

California's International Agricultural Exports in 2005

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In 2005 California's agricultural exports surpassed \$9 billion for the first time. The \$9.3 billion in exports is a new record and represents a 13 percent increase from 2004.

The data reported in this *AIC Issues Brief* describe international agricultural exports for 2005, and revisions for 2003 and 2004. We also add data for five new commodities back to 2002. These data are the product of a ten-year collaborative effort between the AIC and the Agricultural Export Program of the California Department of Food and Agriculture to develop accurate estimates of the value of California agricultural products shipped to international markets. As in the past, we have relied upon national and international data as well as informal estimates from industry sources. More detail about the history, methods, and early results from the project, along

with export data since 1995, is available at <http://aic.ucdavis.edu/pub/exports.html>. The website also contains additional details for individual commodities and markets.

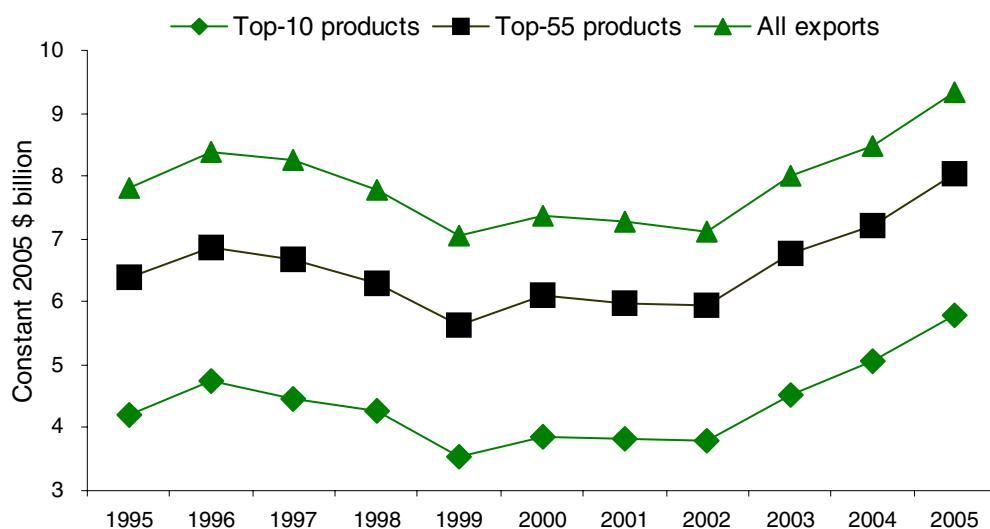
Agricultural exports by commodity or product

Total California agricultural exports declined in the late 1990s and stabilized at the lower plateau before beginning to rise again in 2003 (Figure 1). Both the top 10 and the top 55 California agricultural exports have followed a similar pattern.

In Table 1 we list the top 55 agricultural products by export value and an "other products and mixtures" category comprised of smaller commodities, mixtures of commodities, and other agricultural products for which the commodity composition is difficult to determine. The top 55 export commodities account for \$8.0 billion or 86 percent of total exports while the remaining 14 percent were associated with other products and mixtures. Thirty-three of the top 55 export commodities exhibited increases of more than 5 percent in export value from 2004, while nine showed decreases, and 13 commodities showed little change (± 5 percent).

The top 10 export commodities combined

FIGURE 1. California's agricultural exports, 1995-2005



Note: The aggregation "Top-55 products" includes only 50 products from the years 1995-2001. In 2002 the added 5 commodities contribute \$57 million.

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TABLE 1. California agricultural product export values and rankings, 2003-2005

2005 Rank	Product	2003	2004	2005	Percent Change ¹ 2005/2004
		Export value \$ million			
1	Almonds	1,081.2	1,369.7	1,840.9	34
2	Cotton ²	676.4	631.9	699.0	11
3	Wine ²	551.8	683.8	575.3	-16
4	Dairy and products	326.2	439.9	563.4	28
5	Table grapes	386.3	453.9	539.9	19
6	Oranges and products ³	343.7	345.2	365.0	6
7	Rice ⁴	222.5	280.3	319.8	14
8	Walnuts	213.9	240.5	318.5	32
9	Pistachios	135.3	179.0	299.5	67
10	Tomatoes, processed	238.7	250.3	263.0	5
11	Lettuce ²	178.1	188.3	237.0	26
12	Strawberries ²	197.9	204.0	233.4	14
13	Raisins	164.7	195.1	209.1	7
14	Peaches and nectarines ³	125.7	123.3	127.0	3
15	Hay ²	106.7	109.2	109.0	0
16	Dried plums	133.6	130.1	107.7	-17
17	Broccoli ²	96.9	98.9	104.0	5
18	Beef and products (includes hides and skins) ⁵	214.7	80.1	99.7	24
19	Lemons ^{3,6}	80.9	77.4	86.4	12
20	Carrots ^{2,3,4}	76.4	78.4	82.4	5
21	Plums	58.5	37.6	55.2	47
22	Tomatoes, fresh	54.0	67.7	53.2	-21
23	Celery ²	42.8	50.5	51.3	2
24	Grapefruit	48.1	43.0	50.3	17
25	Cauliflower ³	53.4	48.0	47.6	-1
26	Cherries	65.4	76.7	45.5	-41
27	Melons ³	39.4	39.3	42.8	9
28	Flowers and nursery ³	37.8	40.7	41.9	3
29	Onions ²	48.9	45.6	37.4	-18
30	Potatoes	28.3	24.1	35.4	47
31	Asparagus ²	26.9	18.0	31.1	73
32	Spinach ⁷	19.9	26.9	30.7	14
33	Grape juice and concentrate	30.4	29.8	30.4	2
34	Raspberries ⁷	16.2	23.5	28.6	22
35	Bell and chili peppers ³	21.9	26.4	25.6	-3
36	Pears ⁶	15.9	24.0	24.4	1
37	Garlic	22.3	21.2	24.3	15
38	Apples ²	19.9	15.9	24.1	52
39	Cabbage ⁷	15.8	14.9	19.4	31
40	Turkey ²	12.4	14.6	18.7	28

TABLE 1. **California agricultural product export values and rankings, 2003-2005 (continued)**

2005 Product Rank	Export value \$ million			Percent Change ¹ 2005/2004
	2003	2004	2005	
41 Wheat	38.6	26.6	17.7	-33
42 Olives	11.1	15.6	17.7	13
43 Apricots	15.5	12.7	14.1	11
44 Dates	13.9	12.5	13.3	7
45 Figs	8.0	9.2	12.3	33
46 Tangerines and mandarins ⁷	7.5	9.0	11.8	32
4 Eggs ⁴	6.4	5.1	10.0	96
48 Dry beans ²	8.0	6.7	9.6	44
49 Sweet potatoes ⁷	7.8	10.5	9.5	-9
50 Kiwi	8.8	10.6	9.0	-15
51 Chickens	5.5	7.0	8.6	23
52 Cottonseed and byproducts	9.2	16.9	6.1	-64
53 Artichokes	2.9	4.2	4.4	5
54 Avocados	1.5	2.2	2.7	24
55 Mushrooms	2.1	2.4	2.3	-4
Total 55 principal commodities	6,376.7	6,998.5	8,047.4	15
Total other products ^{2, 4, 8}	1,170.1	1,246.1	1,295.2	4
Total all agricultural exports	7,546.7	8,244.6	9,342.5	13

¹ Export values for each year are rounded. More precise values are used in the percent change calculations.

² The 2003 and 2004 figures were revised based on updated production data from the U.S. Department of Agriculture, National Agricultural Statistics Service.

³ The 2003 and 2004 figures were revised based on updated Canadian import data.

⁴ The 2003 and 2004 figures were revised based on updated port data from the U.S. Department of Commerce, International Trade Commission.

⁵ Hides and skins account for 54 percent of beef and products' total value in 2005.

⁶ Estimation method was re-calibrated and applied to 2003, 2004, and 2005 data.

⁷ New commodity list.

⁸ "Other products" is composed of (a) highly processed products that are difficult to attribute to a specific commodity such as mixtures of fruits, nuts and vegetables and other processed foods, and (b) animal and plant products marketed in such small quantities that they are not included in the top 55 leading commodities.

accounted for 72 percent of the export value of the top 55 California agricultural export commodities and 62 percent of total agricultural exports. Exports of the top 10 commodities increased 18 percent from the top 10 of 2004. The top 10 commodities in 2005 are almonds, cotton, wine, dairy and products, table grapes, oranges and products, rice, walnuts, pistachios, and processed tomatoes. Pistachios joined the top 10 after a 67 percent increase in value from 2004, dropping strawberries out of the top 10. Generally there is little change in the rank of the top 10 commodities from year to year.

Almonds have been the top export commodity for several years. For the fourth consecutive year they have exhibited an increase in export value greater than 20 percent. Almond export value increased by 34 percent in 2005, totaling \$1.8 billion in exports. This increase is accounted for by increased export prices for almonds.

Value of exports of cotton increased 11 percent, from \$632 million in 2004 to \$699 million in 2005, while the total volume of cotton exports increased 19

percent. California exports both upland and American pima cotton types. Upland cotton exports totaled \$359 million in 2005, a decrease of 20 percent from 2004 and 8 percent from the 2002-2004 average export value. This decrease is driven by lower export prices for upland cotton than in previous years. American pima cotton export value increased by 87 percent from 2004 to \$340 million in 2005. The average export price of American pima was \$617 per bale in 2005, a 57 percent increase from 2004.

Wine export values decreased by 16 percent from 2004 to \$575 million but remained unchanged from the average value of the period from 2002-2004. By volume, wine exports decreased nearly 9 percent to 510 million liters, even though California produced 20 percent more wine in 2005. This implies that a smaller percentage of the 2005 wine production was exported.

The export value of California dairy products totaled \$563 million in 2005, a 28 percent increase from 2004. California's increase in dairy export value occurred primarily from an increase in the export of nonfat dry milk. Exports of dairy products also increased nationwide during 2005. For example, the U.S. export value of nonfat dry milk increased 25 percent. Mexico remained the primary destination for California's nonfat dry milk, accounting for nearly half of total dairy exports.

Exports of table grapes surpassed \$500 million for the first time, reaching \$540 million in 2005. The export value of table grapes increased 19 percent from 2004 due primarily to an increase in the volume of exports. California rice exports also rose significantly. In 2005, rice exports rose 14 percent in value over 2004, increasing from \$280 million to \$320 million. California exports mainly medium grain rice. A large increase in the quantity of medium grain rice is the cause of the increase in rice export value.

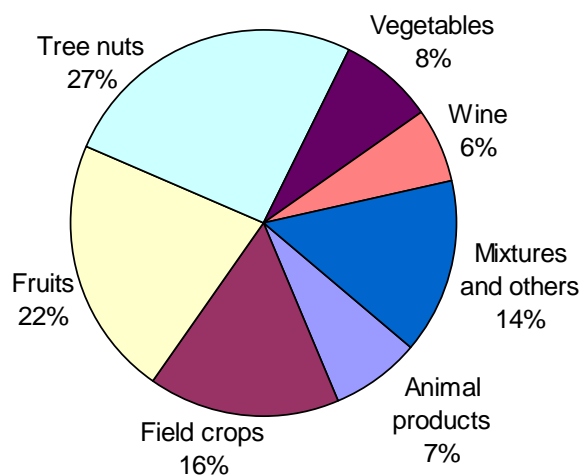
The market for walnuts has exhibited increases in export value since 1999, reaching \$318 million in 2005, a 32 percent increase from 2004. The recent increase is driven by a large increase in export prices from 2004. Pistachio export value increased sharply from \$179 million in 2004 to \$299 million in 2005, increasing 67 percent and reaching the top 10 agricultural exports for the first time. The volume

of pistachios exported increased from 45,000 metric tons in 2004 to 76,000 in 2005.

Other top 10 commodities include oranges and products, and processed tomatoes, both of which showed small increases of 5 to 6 percent during 2005.

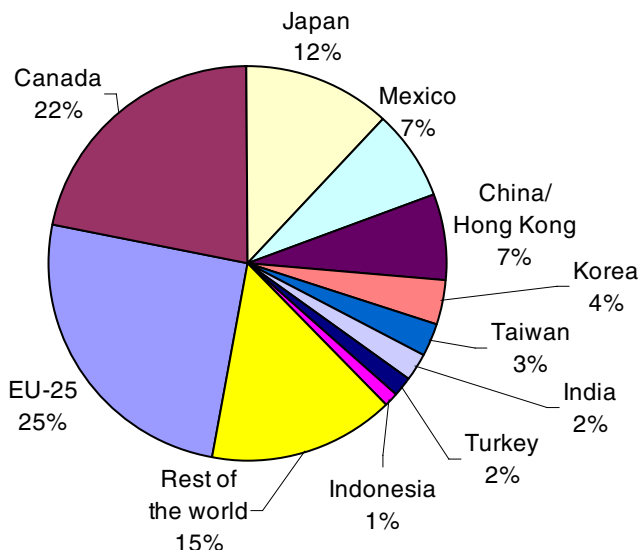
Exports of beef and products, including hides and skins, totaled \$215 million in 2003, ninth in export value overall. Following a case of "mad cow" disease detected in the state of Washington on December 23, 2003, all export markets for beef were closed and exports for beef and products collapsed. As some markets gradually opened, exports were \$80 million in 2004 and rose slightly to \$100 million in 2005. Exports for beef may be somewhat higher in 2006 because the largest market for beef in 2003, Japan, which imported \$85 million in 2003, has partially reopened its market to U.S. beef in 2006. Japan reopened its market on January 2006, but closed it again the same month following the export of beef with the vertebral column attached, which was counter to a United States-Japan agreement. On July 27, 2006 Japan again reopened its market, this time without further problems. South Korea, another large market, finally agreed to resume imports of U.S. beef on a limited basis in September of 2006 on the condition that the cattle are no older than 30 months and the beef does not include the brains, spinal cord, or any bone chips. No shipments have successfully entered South Korea under these rules. Three shipments have been rejected by South Korea in

FIGURE 2. **California agricultural exports by category, 2005**



Note: Flowers and nursery products are included in "mixtures and others."

FIGURE 3. California agricultural exports to the top 10 destinations, by value, 2005



Note: Based on 48 individual products for which reliable destination data were available. The 48 commodities account for nearly 99 percent of the export value of the top 55 commodities. The commodities for which export destinations are not included are apples, turkey, wheat, eggs, chickens, avocados and mushrooms.

November and December of 2006 after finding bone chips in the beef.

Large increases in export value during 2005 were also seen in markets for lettuce, \$49 million (26%), strawberries, \$29 million (14%), beef and products, \$20 million (24%), and plums, \$18 million (47%).

Other commodities that showed significant increases in export value, although less of an absolute gain in value, were eggs (96%), apples (52%), dry beans (44%), figs (33%), tangerines and mandarins (32%), turkeys (28%), avocados (24%), and chickens (23%).

Commodities that witnessed significant losses in export value in 2005 include cherries, \$31 million decrease (-41%), fresh tomatoes, \$15 million decrease (-21%), cottonseed and byproducts, \$11 million decrease (-64%), and wheat, \$9 million decrease (-33%).

Five new commodities are introduced in this year's report. These are cabbage, raspberries, spinach, sweet potatoes, and tangerines and mandarins. We calculated the export value for cabbage, raspberries, spinach, and sweet potatoes, all of which are mainly

exported to Canada, by using the ratio of Canadian imports from California to U.S. exports to Canada, and then multiplying this ratio by total U.S. exports. The export value for tangerines and mandarins, which are primarily grown in California and Florida, was calculated by adding Canadian imports from California to exports to foreign destinations (minus Canada) from California ports.

As Table 1 documents, California exports a broad variety of agricultural products. Figure 2 shows the share of total export value by commodity group. Fruits, wine, tree nuts and vegetables accounted for over 62 percent of the total agricultural export value. Most of the "mixtures and others" category is comprised of highly processed products and is hard to separate into individual commodities. The commodity groups that increased the most from 2004 to 2005 were tree nuts (37%) and animal products (28%).

International Destinations

California exports agricultural products to more than 150 countries. Accurate export destination data are available for only 48 commodities. These 48 commodities account for 99 percent of the export value of the top 55 export commodities. The commodities whose export destinations are not included are apples, turkey, wheat, eggs, chicken, avocados and mushrooms. The top 10 export destinations account for 84 percent of the 2005 export value of the 48 commodities, while the top 3 destinations, the European Union (EU-25), Canada, and Japan, account for nearly three-fifths of the 48 commodity total (Figure 3).

In 2005 the European Union consisted of 25 individual member nations. The major destinations of California commodities within the European Union were Germany, Spain, the United Kingdom, Italy, and the Netherlands, each accounting for over \$200 million of California's agricultural exports. However, products moved freely within the European Union and we have no data on the country of final consumption. The European Union was the largest market for California commodities in 2005, accounting for over \$2.0 billion or 25 percent of the export total for the 48 export commodities. Almonds accounted for 54 percent of total California exports to the European Union. Wine, pistachios, and

TABLE 2. **Percent of California export value shipped to major markets, by commodity group, 2005¹**

	EU-25	Canada	Japan	Mexico	China/ Hong Kong	Korea	Rest of the world
Animal products ²	0.7	1.3	7.0	44.3	6.5	3.0	37.2
Field crops ³	3.4	12.2	20.7	6.3	16.4	4.6	36.3
Flowers and nursery	12.7	38.2	5.6	33.7	2.6	1.0	6.1
Fruits ⁴	8.3	35.5	13.3	5.6	9.4	6.5	21.5
Tree nuts	59.8	6.5	8.0	1.4	3.4	2.2	18.8
Vegetables ⁵	2.4	74.3	8.4	4.9	0.7	0.2	9.2
Wine	51.9	20.8	10.6	1.2	1.8	1.7	12.1
All commodity groups	25.3	22.0	11.8	7.4	7.1	3.5	22.7

¹ Based on 48 individual products for which reliable data is available.

² Does not include chicken, eggs, or turkey because reliable data on the destination of export is not available.

³ Does not include wheat because reliable data on the destination of export is not available.

⁴ Does not include apples and avocados because reliable data on the destination of export is not available.

⁵ Does not include mushrooms because reliable data on the destination of export is not available.

walnuts together accounted for an additional 34 percent of exports' value to the European Union.

Canada imported over \$1.7 billion or 22 percent of all of California's exports (of the 48 agricultural commodities) in 2005. The value of exports to Canada was spread over many commodities. The top four exports to Canada were lettuce, strawberries, table grapes and processed tomatoes, which accounted for 38 percent of total exports to Canada. Canada imported \$15 million or more of 27 commodities and \$2 million or more of 44 commodities. Fresh fruits and vegetables accounted for a great share of exports to Canada.

Japan was the third largest market for California agricultural products, accounting for nearly 12 percent of the 48 commodity export value. Exports of rice to Japan totaled \$160 million and almonds added another \$145 million. Combined these two commodities accounted for 32 percent of the total California exports to Japan. Beef and products were once major exports to Japan, but following the BSE problem, exports from California have collapsed. In 2005, exports of beef and products to Japan totaled \$5 million, most of which were imports of hides and skins. Other major export commodities to Japan included hay, wine, oranges and products, and walnuts.

Mexico accounted for 7 percent of agricultural exports. Exports to Mexico increased nearly 12 percent during 2005. The top 5 exports to Mexico were dairy and products (mainly nonfat dry milk), table grapes, cotton, processed tomatoes, and beef and products. Exports of beef and products to Mexico increased 43 percent to \$30 million, replacing almonds as number 5.

China/Hong Kong accounted for 7 percent of total California shipments. China/Hong Kong increased purchases of California's agricultural products by 25 percent. The main exports were cotton, table grapes, oranges and products, and almonds. Exports to Korea increased 9 percent in 2005. Other notable countries with large percentage increases in 2005 were Turkey, India, and Taiwan. Exports to Turkey increased by 89 percent, India by 54 percent, and Taiwan by 27 percent.

By commodity group, Table 2 shows California export distribution among the six principle destinations and the "rest of the world." Canada is an important market for flowers, nursery products, vegetables, and fruits. The European Union is especially important for tree nuts and wine, while Mexico is an important market for animal products, flowers and nursery products.

Farm Quantity Exported

Table 3 shows the ratio of the farm quantity exported in 2005 to the farm quantity produced in 2005 for major commodities. We used standard U.S. Department of Agriculture conversion ratios to translate export quantities of processed products back to farmgate production. For example, to estimate the farm export quantity of all grape products in terms of fresh grapes, we converted export quantities of raisins, wine and grape juice back to fresh grapes and then added this figure to fresh table grape exports.

For many crops harvested in the fall, such as cotton or almonds, the ratio of farm quantity exported to farm quantity produced does not represent the share of production in 2005 because most of the exported commodity was likely to have been produced in the previous year and stored before export. For crops harvested earlier in the year or not easily stored, such as lettuce and table grapes, the ratio approximates the annual share of farm production exported. Nonetheless, the data in Table 3 displays the importance of exports across commodities.

Excluding the special case of cotton, the 2005 individual commodity ratio of exports to production ranged from less than one-half of one percent for avocados to 85 percent for dried plums. Six commodities, almonds, dried plums, olives, pistachios, raspberries, and rice, had ratios over 50 percent, while 17 commodities had ratios over 20 percent. Table 3 shows the importance of exports for producers of these commodities, particularly tree nuts, where exports accounted for at least 40 percent of the production of almonds, pistachios and walnuts. Weighting the commodity ratios by their value of production, ratios with a large share of the sum of production value will have a greater influence in a weighted average. The overall average ratio of exports to production of the commodities weighted by the production value of each product was 26 percent.

Final Remarks

The year 2005 was the fourth consecutive year that California witnessed increases in agricultural export value to foreign destinations. California agricultural exports increased by 13 percent in 2005 and reached a new record high with total exports of over \$9.3

TABLE 3. **Percent of farm quantity exported, 2004 and 2005¹**

	2004	2005
	percent	
Almonds	69	77
Grapes, all ²	28	23
Cotton ³	73	117
Dairy and products ^{4, 5, 6}	9	12
Oranges	30	31
Rice	38	69
Walnuts	42	43
Pistachios	29	59
Tomatoes, processed	12	15
Lettuce	9	13
Strawberries	11	12
Peaches and nectarines	12	12
Hay	7	7
Dried plums ⁷	154	85
Broccoli	14	16
Raspberries	53	77
Olives	49	69
Weighted average ⁸	24	26

¹ The quantities are converted to farm level equivalent using conversion factors from the United States Department of Agriculture, National Agricultural Statistics Service.

² Grapes, all includes grape juice, raisins, table grapes, and wine.

³ The ratio for cotton is higher than 100 because volumes of past season inventories were exported in 2005.

⁴ The farm quantity exported for dairy and products is calculated by converting cheese, condensed milk, fluid milk, ice cream, nonfat dry milk, whole dry milk, and whey products to their fluid milk equivalents.

⁵ There is no addition of farm quantity of milk allotted to whey exports because whey is a byproduct from cheese production. Other products including casein, lactose, milk albumin, products for infant use, pudding, and rennet are converted to farm equivalent by multiplying California's share of U.S. milk production to the United States export quantity for these products, and then applying a conversion factor of 1 pound of product to 8 pounds of milk equivalent. The same conversion factor is used for nonfat dry milk.

⁶ The 2004 dairy export value was revised.

⁷ The ratio for dried plums is higher than 100 because plums from prior season inventories were exported in 2004.

⁸ The weighted average is based on each of the 52 commodity's share of production value. Values for chickens, mushrooms, and flowers and nursery products are not included because reliable data on export quantity is not available.

billion. Among specific commodities, the continued rapid increase of almonds, dairy, table grapes, rice, walnuts, and pistachios accounts for a large share of the overall agricultural export increase. 🌱

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