnage will be lower.

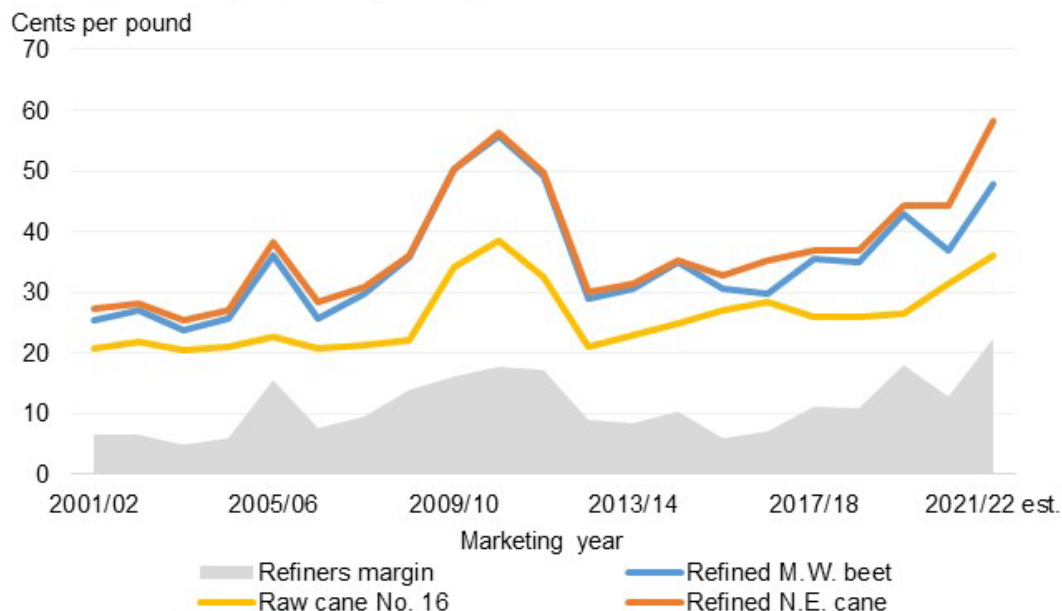
As in the previous two years, the tight beet sugar supplies will likely sustain the demand for

refined cane sugar. Given that prices of refined beet sugar and refined cane sugar have historically been in lockstep, it is likely that the latter will closely follow the former's price movement into 2022/23. Refined cane sugar prices, which are based on Sosland's weekly quotes for the Northeast region, averaged 56.1 cents per pound in 2021/22, overtaking the previous record of 56.1 cents per pound in 2010/11 (which at that time was supported by high world prices) and is currently quoted at a new high of 61 cents per pound for 2022/23.

The refined cane sugar price tends to have a strong, positive correlation to the price of raw cane throughput. Measured by the Intercontinental (ICE) No. 16 raw cane daily futures settlement, the average raw cane price in 2021/22 was 36.1 cents per pound—about 4.7 cents-per-pound higher (13 percent) than 2020/21 and second only to the 2010/11 record high of 38.5 cents—even after USDA took several actions to increase supplies. As of November 11, the average settlement price of the contract months through September 2023 is 36.2 cents, indicating that high raw cane prices are likely to continue into 2022/23, possibly influenced by market fundamentals (e.g., such as the ICE No. 11 world raw sugar price) and logistical considerations (e.g., high cost of moving the excess raw sugar from Louisiana's bumper crop to coastal refiners) that temper the impact of government policy intervention.

Figure 12

**Average U.S. sugar prices, fiscal year 2001/02 to 2021/22**



est. = estimated; M.W. = Midwest region; N.E. = Northeast region.

Source: USDA, Economic Research Service.

# Mexico Outlook

## Production in 2022/23 Unchanged

The November 2022 *WASDE* projection for Mexico's sugar production in 2022/23 is unchanged at 5.9 million metric tons (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 (table 10). The *WASDE* forecast is lesser mostly because it assumes a lower harvested area of 800,000 hectares, while CONADESUCA's projection is at 832,245—4.1 percent higher than 2021/22. Apart from acreage, CONADESUCA's 2022/23 projections for sugarcane yield, extraction rate, and factory yield are lower than last year's, which CONADESUCA finalized on October 19. Thus, the 6.025 million MT sugar production represents a 2.6-percent decline from last year's 6.185 million MT. As with *WASDE*, CONADESUCA's tempered expectation is likely reflecting the impact of lower rainfall in some growing areas during the critical growing season, higher prices for fertilizers and other inputs, and field labor shortages.

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

Items	2020/21		2021/22			2022/23	
	October (estimate)	November (estimate)	Monthly change	October (forecast)	November (forecast)	Monthly change	
1,000 metric tons, actual weight							
Beginning stocks	858	1,053	1,053	0	947	964	17
Production	5,715	6,185	6,185	0	5,900	5,900	0
Imports	65	50	31	-19	50	35	-15
Imports for consumption	32	15	7	-8	15	10	-5
Imports for sugar-containing product exports (IMMEX) 1/	33	35	24	-11	35	25	-10
Total supply	6,638	7,288	7,269	-19	6,897	6,899	2
Disappearance							
Human consumption	3,935	4,050	4,113	63	4,050	4,168	118
For sugar-containing product exports (IMMEX)	485	497	532	35	497	533	36
Other deliveries and end-of-year statistical adjustment			-16				
Total	4,420	4,547	4,629	82	4,547	4,701	154
Exports	1,165	1,794	1,676	-118	1,403	1,219	-184
Exports to the United States and Puerto Rico	828	1,180	1,180	0	1,385	1,219	-166
Exports to other countries	337	614	495	-118	18	0	-18
Total use	5,585	6,341	6,305	-36	5,950	5,920	-30
Ending stocks	1,053	947	964	17	947	979	32
Stocks-to-human consumption (percent)	26.8	23.4	23.4	0	23.4	23.5	0
Stocks-to-use (percent)	18.9	14.9	15.3	0	15.9	16.5	1
High-fructose corn syrup (HFCS) consumption (dry weight)	1,320	1,310	1,291	-19	1,317	1,291	-26

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

Sources: USDA, World Agricultural Outlook Board; USDA, Economic Research Service; Mexico's National Committee for the Sustainable Development of Sugarcane (CONADESUCA).

**Table 12: Mexican sugar production, 2020/21–2022/23**

	2021/21	2021/22 Final (10/19/2022)	2022/23 First estimate (11/11/2022)	Annual change Percent
Area harvested (ha)	789,996	799,774	832,245	4.1
Sugarcane processed (MT)	51,292,545	54,680,831	53,309,601	-2.5
Sugarcane yield (MT per ha)	64.93	68.37	64.1	-6.3
Extraction rate (percent)	11.14	11.31	11.3	-0.1
Total factory yield (MT per sugar ha)	7.23	7.73	7.2	-6.3
Sugar production (MT)	5,715,448	6,185,050	6,025,623	-2.6

ha = hectares; MT = metric tons.

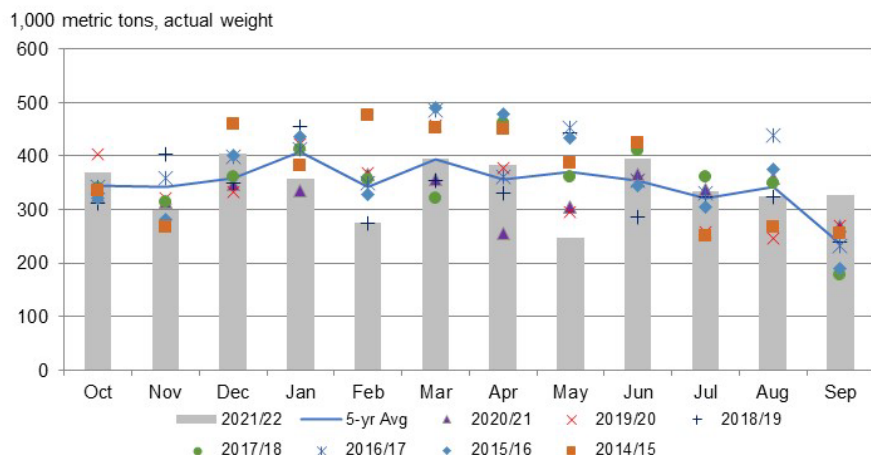
Sources: USDA, Economic Research Service calculations using data from Mexico's National Committee for the Sustainable Development of Sugarcane (CONADESUCA).

## Larger Domestic Consumption in 2021/22 and 2022/23

Stronger-than-expected September deliveries (figure 13) for domestic consumption increased the 2021/22 final number from last month by 63,000 MT to 4.113 million. Conversely, the 2021/22 deliveries of high-fructose corn syrup (HFCS) for most months were lower-than-expected (figure 14), and thus are reduced by 19,000 MT, dry basis to 1.291 million. The resulting per capita sweetener consumption is 41.09 kilograms (figure 15). Both values for the HFCS and per capita sweetener consumption are carried over to 2022/23 and are used in conjunction with a population projection of 132.849 million to arrive at a 2022/23 sugar for human consumption of 4.168 million MT, a 1.3 percent increase from the prior year.

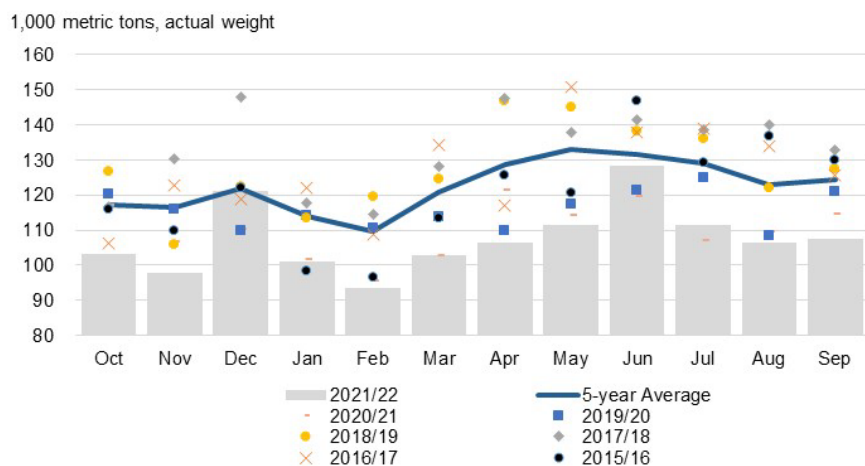
Relatively strong sugar deliveries in September of sugar for the *Industria Manufacturera, Maquiladora y de Servicios de Exportación* (IMMEX) program (figure 16) raised last month's 2021/22 number by 35,000 MT to 532,000 MT. The 2022/23 IMMEX forecast is correspondingly raised by 36,000 MT from last month to 533,000 to capture the increasing use of the Federal program that allows manufacturers of sugar-containing products to use imported and domestically produced sugar as inputs if the products are exported within 6 months.

Figure 13  
**Mexico sugar deliveries for consumption, monthly, 2014/15–2021/22**



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

Figure 14  
**Mexican HFCS consumption, monthly, 2015/16–2021/22**

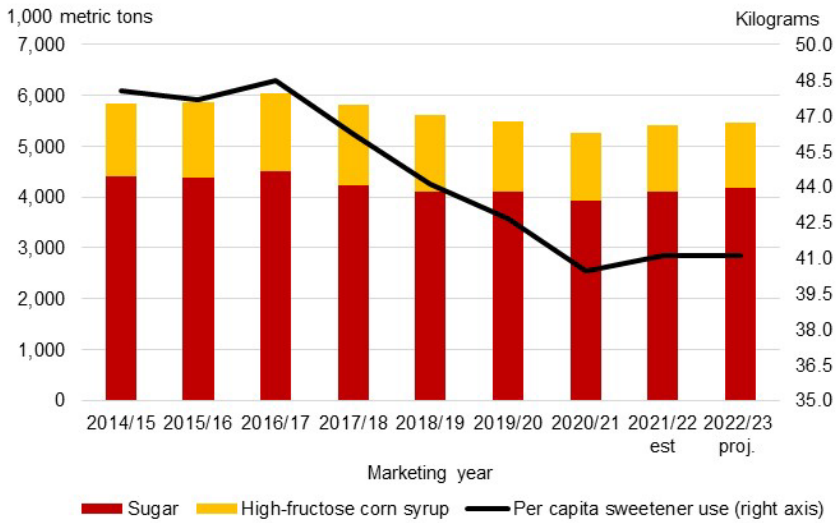


HFCS = high-fructose corn syrup.

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

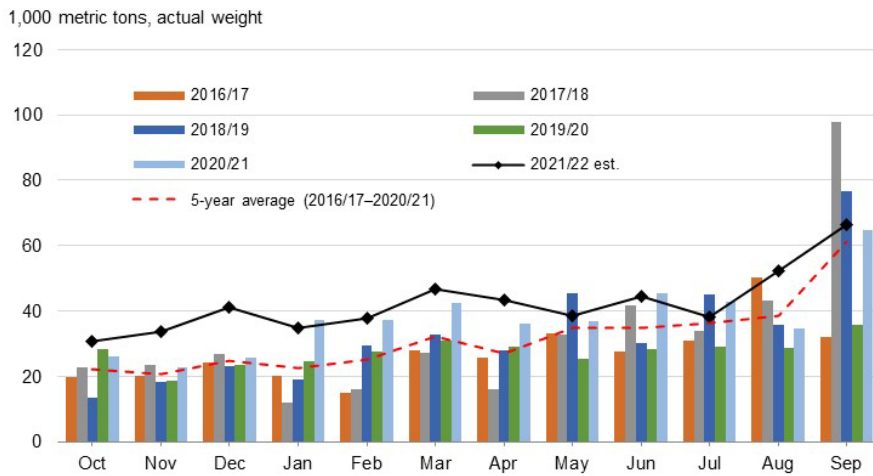


Figure 15  
**Mexican total and per capita sweetener consumption by year, 2014/15–2022/23**



Note: est. = estimated; proj = projected.  
 Source: USDA, World Agricultural Outlook Board.

Figure 16  
**Mexican domestic IMMEX deliveries, monthly, 2016/17–2021/22**



IMMEX = Industria Manufacturera, Maquiladora y de Servicios de Exportación.  
 Source: Mexico's National Committee for the Sustainable Development of Sugarcane (CONADESUCA).

## Mexican Exports Lowered in 2021/22 and 2022/23 on Stronger Domestic Demand and Target Ending Stocks

Total Mexican exports in 2021/22 are finalized at 1.675 million MT, a 118,000-MT reduction from last month. Exports to the United States are slightly adjusted by 175 MT to 1.180 million based on final U.S. Department of Commerce, Bureau of the Census import data. Based on

CONADESUCA, exports destined for other locations and purposes outside of the suspension agreements are lowered by 118,000 MT to 614,000.

For 2022/23, Mexican exports are residually projected at 1.219 million MT, a 183,616 reduction from last month. This projection is based on current forecast of Mexican production, domestic demand, and 2.5-months' worth of ending stocks of 1.701 million STRV. As such, Mexico's exports to the United States under the suspension agreements' license are maxed out at 1.219 million MT, leaving zero exportable supplies to other countries. Targeting a 13.5-percent U.S. stocks-to-use, the U.S. Department of Commerce will calculate the Mexican export quota next month.

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