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# Sugar and Sweeteners Outlook

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## USDA Projects U.S. and Mexican Sugar Supply and Use for Fiscal Year 2009

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The next release is  
September 2008  
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World Agricultural  
Outlook Board.

At the end of March 2008, the National Agricultural Statistics Service (NASS) projected sugar beet acreage intentions for the 2008 crop year at 1.132 million acres, about 10.9 percent lower than 2007 crop year area planted. Assuming normal sucrose levels and continued improvement in productivity, the U.S. Department of Agriculture (USDA) projects fiscal year (FY) 2009 national beet sugar production at 4.400 million short tons, raw value (STRV), about 410,000 STRV less than the projection for FY 2008 (4.810 million STRV).

The USDA projects FY 2009 cane sugar production at 3.715 million STRV, an increase of 134,000 STRV over FY 2008. Because area harvested is not forecast by NASS, current cane sugar projections assume the same area harvested for sugar as the previous year. Florida cane sugar production for FY 2009 is forecast at 1.865 million STRV. This forecast assumes a return to normal weather patterns. If dry conditions seen in the last two seasons persist, cane sugar production could be reduced by 130,000 STRV. The USDA projects Texas production at 200,000 STRV. However, like Florida, Texas has faced dry conditions this past year. If these conditions prevail this coming year, production can be expected to be 35,000 STRV less. The USDA projects FY 2009 Louisiana cane sugar at 1.410 million STRV and Hawaiian cane sugar at 240,000 STRV.

Although the raw and refined sugar tariff-rate quotas (TRQ) for FY 2009 have not yet been announced, the USDA projects them in the *World Agricultural Supply and Demand Estimates* (WASDE) report at minimum levels implied by existing international commitments to the World Trade Organization (WTO) and at the allocated levels from the Dominican Republic and Central American Free Trade Agreement (DR-CAFTA). The projection in the May WASDE is, therefore, at 1.274 million STRV, assuming a shortfall of 100,000 STRV. Included in the total minimum access quantity is the refined sugar TRQ, the minimum access commitment of which is 24,251 STRV, or 22,000 metric tons, raw value (MTRV). Until the TRQ is announced, there is no projection for additional specialty sugar. This sugar is mostly organic sugar, and its allocation for FY 2008 was set at 70,000 STRV in addition to the 1,825 STRV included in the minimum access quantity. The USDA projects imports from Mexico at 550,000 STRV.

Other program sugar imports outside the sugar TRQ for FY 2009 are projected to total 425,000 STRV. Other USDA import programs include the Refined Sugar Re-export Program, the Sugar-Containing Products Program, and the Polyhydric Alcohol Program.

Sugar exports for FY 2009 are forecast at 250,000 STRV. Most of these exports are expected to go to Mexico, where they are used in Mexico's product re-export (IMMEX) program. Almost all such sugar-containing products are expected to be exported to the United States.

Deliveries for domestic food and beverage use for FY 2009 are projected at 10.325 million STRV, an increase of 100,000 STRV over the FY 2008 delivery estimate. Deliveries for domestic food and beverage use for FY 2008 were increased by 175,000 STRV to 10.225 million STRV in the May 2008 WASDE. Deliveries to industrial end users for the first 6 months of FY 2008 are 6.6 percent higher than the average of the same corresponding period of the two previous years. Likewise, deliveries to nonindustrial end users for the first 6 months are 2.1 percent higher.

The projection for Sugar-Containing Product Re-export deliveries is 150,000 STRV, the same level as that estimated for FY 2008. The FY 2009 projection for deliveries is 25,000 STRV for the manufacture of polyhydric alcohol and 35,000 STRV for feed uses, the same as the FY 2008 estimates.

Ending stocks are the difference between supply and use. For FY 2009, ending stocks are projected at 1.335 million STRV, implying an ending stocks-to-use ratio of 12.4 percent. For FY 2008, ending stocks are estimated at 1.756 million STRV, implying an ending stocks-to-use ratio of 16.4 percent.

The refined beet sugar price reported by *Milling and Baking News* is 30-33 cents/pound (lb) as of May 16. The price had increased 4 cents to 28 cents/lb after the explosion at the Imperial Sugar refinery on February 7. According to *Milling and Baking News*, there is concern that area planted may be less than indicated in NASS's *Planting Intentions*. The nearby no.14 New York raw sugar contract price is averaging 20.7 cents/lb through the first half of May. With the minimum price to avoid forfeiture in Florida projected by the Farm Service Agency at above 21 cents per pound, there may be raw sugar forfeitures this fiscal year.

The USDA projects 2008/09 Mexican sugar production at 5.850 million MTRV. Sugarcane area harvested is projected at 668,000 hectares, about the same level as this year. Sugarcane production for 2008/09 is projected at 51.0 million metric tons (mt), implying sugar recovery at 11.5 percent, raw basis (10.8 percent, tel quel basis).

The USDA estimates 2007/08 Mexican sugar production at 5.950 million MTRV. After a slow start to the harvest season, the pace picked up substantially. Sucrose recovery through the end of April was 12.15 percent, raw basis (11.46 percent, tel quel). With several more weeks to the harvest season, the recovery rate is forecast by the Economic Research Service to be at 12.18 percent, raw basis (11.48 percent, tel quel).

The USDA projects 2008/09 Mexican sugar deliveries for human consumption at 5.430 million MTRV, an increase of 80,000 MTRV over 2007/08. Consumption of high fructose corn syrup is projected at 800,000 mt, dry basis, the same level as estimated for 2007/08. Mexican 2008/09 sugar exports are projected at 500,000 MTRV, and 2007/08 exports are estimated at 530,000 MTRV. The destination for almost all of this sugar is the United States.

Deliveries to Mexico's IMMEX program are projected at 375,000 MTRV in 2008/09, 5,000 MTRV more than estimated deliveries in the previous year. Ending stocks for 2008/09 are projected at 1.413 million MTRV, implying a stocks-to-consumption ratio of 26.0 percent. This level is below the average 1997/98-2006/07 ending stocks-to-consumption ratio of 26.7 percent. Ending stocks for 2007/08 are estimated at 1.643 million MTRV, implying a stocks-to-consumption ratio of 30.7 percent.

# U.S. Sugar

On May 11, 2008, the U.S. Department of Agriculture (USDA) released its latest supply and use estimates for fiscal year (FY) 2008 and first projections for FY 2009 in the World Agricultural Supply and Demand Estimates (WASDE) report.

## Production

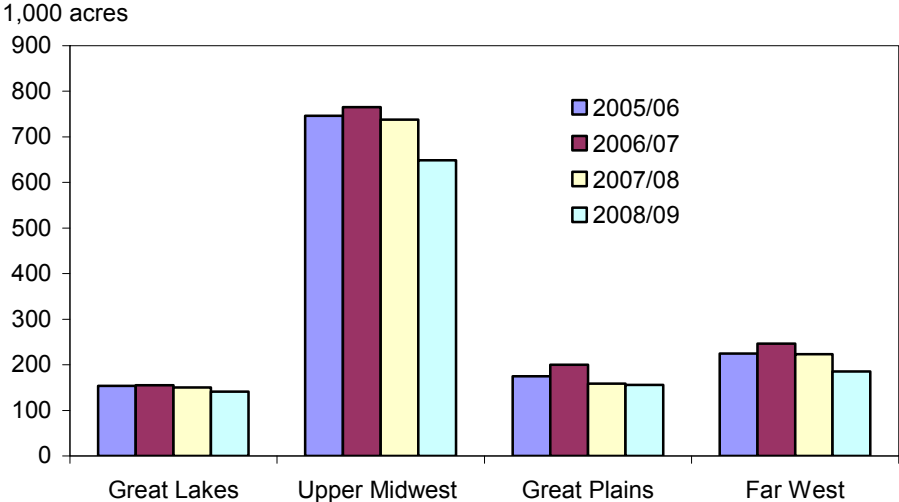
For most of the year, the USDA's Interagency Commodity Estimates Committee (ICEC) for sugar does not project sugar production for the out-year crop. For the most part, the USDA accepts the production estimates and projections provided by beet sugar processors and cane sugar millers to the Farm Service Agency (FSA). However, the processors' and millers' forecasts are not available until July of the preceding crop year. Therefore, in the meantime, WASDE reflects ICEC projections for FY 2009 sugar in May and June.

## FY 2009 Beet Sugar Production

At the end of March 2008, the National Agricultural Statistics Service (NASS) projected 2008/09 crop year sugar beet acreage intentions at 1.132 million acres, about 13.7 percent lower than the average of the last 3 crop years' area planted. Most of the decrease in area is attributable to higher alternative crop prices, taking place when carryover sugar stocks have been expected to be high relative to expected total use in the 2007/08 crop year (i.e., average ending-year stocks-to-use projected in WASDE at 18.77 percent, October 2007 through March, 2008).

Figure 1 shows the distribution of area planted across the major producing regions since 2005/06. The largest acreage decrease takes place in the Upper Midwest (Minnesota and eastern North Dakota), over 100,000 acres relative to the

Figure 1  
**Sugar beet area planted, by region, 2005/06-2008/09**



Source: USDA, NASS, Crop Production, *Planting Intentions*.

2005/06-2007/08 average, for about a 13.4-percent reduction. The second largest area reduction takes place in the Far West (Idaho, California, Oregon, and Washington State), 46,000 acres, for a 19.8-percent reduction. The Great Plains (Colorado, Wyoming, Nebraska, Montana, and western North Dakota) has 21,600 fewer acres, a 12.2-percent reduction. The Great Lakes (Michigan) has 12,000 fewer acres, a 7.8-percent decline.

Table 1 summarizes the methodology used to arrive at a projection for FY 2009 beet sugar production. The first column shows the NASS planted acreage intentions. The next column shows the average harvested-to-planted area ratios. Nationally, an average of 97.6 percent of area planted is harvested, implying that 1.105 million acres in aggregate for FY 2008 will be harvested. A State-by-State analysis of sugar beet yield trends implies a national yield projection of 26.0 tons per acre. Trend yields in certain States are higher than in prior years because of recent-year observed improvements in yield levels. These States include Minnesota, North Dakota, Michigan, Idaho, and Nebraska.

The resulting sugar beet production projection is 28.722 million tons, 10.0 percent less than FY 2008. Assuming normal sucrose levels and trend improvement in productivity, national sugar yield is projected at 3.965 tons/acre. Therefore, national beet sugar production is projected (sugar yield times area harvested) at 4.400 million short tons, raw value (STRV). This projection is 410,000 STRV less than FY 2008 estimated production (4.810 million STRV).

### ***FY 2009 Cane Sugar Production***

Table 2 shows cane sugar projections by State, along with underlying assumptions made by the sugar ICEC. The first column shows projected area harvested for sugar. Because NASS does not forecast area harvested until the end of June, the same area is assumed to be harvested as in the previous year. State sugar yields are projected based on sugarcane yields, trend productivity improvement, and normal sucrose levels. Sugar production is the multiplication of sugar yield and area harvested.

Florida cane sugar production for FY 2009 is forecast at 1.865 million STRV. This forecast assumes a return to normal weather patterns after 2 years of dry conditions, implying an expected sugar yield of 4.93 tons/acre. However, if dry conditions similar to the past 2 years persist, sugar yield could be expected to be 0.341 tons/acre lower at 4.59 tons/acre, which would imply production at 1.735 million STRV. Factoring in a drought probability of 50 percent implies an expected production level of 1.800 million STRV.

Texas is similar to Florida. Dry conditions in FY 2008 reduced expected sugar yield by 0.863 tons/ acre. Nonetheless, with the reemergence of normal weather, the USDA projects Texas production at 200,000 STRV. Conditions similar to those of FY 2008 imply production at 166,000 STRV, and 50-percent probability of these conditions implies expected production at 176,000 STRV.

The USDA projects FY 2009 Louisiana cane sugar at 1.410 million STRV and Hawaiian cane sugar at 240,000 STRV.

Table 1--ERS projection of beet sugar production for FY 2009

Sugar beet States	Area planted 1/ A	Estimated ratio: harvested-to- planted area 2/ α	Area harvested B= α*A	Trend yield C	Sugar beet production D = B*C	National sugar yield 3/ φ	Beet sugar E = φ*B
	1,000 acres	Ratio	1,000 acres	Short tons/acre	1,000 short tons	(Short ton, raw value)/acre	1,000 short tons, raw value
California	31.6	0.978	30.9	39.16	1,210	--	--
Colorado	35.8	0.952	34.1	24.56	837	--	--
Idaho	144.0	0.991	142.7	33.28	4,748	--	--
Michigan	141.0	0.969	136.6	23.84	3,257	--	--
Minnesota	432.0	0.978	422.4	24.56	10,375	--	--
Montana	35.8	0.982	35.2	24.19	851	--	--
Nebraska	52.0	0.930	48.3	23.64	1,143	--	--
North Dakota	217.0	0.981	212.9	24.77	5,273	--	--
Oregon	8.2	0.972	8.0	30.36	242	--	--
Washington	1.8	0.983	1.8	39.27	69	--	--
Wyoming	32.6	0.973	31.7	22.59	717	--	--
Total	1,131.8	0.976	1,104.5	26.00	28,722	3.965	4,379

1/ USDA, NASS, Acreage Intentions.

2/ Excludes payment-in-kind crop years of 2000/01 and 2001/02.

3/ National sugar yield = 0.02467\*Trend (=39) + 0.115463\*sugar beet yield.

Source: USDA, ERS, Sugar and Sweetener Group.

Table 2--ERS projection of cane sugar production, FY 2009

State	Climatic condition	Area harvested 1/ 1,000 acres	Sugar yield 2/ (Short ton, raw value)/acre	Cane sugar production 1,000 short tons, raw value
Florida	Normal	378.0	4.93	1,864
	50 percent chance of drought	378.0	4.76	1,799
	Drought	378.0	4.59	1,735
Louisiana	Normal	390.0	3.61	1,408
Texas	Normal	43.5	4.69	204
	50 percent chance of drought	43.5	4.04	176
	Drought	43.5	3.83	166
Hawaii	Normal	20.2	11.82	239

1/ Assumed to equal area harvested for sugar from 2007/08.

2/ Florida sugar yield = -0.846 - 0.341\*(1 for fiscal years 2006,2007,2008; 0, otherwise) + 0.0282\*Trend (= 38 for FY 2009) + 0.126\*Florida sugarcane yield

Louisiana sugar yield = -0.736 + 0.025\*Trend + 0.116\*Louisiana sugarcane yield

Texas sugar yield = -1.766 - 0.863\*(1 for fiscal year 2008; 0, otherwise) + 0.155\*Texas sugarcane yield

Hawaii sugar yield = -1.863 + 0.050\*Trend + 0.132\*Hawaii sugarcane yield

Source: USDA, ERS, Sugar and Sweetener Group.

## ***FY 2008 Production***

At half way through the fiscal year, the beet processors' estimate of FY 2008 beet sugar production is 4.810 million STRV. Beet producers have produced 3.713 million through the end of March, about 76 percent of the expected total. With a NASS estimate of area harvested at 1.247 million acres, sugar recovery per harvested acre is calculated at a record 3.858 STRV. (Sugar recovery for FY 2007 was estimated at only slightly less, 3.841 STRV.)

In the latest FSA survey, Florida cane sugar millers estimate FY 2008 sugar production at 1.691 million STRV. This estimate implies sugar yield at 4.47 STRV/acre, about the same as in FY 2007 (4.50 STRV/acre) but below the historical trend (4.83 STRV/acre). The Louisiana sugarcane harvest ended in January, and sugar production was estimated at 1.442 million STRV. The USDA expects about 48,000 STRV of production next September, the last month of the fiscal year. Production is, therefore, projected at 1.490 million STRV for the fiscal year. (Production in Louisiana for September 2007 was 40,938 STRV.) Processors in Hawaii estimate production at 238,000 STRV, and the processor in Texas estimates production at 162,500 STRV.

## ***Trade***

Although the raw and refined sugar tariff-rate quotas (TRQ) for FY 2009 have not yet been announced, the USDA projects them in the WASDE report at minimum levels implied by existing international commitments to the World Trade Organization (WTO) and at the allocated levels from the Dominican Republic and Central American Free Trade Agreement (DR-CAFTA). The projection in the May WASDE is, therefore, at 1.274 million STRV, assuming a shortfall of 100,000 STRV (table 3). Included in the total minimum access quantity is the refined sugar TRQ, the minimum access commitment of which is 24,251 STRV, or 22,000 metric tons, raw value (MTRV). Until the TRQ is actually announced, there is no projection for additional specialty sugar. This sugar is mostly organic sugar, and its allocation for FY 2008 was set at 70,000 STRV in addition to the 1,825 STRV included in the minimum access quantity. The USDA projects imports from Mexico at 550,000 STRV.

Other program sugar imports outside the sugar TRQ for FY 2009 are projected to total 425,000 STRV. Other USDA import programs include the Refined Sugar Re-export Program, the Sugar-Containing Products Program, and the Polyhydric Alcohol Program.

Sugar exports for FY 2009 are forecast at 250,000 STRV. Most of these exports are expected to go to Mexico where they are used in Mexico's product re-export (IMMEX) program. Almost all such sugar-containing products are expected to be exported to the United States.

Based on reliable information, the FY 2008 raw sugar TRQ shortfall was increased by 70,000 STRV in the May 2008 WASDE to 170,000 STRV. The resulting total (1.061 million STRV), when summed with other import components (refined sugar TRQ, DR-CAFTA, Mexico, and re-export imports), brings the FY 2008 import estimate to 2.251 million STRV (table 4).

Table 3--USDA estimate of sugar imports, FY 2009

Item	Metric tons, raw value	Short tons, raw value
<b>Raw sugar TRQ</b>	1,117,195	1,231,497
Less shortfall	-90,719	-100,000
<b>Total raw sugar TRQ</b>	<b>1,026,476</b>	<b>1,131,497</b>
<b>Refined sugar TRQ</b>		
Allocation to Canada	10,300	11,354
Global	7,090	7,815
Specialty		
Base	1,656	1,825
Additional	0	
Specialty total	1,656	1,825
<b>Total refined sugar TRQ</b>	<b>19,046</b>	<b>20,994</b>
<b>CAFTA/DR TRQ</b>	<b>110,460</b>	<b>121,760</b>
<b>Total estimate TRQ entries</b>	<b>1,155,982</b>	<b>1,274,251</b>
<b>Mexico</b>	<b>498,957</b>	<b>550,000</b>
<b>Re-export program imports</b>	<b>385,557</b>	<b>425,000</b>
<b>Sugar syrups, high-tier</b>	<b>0</b>	<b>0</b>
<b>Total projected imports</b>	<b>2,040,496</b>	<b>2,249,251</b>

1/ Mexico allocated 7,258 MTRV (8,000 STRV) under raw cane TRQ.

Source: USDA, FAS.



Table 4--USDA estimate of sugar imports, FY 2008

Item	Metric tons, raw value	Short tons, raw value
<b>Raw sugar TRQ</b>	1,117,195	1,231,497
Less shortfall	-154,223	-170,000
<b>Total raw sugar TRQ</b>	<b>962,972</b>	<b>1,061,497</b>
<b>Refined sugar TRQ</b>		
Allocation to Canada	10,300	11,354
Global	7,090	7,815
Specialty		
Base	1,656	1,825
Additional	63,503	70,000
Specialty total	65,159	71,825
<b>Total refined sugar TRQ</b>	<b>82,549</b>	<b>90,994</b>
<b>CAFTA/DR TRQ</b>	<b>89,440</b>	<b>98,590</b>
<b>Total estimate TRQ entries</b>	<b>1,134,961</b>	<b>1,251,081</b>
<b>Mexico</b>	<b>521,637</b>	<b>575,000</b>
<b>Re-export program imports</b>	<b>385,557</b>	<b>425,000</b>
<b>Sugar syrups, high-tier</b>	<b>0</b>	<b>0</b>
<b>Total projected imports</b>	<b>2,042,155</b>	<b>2,251,081</b>

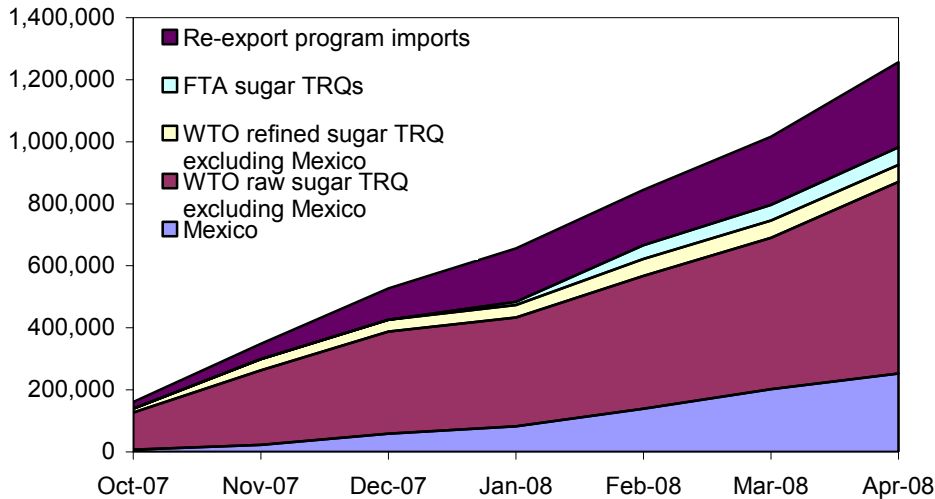
1/ Mexico allocated 7,258 MTRV (8,000 STRV) under raw cane TRQ.

Source: USDA, FAS.

Figure 2

**Cumulative U.S. sugar imports, by month, FY 2008**

Metric tons, raw value



Source: U.S. Customs and Border Protection.

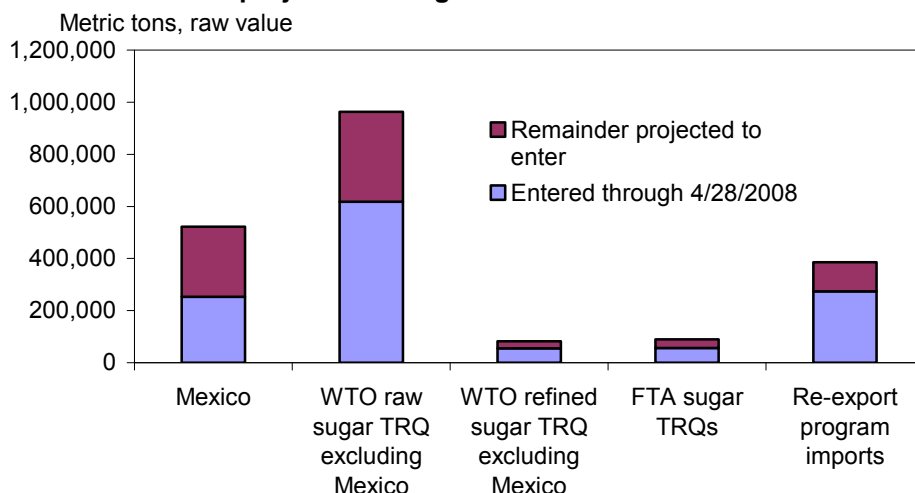
Based on data found in tables 21-24, figure 2 shows monthly cumulative imports through the end of April 2008, the seventh month of the fiscal year. Figure 3 shows this same information, along with the amounts expected to enter by the end of September. Through April 2008, raw sugar TRQ entries have equaled 688,496 STRV (624,593 MTRV), or about 65 percent of the expected total. Entries of specialty (mostly organic) sugar under the refined sugar TRQ are restricted by tranches that open on pre-specified dates during the fiscal year. The latest tranche opened on May 14, 2008, for 15,050 STRV (13,653 MTRV). The last tranche for the same quantity opens on August 27, 2008. Sugar from Mexico for the year is estimated at 575,000 STRV. Of this amount, 48.5 percent has entered through April.

***Sugar Deliveries, Sugar-Containing Products, Ending Stocks***

Deliveries for domestic food and beverage use for FY 2008 are projected at 10.225 million STRV, a seemingly large increase of 3.1 percent over the FY 2007 delivery estimate of 9.913 million STRV. However, as analyzed in earlier editions of the *Sugar and Sweetener Outlook*, FY 2007 deliveries were probably understated by 185,000 STRV. That analysis suggested that, in FY 2007, entities that do not report to the USDA held early-season, unrecorded draw-downs of sugar stocks. This refined sugar was imported in late FY 2006 and was recorded as a delivery upon entry into U.S. customs territory. Deliveries in the first quarter of FY 2007 were unusually low as the normal delivery pattern was altered by the presence of the earlier-imported refined sugar. As a consequence of these factors, the actual increase for FY 2008 is more on the order of 1.3 percent. Further, in making its forecast for FY 2009, the USDA assumed an increase of about 1 percent in deliveries for human consumption, making it 10.325 million STRV.

Figure 3

**FY 2008 U.S. sugar imports, by type, actual through 4/30/2008 and projected through 9/30/2008**



Source: U.S. Customs and Border Protection (data), USDA (projection).

The problem described immediately above is compounded by the unusually high level of imports of refined sugar throughout the whole of FY 2006, 615,000 STRV. Because the end use of this sugar cannot be tracked, comparisons of FY 2008 end use data with corresponding data in FY 2006 and FY 2007 are suspect. The only clear trend for sugar in industrial uses is the increase of sugar for beverage manufacturing. Deliveries for the first half of FY 2008 have amounted to 170,983 STRV, 42.5 percent higher than the average for corresponding periods in FY 2006 and FY 2007.

In spite of these analytical difficulties, deliveries since the beginning of the year have been stronger than the pattern of the last few years. After the refinery explosion in February, there was some concern that firms would increase their sugar purchases to guard against effects of possible market shortages due to reduced refining capacity. Although the data may contain an element of this concern, the strength in deliveries through the end of March seems to outweigh the concern.

FY 2008 sugar in imported products through two quarters (October 2007-March 2008) is estimated at 614,601 STRV, a decrease of 3.7 percent compared with the same period in FY 2007 (tables 5 and 6). The upward trend in sugar in imported products, in evidence since 1995, has reached a plateau, at least for the present. In individual product categories, sugar in sugar confectionery has decreased 9.3 percent. Although part of this decrease is due to fewer imports of flavored sugar from Mexico (Harmonized Tariff Schedule (HTS) 1701.91.4800 and 1701.91.5800), the decrease without the inclusion of these products is 7.0 percent. Interestingly, imports of sugar in carbonated and other beverages have decreased 4.9 percent in the first half of FY 2008 compared with FY 2007. Sales of these beverages are believed to be targeted to immigrant groups from Mexico and other countries living in the United States. The sugar in the other import product categories are about the same as in the first half of the previous fiscal year. Sugar in product exports for the same periods increased 14.3 percent to 323,000 STRV.

Table 5--Estimated U.S. sugar deliveries and sugar in traded sugar-containing products 1/

Fiscal year	Oct-Dec	Jan-Mar	Apr-June	July-Sept	FY Total
<i>1,000 short tons, raw value (STRV)</i>					
Domestic sugar deliveries for food and beverage use:					
1993	2,280	2,046	2,172	2,432	8,930
1994	2,277	2,121	2,265	2,533	9,196
1995	2,260	2,105	2,311	2,542	9,218
1996	2,379	2,191	2,355	2,519	9,445
1997	2,430	2,143	2,401	2,591	9,565
1998	2,443	2,233	2,428	2,568	9,672
1999	2,458	2,208	2,553	2,655	9,873
2000	2,580	2,318	2,484	2,611	9,993
2001	2,564	2,370	2,486	2,580	10,000
2002	2,474	2,227	2,439	2,645	9,785
2003	2,497	2,183	2,360	2,464	9,504
2004	2,504	2,286	2,368	2,520	9,678
2005	2,547	2,335	2,471	2,666	10,019
2006	2,571	2,436	2,487	2,690	10,184
2007	2,389	2,307	2,535	2,682	9,913
2008	2,514	2,501			
Estimated sugar in imported sugar-containing products:					
1993	75	81	79	74	309
1994	76	62	68	84	290
1995	79	83	92	100	354
1996	99	85	95	110	389
1997	112	100	119	128	459
1998	125	115	138	151	529
1999	140	140	163	177	620
2000	173	162	177	191	704
2001	185	174	195	216	769
2002	215	192	223	250	879
2003	236	226	256	284	1,002
2004	266	251	288	315	1,119
2005	291	277	298	340	1,205
2006	322	313	358	352	1,345
2007	334	304	321	352	1,311
2008	323	292	0	0	
Estimated sugar in exported sugar-containing products:					
1993	59	56	52	62	229
1994	74	63	63	66	267
1995	68	74	78	91	311
1996	97	85	90	103	376
1997	103	98	102	108	411
1998	109	91	98	103	401
1999	106	96	99	109	409
2000	116	104	107	128	456
2001	134	115	129	130	508
2002	130	112	118	125	485
2003	138	123	130	140	531
2004	150	137	140	148	575
2005	152	142	160	161	616
2006	175	143	150	150	618
2007	157	145	150	156	608
2008	179	166	0	0	

Continued--

Table 5--Estimated U.S. sugar deliveries and sugar in traded sugar-containing products 1/

Fiscal year	Oct-Dec	Jan-Mar	Apr-June	July-Sept	FY Total
<i>1,000 short tons, raw value (STRV)</i>					
Estimated sugar in USDA sugar-containing product re-export program:					
1993	26	23	26	57	132
1994	24	20	39	43	126
1995	28	18	18	39	103
1996	21	20	30	32	104
1997	22	68	22	45	157
1998	21	24	32	46	123
1999	44	58	35	32	169
2000	21	21	22	22	86
2001	18	21	29	30	98
2002	40	39	35	42	156
2003	43	44	49	47	183
2004	35	28	40	39	142
2005	28	24	37	33	121
2006	25	25	23	32	106
2007	31	43	55	40	169
2008	35	27			
Estimated sugar deliveries for domestic consumption (adjusted for trade in sugar-containing products):					
1993	2,322	2,094	2,226	2,500	9,142
1994	2,303	2,140	2,309	2,594	9,346
1995	2,299	2,132	2,343	2,590	9,364
1996	2,402	2,211	2,390	2,558	9,561
1997	2,461	2,213	2,439	2,656	9,770
1998	2,480	2,281	2,500	2,662	9,923
1999	2,536	2,311	2,651	2,755	10,253
2000	2,658	2,396	2,576	2,697	10,328
2001	2,632	2,450	2,580	2,697	10,359
2002	2,599	2,346	2,580	2,811	10,335
2003	2,637	2,330	2,534	2,656	10,158
2004	2,655	2,428	2,555	2,726	10,364
2005	2,714	2,493	2,646	2,877	10,730
2006	2,743	2,630	2,719	2,924	11,016
2007	2,597	2,510	2,761	2,917	10,785
2008	2,693	2,654			

1/ includes Puerto Rico.

Source: USDA, FAS, *Sweetener Market Data*, (deliveries data); USDA, ERS, Sugar and Sweetener Group, (sugar in traded products).

Table 6--Estimated sugar in U.S. product imports and exports, by quarter, 2000-08.

Year	Quarter	Sugar confectionery 1/	Cocoa and cocoa preparations	Cereal and bakers preparations	Bread, pastry, cakes, etc.	Misc. edible preparations	Carbonated soft drinks	Total sugar in imported products	Total sugar in exported products	Net sugar inflow in products
<i>1,000 short tons, refined value</i>										
2000	1	55,893	30,093	4,310	21,857	27,881	11,143	151,177	97,575	53,602
	2	53,582	30,872	5,170	22,083	36,656	17,432	165,795	99,551	66,244
	3	65,986	34,019	4,913	27,118	28,847	17,963	178,846	119,852	58,994
	4	64,452	35,423	5,154	28,682	26,983	12,206	172,901	125,618	47,282
2001	1	58,397	34,603	4,074	24,710	28,332	12,465	162,581	107,209	55,371
	2	61,638	34,705	4,655	25,440	35,711	19,667	181,816	120,818	60,998
	3	73,570	43,077	4,695	31,255	29,866	19,248	201,711	121,239	80,472
	4	66,370	47,965	4,672	34,512	33,422	13,581	200,523	121,725	78,797
2002	1	60,027	41,174	5,219	25,223	33,770	13,928	179,341	104,652	74,690
	2	71,349	44,276	4,667	26,511	39,860	21,486	208,149	110,141	98,007
	3	85,942	55,501	4,651	32,380	34,310	20,545	233,329	116,380	116,949
	4	81,685	52,658	4,881	33,724	32,429	14,894	220,272	128,759	91,513
2003	1	74,278	48,212	5,805	28,656	36,622	17,870	211,444	115,366	96,077
	2	86,456	48,091	5,860	31,781	41,386	25,534	239,108	121,482	117,626
	3	105,086	58,865	6,132	36,510	35,778	23,268	265,639	130,461	135,178
	4	96,965	53,092	7,342	37,552	37,073	16,769	248,794	140,640	108,154
2004	1	85,890	50,762	6,134	31,286	40,580	19,620	234,272	127,941	106,331
	2	95,481	51,296	5,907	32,740	54,497	28,812	268,733	130,813	137,920
	3	116,929	60,192	6,322	36,703	46,746	27,341	294,234	138,317	155,917
	4	102,519	57,817	6,719	38,169	44,505	21,958	271,687	142,166	129,521
2005	1	95,894	52,593	6,408	32,231	48,754	22,577	258,458	132,481	125,976
	2	104,711	53,727	6,060	33,878	50,268	30,151	278,795	149,868	128,927
	3	132,330	63,740	6,766	38,352	45,958	30,447	317,594	150,723	166,871
	4	124,034	61,262	6,778	39,280	42,859	26,571	300,784	163,888	136,896
2006	1	113,189	64,153	6,180	32,874	48,623	27,419	292,436	133,673	158,763
	2	141,139	66,249	6,299	33,896	53,490	33,916	334,988	139,891	195,097
	3	126,324	73,329	5,828	39,611	47,260	36,336	328,687	140,145	188,543
	4	118,895	71,719	6,425	42,214	44,320	29,044	312,616	147,126	165,490
2007	1	103,240	65,694	6,530	34,817	44,275	29,515	284,071	135,107	148,964
	2	102,477	67,848	6,132	37,448	52,509	33,670	300,083	140,211	159,872
	3	119,503	77,208	6,172	41,088	48,744	36,070	328,785	145,788	182,997
	4	107,843	70,971	6,253	41,433	44,870	30,096	301,465	167,188	134,277
2008	1	93,572	65,601	6,673	35,596	45,872	25,615	272,929	155,501	117,428

1/ Includes flavored sugars -- HTS 1701.91.4800 and 1701.91.5800.

Source: USDA, ERS, Sugar and Sweetener Group.

Ending-year stocks for FY 2008 are estimated at 1.766 million STRV, implying an ending-year stocks-to-use ratio of 16.4 percent. The ratio projected in December 2007 had been at a high of 9.4 percent. Since December, the estimate for beet sugar production has been lowered by 86,000 STRV and Florida cane sugar production has been lowered by 84,000 STRV. (The decrease in Texas cane sugar production, 36,000 STRV, was offset by an increase in Louisiana cane sugar production, 40,000 STRV.) The estimate of deliveries for human consumption was increased by 125,000 STRV, from December to May. (An increase in estimated sugar from Mexico, 100,000 STRV, was offset by an increased estimate of shortfall, (70,000 STRV), no sugar expected from Costa Rica under the DR-CAFTA, and no imports of sugar syrups.)

The initial projection of ending-year stocks for FY 2009 is 1.335 million STRV, implying an ending-year stocks-to-use ratio of 12.4 percent. Compared with that of FY 2008, production is projected to be lower by 276,000 STRV. The projected decrease in beet sugar production of 410,000 STRV is offset by a projected increase in cane sugar production of 134,000 STRV. FY 2009 beginning stocks are 43,000 lower than in FY 2008; imports are projected about the same as in FY 2008; and deliveries are projected to be 100,000 STRV more than in FY 2008.

### ***Prices***

The refined beet sugar price reported by *Milling and Baking News* is 30-33 cents/pound (lb) as of May 16, 2008. The price had increased 4 cents to 28 cents/lb after the explosion at the Imperial Sugar refinery on February 7. According to *Milling and Baking News*, there is concern that area planted may be less than indicated in NASS's *Planting Intentions*.

The nearby no.14 New York raw sugar contract price is averaging 20.7 cents/lb through the first half of May. With the minimum price to avoid forfeiture in Florida projected by the FSA at above 21 cents per pound (table 7), there may be raw sugar forfeitures this fiscal year. The forfeiture concern stems from the loss of the refinery in February. Other refineries were able to take up the refining slack but only by running above normal pace. Demand for raw sugar is, therefore, hypothesized to be reduced by the lack of sufficient refining capacity.

Table 7--Calculation of minimum prices of raw cane and refined beet sugar to avoid forfeiture, 2007/08 crop

State/region	Cost of loan redemption and marketing					Minimum price 3/
	Loan rate	Interest expense 1/	Transport costs 2/	Location discounts	Cash discount (2%)	
	<i>Cents per pound</i>					
Raw cane sugar						
Florida	18.07	0.58	2.39	0.00	--	21.04
Hawaii	16.64	0.53	2.80	1.25	--	21.22
Louisiana	18.27	0.58	0.52	0.46	--	19.83
Texas	17.27	0.55	1.95	0.40	--	20.17
Refined beet sugar						
Michigan and Ohio	24.17	0.77	--	--	0.51	25.45
Minnesota and eastern North Dakota	22.89	0.73	--	--	0.48	24.10
Colorado, Nebraska, eastern Wyoming	22.95	0.73	--	--	0.48	24.16
Montana, western Wyoming, and western North Dakota	23.00	0.73	--	--	0.48	24.21
Idaho, Oregon, Washington State	22.03	0.70	--	--	0.46	23.19
California	23.62	1.98	--	--	0.52	26.12

1/ Commodity Credit Corporation interest rate = 4.25 percent.

2/ Based on 4/21/08 freight reporting.

3/ The unit amount that the borrower repays.

Source: USDA, FSA.



## Mexico Sugar and HFCS

The USDA estimates 2007/08 Mexican sugar production at 5.950 million metric tons, raw value (MTRV). After a slow start to the harvest season due to labor unrest, the pace picked up substantially. Sucrose recovery through the end of April was at a high level of 12.15 percent, raw basis (11.46 percent, tel quel). With several more weeks to the harvest season, the recovery rate is forecast by the Economic Research Service (ERS) Sugar Group to be at 12.18 percent, raw basis (11.48 percent, tel quel). Although ERS estimates that the sugarcane crop should be about 49 million metric tons (mt), the Foreign Agricultural Service (FAS) post in Mexico City expects a crop of 50 million mt, implying that production may end up higher.

The USDA projects 2008/09 Mexican sugar production at 5.850 million MTRV. Sugarcane area harvested is projected at 668,000 hectares, about the same level as this year. Sugarcane production for 2008/09 is projected at 51.0 million metric tons (mt), implying sugar recovery at 11.5 percent, raw basis (10.8 percent, tel quel basis). Although the sugarcane crop is forecast higher than this year's crop, it is assumed that sugar yield (i.e., sugar per harvested area) will be close to trend (fig. 4).

The USDA projects 2008/09 Mexican sugar deliveries for human consumption at 5.430 million MTRV, an increase of 80,000 MTRV over 2007/08. Consumption of high fructose corn syrup (HFCS) is projected at 800,000 mt, dry basis, the same level as estimated for 2007/08. Mexican 2008/09 sugar exports are projected at 500,000 MTRV, and 2007/08 exports are estimated at 530,000 MTRV. The destination for almost all this sugar is the United States.

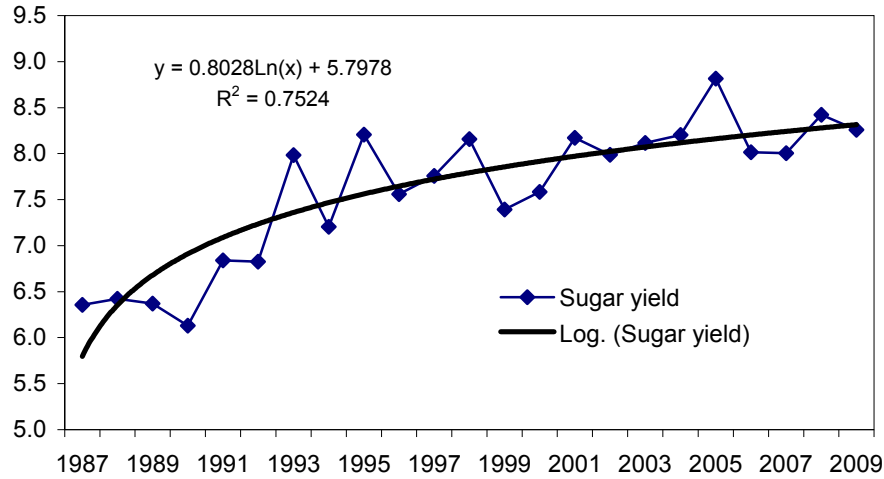
Deliveries to Mexico's IMMEX program are projected at 375,000 MTRV in 2008/09. This amount is 5,000 MTRV more than estimated deliveries in the previous year. Ending stocks for 2008/09 are projected at 1.413 million MTRV, implying a stocks-to-consumption ratio of 26.0 percent. This level is below the average 1997/98-2006/07 ending stocks-to-consumption ratio of 26.7 percent. Ending stocks for 2007/08 are estimated at 1.643 million MTRV, implying a stocks-to-consumption ratio of 30.7 percent (fig. 5).

Sugar prices in Mexico remain low. The price of estandar sugar in Mexico City has averaged 258 pesos per 50-kilogram bag through mid-May, or about 22.3 cents/pound (lb) (fig. 6). Although this price is higher than the raw sugar No.14 contract price of 20.7 cents/lb, estandar's high polarity gives it a premium to the 96-pol raw sugar, which implies that these prices are fairly close (although separated by distance). The price of refinado sugar in Mexico City has averaged 319 pesos per 50-kilogram bag through mid-May, or about 27.5 cents/lb. This price is below the equivalent U.S. refined price in the Midwest of 30-33 cents/lb (fig. 7). The low sugar prices in Mexico are part of the reason for HFCS not being used more in the Mexican beverage industry.

Figure 4

**Sugar yield in Mexico, actual and projected, 1987-2009**

Metric tons, tel quel/hectare

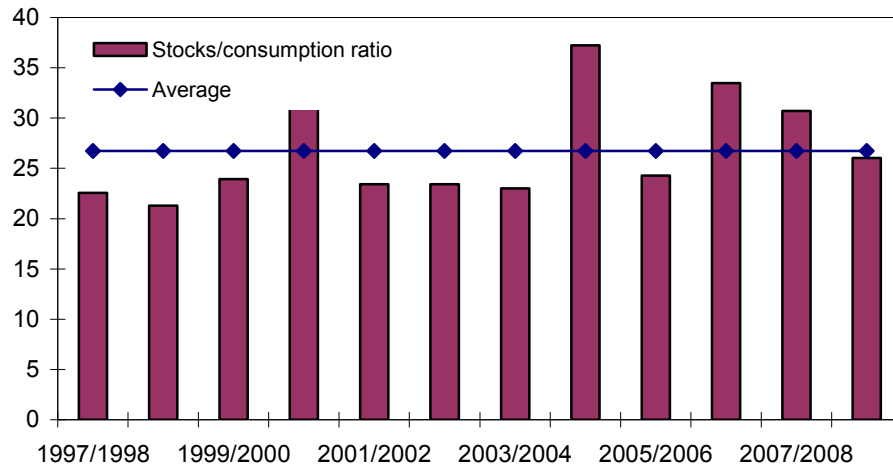


Sources: COAAZUCAR (data), ERS, Sugar and Sweetener Group (projection).

Figure 5

**Sugar in Mexico, ratio of ending fiscal year stocks to consumption, 1997/98-2008/09**

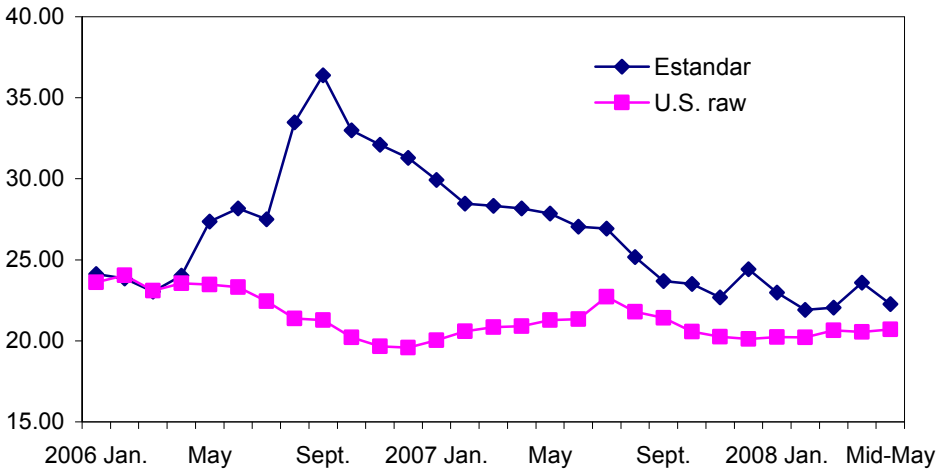
Percent



Source: USDA, FAS PSD database.

Figure 6  
**Estandar sugar price, Mexico City, and U.S. No. 14 raw sugar nearby futures price**

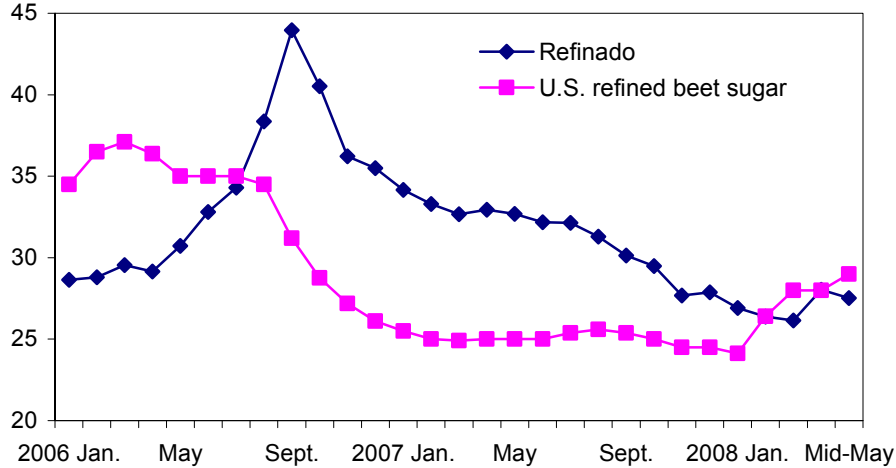
U.S. cents/lb



Source: Economia - SNIIM, ICE market data.

Figure 7  
**Refinado sugar price, Mexico City, and refined beet sugar, Midwest price**

U.S. cents/lb



Source: Economia - SNIIM, Milling and Baking News.

## U.S. Sweetener Demand

The Economic Research Service (ERS) makes calendar year estimates of total sweetener deliveries that are available for food and beverage consumption by U.S. consumers. These sweeteners include refined sugar; the corn sweeteners of high fructose corn syrup (HFCS), glucose syrup, and dextrose; honey; and other edible syrups, including maple syrup and maple sugar.

U.S. deliveries of total sweeteners for human food and beverage use for 2007 is estimated at 20.561 million tons (table 8), representing a decrease of 1.0 percent compared with deliveries in 2006. Refined sugar deliveries were about the same as in 2006, but corn sweetener deliveries for food and beverage use fell by 2.0 percent. Within the corn sweetener category, HFCS deliveries fell for the fifth year in a row, down 6.3 percent since 2002. Deliveries of the other corn sweeteners for human use stayed on the same level as 2006. Honey deliveries decreased by 11.4 percent, and other edible syrups remained at about the same level as in 2006.

On a per capita basis, U.S. sweetener deliveries for 2007 were equal to 136.6 pounds, down 2.6 pounds from 2006 and down 14.8 pounds from the per capita high of 151.4 pounds set in 1999.

Sugar contained in imported products has been excluded in estimating U.S. per capita sweetener deliveries. Prior to 1995, sugar contained in imports was offset by sugar contained in U.S. food exports, therefore indicating only a minor positive adjustment to total deliveries. Beginning in the 1995-96 period, imports of sugar-containing products started increasing at a faster rate than U.S. exports of sugar-containing products. The next-to-last column of table 8 shows the addition of sweetener supplies due to net imports of these products. The added amount has grown from 116,000 tons in 1996 to 801,000 tons in 2007. (The 2007 total actually decreased relative to 2006 by 11,000 tons.) On a per capita basis, the sugar in net imported products added 5.3 pounds to total per capita sweetener availability in 2007 for a total of 141.9 pounds.

Data estimated by SRI Consulting and published in their Chemical Economics Handbook (CEH) shows in the next-to-last column the sucrose equivalence of available high-intensity sweeteners saccharin, aspartame, acesulfame K, sucralose, and cyclamate. The supply of these sweeteners has been growing over time, from 2.91 million tons in 1992 to 4.57 million tons in 2007. On a per capita basis, consumption availability in 2007 is estimated at 30.3 pounds, sucrose equivalent.

Table 8--U.S. caloric sweeteners estimated deliveries for domestic food and beverage use, by calendar year 1/

Calendar year	U.S. population 2/ (July 1) <i>Millions</i>	Refined sugar	Corn sweeteners				Pure honey	Edible syrups	Total caloric sweeteners	Sugar from net imports	Total caloric sweeteners with sugar-containing products	High Intensity Sweeteners 3/ (sucrose equivalence)	Total sweeteners
			HFCS	Glucose syrup	Dextrose	Total							
			<i>1,000 tons, dry basis</i>										
1992	256.9	8,249	6,652	1,943	461	9,056	126	53	17,483	174	17,657	2,908	20,565
1993	260.3	8,305	7,086	2,050	481	9,617	135	56	18,112	183	18,295	3,032	21,327
1994	263.4	8,478	7,398	2,093	502	9,993	126	54	18,651	153	18,804	3,157	21,960
1995	266.6	8,652	7,676	2,176	528	10,380	120	57	19,209	121	19,331	3,550	22,881
1996	269.7	8,785	7,788	2,216	537	10,541	131	57	19,514	116	19,630	3,695	23,326
1997	272.9	8,861	8,240	2,364	511	11,116	129	58	20,163	197	20,360	3,689	24,049
1998	276.1	8,966	8,552	2,358	502	11,411	130	59	20,566	274	20,840	3,782	24,622
1999	279.3	9,264	8,897	2,281	488	11,666	147	60	21,138	354	21,492	3,877	25,369
2000	282.3	9,253	8,845	2,230	476	11,551	157	61	21,022	304	21,327	3,917	25,243
2001	285.0	9,195	8,920	2,205	469	11,595	134	61	20,986	388	21,373	4,059	25,432
2002	287.7	9,109	9,045	2,224	473	11,741	153	62	21,065	529	21,594	4,193	25,787
2003	290.3	8,859	8,849	2,209	449	11,507	146	63	20,575	621	21,196	4,284	25,479
2004	293.0	9,045	8,779	2,292	487	11,558	130	64	20,797	656	21,453	4,381	25,833
2005	295.7	9,346	8,756	2,261	481	11,497	155	66	21,065	669	21,734	4,414	26,148
2006	298.4	9,323	8,702	2,053	463	11,219	167	66	20,774	812	21,586	4,467	26,053
2007	301.1	9,351	8,479	2,067	448	10,994	148	67	20,561	801	21,361	4,568	25,930
			<i>Pounds, dry basis</i>										
1992	256.9	64.2	51.8	15.1	3.6	70.5	1.0	0.4	136.1	1.4	137.5	22.6	160.1
1993	260.3	63.8	54.5	15.8	3.7	73.9	1.0	0.4	139.2	1.4	140.6	23.3	163.9
1994	263.4	64.4	56.2	15.9	3.8	75.9	1.0	0.4	141.6	1.2	142.8	24.0	166.7
1995	266.6	64.9	57.6	16.3	4.0	77.9	0.9	0.4	144.1	0.9	145.0	26.6	171.7
1996	269.7	65.2	57.8	16.4	4.0	78.2	1.0	0.4	144.7	0.9	145.6	27.4	173.0
1997	272.9	64.9	60.4	17.3	3.7	81.5	0.9	0.4	147.8	1.4	149.2	27.0	176.2
1998	276.1	64.9	61.9	17.1	3.6	82.7	0.9	0.4	149.0	2.0	150.9	27.4	178.3
1999	279.3	66.3	63.7	16.3	3.5	83.5	1.1	0.4	151.4	2.5	153.9	27.8	181.7
2000	282.3	65.5	62.7	15.8	3.4	81.8	1.1	0.4	148.9	2.2	151.1	27.7	178.8
2001	285.0	64.5	62.6	15.5	3.3	81.4	0.9	0.4	147.3	2.7	150.0	28.5	178.5
2002	287.7	63.3	62.9	15.5	3.3	81.6	1.1	0.4	146.5	3.7	150.1	29.2	179.3
2003	290.3	61.0	61.0	15.2	3.1	79.3	1.0	0.4	141.7	4.3	146.0	29.5	175.5
2004	293.0	61.7	59.9	15.6	3.3	78.9	0.9	0.4	141.9	4.5	146.4	29.9	176.3
2005	295.7	63.2	59.2	15.3	3.3	77.8	1.1	0.4	142.5	4.5	147.0	29.8	176.8
2006	298.4	62.5	58.3	13.8	3.1	75.2	1.1	0.4	139.2	5.4	144.7	29.9	174.6
2007	301.1	62.1	56.3	13.7	3.0	73.0	1.0	0.4	136.6	5.3	141.9	30.3	172.2

1/ Per capita deliveries of sweeteners by U.S. processors and refiners and direct-consumption imports to food manufacturers, retailers, and other end users represent the per capita supply of caloric sweeteners. The data exclude deliveries to manufacturers of alcoholic beverages. Actual human intake of caloric sweeteners is lower because of uneaten food, spoilage, and other losses.

2/ U.S. Census Bureau.

3/ Calculated from data developed by SRI Consulting and published in *Chemical Economics Handbook* (CEH).

Source: USDA, ERS, Sugar and Sweeteners Group.

## Western Hemisphere Sugar



## **Western Hemisphere Sugar**

Sugar is an important crop for many countries in Latin America. In fact, in several countries, it represents an important share of the agricultural gross domestic product. Sugarcane-based ethanol is becoming a real alternative in many countries, such as Colombia. Latin America houses several important sugar-producing countries that have the potential to produce large amounts of refined sugar and sugarcane-based ethanol.

### ***Dominican Republic***

#### **Production**

At 482,186 metric tons, raw value (MTRV), sugar production in the Dominican Republic during marketing year (MY) 2007 fell below the 520,000 MTRV initially estimated because of unfavorable weather conditions and a nonoperational state-owned mill. The Central Romana and Grupo Vicini mills produced 90 percent of the country's sugar, while Consorcio Azucarero Central produced the remaining 10 percent. Production for MY 2008 is forecast at 490,000 MTRV. Central Romana and Grupo Vicini will produce 89 percent and Consorcio Azucarero Central will produce the rest. Central Romana and Grupo Vicini usually start the sugar harvest in early to late December, while Consorcio Azucarero Central begins in early to late February.

In MY 2007, the only sugar refinery operating in the country, Central Romana, produced 150,000 metric tons (mt), requiring the country to import 84,000 mt of raw sugar. The Dominican Sugar Institute (INAZUCAR) believes that the production of refined sugar for MY 2008 will be similar to that of MY 2007, implying that, to meet its needs, the country must import about 40,000 mt of raw sugar. However, the opening of the European Union (EU) market may generate an increase in raw sugar imports. In October 2008, the Dominican Republic will be allowed to export up to 30,000 mt of raw sugar to the EU duty free.

Depending on the company, production costs vary from U.S. \$0.12 to U.S. \$0.20 per pound. The major factors that determine yield are rainfall patterns, fertilization, and labor. Due to increasing costs, fertilizer application, which in most cases is done by hand, has remained almost constant during the last 5 years. Moreover, less than half of the land used in sugarcane production is irrigated. During dry periods, these two limitations can reduce supply.

The Government is considering putting sugarcane to the alternative use of producing biofuels, specifically ethanol, and legislation is slowly moving in this direction.

#### **Consumption**

Domestic consumption for marketing year (MY) 2007 was 334,500 mt—185,000 mt, or about 55 percent, of raw sugar and 149,500 mt, or about 45 percent, of refined sugar. The general public usually consumes raw sugar, while soft drink, juice, and confectionary industries demand refined sugar. The USDA believes that

domestic sugar consumption for MY 2008 will be very similar to that of MY 2007. Central Romana, the only domestic refiner, produces about 150,000 mt. Semi-refined sugar has not been manufactured in the last 5 years.

## **Trade**

A shortfall in domestic production in MY 2007 caused imports to be higher than initially forecast. The USDA believes that, unless MY 2008 domestic production increases, the country will need to import 40,000 mt of raw sugar.

The Dominican Republic is the largest beneficiary of the U.S. tariff rate quota (TRQ) for sugar. Besides its informal trade with Haiti, all of the Dominican Republic's exports go to the United States and Puerto Rico. During CY 2007, the Dominican Republic exported 276,039 mt of raw sugar. As of March 2008, 41,525 mt of raw sugar have been shipped to the United States and Puerto Rico. Currently, the TRQ allocation for the Dominican Republic is 185,335 mt. Under the Dominican Republic and Central American Free Trade Agreement (DR-CAFTA), which was implemented in 2006, the Dominican Republic can add 10,000 mt to its quota with 2 percent growth per year, provided the country meets the next exporter requirement stated in the agreement.

The Dominican Republic's import duties are relatively high—15 percent for raw sugar and 20 percent for refined sugar, plus a 16-percent value-added tax, known domestically as ITBIS. Imports for sugar and sugar-based products require permits from INAZUCAR. A couple of companies operate in a special free-trade zone using sugar as a raw material. They produce sweetened coconut milk, piña colada mix, juices, canned red pinto beans, and garbanzos. These companies are authorized to import and re-export as much as 6,000 mt of sugar per year. (Estimates in this report do not include the free-trade-zone sugar.)

In January 2008, the Dominican Republic, along with other countries in the Caribbean, reached an Economic Partnership Agreement (EPA) with the EU. Under this agreement, starting in October 2008, 30,000 mt of sugar will have export access to the EU and, as of October 2009, Dominican sugar will have free access. As of October 2008, Dominican sugar will enter the EU at 448.20 €(euro) per mt c.i.f. (cost, insurance, freight), and for 2009, at 335.20 €per mt c.i.f. Although these values are higher than the U.S. preferential rate, INAZUCAR has stated that exports to the EU will take place only after the U.S. quota is filled.

## **Policy**

Numerous laws regulate the Dominican sugar industry. Two of the most important are law 491 and law 619. The former is used to supervise the relationship between private cane producers and processors and to set the price for cane based on sugar content, while the latter is used to assign regulatory functions to INAZUCAR and to regulate marketing, price schedules, and statistics.

To allocate the U.S. quota among producers, INAZUCAR uses a formula based on the individual production levels of the last 3 years. INAZUCAR no longer publishes allocations; current, a Presidential ruling dictates individual allocations. For 2008, Central Romana obtained 62.84 percent; Vicini, 27.16 percent; and Consorcio Azucarero Central, 10 percent.



Due to the new DR-CAFTA agreement implemented in March 2006, the Dominican Republic will phase out its sugar and high fructose corn syrup tariffs over a 15-year period.

Legislation to diversify the use of sugarcane is moving forward. Biofuel production, specifically in ethanol-gasoline blends, appears to be the first alternative. In fact, decree 556-05 from 2005 reactivated law 2071 to authorize ethanol-gasoline blends. Moreover, a new law requiring the use of 5 percent alcohol in gasoline is waiting approval. The bill has already passed in one of the two Congress' chambers, and government officials believe that it will soon become a law. If this legislation passes and international prices remain favorable, ethanol production will move forward, but domestic production is at least 2-3 years away.

## *Argentina*

### **Production**

The harshest winter in the last 20 years, combined with excess autumn rain, took its toll on sugar production in Argentina, causing MY 2008 production, at 2.16 million MTRV to be about 80 percent of initial estimates. Production for MY 2009, however, looks very promising. In fact, expectations of a return to normal weather patterns as well as higher yields may result in record-high production of 2.52 million MTRV.

Considerable investment at the farm level during the last few years significantly increased productivity; however, MY 2008's poor weather and increasing costs have slowed the pace of investment. For instance, for MY 2009, Argentinean farmers expect the cost of fertilizers, labor, energy, and agricultural chemicals to increase by 20-30 percent. Experts believe that this will translate into higher prices.

Conversely, investment at the mill level continues to be robust. Mills are expanding crushing capacity and boilers in order to co-generate energy. For example, three mills in the Tucuman Province will achieve energy self-sufficiency, which will be a big plus during the winter. Moreover, almost all of the mills are considering the possibility of expanding their distilleries to produce ethanol for fuel. According to people familiar with the industry, investment will take place when the current biofuel law is improved, as it is currently viewed to be lacking many definitions.

### **Consumption**

Domestic consumption for MY 2008 was 1.8 million mt. The Argentinean economy is expected to continue growing, which will lead to an increase in domestic sugar consumption. USDA expects domestic consumption for MY 2009 to reach a record high of 1.9 million mt, with households demanding approximately 40 percent and soft drink, candy, and food industries consuming the remaining 60 percent.

## **Trade**

Low domestic production for MY 2008 caused exports to be lower than initially expected, only 338,000 mt. Even though Argentinean companies had committed to export most of their anticipated production surplus, some deals had to be called off. For instance, some 300,000 mt of raw sugar were re-purchased at the port and then refined and sold in the domestic market. Moreover, in late 2007 and early 2008, one sugar mill had to import sugar from Bolivia in order to comply with pre-arranged export agreements, while a candy manufacturer and two large mills imported around 9,500 mt of refined sugar from Brazil during the same period.

Nonetheless, it appears that MY 2009 will be different. MY 2009 exports will be 580,000 mt, about 71 percent higher than MY 2008 exports. As of now, 20 percent of the MY 2009 crop is designated for export. Exports of raw sugar will represent more than 50 percent of total sugar exports, with the United States and the Russian Federation being the most important buyers. Refined sugar is expected to be shipped primarily to Chile followed by Uruguay and a few other countries in the region.

## **Policy**

The current biofuel law mandates that gasoline be mixed with 5 percent ethanol by 2010, which represents an annual production of 250-300 million liters. However, many experts believe that the current law is not well structured and thus slows the pace of investment. Currently, Argentina's annual ethanol production, which comes from molasses, is about 250 million liters, none of which is used for fuel. Experts believe that, if ethanol production occurs, sugar exports will decrease drastically, leaving the United States as the only buyer of Argentinean sugar. Finally, the Government is pressuring the industry to include water treatment processes.

## *Guatemala*

### **Production**

Most of the sugarcane production in Guatemala takes place in the southern part of the country in the departments (equivalent to U.S. States) of Escuintla, Suchitepequez, Retalhuleu, and Santa Rosa. MY 2007 sugar production was 2.36 million mt. Even though area planted will increase during MY 2008, unfavorable weather conditions and the low irrigation rate—only about 40 percent of the land used in sugarcane production is irrigated—will reduce domestic production. Domestic production will decline 7 percent to 2.2 million mt, but area planted will increase by about 3 percent to 215,000 hectares. Contracts acquired by the mills generally result in an increase in area planted. Currently, producers are expanding the crop toward the southeast region of the country. Northward expansion is impossible as this area is devoted to banana and palm oil crops.

The country presently has 13 mills, which have a combined production capacity of 130,000 mt per day. Some of these mills produce alcohol. Specifically, the Palo Gordo and Darsa mills each produce 100,000 liters per day and the Madgalena & Madre Tierra mill produces 300,000 liters per day. Moreover, in MY 2007, the biggest sugar mill in Guatemala, Pantaleon, opened "Bio-Etanol Co," which has a

production capacity of 150,000 liters per day. Other mills are also in the process of adding alcohol refineries. Mexico, the EU, and Central American countries are the main buyers of Guatemalan alcohol.

The sugar industry generates about 60,000 full-time direct jobs and about 300,000 indirect ones. For example, the Guatemalan Sugarcane Research Center (CENGICAÑA) provides the industry with research and technical assistance. CENGICAÑA's main mission is to conduct research on how to increase yields and on how to develop new cane varieties. CENGICAÑA's support has proven to be effective. In fact, even though the weather has been uncooperative, yields have maintained acceptable levels.

### **Consumption**

Domestic consumption for MY 2007 was 715,000 mt. Due to population growth, consumption for MY 2008 will increase about 4 percent to 745,000 mt. Concerns about malnutrition and growing awareness of the vitamin A content found in sugar caused per capita consumption to increase during 2007. Currently, per capita sugar consumption in Guatemala is close to 53 kilograms (kg). Domestic sugar consumption is divided between the general public at 72 percent and industrial users at 28 percent. Soft drink companies demand most of the industrial portion, followed by confectionaries, bakeries, juice makers, wineries, dairies, and pharmaceutical companies.

Comercializadora de Guatemala (COMETRO) controls domestic wholesale and retail markets. Specifically, COMETRO markets and distributes to retailers using its network of 38 strategically located warehouses. Nonetheless, COMETRO is starting to face some competition, which has forced it to design new marketing strategies aimed at improving efficiency.

### **Trade**

Guatemala is the second largest sugar exporter in Latin America and the fifth largest in the world. Agricultural exports count for about 75 percent of total exports, with sugar, bananas, and coffee the most important products. Sugar exports represent about 75 percent of total sugar production. In fact, according to the USDA Post, during CY 2007, Guatemala exported 1,295,092 mt. The biggest buyers of Guatemalan sugar are South Korea, Canada, the United States, Venezuela, China, Chile, and Taiwan, which make up around 74 percent of demand. Guatemala's sugar exports for MY 2007 were 1.5 million mt, and the USDA Post believes that, for MY 2008, exports will reach 1.4 million mt. The U.S. quota allocation for Guatemala for FY 2008 is 50,546 MTRV. The Asociación de Azucareros de Guatemala (ASAZGUA) expects a small increase in the percentage of raw sugar exports. In fact, it believes that about 84 percent of the exports will be raw sugar.

Asia is becoming an important market for Guatemalan sugar. In 2006, Guatemala and Taiwan reached a bilateral free trade agreement that allows significant quantities of Guatemalan sugar to enter duty free. Since then, the quantity has been increasing. In 2007, Taiwan's quota allocation for Guatemala was 67,482 mt, and in 2008, it was 75,000 mt, of which 48,750 mt was raw sugar and the rest was refined sugar. Moreover, the new Economic Cooperation Agreement with the Russian

Federation will provide Guatemala most-favored-nation treatment without volume restrictions.

## **Policy**

Guatemala's sugar board includes representatives from the Economics Ministry, sugarcane producers, and sugar mills. The board sets production goals and sugarcane prices and decides the distribution among the mills of the U.S. sugar quota. Distribution of this quota is based on past production performance, previous quotas, and milling capacity.

A law aimed at fighting malnutrition requires that all sugar sold in the domestic market be enriched with vitamin A, which, according to industry representatives, signifies an annual investment of \$3.5 million. Guatemala does not have import quotas; all imports have a tariff of 20 percent and are required to comply with the vitamin A enrichment law.

## ***Brazil***

### **Production**

#### **Sugar**

Brazil is by far the biggest producer of sugarcane in the world. In fact, it produces around 35 percent of the world's total. Most of Brazil's sugarcane production, 80-85 percent, takes place in the Center-South part of the country, while the remaining 15-20 percent occurs in the Northeast. Sugarcane production for MY 2008 was 491.1 million mt, with the Center-South region providing 431.1 million mt and the Northeast 60 million mt. Due to the continued increase in land used by sugarcane plantations in the Center-South region, the Agricultural Trade Office (ATO) in Sao Paulo expects that sugarcane production for MY 2009 will grow by 12 percent to 550 million mt. This expansion in the amount of land used will allow the Center-South region to produce 490 million mt. In addition to an increase in acreage, approximately 30 new mills are scheduled to start operating this season.

In MY 2008, the area of land used in sugarcane production was 7.19 million hectares, and MY 2009 will see an increase of approximately 12 percent to 8.05 million hectares. Likewise, the harvested area is expected to increase sizably between MY 2008 and MY 2009, from 6.5 million hectares to 7.4 million hectares, or by about 14 percent. The Government of Brazil, through its satellite program, monitors sugarcane expansion in the country. According to this program, Sao Paulo State, which is the leading sugarcane producer in Brazil, increased its sugarcane acreage by about 15 percent during MY 2008. Parana, the second largest sugarcane-producing State, increased its land area for sugarcane by 23 percent between MY 2007 and MY 2008, and Minas Gerais, the third largest producing State, expanded its land area by about 31 percent during the same period. Although most of the expansion took place on what was previously cattle pasture, it is not clear if some soy and grain fields were displaced.

Weather conditions in the States of Sao Paulo, Parana, and Minas Gerais will contribute to a decrease in the agricultural yield for MY 2009. In fact, yields are

forecast at 74.32 mt per hectare, representing a 2 percent reduction from the previous marketing year. On the other hand, the industrial yield will remain nearly unchanged, remaining at around 143 kg TRS (total reducing sugar) per mt, which is only slightly lower than the MY 2007 industrial yield of 145.81 kg TRS per mt.

Sugar production for MY 2008 was 32.1 million mt, and production for MY 2009 is expected to increase by 5 percent to 33.7 million mt. The Center-South States will produce about 87 percent or 29.2 million mt, implying an increase of 7 percent compared with 1 year earlier. The Northeast region will produce about 4.5 million mt, or 13 percent.

## **Ethanol**

As ethanol demand is strong, harvesting early avoids potential shortages of the product. Brazil's harvest season officially starts in May; however, harvesting in Parana State usually starts in mid-March and in Sao Paulo State in April; mills start crushing the cane in late March and early April.

Although sugar prices have bounced back, the MY 2009 crop is expected to follow the growing trend of ethanol production because of the strong domestic demand for ethanol.

Ethanol production will continue rising. Production for MY 2009 will increase by about 15 percent, from 22.39 billion liters (8.07 billion liters of anhydrous ethanol and 14.32 billion liters of hydrated ethanol) in MY 2008 to 25.71 billion liters (8.5 billion liters of anhydrous ethanol and 17.21 billion liters of hydrated ethanol) in MY 2009.

## **Consumption**

Fuel consumption in Brazil has been steadily increasing since 2005. For instance, diesel consumption has gone from 39 million cubic meters in 2005 to 41.5 million in 2007. Hydrated ethanol consumption has increased from 4.6 million cubic meters in 2005 to 9.3 million in 2007. Consumption of gasoline C (including 20-25 percent anhydrous ethanol) has grown from 23.5 million cubic meters to 24.3 million cubic meters during the same period. However, increasing sales of flex-fuel cars do not guarantee that demand for ethanol will continue rising. Consumers' decisions at the pump are based on the ethanol-gasoline price ratio. Specifically, ratios below 70 percent imply that ethanol prices are more attractive than gasoline prices. Since 2005, ethanol has been more attractive in Sao Paulo State, but it was not until 2007 that ethanol became preferred in the States of Rio de Janeiro, Minas Gerais, Goiania, and Fortaleza. So far during 2008, ethanol has been preferred in all of the previously mentioned States. Gasoline prices, however, have been more attractive in the State of Porto Alegre since 2006 and, as of 2008, this trend has not changed.

Sugar consumption during MY 2008 was 11.4 million mt. ATO/Sao Paulo says that population growth and expansion of the food processing sector will increase domestic sugar consumption to 11.9 million mt in MY 2009.

## **Trade**

Sugar exports during MY 2008 were 19.75 million mt. In MY 2009, exports will increase by about 9.3 percent to 21.6 million mt. Of this total, raw sugar should be around 16.2 million mt and the remaining will be refined sugar. In MY 2008, Brazilian exports went to several countries all over the world. Russia, importing 3,691,668 mt worth \$894.5 million, was the most important importer of Brazilian sugar (NCM 1701.11.00). Malaysia bought 859,767 mt worth \$197.3 million; Nigeria, 823,860 mt, \$204.9 million; Canada, 228,400 mt, \$186.7 million; Egypt, 681,593 mt, \$159.7 million; Algeria, 204,268 mt, \$157.8 million; Iran, 449,430 mt, \$108.2 million; and all other purchasing countries, 2,804,720 mt, \$693.5 million. The main buyers of Brazilian sugar (NCM 1701.99.00) were the United Arab Emirates, which bought 750,602 mt worth \$177.1 million; Saudi Arabia, 681,699 mt, \$159.3 million; and Nigeria, 309,390 mt, \$95 million.

Brazil exported 3.45 billion liters of ethanol in MY 2008, which was 450 million liters higher than the initial estimate because of the unexpectedly large volumes of ethanol that companies sold in late in 2007 and early 2008 in order to liquidate excess supply. Ethanol exports will reach 3.9 billion liters in MY 2009, which signifies an increase of 450 million liters from the previous marketing year. Brazil expects to increase its exports to the United States both directly and through Caribbean Basin Initiative (CBI) countries. Moreover, anticipated high U.S. prices for ethanol should make Brazilian ethanol more attractive. Like it does for sugar, Brazil sells ethanol to many countries around the globe. For instance, in MY 2008, the Netherlands, buying 875.4 million liters worth \$361.3 million, and the United States, buying 514.2 million liters worth \$265.9 million, were the most important importers of Brazilian ethanol (NCM 2207.10.00). Jamaica, Japan, El Salvador, Costa Rica, Trinidad and Tobago, Nigeria, the Virgin Islands, and South Korea purchased 1.24 billion liters worth \$485.1 million. The main buyers of Brazilian ethanol (NCM 2207.20.10) were the Netherlands, at 11.6 million liters worth \$4.7 million, and Jamaica, at 10.4 million liters worth \$4.1 million.

## ***Peru***

### **Production**

Favorable weather conditions, robust investment in new plantations, and efficiency gains at processing plants will raise CY 2008 sugar production in Peru to 910,000 mt, an increase of 105,000 mt, or about 13 percent, over that of CY 2007. The USDA Post believes that sugar production will continue rising in the near future. In fact, CY 2009 production is projected at 995,000 mt. If Peru achieves this production level, it will become self-sufficient in sugar production. Peru's sugarcane production will reach 8.2 million mt, up about 960,000 mt from that of CY 2007, and 8.3 million mt in CY 2009.

Sugar mills in Peru are located along the coast and have a total milling capacity of 37,000 mt of cane per day. Mills in Peru are very heterogeneous. In fact, yields range from 53 to 190 mt of cane per hectare and cuts occur every 13-18 months. Moreover, costs vary widely between mills, largely due to their fuel requirements. Fuel use can be as low as 5 gallons per metric ton and as high as 90 gallons per metric ton of sugar produced.

The Northern coast of Peru, where most of the cane is produced, has seen significant private investment in the last 5 years, with domestic as well as international investors purchasing land. This investment has produced economies of scale, which, in turn, have allowed for higher rates of return and thus more investment.

Peru has 10 sugar producers, with the largest 5 producing more than 70 percent of the output. Sugar production and market share among the 10 producers in CY 2007 were as follows: Casa Grande, 165,967 mt, 8.2 percent; Cartavio, 138,180 mt, 15.2 percent; Laredo, 132,045 mt, 14.5 percent; Paramonga, 122,027 mt, 13.4 percent; Tuman, 93,522 mt, 10.3 percent; Andahuasi, 69,060 mt, 7.6 percent; San Jacinto, 62,885 mt, 6.9 percent; Pomalca, 58,206 mt, 6.4 percent; Pucala, 58,537 mt, 6.4 percent; and Chucarapi, 9,678 mt, 1.1 percent.

Production of ethanol from sugarcane is one of the main drivers of investment in Peru. So far, investments have totaled \$130 million. Experts believe that about 7.8 percent of gasoline and 5 percent of diesel could be replaced with biofuels.

### **Consumption**

Peru's sugar consumption has been increasing over the last few years. In fact, it will increase from 995,000 mt to 1,050,000 mt between MY 2007 and MY 2008. The USDA Post believes that sugar consumption will reach 1,100,000 mt in CY 2009. The increase in domestic consumption is principally due to the robust state of the economy, with beverage and confectionary industries being the main drivers.

### **Trade**

The USDA Post estimates Peru's sugar exports for CY 2008 at 48,000 mt. The United States, through its sugar tariff rate quota, is virtually the only buyer of Peruvian sugar. The ministry of Agriculture and the Peruvian Sugar and Biofuels Producers Association (APPAB) distribute the U.S. sugar quota among the mills.

Expectations of higher domestic production will cause exports to increase and imports to contract. In fact, CY 2009 imports will decrease by 30 percent. Colombia will be the main seller in CY 2008, with a market share of 63 percent, followed by Bolivia with 17 percent, and Guatemala with 9 percent.

### **Policy**

Most mills have been privatized, which has resulted in an increase in productivity. A few mills, however, still refuse to privatize despite their high debt and inability to re-pay it. These mills are highly inefficient. Only one of the mills that has not privatized, Andahuasi, has developed an investment plan to upgrade technology and renovate plantations. Some evidence suggests that the plan is working. Despite inefficiencies, Peru is expected to be self-sufficient in sugar production in CY 2009.

Sugarcane is assessed a 9 percent import tariff and is subject to the price band system, which is a surcharge based on the international price: the lower the international price, the higher the tax. Andean Community Nations have duty-free access.

In 2003, Peru's government passed Law 28054 to promote the use of biofuels. However, some elements of the law, such as the tax scheme for ethanol, are unclear. Nonetheless, when the domestic law becomes more transparent, investors plan to use the United States as the main export market. Under the Peru-U.S. FTA, ethanol will have duty-free access to the United States as soon as the agreement is implemented. In anticipation, one U.S. and one Peruvian company bought 10,000 hectares each to sow sugarcane for ethanol production.

## *Colombia*

### **Production**

Most of the Colombian sugarcane is planted in three departments: Cauca Valley, Cauca, and Risaralda, which are located in the southern part of the country. Currently, 14 mills in the country are dedicated to the production of sugar. Unfavorable weather conditions, which reduced sugarcane yields, decreased production from 2.44 million mt in MY 2006 to 2.35 million mt in MY 2007. However, better weather conditions will increase MY 2008 production to 2.36 million mt.

Sugar production has been declining in the last few years due to ethanol production. In fact, 5 out of the 14 mills are producing sugarcane-based ethanol. According to the Ministry of Agriculture, land used on sugarcane plantations in 2007 was 214,569 hectares, with 177,137 hectares used for sugar production and 37,432 hectares used for ethanol production. Land used in sugarcane production in 2008 will increase by 2,947 hectares, with a reduction of 1,116 hectares used for sugar production and an increase of 4,063 hectares used for ethanol production.

The 5 ethanol plants in Colombia produce an average of 230,000 liters of ethanol per day, which supplies 70 percent of the government mandate to blend 10 percent ethanol with gasoline. To cover the remaining 30 percent, the Government plans to increase ethanol production from sugarcane and to start production from beetroot and cassava. However, the main obstacle is to ensure that the supply of raw materials is sufficient to produce ethanol.

Colombia is the second largest producer of noncentrifugal sugar in the world after India. Colombia's noncentrifugal sugar production in 2007 was 1.58 million tons and was distributed amongst 70,000 farms, which, combined, employ about 120,000 farmers. An initiative to use some of the sugarcane from the production of noncentrifugal sugar in ethanol production is not proving successful because prices for noncentrifugal sugar are much more attractive than prices for ethanol.

### **Consumption**

Domestic sugar consumption in MY 2007 was 1.6 million tons and increase to 1.61 million tons in MY 2008 due to strong economic growth. The creation and preparation of confectionary food items for export and for domestic consumption will be the main drivers of the increase in domestic sugar consumption.



## **Trade**

Sugar exports were 942,000 mt in MY 2007. Ethanol production will cause exports in MY 2008 to decrease to 940,000 mt. Of this amount, about 720,000 mt will be refined sugar and the rest will be raw sugar. Producers have been exporting higher priced sugar and have substituted exports of raw sugar with ethanol production. In fact, since late 2005, when ethanol production started, raw sugar exports have decreased by 300,000 mt and imports have increased.

Colombia exported sugar to several countries in the world in MY 2007. During the last 3 years, Peru has been the most important buyer of Colombian sugar. In fact, in MY 2007, Peru imported about 187,000 mt; Haiti, 145,000 mt; Chile, 113,000 mt; Mexico, 65,000 mt; Venezuela, 49,000 mt; Jamaica, 45,000 mt; Canada, 43,000 mt; Trinidad and Tobago, 25,000 mt; Syria, 22,000 mt; Ecuador, 11,000 mt; the United States, 58,000 mt; and other countries, 180,000 mt. Imports have seen a steady increase since launching ethanol production. In MY 2007, the main exporters of sugar to Colombia were Brazil, Argentina, Cuba, and Singapore.

The 2007 U.S. quota was 30,760 mt; however, Colombia's exports were almost twice that amount. The 2008 U.S. quota was set at 25,273 mt. Colombia always fulfils the U.S. quota because prices are very attractive. The Ministry of Foreign Trade distributes this quota. Generally, large mills obtain about 80 percent and noncentrifugal sugar producers obtain the remaining 20 percent.

## **Policy**

In 2007, Colombia launched the "Agriculture Secure Income" plan, which secures government funding for agricultural production. The program receives \$270 million in funding to assist producers of specific commodities. Sugarcane, producers can receive subsidized loans from the government-owned bank (FINAGRO). Small farms are eligible for the maximum subsidy, which is 40 percent of the principal balance, while large farms get the lowest subsidy of 10 percent. Moreover, there is a government program to encourage agricultural exports.

Colombia also has a price-stabilization fund, which was launched in January 2001 by the Ministry of Agriculture. Exporters who receive prices above the international price contribute to the fund. Money from the fund is distributed among exporters who sell their sugar at prices lower than the international price.

Colombia belongs to the Andean Community and thus uses a price band system. Countries belonging to this group (Bolivia, Ecuador, and Peru) are allowed to export sugar to Colombia duty free. Imports from nonmember countries are subject to a variable duty. The benchmark duty rate on imports of raw and refined sugar is 20 percent. The Andean Community revises the price band system every April.

## *Jamaica*

### **Production**

On average, sugarcane plantations in Jamaica use around 34,000 hectares. However, illicit cane fires, poor weather, disruptions in labor supply, and increases in stand-over fields allow only 80 percent of the area to be harvested. There are five state-owned and two privately owned sugar mills in Jamaica. The heterogeneity among the Jamaican mills suggests that the state-owned mills should be upgraded. In fact, all five state-owned mills have recovery indexes below the industry minimum of 91 percent. This problem is more evident at the Bernard Lodge and Long Pond sugar mills, the recovery indexes of which are 81 percent and 79 percent, respectively. In contrast, the private mills have recovery indexes of 92 percent and 96 percent. Some evidence suggests that sometime later in the year a Brazilian firm will take control of the five state-owned mills.

An increase in the sugarcane area in 2006/07 raised production of sugarcane to 1,974,000 mt and of sugar to 164,000 mt, which were both higher than initial estimates. Because of a hurricane in August 2007 and unfavorable weather conditions during late November and early December 2007, the 2007/08 crop was strategically delayed about 3 weeks. This decision, combined with subsequent improvement in the weather, resulted in an enhancement in the quality of the crop, which, in turn, increased productivity. In fact, 2007/08 sugarcane and sugar production will be only slightly lower than that of 2006/07. Specifically, 2007/08 sugarcane production will be 1,750,000 mt, while sugar production will be 160,000 mt. The USDA Post believes that sugarcane and sugar production for 2008/09 will increase to 1,900,000 mt and 170,000 mt, respectively.

### **Consumption**

Domestic consumption in 2006/07 was 140,000 mt, which was 10,000 mt higher than the initial estimate. This higher consumption level was due to Jamaica boosting its refined sugar imports by 9,000 mt in 2006/07. In Jamaica, refined sugar is used for manufacturing, principally by the soft drink and bakery industries. Given the increase in wheat prices, which depressed the bakery industry, the growth in refined sugar consumption must be attributed to the soft drink industry. The USDA Post estimates that domestic consumption for 2007/08 will fall by 1.5 percent to 138,000 mt and that consumption 2008/09 will reach 140,000 mt.

### **Trade**

Attractive prices paid by the EU encourage Jamaica to fulfill its quota even though it means that the country must import raw and refined sugar to satisfy its domestic demand. The EU quota is 127,000 mt plus an additional 24,000 mt under the Special Preferential Sugar agreement.

Jamaica exported around 153,000 mt worth \$101 million in 2006/07. The EU bought about 147,000 mt, the United States about 5,900 mt, and other countries the rest. The price that the EU pays for Jamaican sugar will be adjusted downwards every July 1 until 2010. Although the price will not be adjusted in 2008, Jamaican Cane Product Sales, the agency which trades Jamaica's raw sugar, will fulfill the

2008 EU quota before July 1 in order to create a pattern for 2009 and 2010. The EU will pay 448 €/mt in 2009 and 335.2 €/mt in 2010 for Jamaican sugar.

Jamaica's imports of refined sugar jumped 12 percent to 74,000 mt in 2006/07, principally due to an increase in manufacturing demand. On the other hand, raw sugar imports remained almost constant. Guatemala, Colombia, Belize, and Guyana are the main suppliers for the Jamaican market. Guatemala supplies 30-50 percent of refined sugar, Colombia 20-40 percent, and Belize and Guyana share the difference.

For the current crop year, Jamaica expects to fulfill both the EU and U.S. quotas. Given the above-explained situation with the EU, the U.S. quota will not be fulfilled until the end of the crop cycle. Moreover, the USDA Post estimates that imports will reach 129,000 mt, of which 75,000 mt will be refined sugar and the rest will be raw sugar.

### **Policy**

Due to future reductions in the price, the EU will pay for Jamaican sugar, the Jamaican Government plans to privatize its five mills, which combined represent 80 percent of the industry. Media reports suggest that the Government may have selected Brazil's Infinity Bio-Energy to operate the five state-owned mills and that a deal could be reached as early as June 2008. If Infinity Bio-Energy takes over, the production of sugar and traditional sugar derivatives will increase; however, the anticipated production of ethanol will not occur at least for 2 more years. When produced, Jamaican ethanol will have preferential access to the United States through the Caribbean Basin Initiative. Finally, Jamaican environmental policies encourage the diversification of sugarcane uses.

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## Honey

Notwithstanding a 2-percent climb in the number of honey-producing bee colonies to more than 2.4 million in 2007, U.S. production of natural honey declined 4 percent. Lower yields of honey harvested per colony were again to blame for the second consecutive year. The average yield in 2007 was 60.8 pounds of honey per bee colony, down from 64.7 in 2006 and 72.4 in 2005. Despite the reduced production volume, honey prices remained largely unchanged on average in 2007, sliding by less than 1 percent. Thus, lower production and prices pushed the value of production down 4.5 percent from \$160.5 million in 2006 to \$153.2 million in 2007.

The smaller yield per colony and slightly lower prices also trimmed the average farm value of honey per bee colony to \$62.75 in 2007 from \$67.00 in 2006. States that produced larger volumes of honey, such as North and South Dakota, Texas, and Michigan, were able to raise their honey production values significantly. Bee keepers in Texas and Michigan gained value per colony at two-digit rates relative to other major honey-producing States where values per colony declined, except in North and South Dakota. By far, North Dakota remained the largest producing State with more than 31 million pounds of honey produced in 2007, more than twice that of California, the next largest producer.

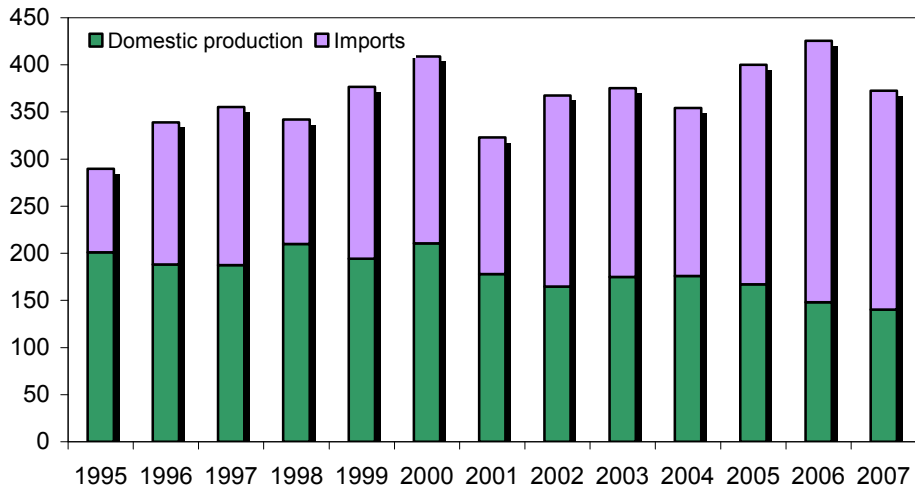
U.S. consumption of honey fell 11 percent in 2007 as domestic production, stocks, and import volume dropped. As a result, per capita consumption slipped from 1.4 pounds to 1.3 pounds. Supply from imports accounted for 61 percent of domestic honey consumption in 2007, down from 65 percent in 2006. Imports exceeded 200 million pounds in 5 of the 6 years between 2002 and 2007, during which the share of imports in consumption climbed from 52 percent to 61 percent. Import prices averaged 75 cents per pound between 2002 and 2006, which is 30 percent more than in the preceding 6 years. As a result, the import cost of honey during that period was 75 percent higher than in the preceding 6 years.

The volume of imported honey fell by 16 percent in 2007 as supplies from Argentina, China, India, and Russia dropped precipitously. A fast-rising foreign supplier is Vietnam, ranking third after Argentina and China in terms of volume shipped to the U.S. and after Argentina and Canada in terms of value of shipments. Brazil and India round up the top six foreign honey suppliers. Although 2007 import prices at 70 cents per pound were 13 percent higher than in 2006, they still lagged behind prices in 1996-97 and in 2002-04. Import prices were about two-thirds that of domestic prices in 2007. Compared with price ratios of the past 2 decades, however, when they largely ranged from 70 percent to 96 percent, import prices in recent years have been highly competitive with domestic honey prices. Although larger imports represent to some extent a market challenge for domestic honey farmers, another factor also plays a part in this challenge: The elasticity of domestic supply with respect to price is less than 1 percent on average. This factor means that, historically, a 1-percent rise in honey prices results in less than a 1-percent jump in production the next year.

Figure 8

**Imports in U.S. honey consumption are up sharply**

Million pounds



Sources: USDA, NASS, *Honey*; U.S. Census Bureau.

## Should the WASDE Forecast Miscellaneous Use?

Miscellaneous use is the only item in the sugar supply and use table not forecast by the World Agriculture Outlook Board in its monthly *World Agriculture Supply and Demand Estimates* (WASDE) report. This data point is a residual calculated after the fiscal year (FY) ends to match the WASDE supply to use and ending stocks published in the Farm Service Agency (FSA) *Sweetener Market Data* (SMD) report.

### *WASDE Miscellaneous*

The WASDE miscellaneous, although wide ranging (from -132,000 tons to 160,000 tons), on average, is less than 0.01 percent of total domestic sugar use. At its highest, in FY 2003, miscellaneous represented only 1.6 percent of total domestic sugar use. The WASDE miscellaneous is calculated by subtracting exports, domestic deliveries, and ending stocks from supply. FSA supplies data on stocks, sugar production, exports, and domestic deliveries for the WASDE report. These data are reported to FSA monthly by the sugar processing and refining industries. Import data for the WASDE, however, are provided by the Foreign Agriculture Service (FAS) from data collected by the U.S. Customs Service and published by the U.S. Census Bureau. The timing of data reporting, end-of-year polarity adjustments, and data revisions account for differences between WASDE and SMD imports. These import differences, along with three industry-reported miscellaneous uses as described below (published in the SMD), account for the WASDE miscellaneous.

### *SMD Miscellaneous*

The SMD miscellaneous is comprised of refining loss, inventory adjustments, and intra-industry sales less receipts. Processors and refiners report these data monthly to FSA to ensure a complete materials balance in their reporting.

### *Refining Loss*

Refining loss is the difference between the actual quantity of refined cane sugar produced and the estimated quantity of refined sugar that should be produced from the raw cane sugar entering into the refining process. Some large, highly efficient, cane sugar refiners produce more refined sugar than what FSA's raw value conversion formula estimates (table 1A). Through thorough testing, these cane sugar refiners found that they realize 100 pounds of refined sugar from (approximately) every 105 pounds of 96-degree raw sugar introduced into the refinery. Because these companies produce more sugar than the USDA formula predicts, they show a sugar gain, which is reported as a negative refining loss.

In FY 2005, USDA began requiring all cane sugar refiners to report data using a 1.07 conversion factor for converting “as made” sugar production to a raw value equivalent. This change was in preparation for a web-based data reporting system that standardized the conversion factor in order to test data accuracy before submission. Highly efficient cane sugar refiners were required to increase the raw value equivalent of actual sugar production by as much as 2 percent (1.05 to 1.07) and therefore to report consistently negative refining losses (inventory gains), as displayed in table 2A. Although there appears to be a trend toward higher efficiency (fewer refining losses followed by refining gains) from FY 2000 on, these gains started increasing substantially in FY 2005.

### *Inventory Adjustment*

Inventory adjustment contains data from all three sugar sectors and is a “catch-all” for adjusting monthly reported ending stocks. Processors and refiners adjust inventories for quarterly or monthly physical inventories, torn refined sugar packaging, return of rail cars with sugar remaining inside, and floor sweepings/overspray in packaging facilities. Also, some cane sugar refiners and sugarcane processors use the inventory-adjustment category to account for production estimate corrections. For example, since raw sugar warehouses are emptied every year, sugarcane processors assume sugar production must equal sugar sales. When warehouses are emptied, total sales are used as the final production report.

Table 1A--Raw value conversion for sugar derived from sugarcane 1/

Raw sugar <i>Pounds</i>	Polarity <i>Degree</i>	Refined sugar <i>Pounds</i>
107.000	96.0	100
105.250	97.0	100
103.500	98.0	100
101.750	99.0	100
100.875	99.5	100
100.000	100.0	100

1/ Raw value =  $\{[(\text{actual degree of polarization} - 92) \times 0.0175] + 0.93\} \times \text{actual weight}$ .

Source: USDA, FSA.

Table 2A--Miscellaneous breakdown

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	3-Year average	5-Year average	10-Year average
<i>Short tons, raw value (1,000)</i>													
WASDE miscellaneous	-2	-58	-137	124	-23	160	26	95	-68	-132	-35	16	-1.5
Imports difference	50	-28	11	15	-91	118	-64	238	105	-47	99	70	31
SMD miscellaneous	-53	-28	-150	67	67	43	91	-144	-172	-85	-133	-53	-36
Refining loss	43	53	120	40	1	-20	-53	-124	-17	-91	-77	-61	-5
Inventory adjustment	-52	-36	-107	-64	-12	-1	45	10	17	37	21	22	-16
Sales less receipts	-44	-45	-163	91	78	64	99	-30	-172	-31	-78	-14	-15
Unexplained	-1	2	-2	-41	-1	1	1	-1	1	0	0	0	-4

Source: Farm Service Agency, USDA.

Inventory adjustments appear to be level in recent years, although a pattern change was noted. Inventory adjustments since FY 2004 have been positive and averaged only 22,000 tons. Before FY 2004, inventory adjustments fluctuated significantly, ranging from -1,000 tons to -107,000 tons. There does not appear to be a clear reason behind the pattern change of consistent inventory gains, then inventory losses. However inventory adjustments have stabilized, 3- and 5-year averages were nearly equal, and the long-term (10-year average) data are small, 16,000 tons.

### ***Intra-Industry Sales less Receipts***

Intra-industry sales less receipts are used to track sugar in transit between sugar reporting companies. For example, when sugarcane processors sell raw sugar to cane sugar refiners, the sale and receipt will offset one another (in theory). Due to contractual details that identify when ownership changes hands, the sale could occur in one month and the receipt in the next, but over time, these transactions should balance.

FY 2005-07 data show an imbalance of receipts higher than sales. USDA conducted an exhaustive telephone survey to consider the possibility that cane refiners may have been purchasing imported raw sugar from traders. We concluded that no foreign-origin sugar was being reported as a "receipt" by cane sugar refiners, and therefore, FSA was not double counting domestic sugar supplies.

### ***Imports***

WASDE and SMD import data differ, as discussed. Technical differences, such as title transfer (denoting ownership) and/or reporting deadlines, cause differences between Customs data as reported in the WASDE and SMD imports. Refiners, for example, may not take title to imported sugar until it is offloaded into the refinery. Customs, however, will consider sugar entered into the US when the ship is anchored within 3 miles of the US coast.

### ***Conclusion***

WASDE miscellaneous appears to be too small to require being forecast due to offsetting biases. We compared SMD data available at the time the WASDE published each fiscal year's data for the final time. SMD miscellaneous is biased negatively primarily because of refining losses and recent trends in sales less receipts. WASDE miscellaneous is biased positively because of the differences in imports. Thus, the WASDE and SMD miscellaneous biases offset one another. In the long run (10-year average), the WASDE miscellaneous appears to be small (table 2A).

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### ***Global Biofuels Market Boosts Sugar Ethanol Industry in Latin America***

Worldwide concerns about climate change from greenhouse gas (GHG) emissions paired with the current price environment of record-high and rising crude oil prices have led to a growing demand for renewable sources of energy for the transportation sector around the world. In most countries in Latin America, as is the case for various countries around the world, government policy incentives and programs have set the goal of significantly expanding liquid biofuels made from biomass as an alternative for transportation fuel in the coming decades.

The best known biofuels in the transportation sector are ethanol (produced from a variety of feedstocks) and biodiesel (derived from vegetable oil and animal fats). Brazil and India use sugarcane to produce ethanol, while U.S. producers rely most heavily on corn. China relies mostly on corn, although it also extracts fuel from rice and wheat. The European Union (EU) mainly produces biodiesel from rapeseed and other vegetable oils. The Americas, mostly the United States and Brazil, account for 70 percent of the world's biofuel production. Brazil alone produces 40 percent of the world's biofuels, whereas the United States, the EU, China, and India produce much of the balance. Brazil, a pioneer in the production and use of fuel ethanol in its transportation sector, plays a large role in global biofuels markets thanks to decades of public and private investment in agrifuels development and the Government's past and current incentives toward sugarcane, sugar, and ethanol production.

The Brazilian success at integrating sugar ethanol into the fuel supply to reduce dependence on petroleum is more significant given that the transportation sector accounts for 61 percent of liquid fuel consumption in the country (Empresa de Pesquisa Energética, EPE). Several countries in Latin America, as well as many other developed and developing countries around the world, are looking at Brazil as the model for developing biofuel programs in their own countries.

### ***A Growing World Biofuel Market Influencing Energy Supply and Biomass Use in Latin America***

Promotion of liquid biofuels made from biomass as the best alternative for transportation fuel is not a new effort. Over the past two decades the renewable share of world-marketed energy use has been expanding and it now accounts for 8 percent of total energy supplied. Global biofuel production has tripled since 2000, reaching 15.7 billion gallons in 2007. The United States and Brazil were the world's two largest producers of ethanol, contributing 6.5 billion and 5.3 billion gallons (F.O. Licht).

Total energy supply and use in Latin America remains modest compared with energy supply and use in the United States and other industrialized countries: In 2005 Latin America's total energy supply per capita was 14 percent of energy supply in the United States (IEA).

Latin America's current energy matrix includes production and use of oil, coal, gas, hydroelectric power, and biomass. Although the largest share of Latin America's total energy supply is crude oil (54 percent), the production of renewable fuels from

hydroelectric and biomass sources now represent 29 percent of its energy market compared with more than 40 percent in Brazil and 12 percent globally. Fully 18 percent of Latin America’s energy came from biomass in 2006 compared with a high 27 percent for Brazil and 10 percent for the world (IEA). Biomass includes cane bagasse, alcohol, wood and coal.

With continuing expansion in economic activity, rising personal incomes and urbanization, demand for oil and other liquid fuels is expected to continue to increase in the transportation sector. Biofuels currently meet just over 1.59 percent of road-fuel demand worldwide, but the long-term prospects are for biofuels to play a much larger role in meeting world road-transport fuel demand. The International Energy Agency forecasts this share to quadruple by 2030. In the United States, biofuels such as ethanol and biodiesel represent 2.45 percent of the transportation fuels market, and 1.29 for the EU, and just 0.16 for Latin America, excluding Brazil. But, in the case of Brazil, biofuels represent over 26 percent of the transportation fuels market (fig. 1-B).

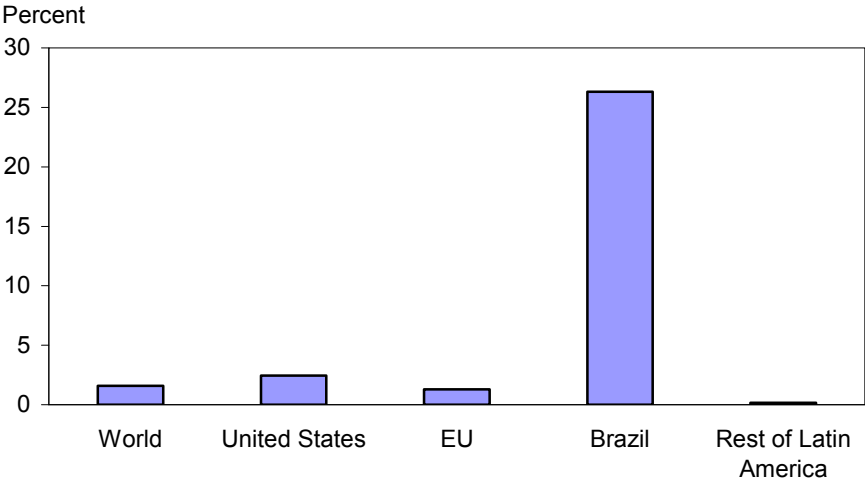
**Brazil’s Comparative Advantage in Sugar Ethanol Production**

Brazil’s ready availability of land, water and labor has made it the world’s largest sugarcane producer and exporter of sugar and ethanol. Sugarcane production in Brazil reached 428 million tons, growing at a rate of 11 percent per year since 2000. Sugarcane production in 2007/08 is expected to reach an all-time high of 491 million tons, a 14.7-percent increase over the previous year (USDA/FAS).

About 53 percent of Brazil’s sugarcane harvest is being distilled into fuel ethanol <sup>1</sup> (CEPEA), compared with a world average of 10 percent (Earth Policy Institute). The remaining 47 percent of Brazil’s annual sugarcane harvest goes into producing sugar for domestic consumption and for export, a significant change from the 1970s when more than 80 percent of total sugarcane output went into sugar production.

<sup>1</sup> This represents 5.9 billion gallons (22.4 billion liters) of fuel ethanol -2.1 billion gallons of anhydrous and 3.8 billion gallons of hydrous ethanol.

Figure 1B  
**Brazil leads the world in the share of biofuels used as fuel for road transportation**



Source: OECD, IEA, 2007.

Brazil is the largest exporter of ethanol in the world. Brazil's ethanol exports represent 56 percent of the world's ethanol export market (GTIS, 2007). Despite the large role that Brazil plays in global export markets, the country exports just 20 percent of its ethanol production. Brazil exports both anhydrous ethanol (which is added to gasoline) and hydrous ethanol (used as a gasoline substitute). Hydrous ethanol exports represent between 90 and 97 percent of the total value of ethanol exports, in any given year, with anhydrous ethanol exports accounting for the remainder.

Brazil's ethanol exports in 2007 were \$1.4 billion. Major Brazilian markets for fuel ethanol in 2007 included the United States (\$361 million), the EU (\$421 million) and Japan (US\$153 million). Exports of ethanol dehydrated in Central America were re-exported duty free to the United States because under the Caribbean Basin Initiative the United States exempts Central American countries from paying the 54-cent duty on U.S. ethanol imports. In 2007 the U.S. imported 245 million gallons of fuel ethanol under the CBI quota fill (ITC).

Brazil's production and use of fuel ethanol since 1975 represent the most successful program of renewable fuel for transportation implemented to date. In 2007 over 82 percent of the new car fleet in the country used fuel ethanol. The recent interest in converting biomass to biofuels throughout the world is leading to increased domestic and foreign demand. Brazil's ethanol and sugar industries are experiencing more rapid growth, expansion in arable land and increased yields from technological advancements in new sugarcane varieties. As demand for Brazilian ethanol continues to rise, the production of ethanol will continue to exceed that of sugar in the sugarcane production mix.

Brazilian Government officials and researchers expect area planted to sugarcane to expand by 3-4 million hectares over the next 5 years by expanding sugarcane cultivation in degraded pastureland. The expansion of Brazil's sugar/ethanol complex is leading to new investments in infrastructure and technology. However, despite recent rapid growth and new investments in the sector, ethanol supply still lags demand. At times when ethanol shortages have led to rapid price increases to levels above those agreed upon by refinery owners and the Federal Government, Brazilian authorities have intervened to reduce the percentage of ethanol mixed with gasoline sold at gas stations from 25 percent to 23 or 20 percent, which in turn has led to a reduction in the use of ethanol.

### ***Latin America's Potential for Biofuels Production***

In addition to Brazil, several other Latin American countries have potential for ethanol production. For Latin American countries, biofuel developments provide an opportunity to reduce their dependence on imported liquid fuel and an export opportunity for regionally produced ethanol for use as fuel abroad. Biofuel development is also seen as a means to reduce poverty in the region, by engaging more farmers in crop production and crop diversification. As ethanol can be produced from a variety of biomass crops grown in Latin American--sugarcane, corn, cassava and cellulosic feedstocks (i.e. wood, grasses, and agricultural residues)-- development of an ethanol industry holds great potential for the region (table 1-B).

For most Latin American countries and given their experience with sugarcane cultivation, ethanol produced from sugar cane as a feedstock is their primary interest. Out of 33 Latin American countries, excluding Brazil, 21 countries are growing sugarcane: Argentina, Bolivia, Colombia, Costa Rica, Chile, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Trinidad and Tobago, Uruguay, and Venezuela.

Biodiesel production from soyoil presents development potential in Argentina (third largest soybean producer), Paraguay and Uruguay. Other important palm oil producers include Colombia (fifth largest palm oil producer), and Ecuador (table 2-B).

### ***Latin America's Foreign Demand Opportunities for Sugar Ethanol***

Brazilian flex-fuel technology for automobiles is beginning to spread around the world. Although several countries are developing flex-fuel models in cooperation with Brazil, other countries, mostly in Europe and Asia, have already introduced "E85 models." E85 models are powered by an engine based on the Brazilian technology that can be fueled with 85 percent ethanol and 15 percent gasoline.

The vast markets of the United States, the EU and Asia represent important opportunities for sugar-ethanol producing Latin American countries, in a manner similar to that of Brazil. The United States is the world's largest consumer of ethanol and is seeking to use 36 billion gallons of renewable and other alternative fuels by 2022. The Clean Air Act requirement to add oxygenates (such as ethanol) to gasoline and the ban on methyl tertiary butyl ether (MTBE) as a gasoline additive is also, in addition to the blend subsidy, driving consumption in the United States. In addition, rising costs of crude oil, paired with drive to reduce dependence on foreign oil, have played an important role in the recent growth of the U.S. ethanol industry. The United States produced about 6.5 billion gallons of ethanol in 2007 and is forecast to more than double output by 2010.

The United States applies a 2.5-percent ad valorem tariff and an additional duty applicable under HTS subheading 9901.0050 of \$0.54 per gallon of ethanol (for fuel use) to imports into the United States. However, under the Caribbean Basin Initiative (CBI), countries in Central America and the Caribbean have had duty-free access to the United States since 1989 for ethanol from regional feedstocks. Access for ethanol derived from nonregional feedstocks has been limited by a CBI quota equal to 7 percent of total U.S. ethanol consumption.

Brazil and Central America are already exporting ethanol to the United States, and large U.S. corporations such as Cargill have plants in Latin America that produce ethanol for export to the United States. For example, exports from Brazil to the Central American countries of El Salvador, Jamaica, Costa Rica and Trinidad and Tobago totaling \$202 million in 2006, were imported by the United States under the CBI (GTIS data) (table 3-B). To further benefit from this tariff exemption, Brazil is jointly investing with Central American countries to build new distilleries in Mexico El Salvador, Jamaica, Guatemala, Panama, and the Dominican Republic.

Table 1B--Selected Western Hemisphere countries with potential for biofuels production

Countries	Feedstock supplies		Potential for exports	
	Ethanol	Biodiesel	Ethanol	Biodiesel
USA	Primarily corn	Soyoil, other oilseeds oil, animal fats, recycled fats/oils	x	x
Canada	Corn, wheat, straw	Vegetable oils, animal fats	x	x
Mexico	Sugarcane, corn, sorghum	Palm oil	x	
Brazil	Sugarcane	Castor seed oil, soyoil, palm oil	x	x
Argentina	Sugarcane, corn, sorghum, potatoes, rice, barley	Soyoil, sunflower oil	x	x
Uruguay	Rice	Soyoil	x	x
Chile	Beet	Soyoil		
Colombia	Sugarcane, rice, potatoes, cassava, corn	Palm oil	x	x
Ecuador	Sugarcane	Palm oil, soyoil		x
El Salvador	Sugarcane	Palm oil, soyoil	x	
Guatemala	Sugarcane, corn	Palm oil, soyoil	x	x

Note: Other potential markets for biofuels include: Bahamas, Peru, Haiti, Suriname, Trinidad and Tobago, Venezuela.  
Source: USDA/FAS, Countries Attaché Reports.

Table 2B--World rank in production and global export market share

Item	World rank production	World rank exports	Global exports market share	Exports in 2006	Growth rates 2000-06
			Percent	U.S. \$ Millions	
Brazil					
Sugar	1	1	42	3.919	20
Ethanol	2	1	51	766	79
Soybeans	2	1	35	5.345	22
Corn	3	4	35	121	48
Argentina					
Soyoil	3	1	55	2.789	21
Paraguay					
Soybeans	6	3	3	441	8
Guatemala					
Sugar	4	3	5	299	7
Colombia					
Palm oil	5	7	1	109	26

Source: USDA's Foreign Agricultural Service and Global Trade Information Services data.

Table 3B--U.S. imports of fuel ethanol, by source, 1996-2007

Country	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
<i>Million gallons</i>												
Jamaica	21	9	13	24	28	29	29	39	39	36	67	80
Costa Rica	17	7	12	16	24	11	12	15	26	33	36	42
El Salvador	13	6	4	7	8	3	5	7	6	24	38	75
Canada			1	2	3	6	6	0	0	0	9	6
Brazil									94	31	434	189
Trinidad & Tobago										10	25	43
Netherlands											2	0
Pakistan											6	0
China											37	1
<b>TOTAL</b>	<b>52</b>	<b>22</b>	<b>31</b>	<b>49</b>	<b>63</b>	<b>50</b>	<b>52</b>	<b>61</b>	<b>164</b>	<b>135</b>	<b>653</b>	<b>436</b>

Source: International Trade Commission.

Table 4B--Biofuel policies, programs and blend levels

	Current	Blending targets
USA	E10 and E85	The Energy Independence and Security Act of 2007 raises the renewable fuel standard from 4.7 billion gallons in 2007 to 36 billion gallons (about 15 billion gallons from corn and the rest from cellulose and other sources) by 2022.
Canada	E10 and E85	Government plans to mandate a 5% ethanol content in gasoline by 2010, and a blend of 2% biodiesel in diesel by 2012.
Mexico	E10	E10 mandatory since 2006.
Brazil	E20 to E25, and E100	Current blending ratio of ethanol with gasoline is 25% (E25). A 2% blend of biodiesel with diesel (B2) is mandated for 2008, rising to 5% in 2013. Exports exempted from taxes.
Argentina	E2	Mandatory E5 and B5 by 2010. Export tax for biodiesel 5% and 2.5% tax rebate is lower than for soyoil (24%).
Uruguay	E18	
Colombia	E10	E10 mandatory since 2005. To be raised to 25% by 2010. B5 mandatory by 2008. Tax exemption: VAT and income for biodiesel producers.
Peru	E7	E7 mandatory since 2007. B5 mandatory in 2010.
Costa Rica	E10	
Guatemala	E25	E25 mandatory since 1985. VAT, income, import tax exemptions.

Source: USDA/FAS, Countries Attaché Reports.

While Central America (particularly Guatemala and El Salvador) may offer some of the best prospects for biofuel production and increased exports, several other countries in Latin America with well established sugar industries including Colombia, Peru and Ecuador also have potential for sugar ethanol development. Brazil is partnering with other countries to develop technical standards that would allow fuel ethanol to become an international commodity that could soon be traded daily in international markets.

### ***National Biofuel Programs in Latin America***

Several countries in Central and South America have either initiated or are planning national biofuel programs of some kind, including Argentina, Costa Rica, Colombia, El Salvador, Honduras, Jamaica, Mexico, Nicaragua, Paraguay, Peru, Uruguay and Venezuela (table 4-B). Colombia is viewed as the country with the second most advanced biofuels program in South America, after Brazil (Jank et al.). In 2005, Colombia established a mandatory 10-percent ethanol blend (E10) in gasoline, which is to be raised to 25 percent by 2010. A 5-percent mandatory biodiesel blend is also required in some selected regions beginning in 2008. Mexico is planning to double current sugarcane area for sugar ethanol production in order to meet a 10-percent mandatory blend of fuel ethanol in gasoline by 2012.

In 2003, Guatemala, an important world sugar producer and the largest sugarcane producer in Central America, passed the Law of Incentives for the Development of Projects in Renewable Energy. Under this law, all biofuel projects are exempt from import duties, value-added taxes (VAT) on machinery imports for the stages of pre-investment and execution, and income taxes for 10 years during commercial operation. The Government expects ethanol producers to sell in the international market soon. In Honduras, the Government has encouraged sugar production to supply two ethanol distilleries. Costa Rica has set a target of substituting 7 percent of its gasoline with ethanol by the end of 2008.

El Salvador produces sugarcane and benefits from CBI preferential treatment to enter the U.S. market, under which a maximum quantity of 75 million gallons of ethanol was re-exported to the United States in 2007. This quantity is set to increase by 1.3 million gallons per year through 2020 (Jank et al.).

The Americas' agroenergy potential over the next two decades will be influenced by changes in macroeconomic policy and management, including exchange rate and trade policies, external factors (i.e, international prices of feedstock supplies and foreign demand for renewable fuel), and domestic production and use policies. These policies include blending targets, credit availability for biofuel production at subsidized interest rates, tax exemptions that favor production of feedstocks and/or processing of biofuels, and social policies that may impact the cost structure and profitability of biofuels.

Various other factors, such as increased public and private investment to improve the capacity and efficiency of transportation and marketing infrastructure, may impact the competitiveness of the region's biofuel sector. New technologies to advance the biofuels sector that focus on developing new varieties that increase sugarcane yields and the development of new technologies for a more efficient processing of products to increase ethanol production will also be crucial.

The new H-Bio technology patented by Petrobrás (Brazil's state-oil company) for mixing vegetable oils into diesel fuel, and Brazil's progress to date in "*second generation*" biofuels (refers to biofuels extracted from non-food crops) to obtain ethanol from sugarcane bagasse (cellulosic ethanol) will also be important factors. The Americas' efforts to create biofuels markets will also be affected by the various bilateral, regional and multilateral trade agreements in which these countries may participate.

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### Related Websites

WASDE <http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documented=1194>

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Table 9--World refined sugar price, monthly, quarterly, and by calendar and fiscal year 1/

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	:	1st Q.	2nd Q.	3rd Q.	4th Q.	:	Calendar	Fiscal
<i>Cents per pound</i>																				
1991	13.39	13.40	13.86	12.90	12.99	13.94	14.73	14.40	13.09	13.03	12.71	12.46	:	13.55	13.28	14.07	12.73	:	13.41	13.71
1992	12.18	11.92	12.19	12.54	12.89	13.41	13.41	12.96	12.29	11.94	11.68	11.26	:	12.10	12.95	12.89	11.63	:	12.39	12.67
1993	11.60	11.97	13.05	13.38	13.39	12.64	12.20	13.05	12.90	13.23	13.15	12.97	:	12.21	13.14	12.72	13.12	:	12.79	12.42
1994	13.14	14.11	15.46	14.92	15.77	16.05	15.54	15.62	15.42	15.46	17.77	18.65	:	14.24	15.58	15.53	17.29	:	15.66	14.62
1995	18.75	18.17	17.45	16.31	17.05	19.16	20.27	20.01	16.58	17.29	17.64	17.21	:	18.12	17.51	18.95	17.38	:	17.99	17.97
1996	17.36	17.90	18.14	18.02	17.79	18.00	16.99	16.81	15.74	14.87	14.09	13.95	:	17.80	17.94	16.51	14.30	:	16.64	17.41
1997	13.87	13.98	14.05	14.19	14.61	14.93	15.07	15.66	14.51	13.58	13.81	13.64	:	13.97	14.58	15.08	13.68	:	14.33	14.48
1998	13.52	12.78	12.23	11.63	12.00	11.80	11.65	11.62	10.05	10.00	10.78	10.97	:	12.84	11.81	11.11	10.58	:	11.59	12.36
1999	10.99	10.50	9.85	8.79	9.13	9.93	9.47	9.04	8.28	7.85	7.73	7.61	:	10.45	9.28	8.93	7.73	:	9.10	9.81
2000	7.70	7.67	7.83	8.66	9.06	10.63	11.38	11.29	11.74	11.76	11.02	10.95	:	7.73	9.45	11.47	11.24	:	9.97	9.10
2001	11.27	10.65	10.26	10.61	11.71	12.68	12.60	12.08	10.66	10.19	11.27	11.52	:	10.73	11.67	11.78	10.99	:	11.29	11.35
2002	11.88	10.80	10.81	10.09	10.28	10.02	10.23	10.33	9.68	9.72	10.16	10.25	:	11.16	10.13	10.08	10.04	:	10.35	10.59
2003	10.64	11.10	10.51	10.14	9.95	9.66	9.84	9.74	8.95	8.39	8.67	9.23	:	10.75	9.92	9.51	8.76	:	9.74	10.06
2004	9.16	9.54	10.59	11.19	10.78	10.73	11.81	11.80	11.12	11.21	11.27	11.23	:	9.76	10.90	11.58	11.24	:	10.87	10.25
2005	11.63	12.09	12.02	11.76	11.75	12.61	14.70	14.81	14.60	14.18	13.10	15.00	:	11.91	12.04	14.70	14.09	:	13.19	12.47
2006	16.92	19.99	20.45	21.35	21.81	20.93	20.95	18.16	17.32	17.92	16.41	15.86	:	19.12	21.36	18.81	16.73	:	19.01	18.35
2007	15.13	14.92	15.59	14.21	14.94	14.36	14.13	12.87	12.54	12.56	13.00	13.78	:	15.21	14.50	13.18	13.11	:	14.00	14.91
2008	15.17	16.61	15.79	15.87																15.86

1/ Contract No. 5, London Daily Price, for refined sugar, f.o.b. Europe, spot, through June 2006. Starting in July 2006, spot price replaced by average of nearest futures month for which an entire month of prices is available.

Source: London International Financial Futures and Options Exchange (LIFFE).

Table 10--World raw sugar price, monthly, quarterly, and by calendar and fiscal year 1/

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	:	1st Q.	2nd Q.	3rd Q.	4th Q.	:	Calendar	Fiscal
<i>Cents per pound</i>																				
1991	8.88	8.57	9.22	8.55	7.88	9.37	10.26	9.45	9.39	9.10	8.79	9.03	:	8.89	8.60	9.70	8.97	:	9.04	9.26
1992	8.43	8.06	8.22	9.53	9.62	10.52	10.30	9.78	9.28	8.66	8.54	8.15	:	8.24	9.89	9.79	8.45	:	9.09	9.22
1993	8.27	8.61	10.75	11.30	11.87	10.35	9.60	9.30	9.52	10.27	10.10	10.47	:	9.21	11.17	9.47	10.28	:	10.03	9.58
1994	10.29	10.80	11.71	11.10	11.79	12.04	11.73	12.05	12.62	12.75	13.88	14.76	:	10.93	11.64	12.13	13.80	:	12.13	11.25
1995	14.87	14.43	14.58	13.63	13.49	13.99	13.46	13.75	12.72	11.94	11.96	12.40	:	14.63	13.70	13.31	12.10	:	13.44	13.86
1996	12.57	12.97	13.07	12.43	11.94	12.54	12.83	12.33	11.87	11.65	11.29	11.38	:	12.87	12.30	12.34	11.44	:	12.24	12.40
1997	11.13	11.06	11.17	11.50	11.54	12.02	12.13	12.54	12.65	12.86	13.19	12.90	:	11.12	11.69	12.44	12.98	:	12.06	11.67
1998	11.71	11.06	10.66	10.27	10.17	9.33	9.70	9.50	8.21	8.24	8.73	8.59	:	11.14	9.92	9.14	8.52	:	9.68	10.80
1999	8.40	7.05	6.11	5.44	5.83	6.67	6.11	6.39	6.98	6.90	6.54	6.00	:	7.19	5.98	6.49	6.48	:	6.54	7.05
2000	5.64	5.51	5.54	6.48	7.33	8.72	10.18	11.14	10.35	10.96	10.02	10.23	:	5.56	7.51	10.56	10.40	:	8.51	7.53
2001	10.63	10.26	9.64	9.27	9.96	9.80	9.48	8.77	8.60	7.15	7.80	8.02	:	10.18	9.68	8.95	7.66	:	9.12	9.80
2002	7.96	6.81	7.27	7.12	7.33	7.07	8.02	7.86	8.54	8.84	8.87	8.81	:	7.35	7.17	8.14	8.84	:	7.88	7.58
2003	8.56	9.14	8.50	7.92	7.41	6.85	7.18	7.30	6.70	6.74	6.83	6.95	:	8.73	7.39	7.06	6.84	:	7.51	8.01
2004	6.42	7.01	8.23	8.21	8.08	8.41	9.19	8.99	9.10	9.84	9.65	10.19	:	7.22	8.23	9.09	9.89	:	8.61	7.85
2005	10.33	10.51	10.57	10.19	10.23	10.45	10.89	11.09	11.59	12.40	12.86	15.09	:	10.47	10.29	11.19	13.45	:	11.35	10.46
2006	17.27	18.93	18.01	18.21	17.83	16.19	16.61	13.58	12.42	12.09	12.38	12.47	:	18.07	17.41	14.20	12.31	:	15.50	15.78
2007	11.85	11.63	11.44	10.85	10.78	11.05	12.18	11.66	11.61	11.86	11.83	12.47	:	11.64	10.89	11.82	12.05	:	11.60	11.67
2008	13.75	15.16	14.60	13.68										:	14.50			:		

1/ Contract No. 11 f.o.b. stowed Caribbean port, including Brazil, bulk spot price, plus freight to Far East.

Source: New York Board of Trade (www.nybot.com).

Table 11--U.S. raw sugar price, duty fee paid, New York, monthly, quarterly, and by calendar and fiscal year 1/

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	:	1st Q.	2nd Q.	3rd Q.	4th Q.	:	Calendar	Fiscal
<i>Cents per pound</i>																				
1991	21.86	21.42	21.46	21.23	21.29	21.42	21.25	21.83	22.06	21.76	21.75	21.50	:	21.58	21.31	21.71	21.67	:	21.57	21.89
1992	21.38	21.56	21.36	21.38	21.04	20.92	21.10	21.34	21.55	21.61	21.39	21.11	:	21.43	21.11	21.33	21.37	:	21.31	21.39
1993	20.76	21.16	21.56	21.76	21.36	21.42	21.89	21.85	21.97	21.80	21.87	22.00	:	21.16	21.51	21.90	21.89	:	21.62	21.49
1994	22.00	21.95	21.95	22.08	22.18	22.44	22.72	21.84	21.78	21.58	21.57	22.35	:	21.97	22.23	22.11	21.83	:	22.04	22.05
1995	22.65	22.69	22.46	22.76	23.10	23.09	24.47	23.18	23.21	22.67	22.60	22.63	:	22.60	22.98	23.62	22.63	:	22.96	22.76
1996	22.39	22.68	22.57	22.71	22.62	22.48	21.80	22.51	22.38	22.37	22.12	22.14	:	22.55	22.60	22.23	22.21	:	22.40	22.50
1997	21.88	22.07	21.81	21.79	21.70	21.62	22.04	22.21	22.30	22.27	21.90	21.93	:	21.92	21.70	22.18	22.03	:	21.96	22.00
1998	21.85	21.79	21.74	22.14	22.31	22.42	22.66	22.19	21.92	21.67	21.83	22.19	:	21.79	22.29	22.26	21.90	:	22.06	22.09
1999	22.41	22.38	22.55	22.57	22.65	22.61	22.61	21.24	20.10	19.50	17.45	17.87	:	22.45	22.61	21.32	18.27	:	21.16	22.07
2000	17.70	17.24	18.46	19.43	19.12	19.31	17.64	18.12	18.97	21.15	21.39	20.56	:	17.80	19.29	18.24	21.03	:	19.09	18.40
2001	20.81	21.18	21.40	21.51	21.19	21.04	20.64	21.10	20.87	20.90	21.19	21.43	:	21.13	21.25	20.87	21.17	:	21.11	21.07
2002	21.03	20.69	19.92	19.73	19.52	19.93	20.86	20.91	21.65	21.94	22.22	22.03	:	20.55	19.73	21.14	22.06	:	20.87	20.65
2003	21.62	21.91	22.14	21.87	21.80	21.62	21.32	21.26	21.34	20.92	20.91	20.37	:	21.89	21.76	21.31	20.73	:	21.42	21.76
2004	20.54	20.57	20.86	20.88	20.69	20.03	20.14	20.10	20.47	20.31	20.40	20.55	:	20.66	20.53	20.24	20.42	:	20.46	20.54
2005	20.57	20.36	20.54	21.21	21.96	21.89	21.94	20.49	21.10	21.71	21.83	21.74	:	20.49	21.69	21.18	21.76	:	21.28	20.94
2006	23.61	24.05	23.10	23.56	23.48	23.32	22.44	21.38	21.27	20.22	19.66	19.59	:	23.59	23.45	21.70	19.82	:	22.14	22.62
2007	20.03	20.59	20.85	20.91	21.27	21.33	22.72	21.80	21.42	20.56	20.25	20.12	:	20.49	21.17	21.98	20.31	:	20.99	20.87
2008	20.24	20.21	20.65	20.54									:	20.37				:		

1/ Contract No. 14, duty fee paid New York. Average of nearest futures month for which an entire month of prices will be available. For example, April 2001's price average of 21.51 cents is the average of closes for the July 2001 futures during the month of April since there was not a full month of May 2001 futures in April (the May 2001 futures expired April 10, July 2001 became the nearest futures, so July 2001 was used for the entire month of April).

Source: New York Board of Trade ([www.nybot.com](http://www.nybot.com)).

Table 12--U.S. wholesale refined beet sugar price, Midwest markets, monthly, quarterly, and by calendar and fiscal year

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	:	1st Q.	2nd Q.	3rd Q.	4th Q.	:	Calendar	Fiscal
<i>Cents per pound</i>																				
1991	26.88	26.50	26.50	26.13	26.00	25.75	25.50	25.50	25.00	24.94	24.60	24.50	:	26.63	25.96	25.33	24.68	:	25.65	26.57
1992	25.40	26.50	26.50	26.50	26.40	26.00	25.00	25.00	25.00	24.90	24.13	23.90	:	26.13	26.30	25.00	24.31	:	25.44	25.53
1993	23.25	23.00	23.00	23.50	23.50	23.50	25.50	27.75	27.50	27.50	27.25	26.50	:	23.08	23.50	26.92	27.08	:	25.15	24.45
1994	25.75	25.50	25.50	24.50	24.75	25.25	25.00	25.00	24.70	25.00	25.38	25.50	:	25.58	24.83	24.90	25.29	:	25.15	25.60
1995	25.50	25.50	25.50	25.50	25.13	25.10	24.75	24.75	25.50	25.75	28.13	28.85	:	25.50	25.24	25.00	27.58	:	25.83	25.26
1996	28.69	29.00	29.50	29.50	29.70	29.50	29.50	29.00	29.00	29.00	29.00	29.00	:	29.06	29.57	29.17	29.00	:	29.20	28.84
1997	29.00	29.00	28.13	28.00	28.00	27.50	27.00	26.65	26.38	24.90	25.00	25.50	:	28.71	27.83	26.68	25.13	:	27.09	28.06
1998	25.50	25.50	25.50	25.50	26.00	26.00	26.00	26.00	26.50	26.90	27.00	27.00	:	25.50	25.83	26.17	26.97	:	26.12	25.66
1999	27.20	27.13	27.00	27.00	27.00	27.00	27.00	27.00	27.00	26.00	26.00	25.20	:	27.11	27.00	27.00	25.73	:	26.71	27.02
2000	23.38	22.25	21.50	21.00	19.75	19.00	19.00	19.00	20.70	21.25	21.00	21.80	:	22.38	19.92	19.57	21.35	:	20.80	21.90
2001	23.13	22.75	22.00	20.50	21.38	21.90	22.50	22.50	24.63	25.75	26.20	26.50	:	22.63	21.26	23.21	26.15	:	23.31	22.11
2002	26.75	26.00	25.95	24.63	24.50	24.00	24.00	25.40	26.25	26.75	27.40	27.88	:	26.23	24.38	25.22	27.34	:	25.79	25.49
2003	27.80	26.50	27.13	27.63	28.00	28.00	27.63	25.50	24.00	24.70	23.94	23.63	:	27.14	27.88	25.71	24.09	:	26.21	27.02
2004	23.70	23.50	23.50	23.50	23.50	23.50	23.50	23.50	23.50	23.50	23.38	23.20	:	23.57	23.50	23.50	23.36	:	23.48	23.66
2005	23.50	23.50	23.25	23.80	24.75	25.88	26.00	26.75	40.10	40.00	40.00	36.90	:	23.42	24.81	30.95	38.97	:	29.54	25.63
2006	34.50	36.50	37.10	36.38	35.00	35.00	35.00	34.50	31.20	28.75	27.19	26.10	:	36.03	35.46	33.57	27.35	:	33.10	36.01
2007	25.50	25.00	24.90	25.00	25.00	25.00	25.38	25.60	25.38	25.00	24.50	24.50	:	25.13	25.00	25.45	24.67	:	25.06	25.73
2008	24.13	26.40	28.00	28.00																26.18

Source: *Milling & Baking News*. Simple average of the lower end of the range of quotations for days in that month. Quotations are weekly.

Table 13--U.S. retail refined sugar price, monthly, quarterly, and by calendar and fiscal year

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	1st Q.	2nd Q.	3rd Q.	4th Q.	Calendar	Fiscal
<i>Cents per pound</i>																		
1991	43.40	43.00	43.40	43.30	43.10	43.20	43.50	42.80	42.20	42.00	41.90	41.80	: 43.27	43.20	42.83	41.90	: 42.80	43.08
1992	42.50	42.40	41.90	41.70	41.70	41.50	41.50	41.10	41.00	41.20	41.20	40.60	: 42.27	41.63	41.20	41.00	: 41.53	41.75
1993	41.20	41.00	40.60	40.80	40.80	40.30	40.20	40.60	40.40	40.50	40.30	39.80	: 40.93	40.63	40.40	40.20	: 40.54	40.74
1994	40.70	40.50	40.10	39.90	40.10	39.70	40.00	39.70	40.30	40.20	39.50	39.20	: 40.43	39.90	40.00	39.63	: 39.99	40.13
1995	39.70	39.90	39.80	39.40	39.70	39.50	39.70	39.60	39.80	40.40	40.70	39.80	: 39.80	39.53	39.70	40.30	: 39.83	39.67
1996	40.50	40.30	40.60	40.40	41.50	41.80	42.40	42.80	42.60	43.20	42.60	42.80	: 40.47	41.23	42.60	42.87	: 41.79	41.15
1997	43.40	42.90	43.10	43.50	43.40	43.60	43.30	43.60	43.60	43.00	42.90	42.80	: 43.13	43.50	43.50	42.90	: 43.26	43.25
1998	43.00	42.90	43.30	43.10	42.80	43.10	43.20	43.60	43.20	42.30	42.50	42.70	: 43.07	43.00	43.33	42.50	: 42.98	43.08
1999	43.60	43.00	43.70	43.20	43.60	43.10	43.20	43.10	43.70	43.80	42.60	42.60	: 43.43	43.30	43.33	43.00	: 43.27	43.14
2000	43.70	43.20	42.90	41.40	42.40	42.80	42.50	42.40	42.40	42.50	41.30	41.40	: 43.27	42.20	42.43	41.73	: 42.41	42.73
2001	42.80	43.50	43.70	42.90	43.80	43.50	44.30	43.30	44.20	44.00	42.50	42.50	: 43.33	43.40	43.93	43.00	: 43.42	43.10
2002	44.10	43.70	42.60	44.40	42.70	43.00	43.30	43.30	43.70	42.40	41.90	42.10	: 43.47	43.37	43.43	42.13	: 43.10	43.32
2003	43.00	42.70	42.70	42.70	43.10	42.90	43.10	43.50	42.60	42.50	41.10	42.20	: 42.80	42.90	43.07	41.93	: 42.68	42.73
2004	42.90	42.60	42.60	42.70	42.50	42.50	42.90	42.60	42.60	42.60	42.20	43.00	: 42.70	42.57	42.70	42.60	: 42.64	42.48
2005	43.70	43.50	43.30	43.60	42.70	42.80	42.40	43.20	43.70	44.20	44.50	44.90	: 43.50	43.03	43.10	44.53	: 43.54	43.06
2006	46.10	46.80	47.10	48.00	49.90	50.40	50.50	51.60	51.50	51.20	51.30	50.60	: 46.67	49.43	51.20	51.03	: 49.58	47.96
2007	51.90	51.40	51.80	50.80	51.30	52.10	52.20	51.80	51.80	51.30	51.00	50.30	: 51.70	51.40	51.93	50.87	: 51.48	51.52
2008	51.90	51.30	50.40	51.70										51.20				

Source: Bureau of Labor Statistics.

Table 14--U.S. producer price index for corn sweeteners and sugar, monthly

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
<i>Corn sweeteners (liquids and solids), incl. glucose, dextrose, and HFCS, June 1985=100 1/</i>													
2000	98.9	98.0	97.8	98.0	97.9	97.9	97.8	98.0	98.0	97.6	99.2	100.3	98.3
2001	111.3	111.6	111.6	111.5	111.9	111.3	111.3	111.3	112.2	112.3	113.9	114.0	112.0
2002	116.5	120.1	119.7	119.8	117.4	119.6	121.2	121.0	127.4	127.9	125.9	126.5	121.9
2003	130.0	131.4	131.3	131.3	131.5	131.9	--	132.2	131.9	130.6	130.9	130.7	131.3
2004	131.9	132.0	131.9	131.7	131.6	131.7	131.8	131.5	131.6	131.5	131.6	131.6	131.7
2005	133.1	133.3	133.5	133.1	133.1	133.1	133.2	132.9	133.2	137.2	133.1	133.2	133.5
2006	144.5	144.8	145.1	153.4	151.1	151.2	151.2	150.9	150.9	150.9	151.1	151.0	149.7
2007	175.5	176.8	176.8	176.8	176.9	177.1	176.8	176.8	176.5	176.9	177.0	176.6	176.7
2008 2/	205.5	206.8	206.7	198.3									
<i>Raw cane sugar and other can mill products and byproducts, June 1982=100 1/</i>													
2000	92.7	89.4	95.1	97.4	97.0	99.5	92.7	90.7	95.9	106.1	106.9	103.4	97.2
2001	106.3	107.6	107.6	108.6	107.8	106.1	107.7	107.4	107.1	107.4	108.2	109.8	107.6
2002	109.2	107.0	103.8	103.4	101.4	102.7	106.7	106.9	111.2	111.6	113.9	112.7	107.5
2003	108.8	111.3	113.5	111.6	112.1	111.1	109.8	109.8	108.0	106.8	107.4	105.2	109.6
2004	104.7	104.5	106.4	105.6	105.8	102.7	104.6	103.3	107.1	104.2	104.2	106.5	105.0
2005	106.5	105.6	120.0	121.4	122.9	124.5	125.0	127.2	123.3	125.0	126.4	126.3	121.2
2006	129.5	133.2	129.9	132.9	134.6	135.4	134.2	132.0	132.1	127.5	124.4	123.0	130.7
2007	123.9	125.4	125.9	125.9	127.0	127.2	129.0	127.4	127.6	126.2	124.7	123.0	126.1
2008 2/	123.8	121.1	124.2	123.8									
<i>Refined beet sugar and byproducts, June 1982=100 1/</i>													
2000	105.4	101.5	100.3	99.1	98.3	98.3	97.7	96.2	95.5	94.7	95.0	94.0	98.0
2001	97.5	97.6	97.8	98.0	99.4	99.5	99.5	100.9	102.0	103.3	105.0	106.8	100.6
2002	108.5	109.8	110.5	111.2	111.1	110.9	111.3	111.3	114.2	114.3	116.1	117.9	112.3
2003	118.7	118.8	119.1	119.5	119.2	119.4	119.3	119.4	113.7	116.6	116.4	116.2	118.0
2004	116.1	116.3	116.4	116.8	116.3	116.6	116.6	116.7	116.9	115.5	115.8	116.1	116.4
2005	116.3	117.8	115.9	116.5	117.3	118.6	118.5	118.4	118.2	122.6	136.0	141.5	121.5
2006	141.9	147.4	148.8	149.0	148.6	149.2	152.0	151.2	146.2	145.0	143.5	138.1	146.7
2007	136.2	136.5	133.8	132.9	129.4	126.6	126.2	126.1	125.9	126.3	124.3	123.9	129.0
2008 2/	119.7	119.8	121.6	121.3									
<i>Refined cane sugar and byproducts, June 1982=100 1/</i>													
2000	124.7	121.8	121.7	119.8	120.4	119.8	120.5	119.2	117.5	113.9	113.2	114.4	118.9
2001	112.8	117.5	116.2	114.6	115.1	115.3	115.6	116.6	115.5	115.2	115.2	116.3	115.5
2002	117.4	117.9	121.0	122.3	119.7	121.2	121.3	120.8	120.8	121.0	119.5	120.1	120.2
2003	119.1	122.3	122.8	122.9	122.9	123.5	123.8	124.5	125.5	124.3	122.3	123.4	123.1
2004	120.5	120.4	121.6	121.6	123.0	124.3	123.3	123.5	123.1	123.6	122.5	121.6	122.4
2005	122.8	121.9	121.5	121.4	122.6	123.7	122.4	124.4	125.3	130.4	133.6	140.8	125.9
2006	142.8	146.2	155.5	156.9	155.5	150.7	156.4	153.1	152.3	148.2	143.9	142.3	150.3
2007	144.9	140.4	137.9	136.1	134.9	132.0	132.4	128.5	130.0	124.7	130.1	129.9	133.5
2008 2/	126.4	129.0	127.5	128.0									

1/ Based on a sample of domestic producers. 2/ Preliminary, all indexes are subject to revision four months after original publishing.

Source: Bureau of Labor Statistics.

Table 15--U.S. Consumer Price Index for sugar and selected sweetener-containing products 1/

Year and month	Sugar and sweets	Sugar and artificial sweeteners	Flour and prepared flour mixes	Cereals and bakery products	Breakfast cereal	White bread	Cakes, cupcakes, and cookies	Other bakery products
	2/	3/	4/	5/	6/	7/	8/	9/
	<i>1982-84=100</i>							
2000	154.0	137.1	160.2	188.3	198.0	199.1	187.9	191.5
2001	155.7	140.3	164.3	193.8	199.7	208.3	192.0	199.1
2002	159.0	143.2	171.0	198.0	203.0	213.4	196.7	203.0
2003	162.0	145.7	178.4	202.8	204.3	218.6	202.8	207.3
2004	163.2	146.9	177.8	206.0	203.5	223.8	206.4	211.8
2005	165.2	149.1	179.6	209.0	203.6	232.1	209.8	211.4
2006	171.5	163.9	182.2	212.8	199.9	238.0	214.2	215.5
2007	176.8	167.1	191.6	222.1	205.0	258.0	221.7	220.5
2007								
Jan.	175.2	167.4	189.9	216.3	197.5	249.2	215.8	219.3
Feb.	174.3	168.0	189.0	219.0	204.1	250.4	219.0	218.9
Mar.	174.6	168.3	189.2	218.5	201.7	247.5	219.8	217.5
Apr.	175.9	166.7	189.6	220.5	204.2	255.4	220.6	218.1
May	175.5	167.7	191.1	220.9	204.6	254.8	219.1	219.3
June	176.7	168.0	192.8	222.6	206.3	257.1	219.6	224.3
July	178.2	169.1	194.2	223.3	205.6	259.0	221.6	223.1
Aug.	178.3	168.3	195.7	224.0	205.7	259.9	221.4	226.3
Sep.	178.2	168.4	194.9	223.4	206.2	258.2	222.7	223.9
Oct.	177.2	167.0	191.8	224.7	207.3	267.5	224.3	220.4
Nov.	178.6	163.4	190.8	225.7	209.3	264.6	228.3	217.2
Dec.	178.6	162.5	190.0	226.5	207.8	272.2	228.7	217.5
2008								
Jan.	180.2	167.0	202.3	228.7	203.1	273.1	227.9	221.7
Feb.	180.6	167.7	208.8	233.4	205.9	278.9	229.2	227.2
Mar.	182.2	165.4	215.5	236.3	211.4	287.9	232.7	225.0
Apr.	184.9	168.5	224.3	240.0	208.6	291.4	234.5	233.8

Continued--



Table 15--U.S. Consumer Price Index for sugar and selected sweetener-containing products 1/

Year and month	Non-alcoholic beverages	Carbonated drinks	Non-carbonated juices and drinks	Canned fruits	Candy and chewing gum	Ice cream and related products	Food
	10/	11/	12/	13/	14/	15/	16/
1982-84=100							
2000	137.8	123.4	104.2	106.9	103.8	164.4	167.8
2001	139.2	125.4	106.0	109.0	104.3	173.4	173.1
2002	139.2	125.6	106.4	111.6	106.2	179.1	176.2
2003	139.8	125.6	106.5	113.7	107.8	175.5	180.0
2004	140.4	127.9	105.7	114.0	108.4	178.3	186.2
2005	144.4	131.9	106.5	118.4	109.5	177.6	190.7
2006	147.4	134.2	109.5	121.5	112.2	179.3	195.2
2007	153.4	140.1	112.9	125.2	116.1	183.4	202.9
2007							
Jan.	151.1	137.8	112.1	122.9	114.5	185.5	198.8
Feb.	151.7	138.0	112.1	124.4	113.5	181.6	200.0
Mar.	153.9	141.4	113.4	123.3	113.9	183.6	200.4
Apr.	151.8	138.9	111.0	123.8	115.5	180.0	200.8
May	152.9	139.3	113.1	125.6	114.8	179.5	201.8
June	153.1	139.5	113.0	126.7	115.6	181.3	202.4
July	153.4	140.8	112.3	127.8	117.1	180.2	203.1
Aug.	154.8	141.5	113.4	126.8	117.4	181.8	203.9
Sep.	155.0	142.7	113.4	125.9	117.1	184.4	204.9
Oct.	155.5	142.7	113.7	126.6	116.3	186.1	205.8
Nov.	154.3	140.7	113.7	123.4	118.6	188.0	206.3
Dec.	153.6	138.2	114.0	125.7	118.6	188.5	206.7
2008							
Jan.	157.9	143.7	116.8	128.3	118.8	189.5	208.6
Feb.	157.8	146.5	116.1	132.3	119.1	190.2	209.2
Mar.	158.1	144.5	116.1	130.2	120.6	188.8	209.4
Apr.	159.7	147.0	117.2	130.7	122.5	190.7	211.1

1/ All-urban, unadjusted, U.S. city average. 2/ Series:SEFR, Base: 1982-84=100. 3/ Series: SEFR01, Base: 1982-84=100.

4/ Series: SEFA01, Base: 1982-84=100; 5/ Series: SAF111, Base: 1982-84=100. 6/ Series: SEFA02, Base: 1982-84=100.

7/ Series: SS02011, Base: 1982-84=100. 8/ Series: SEFB03, Base: 1982-84=100. 9/ Series: SEFB04, Base: 1982-84=100.

10/ Series: SAF114, Base: 1982-84=100. 11/ Series: SEFN01, Base: 1982-84=100. 12/ Series: SEFN03, Base: Dec. 1997=100.

13/ Series: SS13031, Base: Dec. 1997=100. 14/ Series: SEFR02, Base: Dec. 1997=100. 15/ Series: SEFJ03, Base: 1982-84=100.

16/ Series: SAF1, Base: 1982-84=100.

Source: Bureau of Labor Statistics.

Table 16--U.S. cane and beet sugar deliveries, monthly, quarterly, and by fiscal and calendar year

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	1st Q.	2nd Q.	3rd Q.	4th Q.	Fiscal	Calendar
1,000 short tons, raw value																		
U.S. beet sugar for domestic consumption:																		
1993	303	287	397	299	328	367	358	372	367	346	325	338	988	994	1,097	1,008	4,134	4,087
1994	312	313	370	303	338	406	360	406	437	338	304	282	995	1,047	1,204	924	4,254	4,170
1995	301	311	378	311	356	399	384	450	465	404	395	331	989	1,066	1,300	1,131	4,279	4,486
1996	316	342	361	343	338	325	350	335	300	333	315	267	1,018	1,006	984	915	4,139	3,923
1997	280	272	315	312	326	332	351	373	428	375	316	317	867	970	1,152	1,009	3,903	3,997
1998	324	316	362	344	342	401	393	388	409	392	334	308	1,002	1,087	1,190	1,034	4,288	4,313
1999	319	325	374	346	361	417	400	427	416	438	392	321	1,018	1,124	1,244	1,151	4,419	4,536
2000	320	340	385	341	393	384	348	411	392	412	378	329	1,045	1,118	1,152	1,119	4,465	4,433
2001	366	346	401	375	405	403	414	450	408	429	373	311	1,113	1,183	1,272	1,112	4,686	4,680
2002	349	315	347	340	375	332	369	365	380	423	396	300	1,012	1,047	1,114	1,119	4,285	4,291
2003	315	307	341	338	338	365	380	366	388	395	335	353	962	1,041	1,134	1,082	4,255	4,219
2004	359	367	407	387	333	438	408	433	392	423	378	342	1,133	1,159	1,233	1,143	4,607	4,668
2005	358	368	395	387	370	416	384	415	449	457	375	337	1,120	1,173	1,248	1,169	4,684	4,710
2006	342	306	357	323	362	381	348	406	366	369	329	306	1,005	1,067	1,120	1,004	4,360	4,195
2007	339	330	378	396	414	404	422	456	420	423	402	311	1,047	1,214	1,297	1,149	4,562	4,707
2008	365	401	401											1,167				
Cane sugar for domestic consumption:																		
1993	311	339	391	387	351	423	422	441	469	427	424	395	1,042	1,161	1,332	1,246	4,734	4,781
1994	332	358	422	361	400	448	411	427	473	443	434	420	1,112	1,209	1,310	1,298	4,877	4,929
1995	340	332	432	380	424	438	369	444	423	431	413	381	1,104	1,243	1,236	1,226	4,880	4,808
1996	353	376	443	425	452	471	463	488	565	547	500	456	1,172	1,349	1,515	1,504	5,262	5,539
1997	397	396	481	444	474	509	462	476	500	525	459	431	1,274	1,427	1,437	1,416	5,641	5,553
1998	369	391	470	430	429	481	432	438	506	486	467	451	1,230	1,339	1,377	1,404	5,361	5,349
1999	355	379	453	452	500	476	433	490	485	483	481	433	1,186	1,429	1,407	1,396	5,427	5,419
2000	383	404	484	425	452	488	455	530	471	534	481	398	1,272	1,365	1,456	1,414	5,490	5,508
2001	410	371	470	413	431	458	419	446	417	487	467	384	1,251	1,302	1,282	1,338	5,248	5,172
2002	392	378	437	424	458	490	472	486	549	468	444	407	1,208	1,373	1,507	1,320	5,424	5,407
2003	372	377	467	434	408	475	421	488	415	476	486	413	1,216	1,317	1,324	1,375	5,177	5,232
2004	346	393	406	377	415	408	404	448	415	528	466	383	1,144	1,200	1,268	1,377	4,987	4,989
2005	377	363	459	400	437	441	418	477	458	476	429	401	1,199	1,277	1,353	1,306	5,207	5,136
2006	405	383	440	405	434	466	435	494	441	487	456	384	1,228	1,305	1,369	1,327	5,209	5,230
2007	399	363	455	426	426	429	400	497	435	448	470	376	1,217	1,281	1,332	1,295	5,157	5,124
2008	408	411	443											1,262				
Imports to nonreporters																		
1993	4	2	3	2	5	9	1	2	1	9	6	8	10	17	3	23	48	52
1994	5	3	6	1	4	4	5	5	7	10	15	12	14	9	18	38	63	78
1995	9	1	1	2	0	0	1	1	4	17	5	0	12	3	6	22	59	44
1996	0	0	0	0	0	0	0	1	19	10	1	1	1	1	20	12	44	33
1997	1	0	1	2	1	1	1	0	1	15	2	2	2	4	2	19	20	27
1998	0	1	0	0	1	1	1	0	0	13	5	1	1	2	1	19	23	24
1999	3	1	0	0	0	0	0	0	4	27	3	4	4	0	4	33	28	41
2000	0	0	1	0	0	0	0	0	3	26	4	1	1	0	3	31	38	36
2001	5	1	0	0	0	0	3	21	3	6	10	8	6	1	27	24	65	58
2002	3	1	4	7	1	12	3	6	14	36	19	2	8	20	24	58	76	109
2003	3	1	1	1	0	1	1	1	4	25	16	5	5	2	6	47	71	60
2004	1	2	6	4	3	3	4	11	4	16	11	1	9	9	19	27	84	64
2005	1	1	13	6	4	11	2	6	57	17	24	55	16	21	65	96	128	197
2006	92	6	104	26	29	60	71	70	61	32	22	5	202	115	202	58	615	577
2007	16	22	4	15	22	4	21	13	19	21	35	15	43	40	53	70	194	206
2008	16	27	29											72				
Total sugar for domestic consumption:																		
1993	619	629	791	688	685	799	782	815	836	783	755	740	2,039	2,172	2,432	2,277	8,916	8,920
1994	649	674	798	665	742	857	776	838	918	792	754	714	2,121	2,265	2,532	2,260	9,195	9,177
1995	651	644	811	694	780	837	755	894	892	853	813	713	2,105	2,311	2,542	2,379	9,218	9,337
1996	670	718	804	769	790	796	813	823	883	891	816	724	2,191	2,355	2,519	2,430	9,445	9,496
1997	678	668	797	758	801	841	813	849	928	915	778	750	2,143	2,401	2,591	2,443	9,565	9,578
1998	694	707	832	774	772	883	826	826	915	892	806	760	2,233	2,428	2,568	2,458	9,672	9,686
1999	676	704	827	798	861	894	833	916	905	947	876	757	2,208	2,553	2,655	2,580	9,873	9,996
2000	703	745	870	766	845	872	804	941	867	973	863	728	2,318	2,484	2,611	2,564	9,993	9,977
2001	781	718	871	788	837	861	835	917	828	922	849	703	2,370	2,486	2,580	2,474	10,000	9,911
2002	744	695	788	771	834	834	844	858	943	927	860	709	2,227	2,439	2,645	2,497	9,785	9,808
2003	689	685	809	772	746	841	802	856	807	896	837	771	2,183	2,360	2,464	2,504	9,504	9,511
2004	706	762	819	767	751	850	817	893	810	967	855	726	2,286	2,368	2,520	2,547	9,678	9,722
2005	737	732	866	793	811	867	804	897	964	951	828	793	2,335	2,471	2,666	2,571	10,019	10,043
2006	839	695	901	755	825	907	853	969	868	888	806	694	2,436	2,487	2,690	2,389	10,184	10,002
2007	754	715	838	837	862	837	843	966	873	892	907	702	2,307	2,535	2,682	2,514	9,913	10,038
2008	789	840	873											2501				

Continued--

Table 16--U.S. cane and beet sugar deliveries, monthly, quarterly, and by fiscal and calendar year

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	1st Q.	2nd Q.	3rd Q.	4th Q.	Fiscal	Calendar		
<i>1,000 short tons, raw value</i>																				
Reexported in products:																				
1993	10	4	9	7	7	12	14	22	20	8	8	7	:	23	26	57	24	:	132	129
1994	7	7	7	9	15	15	10	17	17	12	11	5	:	20	39	44	28	:	127	131
1995	3	7	7	8	4	7	15	18	5	6	8	7	:	18	18	39	21	:	103	96
1996	5	5	10	14	8	8	8	13	11	9	7	6	:	20	30	32	22	:	104	104
1997	32	30	6	6	7	10	12	16	17	7	6	8	:	68	22	45	21	:	157	156
1998	6	9	9	12	10	10	14	15	16	18	15	11	:	24	32	46	44	:	123	146
1999	26	19	12	14	11	10	15	10	7	9	5	7	:	58	35	32	21	:	169	145
2000	7	7	7	7	8	7	6	11	5	6	6	7	:	21	22	22	18	:	86	84
2001	8	5	8	9	10	10	11	11	8	10	16	13	:	21	29	30	40	:	98	120
2002	15	13	11	12	12	11	12	14	15	17	12	14	:	39	35	42	43	:	156	158
2003	16	13	14	14	15	20	19	15	13	16	10	9	:	44	49	47	35	:	183	175
2004	9	10	9	10	18	11	12	15	13	10	9	9	:	28	40	39	28	:	142	135
2005	7	8	9	11	9	17	11	11	11	6	14	6	:	24	37	33	25	:	121	118
2006	6	10	9	10	6	7	7	10	15	11	8	12	:	25	23	32	31	:	106	111
2007	18	11	14	17	22	16	16	13	11	8	12	16	:	43	55	40	35	:	169	173
2008	11	7	9											27						
Polyhydric alcohol and livestock feed use:																				
1993	2	2	1	1	1	1	1	1	1	1	1	1	:	5	4	3	2	:	15	14
1994	1	1	1	1	1	1	1	1	1	1	1	1	:	4	3	4	4	:	13	14
1995	1	1	2	1	2	2	1	2	2	2	1	1	:	4	5	4	4	:	17	17
1996	1	1	2	1	2	2	2	2	2	2	1	1	:	4	5	5	5	:	18	18
1997	1	1	1	2	2	2	2	2	3	2	1	2	:	4	6	6	5	:	21	21
1998	1	1	2	2	2	1	2	2	2	2	2	2	:	4	5	5	6	:	20	21
1999	1	2	2	2	2	2	2	2	2	2	2	3	:	5	6	6	8	:	24	26
2000	3	3	3	3	2	2	3	2	3	2	3	2	:	9	8	7	7	:	32	30
2001	3	3	3	3	4	3	3	4	10	4	3	2	:	8	10	17	9	:	42	44
2002	3	2	2	2	3	4	4	2	2	2	2	1	:	7	8	8	5	:	33	28
2003	2	2	2	2	2	2	2	2	3	2	3	3	:	6	7	7	7	:	24	27
2004	3	3	4	4	4	3	4	4	4	4	3	4	:	9	11	13	10	:	41	44
2005	4	4	4	4	4	5	4	4	5	4	4	5	:	12	13	13	13	:	48	51
2006	5	4	5	4	4	4	4	4	4	5	4	4	:	13	12	12	12	:	50	49
2007	4	5	5	4	5	4	4	5	5	5	5	4	:	14	14	13	14	:	53	54
2008	6	4	6											16						
Total U.S. sugar deliveries 1/:																				
1993	630	635	801	697	693	812	797	838	857	792	763	748	:	2,067	2,201	2,492	2,303	:	9,063	9,063
1994	657	682	806	675	758	873	787	856	936	804	767	720	:	2,145	2,307	2,579	2,291	:	9,334	9,322
1995	655	653	820	703	786	846	772	914	899	861	823	721	:	2,127	2,334	2,585	2,405	:	9,337	9,451
1996	676	724	815	785	800	806	822	838	896	901	824	731	:	2,215	2,390	2,557	2,457	:	9,567	9,619
1997	712	699	804	766	810	854	827	867	948	924	785	760	:	2,215	2,429	2,641	2,469	:	9,742	9,755
1998	701	718	843	787	784	894	843	843	933	912	823	773	:	2,261	2,465	2,619	2,508	:	9,815	9,854
1999	704	725	842	814	875	906	850	928	915	958	883	767	:	2,271	2,594	2,693	2,609	:	10,066	10,167
2000	713	755	880	776	855	881	813	954	875	981	871	737	:	2,348	2,513	2,641	2,589	:	10,111	10,091
2001	792	726	882	800	851	874	849	932	847	936	869	718	:	2,399	2,524	2,628	2,524	:	10,140	10,075
2002	761	710	801	786	848	849	860	874	960	946	874	724	:	2,272	2,483	2,694	2,544	:	9,973	9,994
2003	707	701	825	788	764	863	823	873	823	914	849	783	:	2,233	2,415	2,519	2,546	:	9,711	9,713
2004	718	775	832	782	773	864	833	912	827	980	866	739	:	2,324	2,419	2,572	2,586	:	9,861	9,901
2005	748	744	879	808	824	889	820	912	979	960	846	803	:	2,370	2,521	2,711	2,609	:	10,188	10,212
2006	850	709	914	768	835	919	865	984	886	903	818	710	:	2,474	2,522	2,734	2,432	:	10,339	10,162
2007	776	731	857	858	889	857	862	984	888	918	923	721	:	2,364	2,604	2,735	2,563	:	10,134	10,265
2008	806	851	887											2,544						

Totals may not add due to rounding.

Note: This table commenced in October 1991 when USDA began reporting monthly production data. Puerto Rico data were added beginning October 1993.

1/ Fiscal year totals prior to 1994 differ from supply and use (table ) since WASDE includes Puerto Rico.

Source: USDA, FSA, *Sweetener Market Data*.

Table 17--U.S. sugar: supply and use, by fiscal year 1/

Items	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09 Projection May-08
1,000 short tons, raw value													
Beginning stocks 2	1,492	1,488	1,679	1,639	2,216	2,180	1,528	1,670	1,897	1,332	1,698	1,799	1,756
Total production 3,4	7,204	8,021	8,366	9,050	8,769	7,900	8,426	8,649	7,876	7,399	8,445	8,391	8,115
Beet sugar	4,013	4,389	4,421	4,974	4,680	3,915	4,462	4,692	4,611	4,444	5,008	4,810	4,400
Cane sugar	3,191	3,632	3,945	4,076	4,089	3,985	3,964	3,957	3,265	2,955	3,438	3,581	3,715
Florida	1,679	1,924	2,127	1,966	2,057	1,980	2,129	2,154	1,693	1,367	1,719	1,691	1,865
Louisiana	1,054	1,262	1,325	1,683	1,585	1,580	1,367	1,377	1,157	1,190	1,320	1,490	1,410
Texas	91	80	107	105	206	174	191	175	158	175	177	163	200
Hawaii	340	350	384	318	241	251	276	251	258	223	222	238	240
Puerto Rico	27	16	3	4	0	0	0	0	0	0	0	0	0
Total imports	2,774	2,163	1,823	1,636	1,590	1,535	1,730	1,750	2,100	3,443	2,080	2,251	2,249
Tariff-rate quota imports 5	2,277	1,729	1,256	1,124	1,277	1,158	1,210	1,226	1,408	2,588	1,624	1,251	1,274
Other Program Imports	493	349	386	388	238	296	488	464	500	349	390	425	425
Nonprogram imports	4	85	181	124	76	81	32	60	192	506	66	575	550
Mexico 6											60	575	550
Total supply	11,471	11,672	11,868	12,325	12,575	11,615	11,684	12,070	11,873	12,174	12,223	12,441	12,120
Total exports 3	211	179	230	124	141	137	142	288	259	203	422	250	250
Quota-exempt for reexport	211	179	230	124	141	137	142	288	259	203	422	250	250
Other exports	0	0	0	0	0	0	0	0	0	0	0	0	0
CCC disposal, for export	0	0	0	0	0	0	0	0	0	0	0	0	0
Statistical difference 7	0	0	0	0	0	0	0	0	0	0	0	0	0
Miscellaneous	30	-1	-67	-126	123	-24	161	23	94	-67	-132	0	0
CCC disposal, for domestic non-food use	0	0	0	0	10	0	0	0	0	0	0	0	0
Refining loss adjustment	0	0	0	0	0	0	0	0	0	0	0	0	0
Statistical adjustment 8	30	-1	-67	-126	113	-24	161	23	94	-67	-132	0	0
Deliveries for domestic use	9,742	9,815	10,066	10,111	10,132	9,974	9,711	9,862	10,188	10,340	10,135	10,435	10,535
Transfer to sugar containing products for exports under reexport program	157	123	169	86	98	156	183	142	121	106	169	150	150
Transfer to polyhydric alcohol, feed	21	20	24	32	33	33	24	41	48	51	53	60	60
Deliveries for domestic food and beverage use	9,564	9,672	9,873	9,993	10,000	9,785	9,504	9,678	10,019	10,184	9,913	10,225	10,325
Total use	9,983	9,992	10,238	10,090	10,396	10,087	10,014	10,172	10,542	10,476	10,424	10,685	10,785
Ending stocks /3	1,488	1,679	1,639	2,216	2,180	1,528	1,670	1,897	1,332	1,698	1,799	1,756	1,335
Privately owned	1,488	1,679	1,639	1,919	1,395	1,316							
CCC	0	0	0	297	784	212							
Percent													
Stocks-to-use ratio	14.91	16.81	16.01	21.96	20.97	15.15	16.68	18.65	12.63	16.21	17.25	16.43	12.38

Note: Numbers may not add due to rounding.

1/ Fiscal year beginning October 1. 2/ Stocks in hands of primary distributors and CCC. 3/ Historical data are from USDA FSA (formerly ASCS), Sweetener Market Data, and USDA, NASS, Sugar Market Statistics prior to 1992. 4/ Production reflects processors' projections compiled by the Farm Service Agency. 5/ Actual arrivals under the tariff-rate quota (TRQ) with late entries, early entries, and (TRQ) overfills assigned to the fiscal year in which they actually arrived. The 2007/08 available TRQ assumes shortfall of 170,000 tons. 6/ Does not include Mexico TRQ imports after FY 2007.

7/ Receipts compiled by NASS and FSA Customs data. 8/ Calculated as a residual. Largely consists of invisible stocks change.

Table 18--Net cost of corn starch to U.S. wet-millers, Midwest markets

Period	Corn byproducts				Byproduct credits				Net cost		
	Yellow dent corn 1/	Corn oil	Corn gluten feed	Corn gluten meal	Corn oil	Corn gluten feed	Corn gluten meal	Total byproduct	Corn	Corn starch	Corn sweetener
	Dollars per bu	Cents per lb	Dollars per short ton		----Cents per bushel----			Dollars per bu	Dollars per bu	--Cents per lb--	
1991	2.40	28.36	101.57	256.07	43.96	68.56	33.93	1.46	0.94	2.97	2.81
1992	2.33	23.89	102.80	259.72	37.03	69.39	34.41	1.41	0.92	2.93	2.77
1993	2.27	21.52	87.99	296.53	33.35	59.39	39.29	1.32	0.95	3.02	2.85
1994	2.40	27.22	89.59	262.50	42.19	60.47	34.78	1.37	1.03	3.26	3.08
1995	2.70	26.67	88.34	244.02	41.33	59.63	32.33	1.33	1.37	4.34	4.10
1996	3.82	24.52	116.25	332.40	38.00	78.47	44.04	1.61	2.22	7.04	6.65
1997	2.67	24.87	83.99	345.22	38.55	56.69	45.74	1.41	1.26	4.00	3.78
1998	2.23	29.90	64.86	260.54	46.34	43.78	34.52	1.25	0.98	3.12	2.95
1999	1.92	23.59	58.77	231.88	36.56	39.67	30.72	1.07	0.85	2.68	2.54
2000	1.88	14.66	51.71	237.63	22.72	34.90	31.49	0.89	0.98	3.13	2.95
2001	1.90	15.75	62.46	253.98	24.41	42.16	33.65	1.00	0.90	2.86	2.70
2002	2.17	20.78	60.33	243.72	32.21	40.72	32.29	1.05	1.12	3.55	3.36
2003	2.29	28.65	72.15	251.36	44.40	48.70	33.31	1.26	1.02	3.25	3.07
2004	2.39	27.59	72.01	308.44	42.76	48.61	40.87	1.32	1.07	3.39	3.20
2005	1.90	28.42	51.33	288.09	44.04	34.65	38.17	1.17	0.73	2.33	2.20
2006	2.41	25.06	59.87	264.89	38.84	40.41	35.10	1.14	1.27	4.02	3.80
2006											
Jan.	1.98	25.22	55.75	303.75	39.09	37.63	40.25	1.17	0.81	2.57	2.43
Feb.	2.07	23.65	57.75	259.38	36.66	38.98	34.37	1.10	0.97	3.08	2.91
Mar.	2.04	22.61	61.63	263.75	35.05	41.60	34.95	1.12	0.92	2.93	2.77
I	2.03	23.83	58.38	275.63	36.93	39.40	36.52	1.13	0.90	2.86	2.70
Apr.	2.18	23.19	57.88	250.63	35.94	39.07	33.21	1.08	1.10	3.49	3.29
May	2.22	25.25	60.38	251.70	39.14	40.76	33.35	1.13	1.09	3.45	3.26
June	2.15	25.70	58.25	250.00	39.84	39.32	33.13	1.12	1.03	3.26	3.08
II	2.18	24.71	58.84	250.78	38.31	39.71	33.23	1.11	1.07	3.40	3.21
July	2.22	25.75	56.13	240.00	39.91	37.89	31.80	1.10	1.12	3.57	3.37
Aug.	2.07	25.42	56.00	229.25	39.40	37.80	30.38	1.08	0.99	3.16	2.98
Sept.	2.21	24.71	55.90	237.50	38.30	37.73	31.47	1.08	1.13	3.60	3.40
III	2.17	25.29	56.01	235.58	39.20	37.81	31.21	1.08	1.08	3.44	3.25
Oct.	2.82	24.70	60.20	272.20	38.29	40.64	36.07	1.15	1.67	5.30	5.01
Nov.	3.43	26.47	68.63	306.25	41.03	46.33	40.58	1.28	2.15	6.83	6.45
Dec.	3.53	28.05	69.88	314.31	43.48	47.17	41.65	1.32	2.21	7.01	6.62
IV	3.26	26.41	66.24	297.59	40.93	44.71	39.43	1.25	2.01	6.38	6.03
2007											
Jan.	3.66	28.05	92.00	333.00	43.48	62.10	44.12	1.50	2.16	6.87	6.49
Feb.	3.90	28.66	85.38	346.88	44.42	57.63	45.96	1.48	2.42	7.68	7.26
Mar.	3.76	29.08	84.94	361.50	45.07	57.33	47.90	1.50	2.26	7.16	6.77
I	3.77	28.60	87.44	347.13	44.32	59.02	45.99	1.49	2.28	7.24	6.84
Apr.	3.36	29.93	72.82	363.33	46.39	49.15	48.14	1.44	1.92	6.11	5.77
May	3.52	31.56	59.50	344.00	48.92	40.16	45.58	1.35	2.17	6.90	6.52
June	3.68	34.71	62.25	352.75	53.80	42.02	46.74	1.43	2.25	7.16	6.76
II	3.52	32.07	64.86	353.36	49.70	43.78	46.82	1.40	2.12	6.72	6.35
July	3.03	37.25	66.40	398.50	57.74	44.82	52.80	1.55	1.48	4.69	4.43
Aug.	3.08	39.61	75.00	404.38	61.40	50.63	53.58	1.66	1.42	4.52	4.27
Sept.	3.15	43.61	85.50	414.38	67.60	57.71	54.91	1.80	1.35	4.28	4.04
III	3.09	40.16	75.63	405.75	62.24	51.05	53.76	1.67	1.42	4.50	4.25
Oct.	3.28	52.50	105.00	472.50	81.38	70.88	62.61	2.15	1.13	3.59	3.39
Nov.	3.66	56.32	129.38	495.63	87.30	87.33	65.67	2.40	1.26	3.99	3.77
Dec.	4.03	59.47	134.17	540.79	92.18	90.56	71.65	2.54	1.49	4.72	4.46
IV	3.66	56.10	122.85	502.97	86.95	82.92	66.64	2.37	1.29	4.10	3.87
2008											
Jan.	4.55	63.35	135.60	545.00	98.19	91.53	72.21	2.62	1.93	6.13	5.79
Feb.	4.91	74.89	128.75	543.13	116.08	86.91	71.96	2.75	2.16	6.86	6.48
Mar.	5.16	83.55	117.19	561.88	129.50	79.10	74.45	2.83	2.33	7.40	6.99
I	4.87	73.93	127.18	550.00	114.59	85.85	72.88	2.73	2.14	6.79	6.42
Apr.	5.59	87.05									

NQ = no quote.

Sources: USDA, AMS, <http://marketnews.usda.gov/portal/lg> ;

USDA, byproduct credits and net cost calculations.

Note: To calculate the net cost of corn, it is assumed that the average bushel of corn wet-milled in the United States contains 31.5 pounds of recoverable starch, dry weight, as well as 1.55 pounds of corn oil (crude weight), 13.5 pounds of corn gluten feed (commercial weight), and 2.65 pounds of corn gluten meal, (commercial weight). Also, 31.5 pounds of starch, dry weight, produces about 33.33 pounds of corn sweetener (dry weight) because of the chemical gain converting starch to sweetener.

Table 19—U.S. use of field corn, by crop year 1/

Description	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08 2/	2008/09 2/
HFCS	473	492	513	530	540	530	541	532	530	521	529	510	500	500
Glucose syrup and dextrose	227	233	229	219	222	218	217	219	228	222	229	239	240	240
Total corn sweetener	700	725	742	749	761	748	758	751	758	743	758	749	740	740
Corn starch	226	238	246	240	251	247	246	256	272	278	275	272	270	270
Wet milling excluding alcohol	926	963	988	989	1,013	995	1,003	1,007	1,030	1,021	1,033	1,021	1,010	1,010
Alcohol														
Fuel	396	429	481	526	566	628	714	996	1,168	1,323	1,603	2,117	3,000	4,000
Beverage	125	130	133	127	130	130	131	131	132	133	135	136	135	134
Total	521	559	614	653	696	758	845	1,127	1,300	1,456	1,738	2,253	3,135	4,134
Total	1,447	1,522	1,602	1,642	1,709	1,753	1,848	2,133	2,329	2,477	2,771	3,274	4,145	5,144
U.S. corn crop	7,374	9,233	9,207	9,759	9,431	9,915	9,503	8,967	10,089	11,807	11,114	10,535	13,074	12,125
Corn sweetener share	9.49	7.85	8.06	7.67	8.07	7.54	7.97	8.38	7.51	6.29	6.82	7.11	5.66	6.10
Wet milling excluding alcohol share	12.56	10.43	10.73	10.13	10.74	10.04	10.56	11.23	10.21	8.64	9.30	9.69	7.73	8.33
Alcohol share	7.07	6.05	6.67	6.69	7.38	7.64	8.89	12.56	12.88	12.33	15.64	21.39	23.98	34.09
Total	19.62	16.48	17.40	16.83	18.12	17.68	19.45	23.79	23.09	20.97	24.93	31.08	31.71	42.42

1/ September/August crop year. 2/ Forecast.

Source: USDA, ERS, Sugar and Sweeteners Group.

Table 20--U.S. high fructose corn syrup (HFCS) deliveries, quarterly, by fiscal and calendar year 1/

Quarter and Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
Quarter									
I	2,129	2,165	2,114	2,122	2,185	2,128	2,195	2,087	2,003
II	2,482	2,370	2,527	2,469	2,438	2,408	2,431	2,363	
III	2,400	2,433	2,491	2,408	2,361	2,392	2,356	2,266	
IV	2,103	2,181	2,161	2,136	2,076	2,130	2,073	2,073	
Year									
Fiscal	9,200	9,072	9,313	9,160	9,119	9,004	9,113	8,789	
Calendar	9,114	9,149	9,294	9,135	9,060	9,058	9,056	8,788	

1/ Includes Puerto Rico.

Source: Estimates by USDA, ERS, Sugar and Sweetener Group.

Table 21--U.S. raw sugar tariff-tate quota (TRQ) World Trade Organization allocations and entries by month, fiscal year 2008

	Entries by month								Entries to date	FY 2008 TRQ allocation				
	Oct-07 10/31/07	Nov-07 11/26/07	Dec-07 12/31/07	Jan-08 1/29/08	Feb-08 2/25/2008	Mar-08 3/31/2008	Apr-08 4/28/2008	May-08			Jun-08	Jul-08	Aug-08	Sep-08
	<i>Metric tons, raw value</i>													
Argentina	704	0	0	12	0	0	0						715	45,281
Australia	31,350	31,350	0	235	0	544	0						63,479	87,402
Barbados	0	0	0	0	0	0	0						0	7,371
Belize	0	0	0	0	0	100	0						100	11,583
Bolivia	0	0	8,424	0	0	0	0						8,424	8,424
Brazil	27,546	27,945	42,383	6,492	29,106	6,365	10,217						150,055	152,691
Colombia	161	225	533	380	291	257	285						2,131	25,273
Congo	0	0	0	0	0	0	0						0	7,258
Costa Rica	0	0	0	0	0	483	13,145						13,628	15,796
Cote d'Ivoire	0	0	0	0	0	0	0						0	7,258
Dominican Republic	6,472	305	14,042	6,113	29,629	18,190	28,359						103,110	185,335
Ecuador	0	0	12	-1	51	112	0						175	11,583
El Salvador	0	0	0	14,615	1,689	9,017	0						25,322	27,379
Fiji	0	9,477	0	0	0	0	0						9,477	9,477
Gabon	0	0	0	0	0	0	0						0	7,258
Guatemala	0	0	0	5,436	7,113	5,543	31,551						49,643	50,546
Guyana	0	23	0	12	0	42	19						96	12,636
Haiti	0	0	0	0	0	0	0						0	7,258
Honduras	0	0	0	0	0	4,885	5,645						10,530	10,530
India	0	0	0	0	0	309	0						309	8,424
Jamaica	0	0	0	0	0	0	0						0	11,583
Madagascar	0	0	0	0	0	0	0						0	7,258
Malawi	207	228	269	148	766	115	385						2,118	10,530
Mauritius	124	0	0	81	0	-205	204						204	12,636
Mexico 1/	0	0	7,258	0	0	0	0						7,258	7,258
Mozambique	0	0	0	0	0	244	0						244	13,690
Nicaragua	0	0	6,417	0	7,820	320	0						14,557	22,114
Panama	16,618	47	0	76	0	212	0						16,953	30,538
Papua New Guinea	0	0	0	0	0	0	0						0	7,258
Paraguay	21	0	0	0	0	178	223						422	7,258
Peru	15,466	27,710	0	-11,570	0	0	11,569						43,175	43,175
Philippines	8,119	0	0	13	0	11,903	27,945						47,980	142,160
South Africa	0	23,902	0	0	0	318	0						24,220	24,220
St. Kitts and Nevis	0	0	0	0	0	0	0						0	7,258
Swaziland	0	0	16,493	0	0	356	0						16,849	16,849
Taiwan	0	0	0	0	0	489	0						489	12,636
Thailand	0	0	0	0	0	298	0						298	14,743
Trinidad-Tobago	0	0	0	0	0	0	0						0	7,371
Uruguay	0	0	0	0	0	0	0						0	7,258
Zimbabwe	12,636	0	0	-203	0	203	0						12,636	12,636
<b>Total</b>	<b>119,424</b>	<b>121,211</b>	<b>95,831</b>	<b>21,840</b>	<b>76,464</b>	<b>60,278</b>	<b>129,547</b>						<b>624,595</b>	<b>1,117,195</b>

1/ This amount is also included in Table 24, U.S. imports of sugar and certain sugar-containing products from Mexico, FY 2008.

Source: United States Customs and Border Protection, *Weekly Commodity Status Report*.

[http://www.fas.usda.gov/smi\\_arc.asp](http://www.fas.usda.gov/smi_arc.asp)



Table 22--U.S. refined sugar tariff-rate quota (TRQ) WTO allocations and entries by month, fiscal year 2008

	Entries by month								Entries to date	FY 2008 TRQ allocation	Entries as share of allocation
	Oct-07 10/29/2007	Nov-07 11/26/2007	Dec-07 12/31/2007	Jan-08 1/28/2008	Feb-08 2/25/2008	Mar-08 3/31/2008	Apr-08 4/28/2008	May-08			
	<i>Metric tons raw value</i>										<i>Percent</i>
Global	7,090	0	0	0	0	0	0		7,090	7,090	100.0
Canada	4,167	822	1,882	1,526	1,236	338	57		10,028	10,300	97.4
Mexico 1/	2,954	0	0	0	0	0	0		2,954	2,954	100.0
Specialty 2/	1,656	22,544	0	0	13,653	0	0		37,853	65,159	58.1
<b>Total</b>	<b>15,867</b>	<b>23,366</b>	<b>1,882</b>	<b>1,526</b>	<b>14,889</b>	<b>338</b>	<b>57</b>		<b>57,925</b>	<b>82,549</b>	<b>70.2</b>

1/ This amount is also included in Table 24, U.S. imports of sugar and certain sugar-containing products from Mexico, FY 2008.

2/ The tranches of the FY 2008 specialty sugar TRQ have opened or will open as follows:

Tranche 1 – Opens 10/24/2007 – 1,656 metric tons

Tranche 2 – Opens 11/15/2007 – 22,544 metric tons

Tranche 3 – Opens 01/30/2008 – 13,653 metric tons

Tranche 4 – Opens 05/14/2008 – 13,653 metric tons

Tranche 5 – Opens 08/27/2008 – 13,653 metric tons

The second, third, fourth, and fifth tranches will be reserved for organic sugar and other specialty sugars not currently produced commercially in the United States or reasonably available from domestic sources.

Source: United States Customs and Border Protection, *Weekly Commodity Status Report*,

[http://www.fas.usda.gov/smi\\_arc.asp](http://www.fas.usda.gov/smi_arc.asp)

Table 23--U.S. sugar and sugar-containing product tariff-rate quota (TRQ) allocations and entries by month under the Dominican Republic, Central America-United Central America-United States Free Trade Agreement (CAFTA-DR), calendar year 2008 1/

Country	Entries by month												Entries to date	FY 2008 TRQ allocation
	Jan-08 1/28/08	Feb-08 2/25/08	Mar-08 3/31/2008	Apr-08 4/28/2008	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08		
<i>Metric tons raw value</i>														
Costa Rica 2/	n/a	n/a	n/a	n/a									n/a	n/a
Dominican Republic 3/	n/a	n/a	n/a	n/a									n/a	0
El Salvador	15	24,945	0	0									24,960	24,960
Guatemala	10,196	960	3,982	5,866									21,004	33,280
Honduras	0	0	2,470	0									2,470	8,320
Nicaragua	0	8,147	0	0									8,147	22,880
<b>Total</b>	<b>10,211</b>	<b>34,053</b>	<b>6,452</b>	<b>5,866</b>									<b>56,582</b>	<b>89,440</b>

NA = Not available.

1/ For details on items eligible for these TRQs, see CAFTA-DR Annex 3.3, U.S. Notes, pages 6-9: [http://www.ustr.gov/assets/Trade\\_Agreements/Bilateral/CAFTA/CAFTA-DR\\_Final\\_Texts/asset\\_upload\\_file971\\_3958.pdf](http://www.ustr.gov/assets/Trade_Agreements/Bilateral/CAFTA/CAFTA-DR_Final_Texts/asset_upload_file971_3958.pdf).

See *Federal Register* Vol. 72, No. 244, December 20, 2007.

2/ TRQ allocation is pending final implementation of the agreement by Costa Rica.

3/ The TRQ under CAFTA-DR is zero due to the determination for CY 2008 that Dominican Republic's trade surplus is negative.

Source: United States Customs and Border Protection, *Weekly Commodity Status Report*.

[http://www.fas.usda.gov/smi\\_arc.asp](http://www.fas.usda.gov/smi_arc.asp)

Table 24--U.S. imports of sugar and certain sugar-containing products from Mexico, FY 2008 1/

Imports	Entries by month											Entries to date	
	Oct-07 10/31/2007	Nov-07 11/31/2007	Dec-07 12/31/2007	Jan-08 1/31/2008	Feb-08 2/29/2008	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08		Sep-08
	<i>Metric tons, raw value</i>												
Raw sugar 2/	2,045	2,312	25,376	18,360	41,375	39,382	1,973						130,823
Refined sugar 3/	5,050	13,227	11,019	5,101	15,860	23,588	48,425						122,270
Total sugar	7,095	15,539	36,395	23,461	57,235	62,970	50,398						253,093
	<i>Metric tons, commercial weight</i>												
Powdered drink crystals, flavored sugar 4/	4,094	2,673	2,521	2,060	3,091								14,439
Cocoa powder 5/	7,767	5,710	4,383	6,412	5,846								30,118
Tea mixes 6/	1,976	2,700	1,211	753	1,862								8,502

1/ Beginning 1/1/08, no duty or quota applies to sugar from Mexico. From 10/1/07 - 12/31/07, Mexico had duty-free access of 2,954 metric tons allocated under the refined TRQ and 175,000 metric tons (which included WTO raw sugar allocation to Mexico) established by Presidential Proclamation 8180 issued on September 28, 2007.

2/ Includes imports under Mexico's WTO TRQ allocation for raw sugar. U.S. Harmonized Tariff Schedule (HTS) lines 1701.11.10.00 and 1701.11.50.00. Entries under these HTS lines may include some sugar for direct consumption.

3/ Includes items in HTS lines 1701.91.10.00, 1701.91.30.00, 1701.99.10.10, 1701.99.10.90, 1701.99.50.10, and 1701.99.50.90. Entries under these HTS lines may include some sugar for further processing.

4/ HTS lines 1701.91.48.00 and 1701.91.58.00.

5/ HTS line 1806.10.55.

6/ HTS line 2101.20.58.