

California International Agricultural Exports in 2007

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The value of California's 2007 agricultural exports achieved an all time high of \$10.9 billion, an 11 percent increase from the 2006 total.

The data reported in this *AIC Issues Brief* describe the international agricultural exports for 2007 and revisions for 2006. These data are the product of a twelve-year collaborative effort between the AIC and the California Department of Food and Agriculture to develop estimates of the value of California agricultural products shipped to international markets. As in previous years, we have relied upon national and international data sources as well as informal estimates from sources within the agriculture industry. 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 about individual commodities and markets.

Agricultural exports by commodity or product

The 11 percent increase in export value of California agriculture from 2006 to 2007 represents the continuation of a steady rise in the international trade of California produced commodities which started in 2003 (Figure 1). Data in Figure 1 are adjusted for inflation using the Gross Domestic Product (GDP) deflator and the year 2000 as the base year. In Figure 1 we notice that total value of the top 10 commodities seem to have leveled off over the past three years at around \$5 billion, while the combined top 55 commodities have continued to increase in export value. This would indicate that the recent growth in exports of California agricultural products is due to increased trade of California's "minor" commodities.

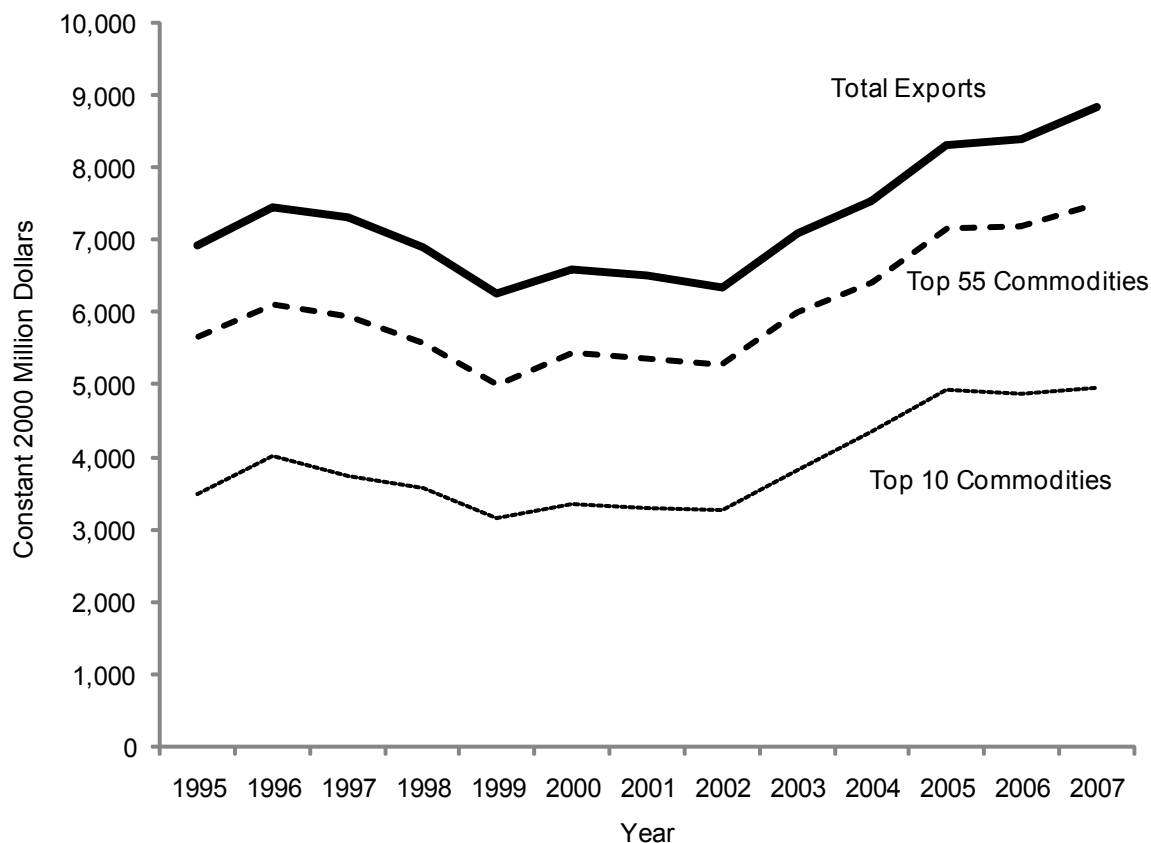
In Table 1 we list the top 55 agricultural products by export value and an "other products and mixtures" category comprised of other commodities, mixtures of commodities, and other agricultural products for which the commodity composition is difficult to determine. The top 55 export commodities account for \$9.3 billion or 85 percent of total exports while the remaining 15 percent of exports were associated with other products and mixtures. Thirty-five of the top 55 export commodities experienced growth in exports of 5 percent or greater from 2006 to 2007. In contrast, 14 commodities had decreased export value of 5 percent or more. The remaining 6 commodities experienced little to no change (<5 percent) in export value from 2006 to 2007.

The top 10 export commodities combined accounted for 69 percent of the export value of the top 55 agricultural export commodities and 59 percent of total agricultural exports. The top 10 commodities in 2007 are almonds, dairy and products, wine, table grapes, cotton, walnuts, pistachios, rice, processed tomatoes and strawberries. With a 28 percent decline in value, oranges and orange products dropped out of the top 10 in 2007 for the first time since 2000. Replacing oranges and products in the top 10 was rice, which rose to eighth place in the 2007 ranking after slipping out of the top 10 in 2006.

Once again, in 2007, almonds are the top export commodity for California with an estimated value of \$1.88 billion. Although the 2007 export value of almonds represents a 1 percent decline compared to 2006 almond exports, this commodity still accounts for approximately 20 percent of total export value for the top 55 commodities listed in Table 1, and 17 percent of total value of all exports of California

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Figure 1. California's agricultural exports, 1995-2007



Note: The aggregation "Top-55 products" includes only 50 products from the years 1995-2000. In 2001 the added 5 commodities contributed \$57 million.

agriculture production. The decline in export value of almonds in 2007 can be attributed to a 5 percent increase in export volume and a decrease in export price. This result represents the third year in a row of increased export volume and lower prices.

The California dairy industry experienced a dramatic increase in the value of dairy exports in 2007, with an estimated total value of \$963 million. This represents a 59 percent increase in export value from the previous year. The increase in the value of California dairy exports is linked to a 35 percent increase in the quantity of exports as well as an increase in the price of dairy products overall.

California wine had a second year of record high exports with a total value of \$816 million. This value is 11 percent higher than the record exports of 2006. The increase in wine exports is a result of a higher proportion of production shipped to international markets. In 2007, the California wine

industry exported 18 percent of its production to foreign markets compared to 17 percent in 2006. In addition, overall production increased by 1 percent in 2007.

California table grapes moved ahead of cotton to become the fourth highest export commodity in 2007, with an export value of \$553 million. This represents an 11 percent increase in value compared to 2006 table grape exports, which recorded a value of \$499 million. This increase is attributed to a 5 percent increase in both export quantities and unit price.

In contrast to table grapes, California cotton experienced a second consecutive year of declining export value. On the heels of a 21 percent decline in export value from 2005 to 2006, California cotton exports declined another 9 percent in 2007 with a total export value of \$505 million, or \$49 million less than 2006 export values. A 7 percent drop in

Table I - California agricultural product export values and rankings, 2006-2007

2007 Rank	Product	2005	2006	2007	Percent change 2007/2006
		Export value (\$ million)			
1	Almonds	1,841	1,899	1,879	-1
2	Dairy and products	563	604	963	59
3	Wine	575	735	816	11
4	Table grapes ²	540	499	553	11
5	Cotton	700	554	505	-9
6	Walnuts	318	365	444	22
7	Pistachios	299	287	364	27
8	Rice	319	268	313	17
9	Tomatoes, processed ¹	263	287	300	5
10	Strawberries	234	274	297	9
11	Lettuce	237	244	274	12
12	Oranges and products	365	359	260	-28
13	Raisins	209	206	213	3
14	Beef and products	100	152	199	31
15	Dried Plums	108	133	175	32
16	Lemons ¹	84	104	169	63
17	Peaches and nectarines	127	125	147	17
18	Hay ¹	112	125	134	8
19	Broccoli	104	112	119	6
20	Carrots	82	87	100	16
21	Cherries ³	52	38	97	154
22	Grapefruit	50	88	79	-11
23	Tomatoes, fresh	55	62	74	19
24	Celery	53	55	63	14
25	Raspberries	29	40	62	53
26	Flowers and nursery	42	51	59	16
27	Onions ¹	45	44	59	34
28	Plums ¹	55	61	51	-16
29	Cauliflower	48	47	51	9
30	Melons	43	42	43	3
31	Potatoes	35	42	42	0
32	Grape juice	30	28	32	15
33	Apples	24	27	31	13
34	Spinach	31	26	29	12
35	Wheat	18	14	27	95

Table I - California agricultural product export values and rankings, 2006-2007 (continued)

2007 Rank	Product	2005	2006	2007	Percent change 2007/2006
		Export value (\$ million)			
36	Garlic	24	26	25	-5
37	Bell and chili peppers	26	22	23	4
38	Pears	24	29	22	-24
39	Cottonseed by products	6	12	19	58
40	Turkey	19	18	19	9
41	Dates	13	16	18	12
42	Olives	18	16	17	8
43	Asparagus	31	12	16	33
44	Apricots	14	13	16	27
45	Cabbage	19	19	14	-24
46	Kiwi	9	17	14	-17
47	Sweet Potatoes	10	13	12	-12
48	Dry Beans ⁴	16	14	12	-16
49	Tangerines and mandarins	12	15	11	-26
50	Figs	12	14	11	-21
51	Chickens	9	7	9	24
52	Eggs	10	9	9	-3
53	Mushrooms	2	2	4	89
54	Avocados	3	11	4	-66
55	Artichokes	4	5	4	-24
	Total Principal Commodities	8,074	8,374	9,305	11
	Total Other Products ^{1, 5, 6}	1,292	1,420	1,608	13
	Total All Agricultural Exports	9,366	9,794	10,913	11

Source: University of California, Agricultural Issues Center.

1 2006 figures were revised based on updated production data from the U.S. Department of Agriculture/National Agricultural Statistics Service.

2 2005 and 2006 figures were revised based on updated production data from the U.S. Department of Agriculture/National Agricultural Statistics Service.

3 2005 and 2006 figures were revised. In 2007 California Cherry Advisory Board started reporting historical data (starting in 2005) on the shipment of all 8 major varieties. Prior figures were based on reported shipments of only 4 varieties (Bing, Van, Lambert, and Rainier)

4 Dry bean figures were updated from 2004-2006 based off of information provided by Dave Kirsten, Kirsten Co., LLC

5 2006 figures were revised based on updated port data from the U.S. Department of Commerce/International Trade Commission.

6 "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.

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

cotton prices along with a 2 percent decline in export quantities led to the decrease in export value. More specifically, the drop in export value for California cotton was the result of a 24 percent decline in the export of upland cotton.

California walnuts export markets increased substantially to 22 percent and pistachios increased to 27 percent in 2007. The growth in export value for pistachios was the largest increase of the top 10 export commodities and is the result of a 36 percent increase in the quantity of pistachios shipped to foreign markets, even though prices experienced a 6 percent decline. The increase in walnut exports for 2007 continues a steady growth since the year 2000. The past year's growth in walnut export value was the result of 10 percent growth in both export quantities and price.

Rice exports for 2007 displayed a substantial (17 percent) increase in export value from the previous year, moving rice into the top 10. The increase in value of California rice exports was due to a 32 percent increase in the overall price of rice, which offset a 21 percent decline in quantity of California rice exports.

Both remaining commodities in the top 10, processed tomatoes and strawberries, had increases in export value from 2006 to 2007. For strawberries, exports increased 9 percent from \$274 million in 2006 to a value of \$297 million in 2007. Processed tomato exports increased 5 percent from \$287 million to \$300 million.

Falling out of the top ten in 2007 were oranges and orange products, which fell to twelfth place. This displacement was due to a 28 percent decrease in the export value of oranges. This drop in value was the result of a decline in the proportion of California orange production shipped to international markets. Due to a freeze in January 2007, a smaller share of the crop was of export quality. In 2007, 17 percent of California's orange crop was exported compared to 37 percent in 2006.

Within the remaining 55 principal commodities, cherries had the biggest gains in export value from the previous year, increasing 154 percent in value from \$38 million in 2006 to \$97 million in 2007.

This increase is linked to a highly productive growing season for California cherry producers, who harvested 82,000 tons of cherries in 2007, up from 40,200 tons in 2006.

Other commodities with significant percentage increases in export value were wheat (95%), lemons (63%), mushrooms (89%), cottonseed and byproducts (58%) and raspberries (53%). Also of note was a 31 percent increase in the value of beef and cattle related products exported. This increase in California beef exports indicates a continued recovery from the 2003 BSE incident in the Washington state and subsequent collapse of U.S. beef exports.

As Table 1 shows, the export of California agriculture products covers a broad scope of different commodities. In 2006 fruits and tree nuts accounted for 48 percent of total export value as Figure 2 shows the 2007 share of these two commodity groups decreased to 46 percent of total exports. In addition to the loss in export share experienced by fruits and tree nuts, California wine exports share decreased by 1 percent. These losses were offset by a 3 percent gain on the part of animal products, which rose from an international export share of 8 percent in 2006 to 11 percent in 2007. Vegetables, field crops and mixtures and other products maintained the same share of export value in 2007 as in 2006.

International Destinations

In 2007, California agricultural products were shipped to 156 separate countries worldwide. Relatively accurate export destination data are available for 48 commodities. These 48 commodities account for over 99 percent of the export value of the top 55 export commodities. The commodities for which no reliable export destination data are available are apples, turkey, wheat, eggs, chickens, avocados and mushrooms. The top 10 export destinations account for 83 percent of the 2007 export value of the 48 commodities, which is down from 85 percent in 2006. The top three export destinations—Canada, the European Union and Japan—account for 57 percent of 2007 export value, which is also a decline from the previous year when these same three destinations received 61 percent of California's agricultural exports. Overall, California agricultural products spanned a greater proportion

of the global market in 2007 as those countries that are outside the top ten primary recipients received a combined 17 percent of exported commodities, up from 12 percent in 2006 (Figure 3).

In 2007, Canada exceeded the European Union as the largest recipient of California agricultural exports. With a value of \$2.2 billion in imports, Canada purchased 24 percent of the total value of agricultural products exported from California in 2007. The European Union, which was the top destination of California agricultural products in 2006, fell to second place, purchasing \$2.1 billion or 23 percent of total exports in 2007. Export values to Canada increasing 18 percent from 2006 to 2007, while the value of exports to the European Union remained stable when compared to the previous year.

The contraction in export share to the European Union in 2007 came about in spite of an expansion of the EU's membership from 25 countries to 27 countries with the inclusion of Bulgaria and Romania on January 1, 2007. The four major destinations within the European Union were once again the United Kingdom, Germany, Spain and Italy. Each of these four countries accounted for greater than \$200 million of California agricultural exports. Due to the freedom of trade among European Union member nations, it is not usually possible to determine the country of final consumption.

As was the case in 2006, almonds were the top California export commodity to the European Union in 2007 with a value of \$940 million which represents over 44 percent of total value of all commodity exports to the European Union. The other two tree nuts, walnuts and pistachios, the third and fourth ranked exports to the European Union, combined for another \$426 million in export value to the European Union. Combining the import of all three tree nuts in 2007, the European Union consumed nearly 51 percent of all tree nuts exported from California. Wine was the second highest commodity export from California to the European Union with a total value of \$424 million. As with tree nuts, the European Union, which received 52 percent of total California wine exports, was the largest foreign consumer of California wine in 2007. Tree nuts and wine combined account for 84 percent

of total export value of California commodities to the European Union.

In contrast to the European Union, the \$2.2 billion value of California exports to Canada was spread more evenly across a broader selection of products. The top commodities for Canada in 2007 were fruits and vegetables. Lettuce, strawberries and table grapes were the top three commodities imported by Canada with a combined value of \$652 million. Wine exported to Canada was the fourth highest valued commodity at \$182 million and processed tomatoes rounded out the top 5 with \$158 million in export value. In 2007, Canada imported 7 commodities from California with values in excess of \$100 million: lettuce, strawberries, table grapes, wine, processed tomatoes, almonds and dairy and dairy products. Another 23 commodities were exported to Canada with values in excess of \$10 million. In contrast, only the top 4 commodities exported to the European Union had total values in excess of \$100 million and only 11 commodities had values equal to or greater than \$10 million.

The value of agricultural exports to Japan decreased from \$964 million in 2006 to \$957 million in 2007. With this slight decrease, Japan maintained its rank as the third largest foreign buyer of California agricultural products in 2007. Although rice and almonds remained the top two California commodities exported to Japan in 2007, the overall value of exports to Japan decreased from 2006 to 2007 for each of these commodities. Rice exports to Japan fell by approximately 16 percent from 2006 while almond export value experienced a 7 percent decline in value. The largest contributor in the overall decline of export value to Japan was oranges and orange products, which fell 36 percent from \$68 million in 2006 to \$43.5 million in 2007. In contrast, California lemons rose by more than 100 percent to \$79.3 million. Beef and products continued a strong rebound into the Japanese markets in 2007 with \$32.7 million in sales — a 54 percent growth in export value from 2006. This demonstrates a continued recovery from the collapse of beef sales to Japan in 2005 due to the BSE crisis.

China/Hong Kong maintained its position as fourth largest export destination, which it first reached in 2006. Export of California agricultural

products to China/Hong Kong totaled \$638 million in 2007, up 4 percent from 2006. Cotton was the top product exported to China/Hong Kong with \$167.5 million in value. This represents 26 percent of the value of all California commodities shipped to China/Hong Kong. In 2007, Mexico, South Korea, Taiwan, India, Australia and the United Arab Emirates all maintained their positions in the list of top 10 destination countries who receive California agricultural products. Of these remaining countries, Taiwan and India each had a decrease in the total value of agricultural product imports from California. In contrast, Mexico, South Korea, Australia and the United Arab Emirates had increased import values.

Table 2 shows California export distribution among the six principal destinations and the “rest of the world” by commodity group. Table 2 summarizes previously discussed observations. The European Union is the largest importer of tree nuts and wine, while Canada imports mostly fruits, vegetables and flowers and nursery products. Imports to the Asian trading partners of Japan, China/Hong Kong and South Korea lean toward field crops.

Farm Quantity Exported

Table 3 offers a comparative look at the ratio of farm quantity exported in 2007 to that exported in 2006. 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 to fresh grape equivalent and then added this figure to fresh grape exports. For many crops harvested in the fall, such as cotton or almonds, or commodities where a portion is placed in storage, the ratio of farm quantity exported to farm quantity produced does not represent the share of 2007 production because most of the exported commodity was likely to have been produced in 2006. For crops harvested earlier in the year or not easily stored, such as lettuce and table grapes, the ratios approximate the annual share of farm production exported. Despite these limitations, the data in Table 3 displays the importance of exports across commodities.

When considering all 55 principal commodities, individual commodity ratio of exports to production

Table 2. Percent of California export value shipped to major markets, by commodity group, 2007¹

	EU-27	Canada	Japan	China/ HK	Mexico	South Korea	ROW	Total
Animal Products ²	4.21	9.61	7.55	10.56	23.57	5.78	38.73	100
Field Crops ³	3.95	14.17	18.83	12.79	7.85	6.27	34.68	100
Fruits ⁴	9.19	37.24	13.27	6.41	5.21	5.94	22.75	100
Tree-nuts	50.85	7.42	6.77	5.98	1.41	2.72	24.85	100
Vegetables ⁵	1.84	75.00	6.88	0.60	7.65	0.31	7.73	100
Flowers and Nursery	15.57	38.13	3.21	1.17	29.10	0.93	11.88	100
Wine	51.97	22.33	6.76	2.30	1.24	1.93	13.47	100
All Commodity Groups	22.94	23.88	10.29	6.86	6.91	4.15	24.98	100

Source: University of California Agricultural Issues Center.

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

2 Does not include chicken, eggs, or turkey because reliable data on 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.

ranged from one percent for avocados to 98 percent for cotton. There were six commodities which had export quantities that were more than 50 percent of 2007 production levels. These commodities were cotton, dried plums, grapefruit, almonds, apples and walnuts. As in previous years, export markets proved vitally important to the California tree nut growers as over half the 2007 production of almond, pistachios and walnuts was traded internationally. The overall average ratio of exports to production of the top 15 commodities in California for 2007 was 28 percent compared to 24 percent in 2006.

Final Remarks

Overall, California agricultural exports in 2007 increased by 11 percent from the previous year and achieved a record high of more than \$10.9 billion in value. The 2007 export of California agricultural products marks the sixth year of continued growth in the sale value of agricultural products to foreign destinations. In addition to an increase in overall export value of California commodities, the data indicate that a broader range of foreign destinations may be importing more California agricultural production.

Table 3. Percent of farm quantity exported, 2006 and 2007 ^{1,2}

	2006	2007
	Percent	
Almonds	72	63
Grapes, all ³	27	26
Dairy and products ^{4,5}	13	17
Cotton	96	98
Walnuts	45	52
Pistachios	57	45
Rice	40	29
Tomatoes, processed	14	11
Strawberries	12	13
Lettuce	10	8
Oranges and products	38	17
Beef and products ⁶	4	5
Dried Plums	32	88
Lemons	20	26
Peaches & nectarines	12	11
Weighted average ⁷	24	28

Source: University of California, Agricultural Issues Center.

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

2 Ratios do not necessarily reflect share of the crop exported in a given year, because exports may include quantities produced in prior years and some of the current year's production may be exported in subsequent years

3 Grapes, all includes grape juice, raisins, table grapes, and wine

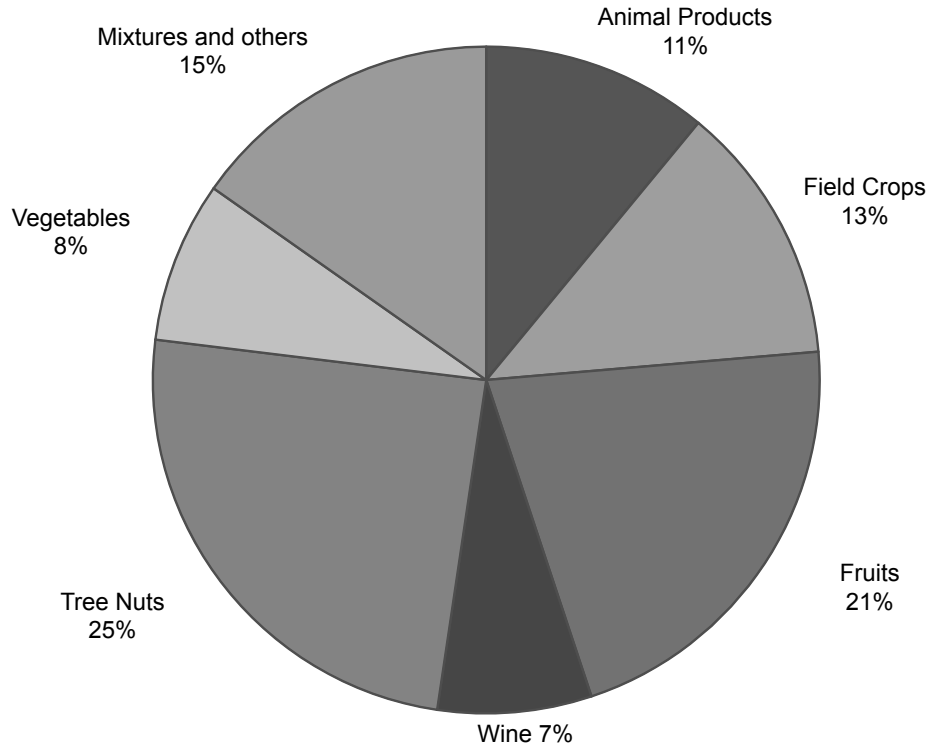
4 Farm quantity exported for dairy and products is calculated by converting cheese, condensed milk, fluid milk, ice cream, nonfat dry milk, and whole dry milk to their fluid milk equivalents.

5 There is no addition for the farm quantity of milk allotted to whey exports because whey is a by-product 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 U.S. export quantity for these products, then applying a conversion factor of 1 pound of product to 8 pounds of milk equivalent. The same conversion factor is used for non fat dry milk.

6 The liveweight equivalent for beef and products is obtained by taking the volume of exports of beef and offal and dividing this by a conversion factor using 1 pound of beef and offal carcass weight as equivalent to 1.49 pounds liveweight.

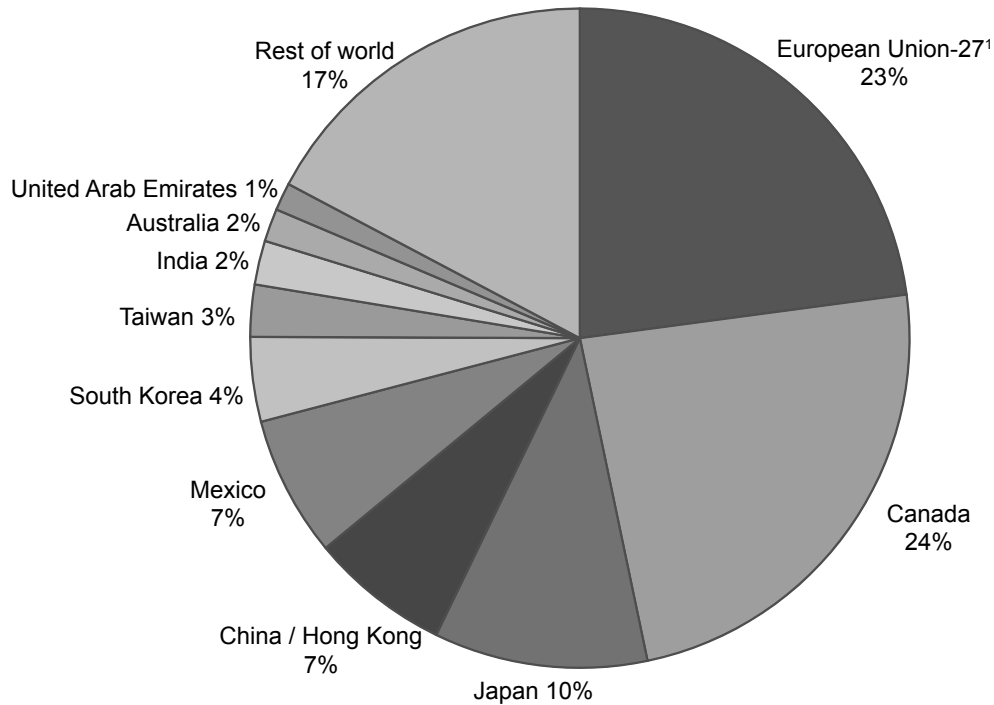
7 The weighted average is based on each of the 52 commodity's share of production value. Values for chickens, mushrooms, and flowers and nursery products are not included because reliable data on export quantity is not available.

Figure 2 - California agricultural exports by category, 2007



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

Figure 3 - California agricultural exports to the top-10 destinations , by value, 2007



Note: Chart is 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. Exact proportion of the distribution may be unequal due to differences from rounding.

1 On January 1, 2007 the European Union increased the number of member countries from 25 to 27 with the addition of Bulgaria and Romania.