



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

CALIFORNIA AGRICULTURE

DIMENSIONS AND ISSUES



Edited by Jerry Siebert
2003

University of California Giannini Foundation of Agricultural Economics
Division of Agriculture and Natural Resources

CHAPTER 10

Organic Agricultural Production in California

Karen Klonsky

Karen Klonsky is a Cooperative Extension Specialist in the Department of Agricultural and Resource Economics, University of California, Davis.

The California Organic Foods Act (COFA), signed into law in 1990, provides protection to producers, processors, handlers and consumers in that foods produced and marketed as organic must meet specified standards. As part of the regulatory process, COFA requires annual registration of all processors, growers and handlers of commodities labeled as organic. State registration is separate from, and does not act as a substitute for, organic certification. Registration is mandated by state law and is administered by CDFA while certification is mandated by federal law and is conducted by certification organizations accredited by USDA.

The Organic Foods Production Act (OFPA) of 1990 requires the United States Department of Agriculture (USDA) to develop national organic standards for organically produced agriculture and to develop an organic certification program. The final regulations for implementation of the OFPA were published in the Federal Register in December, 2000. The new rule took effect April 21, 2001 and marked the beginning of the transition period. Full compliance with the rule was required by October 20, 2002 at which time products began to use the National Organic Program organic label. The final rule includes a list of allowed synthetic and prohibited non-synthetic materials as well as labeling requirements. Unlike COFA, OFPA requires all growers grossing \$5,000 or more to obtain certification from a USDA accredited certification organization.

Interest in organic agricultural production has never been greater due to the continuous and rapid rate of expansion and the relatively higher prices commanded for organic products. This chapter quantifies the current size and growth of the organic industry in California with respect to acres, farm gate sales, and number of growers. The chapter looks at size and growth with respect to major commodity groups and subregions of California. The state's counties are divided into eight geographic regions based on similar groupings used by the California Department of Food and Agriculture (CDFA) in their annual statistical reports (Figure 1). The six major commodity group classifications presented also parallel the CDFA reports and include: field crops; fruit crops; nut crops; livestock, poultry and products; nursery, forestry and flowers; and vegetable crops (Table 1). The most important individual commodities will also be discussed.

When interpreting the results, the following points should be considered. The numbers contained in this chapter are derived solely from information provided in the annual registration forms of organic growers. In other words, the numbers are presented as reported to CDFA by growers. Only sales from products marketed as organic are required to be reported to CDFA. This means that income from sales of organically grown products sold in the conventional market may not be included. Similarly, income from government payments is not reported. Further, the registration information does not reveal whether or not a farm also has conventional production. Therefore, the size of the farm operation is not known from the registration data; only the size of the organic enterprise is known. There are a number of conventional growers in California who devote only a portion of their total acreage to organic crop production. Therefore, some of the growers that are categorized as "small" or "medium-sized" organic farmers may actually be larger conventional growers experimenting or diversifying with some organic acreage.

Under CDFA regulations, producers of organic commodities pay graduated registration fees based on an operation's total sales. However, registrants grossing over \$5 million annually were not obligated to report sales above that amount prior to 2003. While most registrants reported actual amounts over \$5 million, some registrants reported at the ceiling. Therefore, the total value of production in this chapter is undoubtedly underestimated because income realized by some high-revenue producers may not have been fully accounted for.

CALIFORNIA ORGANIC PRODUCTION IN 2002

A total of 1,949 registered organic farmers reported gross sales of \$260 million for organically grown commodities from 170,000 crop production acres during 2002. (Tables 2,3, and 4). Organic agriculture represented approximately one percent of the total cash income from marketings for all agriculture in the state in 2002, excluding livestock, poultry and products. Organic fruits and nuts represent 1.4 percent of the state total and organic vegetable crops represented 2 percent of total vegetable marketings (CDFA, 2003).

Figure 1. California Regions



Table 1. Commodity Groups, Commodity Types, and Individual Commodities

Commodity Group	Commodity Type	Individual Commodity
Field crops	Alfalfa Barley Beans Buckwheat Cane Clover Cotton Field Corn Flax Jojoba Legumes Oats Pasture Peas (dried) Popcorn Rice Rye	Ryegrass Safflower Seed crops Sesame Sorghum Soybeans Sudan Grass Sugar beets Sunflower Tea Vetch Wheat Wild Rice
Fruit & nut crops	Berries Citrus & subtropicals Grapes Nut crops Pome fruits Stone fruits	Blackberries, blueberries, boysenberries, cranberry, olallieberry, raspberries, strawberries Avocados, bananas, cherimoya, dates, figs, guavas grapefruit, jujube, kiwifruit, kumquats, lemons, limes, loquats, mandarins, oranges, tangelos, tangerines, mangos, olives, persimmons Juice, raisin, table, wine Almonds, cashews, chestnuts, coconut, macadamias, peanuts, pecans, pistachios, walnuts Apples, Asian pears, crabapple, pears, pomegranate Apricots, cherries, cherimoya, nectarines, peaches, plums, prunes
Livestock, poultry & products	Apiary Cattle Dairy Hogs & pigs Layer hens Poultry Sheep & lambs	Honey Meat products Dairy products Meat products Eggs Chicken, turkey Meat, wool products
Nursery, forestry & flowers	Aloe vera & cactus Flowers Transplants Firewood, Christmas trees	Container plants Vines, canes
Vegetable crops	Alliums Brassicas Chenopods Composites Cucurbits Legumes & sprouts Solanaceous crops Succulent vegetables & sweet corn Umbells & herbs Other	Garlic, leeks, onions, shallots Arugula, broccoli, Brussel sprouts, cabbage, cauliflower, Chinese cabbage, collards, horseradish, kale, kohlrabi, mustards, radish/Daikon, turnip, watercress Beets, chard, spinach Artichokes, burdock, cardoon, chicory, endive (frieze), lettuces, radicchio, salad mix, spring mix, salsify Cucumbers, gourds, melons, pumpkins, squash String beans, peas, sprouts Eggplant, peppers, potato, tomatillo, tomato Asparagus, mushrooms, sweet corn Carrots, celery, fennel, herbs Jicama, rhubarb, sweet potatoes, yams

Table 2. Organic Acreage by Commodity Group and Region in CA, 2002

Region	Fruit	Nuts	Vegetable Crops	Field Crops	Nursery & Flowers	Livestock, Poultry & Products	Total Acres
Bay area	302	37	665	1,308	10	7	2,329
Cascade Sierra	822	67	299	14,020	53	27	15,288
Central Coast	2,138	897	17,475	1,147	49	1	21,706
North Coast	7,463	1,030	2,124	1,507	86	2,509	14,720
Sacramento Valley	3,039	1,402	2,538	21,588	45	137	28,748
San Joaquin Valley	13,875	2,298	24,970	15,714	5	3,066	59,926
South Coast	12,801	29	4,304	193	78	65	17,470
Southeast Interior	2,660	31	5,508	1,339	9	65	9,612
Total acres	43,099	5,791	57,883	56,816	334	5,876	169,799

Table 3. Gross Sales for Registered Organic Growers by Commodity Group and Region in CA, 2002

Region	Fruit	Nuts	Vegetable Crops	Field Crops	Nursery & Flowers	Livestock, Poultry & Products	Total sales
Bay area	\$720,860	\$65,812	\$4,377,087	\$64,599	\$513,432	\$4,680	\$5,746,468
Cascade Sierra	788,023	12,122	403,803	1,784,633	19,599	264,113	3,272,292
Central Coast	13,115,224	581,236	44,755,913	216,801	2,879,602	3,065	61,551,841
North Coast	13,786,502	398,151	3,705,384	115,538	1,166,965	4,430,451	23,602,990
Sacramento Valley	6,041,772	4,709,178	10,865,271	8,394,535	834,280	5,900	30,850,936
San Joaquin Valley	23,343,635	3,786,854	25,175,938	997,017	166,685	16,069,340	69,539,467
South Coast	22,206,669	18,235	24,682,868	289,448	325,872	322,959	47,846,052
Southeast Interior	8,387,200	3,300	6,809,969	487,073	1,239,047	182,150	17,108,739
Total Sales	\$88,389,885	\$9,574,887	\$120,776,232	\$12,349,643	\$7,145,481	\$21,282,659	\$259,518,786

Table 4. Registered Organic Growers by Commodity Group and Region in CA, 2002

Region	Fruit	Nuts	Vegetable Crops	Field Crops	Nursery & Flowers	Livestock, Poultry & Products	Total Growers
Bay area	25	3	33	14	19	5	51
Cascade Sierra	81	22	64	43	21	8	134
Central Coast	133	44	138	30	48	5	250
North Coast	223	84	153	45	73	29	377
Sacramento Valley	124	63	75	109	30	5	270
San Joaquin Valley	179	69	66	34	8	16	284
South Coast	449	24	102	25	37	10	490
Southeast Interior	79	6	30	17	4	5	106
Total growers	1,290	315	654	316	240	83	1,949

Organic Commodities

Produce (vegetable, fruit and nut crops) includes the commodity groups of most consequence to registered organic agriculture in California. In 2002, produce was grown by the majority of organic farms (83 percent of the total farms) and acreage (63 percent of the total acreage). Compared to all of California agriculture, produce is an even greater proportion of organic marketings than conventional marketings, representing 84 percent of total organic sales and 60 percent of total sales from California's agricultural commodities. In contrast, livestock, poultry and products represent only 8 percent of organic sales in 2002 but routinely contribute more than one fourth of statewide income from agriculture.

In 2002 there were 45 different commodities with over \$1 million in organic sales. The highest grossing commodity was grapes followed by lettuces, carrots, strawberries and tomatoes (Table 5). Of the top 20 grossing commodities, eight were fruit crops (grapes, strawberries, dates, apples, raspberries, oranges, avocados, and peaches), seven vegetable crops (lettuces, carrots, tomatoes, spinach, celery, broccoli, and mushrooms), two livestock commodities (dairy and chicken) and one nut crop (almonds). The top 20 commodities represented 60 percent of total sales.

Table 5. Sales of Top 20 Organic Commodities, Total Sales, and Organic Percentage of Total Sales, California 2002 (\$1,000)

Rank	Commodity	Organic	% of Organic	Total ^a	% of Total	Organic % of Total
1.	Grapes—all	26,768	10.3	2,650,873	10.1	1.0
	<i>wine</i>	14,557	5.6	1,815,292	0.1	0.8
	<i>raisin</i>	4,072	1.6	401,256	1.5	1.0
	<i>table</i>	8,139	3.1	434,325	1.7	1.9
2.	Lettuces	21,945	8.5	1,370,004	5.2	1.6
3.	Carrots	14,268	5.5	433,919	1.7	3.3
4.	Strawberry	12,525	4.8	841,031	3.2	1.5
5.	Tomato—all	10,126	3.9	766,260	2.9	1.3
	<i>fresh market</i>	6,228	2.4	269,452	1.03	2.3
	<i>processing</i>	3,898	1.5	496,808	1.90	0.8
6.	Spinach	8,490	3.3	135,780	0.5	6.3
7.	Dairy	8,289	3.2	4,630,171	17.7	0.2
8.	Rice	7,118	2.7	138,564	0.5	5.1
9.	Almond	6,830	2.6	731,880	2.8	0.9
10.	Celery/Celeriac	6,522	2.5	259,865	1.0	2.5
11.	Date ^b	6,229	2.4	52,246	0.1	11.9
12.	Nursery	6,025	2.3	2,087,447	8.0	0.3
13.	Chickens (meat)	6,007	2.3	532,452	2.0	1.1
14.	Apple	5,630	2.2	97,380	0.4	5.8
15.	Raspberry	5,525	2.1	41,168	0.2	13.4
16.	Broccoli	5,501	2.1	438,118	1.7	1.3
17.	Orange	4,713	1.8	514,460	2.0	0.9
18.	Avocado	4,520	1.7	315,842	1.2	1.4
19.	Peach	4,435	1.7	246,743	0.9	1.8
20.	Mushrooms	3,664	1.4	160,873	0.6	2.3
Total sales		259,520	100.0	26,137,315	100.0	1.0

a) Includes conventional and organic b) Includes majool variety dates Sources: CDFA, NASS

In 2002 there were 35 different organic crops with over 1,000 planted acres. More acreage was planted to rice (14,431 acres) than to any other single crop representing 8 percent of all organic acreage and one fourth of all field crop acres. Rice sales generated over \$7 million, 3 percent of total organic marketings for the state. Grapes were second in acreage (9,681 acres), with three quarters planted to winegrapes. Total grape sales equaled \$22.7 million, with two thirds from winegrapes. Grapes contributed nine percent of total organic marketings for the state and over half of fruit sales. Lettuces were planted on over 15 thousand acres, half of that to salad mix. Total marketings from lettuces were almost ten percent of all organic sales.

Organic Producers

Produce growers represented 78 percent of the total number of growers in 2002 (Figure 2). Almost half (44 percent) of all organic growers produced fruit crops, about one fourth (23 percent) grew vegetable crops and 11 percent grew nut crops. Field crops were grown by 11 percent of producers, nursery and flowers by 8 percent and livestock, poultry and products by only 3 percent. These percentages don't add to 100 because over one third of organic growers reported sales in more than one commodity group, most typically vegetable crops and fruit crops.

Over half of the registered organic growers grossed under \$10,000 in 2002 while three percent grossed over a million dollars (Figure 3). Ninety percent of sales were from the 17 percent of growers grossing \$100,000 or more. The remaining 10 percent of sales was captured by the 83 percent of growers grossing under \$100,000 in annual sales.

Geographic Distribution of Production

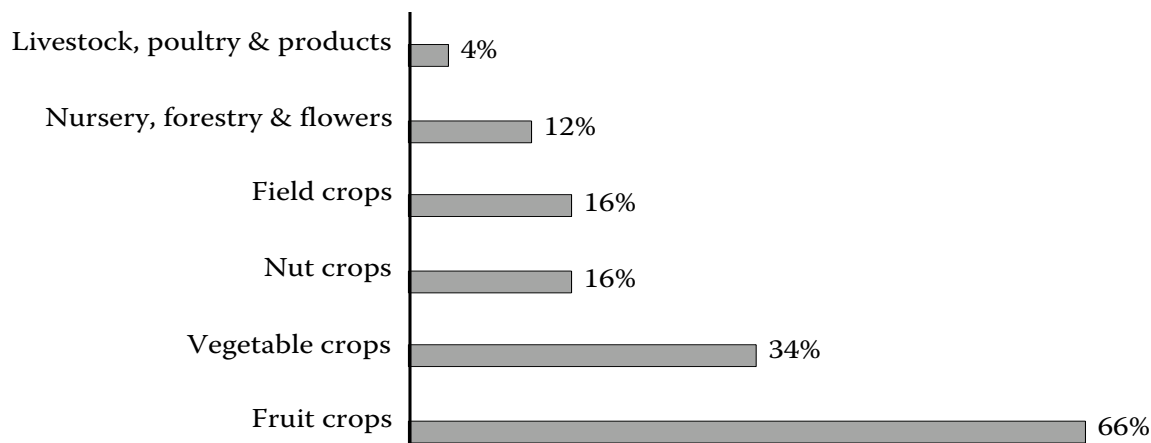
Distribution of Acreage. Over one third of the state's total organic acreage was located in the San Joaquin Valley in 2002 (Table 2). Vegetable crops comprised 42 percent of that acreage, fruit and nut crops 27 percent, and field crops 26 percent. The Sacramento Valley recorded 17 percent of the state's organic acreage, with three fourths of the region's acreage planted to field crops and the rest mostly divided among fruit, nut, and vegetable crops.

The Central Coast represented 13 percent of the total acreage (Table 2). Eighty percent of that acreage was planted to vegetable crops. The South Coast had another 10 percent of the acreage of which almost three fourths was fruit crops. The North Coast and Cascade-Sierra each had 9 percent of the acreage. Half of the North Coast acreage was devoted to fruit crops while 91 percent of the acreage in the Cascade-Sierra was in field crops.

Distribution of Gross Sales. The San Joaquin Valley garnered \$70 million in sales representing over one fourth of the state total (Table 3). Seventy percent of the San Joaquin Valley income was split evenly between fruit and vegetable crops and another 23 percent was from field crops. In contrast, the Central Coast generated \$62 million in sales but 94 percent were from fruits and vegetables and less than one percent from field crops. The South Coast was the third highest grossing region with \$48 million in sales with fruits and vegetables evenly splitting 98 percent of sales.

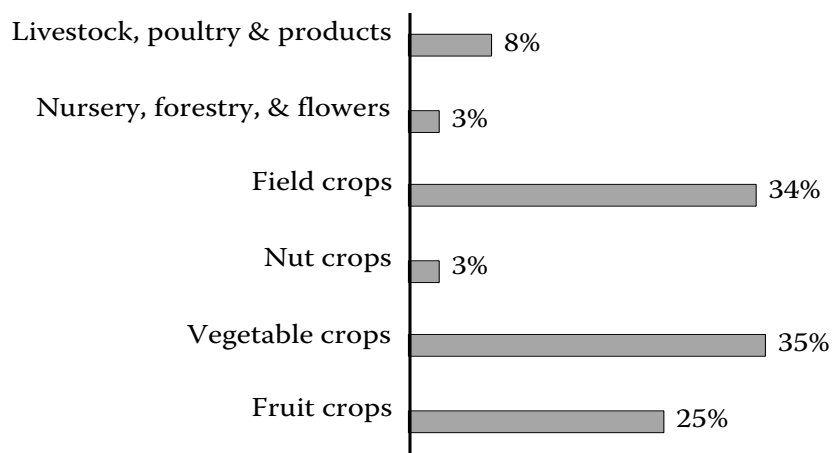
Figure 2. Registered Organic Agriculture by Commodity Group as Reported to CDFA, 2002

GROWER NUMBERS^a



a) Totals more than %100 because of multiple responses to some commodity groups.

CROP ACREAGE



GROSS SALES

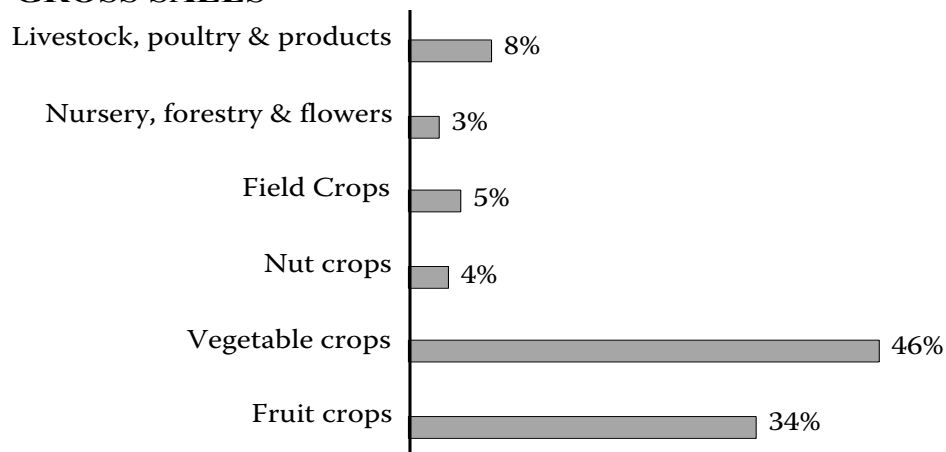
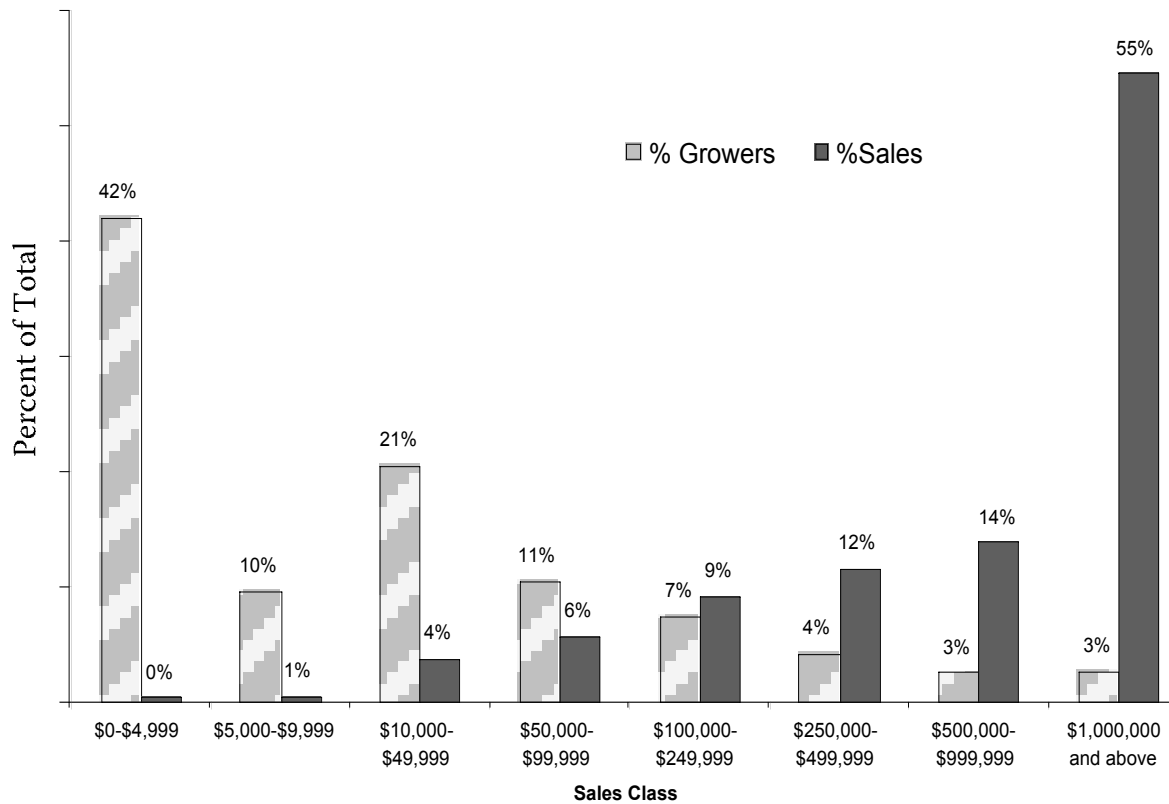


Figure 3. Income Concentration in CA Organic Agriculture, 2002



Distribution by Commodity Groups. The San Joaquin Valley was the leading region for fruit production with 32 percent of the acreage and 26 percent of sales. The South Coast followed closely with 30 percent of the acreage and 25 percent of the sales. The North Coast had 17 percent of the acreage and 16 percent of the sales. Two thirds of the nut acreage was in the San Joaquin Valley and Sacramento Valleys with 89 percent of the sales split between these two regions. The remaining nut production was split between the Central Coast and North Coast.

Three fourths of the vegetable crop production took place in the Central Coast and San Joaquin Valley. These two regions accounted for 58 percent of sales. The Central Coast had 30 percent of the acreage and 37 percent of the sales while the San Joaquin Valley had 43 percent of the acreage but only 21 percent of sales. Field crops were grown primarily in the Sacramento Valley and San Joaquin Valley with two thirds of the acreage and three fourths of the sales. Livestock and poultry production took place primarily in the North Coast and San Joaquin Valley with 95 percent of the acreage and 97 percent of the sales.

INDUSTRY TRENDS 1992-2002

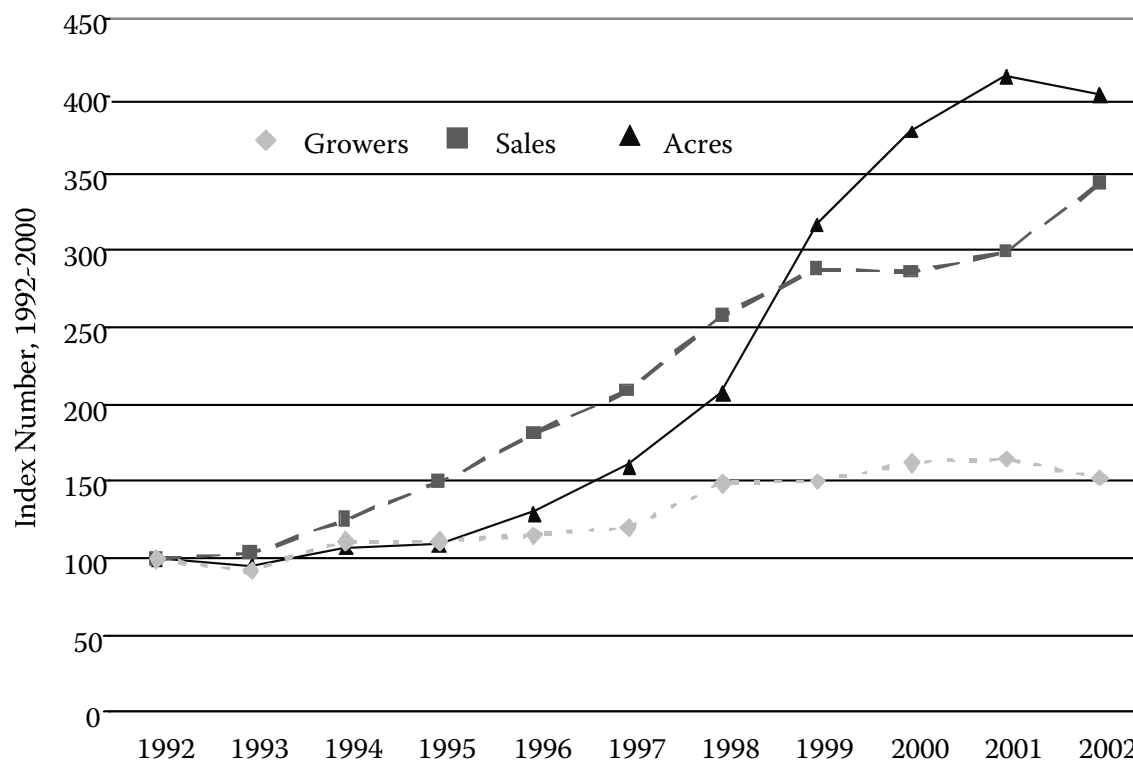
The number of registered organic farms in California increased by over 50 percent during the eleven-year period 1992-2002 from 1,273 to 1,949 growers (Table 6, Figure 4). But the growth has not been even, with the largest growth in 1994, 1998, and 2000.

The numbers actually declined from the previous year in 1993 and 2002. By far the largest absolute change in number of growers has been in fruit and nut crops, increasing by over 700 growers.

Table 6. Registered Organic Growers in CA by Commodity Group, 1992-2002

Year	Fruit & Nuts	Vegetable Crops	Field Crops	Nursery & Flowers	Livestock, Poultry & Products	Total Growers
1992	797	409	45	11	11	1273
1993	750	305	42	14	7	1,185
1994	971	387	46	15	9	1,428
1995	984	427	45	24	12	1,427
1996	1,229	476	70	39	14	1,475
1997	1,063	500	97	68	11	1,533
1998	1,376	678	231	163	37	1,909
1999	1,385	683	271	203	63	1,919
2000	1,523	734	298	227	72	2,075
2001	1,574	723	339	252	82	2,102
2002	1,467	654	316	240	83	1,949

Figure 4. Index Numbers of Growth in CA Organic Agriculture, 1992-2002



Over the same period of time acreage quadrupled increasing from 42,000 acres in 1992 to almost 170,000 acres in 2002 (Table 7, Figures 4 and 5). Three fourths of the increase was accounted for by vegetable crop and field crop expansion. Field crop acreage increased by 49,000 acres, almost a seven fold increase. Almost all of the growth occurred between 1996 and 2001. Acreage actually decreased in 2002 compared to 2001. Vegetable crop acreage increased by 43,000 acres, a four fold increase. Growth took place steadily from 1994-2001 with the largest spurts in 1999 and 2001 but adjusted downward in 2002. Fruit and nut crop acreage was two and a half times higher in 2002 than 1992, a net expansion of 29,000 acres. Expansion has been constant and greatest between 1997 and 2002.

Sales increased to three and a half times what they were in 1992 by 2002, but the rate of increase tapered off in 2000 and 2001 only to pick up again in 2002 (Table 8, Figure 4). The absolute increase was \$184 million, from over \$75 million in 1992 to almost \$260 million in 2002 (Table 8). Eighty percent of the increase was due to produce sales (fruits and nuts \$64 million increase and vegetables \$83 million increase). Livestock, poultry and products contributed 11 percent of the increase, field crops 5 percent and Nursery and Flowers 3.5 percent. The most rapid rate of growth was in livestock, poultry and products increasing from only \$37,000 in sales in 1992 to over \$21 million in 2002.

Table 7. Organic Acreage in CA by Commodity Group, 1992-2002

Year	Fruit & Nuts	Vegetable Crops	Field Crops	Nursery & Flowers	Livestock, Poultry & Products	Total Acres
1992	19,494	14,503	8,289	16	--	42,302
1993	20,188	12,960	7,412	11	--	40,571
1994	21,731	15,744	7,583	12	--	45,070
1995	21,783	16,709	7,743	24	--	46,258
1996	21,867	21,052	11,816	33	--	54,768
1997	23,758	26,637	17,309	121	--	67,826
1998	29,847	30,203	26,499	272	1,083	87,904
1999	38,112	47,757	45,627	759	2,001	134,256
2000	40,430	55,431	58,791	544	4,664	159,860
2001	43,621	70,260	56,194	338	4,515	174,928
2002	48,890	57,883	56,816	334	5,876	169,799

The number of growers increased by a much smaller percentage than the number of farmed acres, suggesting that established growers increased crop acreage and/or that some new growers entered the program with above average farm size (Figure 4). This is consistent with the observation that almost 40 percent of the growth in acreage was in field crops which tend to have much higher acreage per farming unit than produce crops. Acreage also grew at a faster rate than gross sales (401 percent and 344 percent respectively). This is again attributable to an increasing importance of field

crops (increasing from one fifth of acreage in 1992 to a third of total acreage in 2002) that have lower sales per acre than any of the other commodity groups.

Table 8. Sales for Registered Organic Growers in CA by Commodity Group, 1992-2002

Year	Fruit & Nuts	Vegetable Crops	Field Crops	Nursery & Flowers	Livestock, Poultry and Products	Total Sales
1992	34,057,964	37,961,561	2,937,723	442,512	37,057	75,436,817
1993	29,985,496	44,889,371	2,570,137	846,886	39,405	78,331,295
1994	32,684,588	57,569,204	3,761,960	939,373	144,261	95,099,386
1995	35,467,208	72,432,639	3,339,036	1,223,797	850,809	113,313,489
1996	42,635,225	83,091,797	7,217,878	1,904,878	2,233,378	137,083,156
1997	50,905,893	91,030,468	10,154,452	2,033,551	4,163,516	158,287,880
1998	73,678,175	99,141,940	14,041,172	2,776,963	5,439,214	195,077,465
1999	80,254,117	108,968,096	12,964,298	6,943,236	8,631,207	217,760,954
2000	78,336,232	101,533,773	18,371,669	4,764,557	13,267,641	216,273,872
2001	92,798,034	94,848,681	15,508,996	7,086,226	15,723,673	225,965,611
2002	97,964,772	120,776,232	12,349,643	7,145,481	21,282,659	259,518,786

Comparing the organic subsector to the whole of California agriculture, gross sales of organically grown commodities tripled between 1992 and 2002 while overall agricultural sales in California increased by 30 percent over the same period. Growth in organic sales averaged 20 percent a year between 1993 and 1998 but slowed to an average of eight percent from 1998 to 2002. In the five year period 1998-2002, organic sales increased by 33 percent while state total sales were stagnant. Organic crop acreage increased four-fold between 1992 and 2002 despite a decrease in land in farms for the state over the same period. Organic agriculture nevertheless represented only 1 percent of total cash income for California by 2002. Organic produce (vegetable, fruit, and nut crops) was slightly more prominent, with 2 percent of vegetable sales and 1.4 percent of fruit and nut sales in 2002.

Organic Commodities

From 1998-2002, vegetable crops posted a 48 percent increase in the number of acres (27,680 acre increase) but only a 22 percent increase in total sales (\$21.6 million increase), although this varied widely across regions. Over 90 percent of the increase in vegetable crop acreage took place in the Central Coast and the San Joaquin Valley. Vegetable crops with the greatest increase in sales include spinach, celery, endive, mushrooms, lettuces, and fresh market tomatoes. Salad mix sales actually decreased over the period. Commodities with the largest increase in acreage include salad mix, lettuces, spinach, carrots and mustard. The acreage data can be somewhat misleading in that the greatest increase came from fallow acreage and acreage in cover crops for

rotation purposes. It may be that this is a change in reporting practices rather than an actual change in acreage.

Considering all salad crops as lettuces (including salad mix, endive, radicchio and arugula) the greatest increase in acreage attributed to a vegetable commodity came from lettuces expanding from 2,600 acres in 1998 to 6,500 acres in 2002. In fact, lettuces account for over one third of the increase in vegetable acreage. However, sales did not increase in proportion to the acreage, increasing by 23 percent due, primarily, to the decrease in sales from salad mix. Furthermore, the percentage increase in gross sales is reduced when growers with sales above the \$5 million reporting ceiling accurately report increased acreage but do not report the corresponding increase in gross sales, only the requisite \$5 million.

Organic fruit crops posted a sales increase of 28 percent (\$19 million) between 1998 and 2002, with a 40 percent increase in acreage (17,040 acres). The most important commodities for sales growth were strawberries, raspberries, wine grapes, dates, avocados, apples, and peaches. Organic wine grapes increased in sales by over \$4 million and acreage expanded by over 3,000 acres. In contrast, sales of table grapes almost halved over the period while acreage reduced only slightly. The most important nut crops remained almonds and walnuts, with sizeable increases in sales and acreage for both.

Figure 5. Organic Acreage in California, 1992-2002

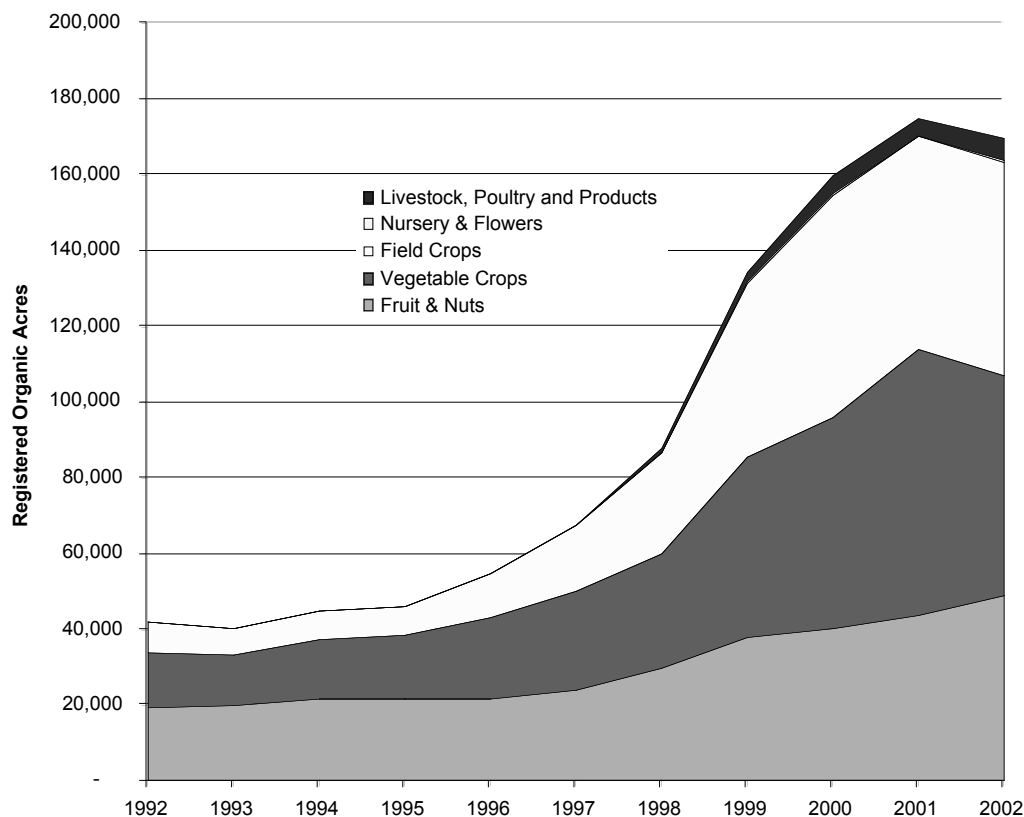
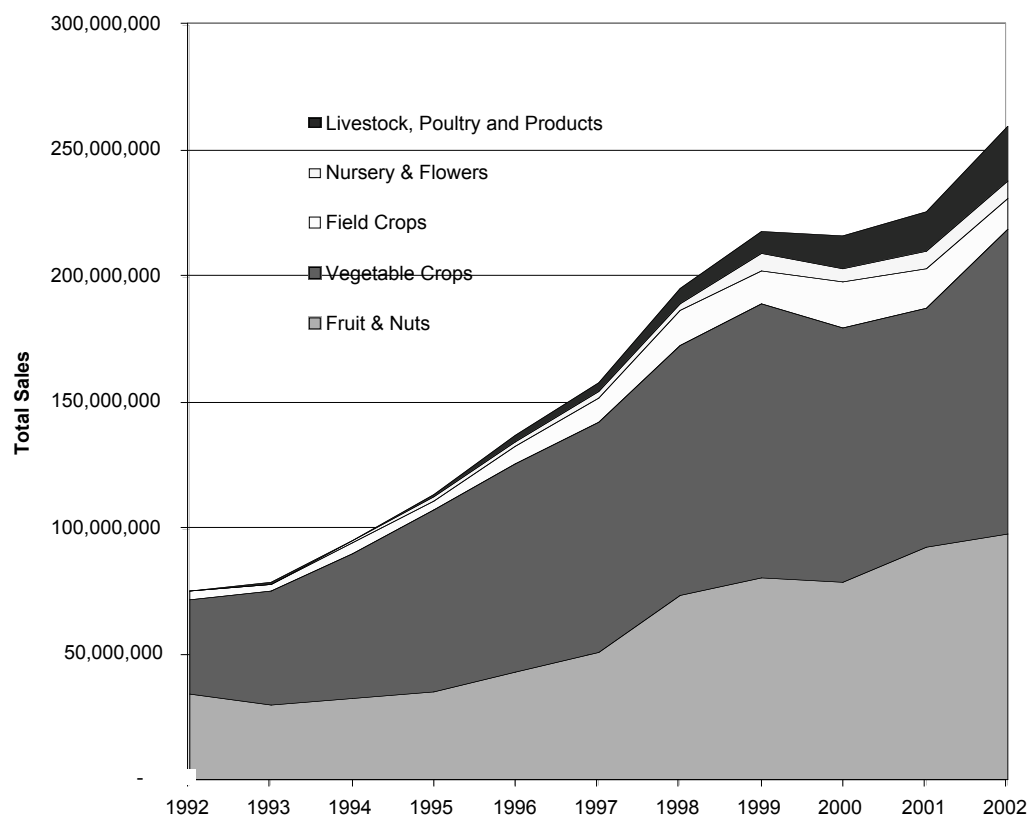


Figure 6. Organic Sales in California, 1992-2002



Field crops grew in acreage from 1998-2002, with the number of farmed acreage increasing by over 50 percent (30,317 acre increase). One third of the increase in acreage is attributable to pasture and rangeland paralleling the increase in livestock and dairy production. Another 25 percent reflects increases in rice, alfalfa, and wheat acreage. Rice remained by far the most important field crop during the period but with stagnant sales at around \$7 million. Alfalfa was the second most important field crop with sales increasing from less than half a million dollars in 1998 to \$1.3 million in 2002. The importance of field crops to organic agriculture remained small, falling from 6 percent of sales in 1998 to less than 5 percent of sales in 2002. This decrease in importance is explained by an absolute decrease in sales over the five year period in almost every region. The decrease in importance is also related to the dramatic increase in sales of livestock, poultry and products.

Sales from livestock, poultry, and related products increased by 389 percent over the past five years, although they remained less than 3 percent of the organic industry. Dairy production increased from \$4 million to over \$11 million. Sales of organic meat were not permissible prior to 1998 due to differential labeling requirements for organic meat and other foods. Sales of organic chicken reached over \$6 million in 2002 with beef and turkey each at about \$300,000. Organic eggs sales were \$3.6 million in 2002.

CONCLUSION

California organic agriculture expanded rapidly from 1992 to 2002, with double-digit average annual growth in registered acreage and sales. Growth of organic agriculture using these measures was considerably faster than in California agriculture as a whole. However, organic agriculture accounted for only one percent of all crop sales and a much smaller percentage of livestock and livestock product sales. Produce (fruits, nuts and vegetables) remains the dominant part of organic agriculture in California despite rapid recent growth in dairy and poultry products.

It is generally assumed that marketing outlets are different for different sales classes of growers. Small growers most likely rely on direct sales (e.g., farmers' markets, roadside stands and CSAs [Community Supported Agriculture]) while larger growers sell through wholesalers and distributors as well as directly to retailers. Market saturation is a concern that is often expressed by those within the organic industry at all levels of production. Anecdotal evidence suggests that some sell in the conventional market when they are unable to find a suitable venue for their products in the organic market or when conventional prices are as high as organic. The value of commodities produced in accordance with organic standards but sold on the conventional market is not required to be reported to CDFA.

Statistics contained in this chapter draw attention to several important questions concerning the future of the organic agricultural industry in California. Perhaps the most obvious questions are—can the organic industry in California sustain the rate of growth realized over the past decade, and if so, what will this growth look like? As the industry expands, will new marketing outlets such as expansion of natural food store chains, organic sales in conventional grocery stores, and Internet sales augment current venues? Will current consumers of organic commodities change their purchasing patterns to include a more varied organic shopping basket, and to what extent will new organic consumers emerge to purchase an ever-increasing supply of organic products? As new products using organic ingredients are developed, how will the distribution of acreage devoted to the various commodity groups change? In addition, the impact of the National Organic Standards, now finalized, is still not clear. Also not clear is how broader legislation concerning food quality protection, water quality, biotechnology, international trade and a host of other issues will be felt by the organic subsector.

REFERENCES

- California Certified Organic Farmers (CCOF). *California Certified Organic Farmers Certified Organic Membership Directory and Product Index*. California Certified Organic Farmers. Santa Cruz, California, 2002.
- California Department of Food and Agriculture. *Resource Directory: California Agriculture 2002*. California Department of Food and Agriculture. Sacramento, California, 2003.
- California Department of Food and Agriculture Organic Program. *California Organic Program. Producing, Handling and Processing Organic Products in California*. California Department of Food and Agriculture. Sacramento, California, 1996.
- Klonsky, Karen and Laura Tourte. *Statistical Review of California's Organic Agriculture: 1995-1998*. University of California DANR Publication 3425, 2002.
- Klonsky, Karen and Laura Tourte. *State Registration and Organic Certification: A Guide for California Growers*. Department of Agricultural Economics. University of California Cooperative Extension. Davis, California, 1994.
- Organic Farming Research Foundation. *Third Biennial National Organic Farmers' Survey*. Organic Farming Research Foundation. Santa Cruz, California, 1998.
- Tourte, Laura and Karen Klonsky. *Statistical Review of California's Organic Agriculture: 1992-1995*. Agricultural Issues Center, University of California, 1998.