California's Organic Agriculture: Two Decades of Growth

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Organic production in California grew from $75 million in farmgate sales in 1992 to over $1.5 billion in 2012. Three-fourths of sales in 2012 were from produce. However, livestock, poultry, milk, and egg sales grew at a faster rate. Growth in the number of acres and growers reflect these trends.

Organic production in California has steadily grown from $75 million in farmgate sales in 1992 to over $1.5 billion in 2012. Statistics on California's organic agriculture are available because of the registration requirements of the California Organic Foods Act (COFA), —passed in 1990 and put into effect in 1992—regulating the production, processing, handling, and labeling of organic products sold in California. COFA required annual registration of processors with the California Department of Health Services, and growers and handlers to register annually with the State Organic Program (SOP) administered by the California Department of Food and Agriculture (CDFA).

National legislation was passed shortly after the California legislation. Also passed in 1990, the Organic Food Production Act of 1990 (OFPA) set national standards for production and handling for food labeled as "organic" and created the National Organic Program (NOP) within the Agricultural Marketing Service of USDA. The purpose was to assure consumers that organic products meet a consistent set of standards regardless of state or country of origin. In particular, the goal was to facilitate interstate commerce in fresh and processed food that is organically produced.

However, the NOP Final Rule for implementation of the national law did not go into effect until October 2002 and COFA remained the only organic law in California up until that time. The California Organic Products Act (COPA) was signed into law in 2003 to bring California into full alignment with OFPA. COPA continued the registration requirements from the previous California law.

While state law mandates registration with CDFA, federal law mandates certification by a USDA accredited third-party organization, with exemptions for growers grossing less than $5,000 annually. Data from the registration forms submitted to CDFA populate a database revealing the growth in the number of growers, acres, and farmgate sales by region, commodity group, and crop.

The provisions of the NOP Final Rule define what is meant by "organic food" and include sections on organic production and processing standards, organic labeling requirements, requirements for using the USDA organic seal, producer/handler certification, and certifier accreditation. The crop standards require that no prohibited substances be applied for at least three years to land in organic production. With some exceptions, synthetic substances are prohibited. Effectively, there is a three-year period over which all aspects of the organic rule must be followed before food produced from the transitioning land may be marketed using the word organic. In practice, this means growers realize the higher costs of organic production without the associated organic price premiums for three years.

Typically, during the transition period, growers will produce crops that are not hosts to diseases and pests that are difficult to control with organic methods. This strategy is implemented to "cleanse" and build up fertility in the soil, reduce pest populations, and encourage beneficial insect populations. This may include planting a cover crop or forage crop for three years before planting a higher-value organic crop.

The livestock standards require that animals raised for slaughter be raised under organic management from the last third of gestation or no later than the second day of life for poultry. It also requires 100% organic feed, vitamins, and mineral supplements. Animals may not be given hormones or antibiotics, although the rule prohibits withholding treatment from a sick or injured animal. Finally, access to the outdoors is required for poultry and access to pasture is required for ruminants.

Growth in Farmgate Sales

Farmgate sales from organic production in California have risen from $75 million in 1992 to over $1.5 billion in 2012, an increase of 20-fold (Figure 1). Between 1992 and 1999, farmgate sales increased at what then seemed to be a rapid pace, tripling from $75 million to $217 million. Sales actually dropped slightly in 2000 and didn't surpass the 1999 level until 2002. It is quite likely that during this period, the uncertainty of the national regulations led to caution in entering the organic market or expanding current production, and may have led some growers to exit the market altogether.

From 2002 forward, once the national rule was in place (with the exceptions of 2005 and 2008), sales increased at double-digit rates in California. Undoubtedly, the economic downturn in 2008 decreased the demand for organic food somewhat, but not as significantly as the press implied at that time.

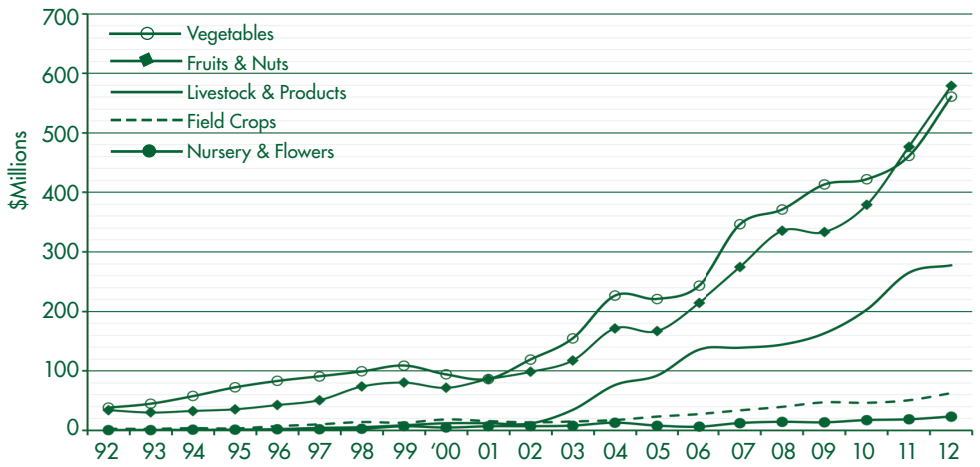
Between 2002 and 2012, farmgate sales increased another five-fold.

Growth rates differed by commodity group. Fruits and nuts, along with vegetable crops, grew at roughly the same rates during the 20-year period: from 1992 to 2001, they both more than doubled. In 2002 sales took off at a fairly steady pace, rising six-fold by 2012. It is worth noting that in 1992, 95% of organic sales were attributable to produce—namely, fruits, nuts and vegetables (Figure 2). Livestock, poultry, and livestock products (primarily eggs and cow's milk) were less than 1% of total sales. By 2012 livestock, poultry, and livestock products represented 18% of a rapidly increasing pie (Figure 2). While produce continues to dominate organic sales in California, its share diminished to 76% by 2012.

Sales of livestock, poultry, and livestock products increased from $37,000 in 1992, to $12 million in 2002, and $278 million in 2012. Along with the growth in livestock production, came demand for organic feed, pasture, and range. Accordingly, after moderate growth through 2002, organic field crop production began to rise at the same time as livestock sales took off in 2003. Alfalfa is the highest grossing field crop at $8 million in sales in 2012, followed by field corn at $2.3 million. It is important to realize that organic feed from other states is imported into California to meet the feed demands of the growing livestock sector. This is, of course, perfectly legal as long as the feed is certified, meets USDA standards, and represents the interstate commerce that the national law was designed to encourage. Looking at all field crops, rice is by far the largest grossing individual crop and showed substantial but unsteady growth. Rice grossed $8.7 million in 1998, rose to $12.5 million by 2000, actually declined in sales from 2001 to 2004, and then unevenly rose to $26.6 million by 2012.

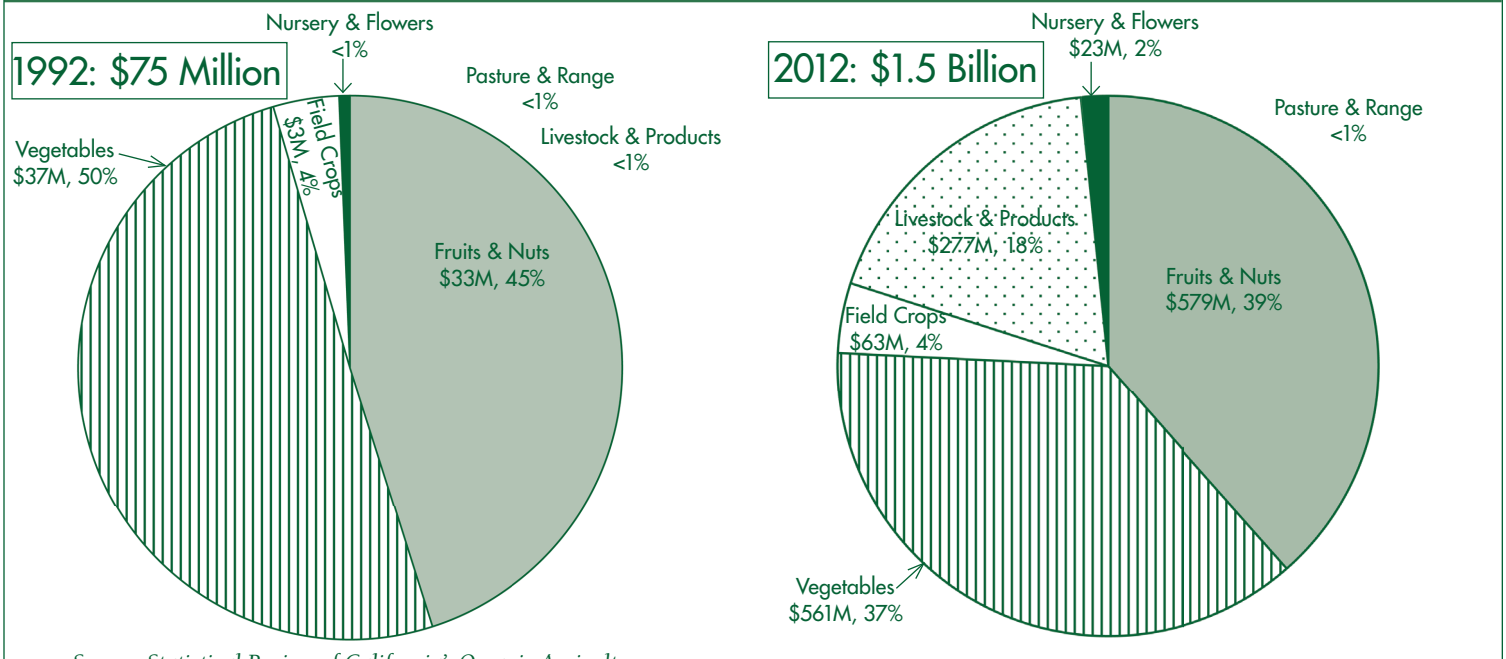
Within each commodity group there are key commodities. Fruits and nuts sales are dominated by grapes and strawberries, although there are over 50 types of fruit reported with organic sales. From 2002 to 2012, sales of organic strawberries rose from $13 million to $94 million. Sales of grapes rose from $27 million to $174 million over the same time period. In 2002 table grape sales were just over half the

Figure 1. California Organic Farmgate Sales, 1992–2012



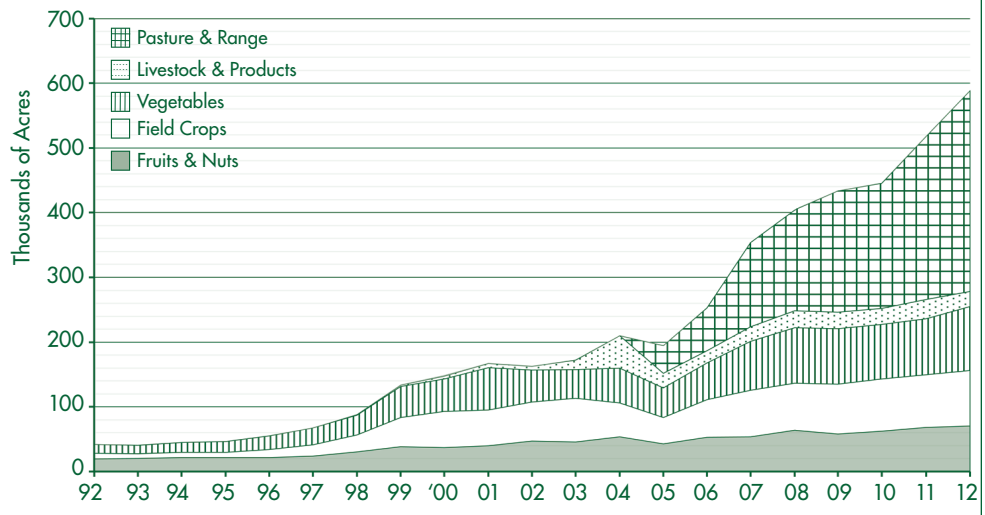
Source: Statistical Review of California's Organic Agriculture

Figure 2. Farmgate Sales of CA Organic Commodities in Millions of Dollars, 1992 and 2012



Source: Statistical Review of California's Organic Agriculture

Figure 3. Organic Acreage in California; 589,235 Acres in 2012



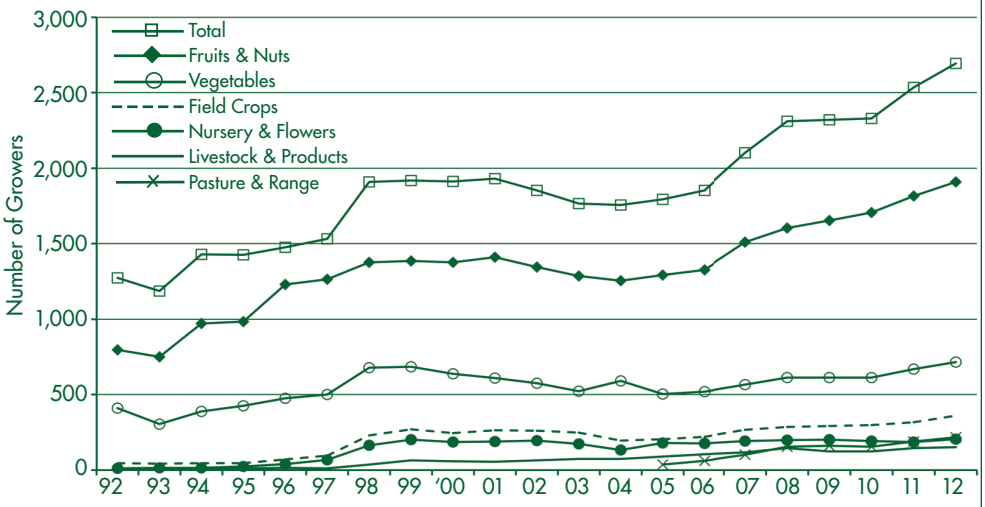
Source: Statistical Review of California's Organic Agriculture

value of winegrape sales—$4.2 million and $7.7 million, respectively. By 2012 table grape sales were 88% of the value of winegrape sales ($64 million compared to $72 million). Organic apple sales increased from $5 million to $15 million over this time period.

The most important nut crops are almonds, walnuts, and pistachios. Almonds are a particularly difficult crop to grow organically, due to the lack of effective organic control of key insect pests. Despite this, almond sales increased from $7 million to $33 million and walnut sales went from $2 million to $14 million. Pistachios sales increased from under $2 million to over $7 million—showing important growth, but not matching the rates of sales growth for almonds or walnuts. Although not commonly recognized by the public as a subtropical fruit, avocados are nonetheless the dominant fruit in this category. Sales increased from $4 million to $36 million from 2002 to 2012.

Sales of over 60 individual vegetable crops are reported and undoubtedly many more are included under "mixed vegetables" and "other vegetables." The vegetable crop with the highest sales was carrots at $112 million in 2012, increasing from only $14 million in 2002 and representing 20% of vegetable sales in 2012, compared to 12% in 2002.

Figure 4. Number of Organic Growers by Commodity Group in CA; 2,693 in 2012



Source: Statistical Review of California's Organic Agriculture

After carrots, vegetable sales are dominated by composites, namely lettuce, radicchio, salad mix, and endive. Although these doubled in sales from $56 million to $99 million between 2002 to 2012, vegetable crops as a group increased even more rapidly—13-fold from $119 to $561 million in farmgate sales. In 2002 composites represented 35% of vegetable sales, decreasing to 25% in 2004 and 18% in 2012.

Other significant vegetable crops are fresh market and tomatoes for processing. Fresh market tomatoes increased from $6 million to $21 million over this time period, and processing tomatoes increased from $5 million to $27 million in sales. The faster growth in processing tomatoes undoubtedly reflects the increase in processed organic foods and the importance of processed tomatoes in canned soups, salsa, and pizza sauce.

Returning to the livestock, poultry, and livestock products commodity group, fluid milk farmgate sales increased from $8.2 million in 2002 to $69 million in 2012 and chicken eggs sales rose from $4.6 million to $20 million. Beef sales went from only $48,000 in 2002 to $38 million in 2012, due to changes in Food and Drug Administration regulations allowing meat to be labeled as organic. Poultry sales went from $10 million to $66 million over the same time period.

Acreage Growth

California cropland under organic practices rose from 42,000 acres in 1992, to 129,000 acres in 2005, to 255,000 acres in 2012 (Figure 3). Vegetables, as well as fruits and nuts, all followed similar growth patterns and the number of acres within each of these commodity groups is roughly similar for any given year. Fruits and nuts started out higher than vegetable crops in 1992 (20,000 acres compared to 15,000 acres) and showed a smaller acreage in 2012

(70,000 versus 99,000). Fruit and nut acreage and vegetable acreage remained somewhat flat from 1992 to 1997 and started to take off in 1998, increasing except for the period 2002 to 2005.

Interestingly, farmgate sales in these categories began their ascent in 2002 at a time when reported acreage actually declined. This difference could be attributable to any number of factors: an increase in price premiums after the implementation of the national rule, an increase in organic yields due to improvements in farming practices, or a lag in planting response to higher prices due to the three-year transition period requirement.

Field crop acreage most closely tracks vegetable crop acreage. In 1992 it was 15,000 acres and by 2012, it reached 86,000 acres. It remained flat from 1992 to 1995, grew until 2002, dipped from 2003 to 2005, and continued to show steady growth since then.

Unfortunately, rangeland and pasture acreage numbers were not evaluated prior to 2005. Acreage has dramatically increased since then—from 43,000 to 310,000—reflecting the increase in beef and dairy sales over that same period. Refinement of the access to pasture rules in the last few years has undoubtedly led to increased demand for pasture and rangeland.

Growth in the Number of Growers

The number of organic growers demonstrated the slowest growth of the three measures of expansion explored in this article. In 1992 the number of registered growers was 1,273, rising to 1,909 in 1998 where it remained until 2000. This number actually decreased for two years and started to rise again slowly until 2006, when a steady growth ensued, reaching 2,693 in 2012 (Figure 4). The vast majority of this growth in grower numbers came from the fruit and nut sector.

Remember that all growers are counted equally, regardless of their acreage or sales for this tabulation. Therefore, this number undoubtedly reflects an increase in the number of very small growers who may sell directly to their clientele. In some instances, this could also reflect conventional growers who have small acreages on which they are testing the waters for diversification into organic production.

The number of field crop growers stayed flat from 1992 to 1997, hovering around 45, increased to 231 in 1998, flattened off until 2004, and then slowly rose to 362 growers by 2012. The increase in the number of field crop producers may reflect the increase in dairy producers growing their own organic feed.

It is important to realize that simply looking at the somewhat flat and steady growth in the number of growers masks the dynamic nature of the industry. Despite the barrier to entry of a three-year transition period, roughly 16% of registered organic growers are new to the program in any given year, and 14% will exit the program and choose not to register as an organic grower in the following year. The result is a slight increase in the total number of registered organic growers.

Interestingly, during the implementation of the national law from 2002 to 2004, the number of growers entering and exiting the California organic program both decreased. The greatest number of new registrants was in 2011, with 616 new registrants and 337 growers deciding not to continue in organic production in 2012. The second highest number of new registrants occurred in 2012, with 496 new enrollees reported.

The Future

Expansion of organic production depends on the conversion of conventional land to organic production and, to a much lesser extent, taking unused land and bringing it into crop or livestock production. The demand for agricultural land in California is currently high, particularly for land that is within an irrigation district. High prices for conventional perennial crops, notably nut crops, has already driven the conversion of field crop acreage to perennial crops and put further pressure on land values and availability.

High conventional prices also reduce the importance of organic price premiums in cropping decisions by farmers, even though organic price premiums remain high. Nonetheless, organic production affords a means of diversification, particularly for conventional vegetable growers, and is typically demanded by large buyers. Growers who are primarily conventional but have some organic production report that they adopt some of the organic production techniques on their conventional acreage.

Small fruit, nut, and vegetable producers tend toward organic production because of the demands of clientele to whom they are selling directly. The result is continued growth in organic production in California, dominated by fruit, nut, and vegetable production but with an increasing importance of livestock, livestock products, and feed crops to support the organic livestock sector.

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For additional information, the author recommends:

Klonsky, K. and B. Healy. *Statistical Review of California's Organic Agriculture: 2009–2012*. University of California Agricultural Issues Center. http://aic.ucdavis.edu/publications/StatRevCAOrgAg_2009-2012.pdf.