

# Trends in Organic Tree Fruit Production in Washington State: 1988-1998



*by David Granatstein*  
Washington State University  
Center for Sustaining Agriculture & Natural Resources  
Wenatchee, WA

**EB1898E**

## Contents

Acknowledgements . . . . .	1
Executive Summary . . . . .	1
Introduction . . . . .	2
History . . . . .	2
Washington State Organic Program . . . . .	2
National Organic Program . . . . .	3
Data Collection . . . . .	3
Trends in Farm Number and Acreage . . . . .	4
Fruit Varieties . . . . .	11
Organic Fruit Volume and Price . . . . .	13
Markets for Organic Food . . . . .	20
Other Trends. . . . .	21
References and Further Reading . . . . .	22

## List of Tables

1. Estimated 1998 U.S. organic tree fruit acreage . . . . .	4
2. Changes in size class of organic orchards in Washington State, 1988–1998. . . . .	9
3. Organic orchard acreage in selected Washington State counties, 1998. . . . .	9
4. Organic orchard acreage in Washington State for 1993 and 1998: Breakdown by county and crop . . . . .	10
5. Organic orchard acreage as a percent of total Washington orchards. . . . .	11
6. Acreage of organically grown apple and pear varieties for selected Washington counties, 1998 . . . . .	12
7. Organic pear sales volume (in cars), Washington State . . . . .	14
8. Price premiums for organic apples as a percent difference from conventional prices: Central Washington . . . . .	19

## List of Figures

1. Certified organic orchard acreage in California 1990-1997.. . . . .	6
2. Certified organic apple acreage in California 1990-1997. . . . .	6
3. Certified organic pear and stone fruit acreage in California 1990-1997. . . . .	7
4. Certified organic orchard acreage in Washington 1988-1999. . . . .	7
5. Certified organic apple acreage in Washington 1988-1999. . . . .	8
6. Certified organic pear and stone fruit acreage in Washington 1988-1999. . . . .	8
7. Number of organic tree fruit farms in Washington State 1988-1998. . . . .	9
8. Organic orchard acreage in selected Washington State counties: 1990, 1993, 1998 . . . . .	10
9. 1998/99 Washington organic apple acreage, by variety . . . . .	11
10. 1998/99 Washington organic pear acreage, by variety . . . . .	12
11. 1998/99 Washington organic stone fruit acreage, by type . . . . .	13
12. Organic apple sales volume, Washington State 1996-1998. . . . .	14
13. Organic apple prices by variety, Washington State 1995-1998 . . . . .	15
14. Monthly organic apple price trends in central Washington 1997-1998. . . . .	16
15. Monthly Red Delicious price trends in central Washington 1997-1998 . . . . .	17
16. Apple price comparisons in central Washington, 1995–1998 . . . . .	18
17. Organic pear prices, central Washington 1996-1998. . . . .	19
18. Organic food sales in the U.S 1975-2000.. . . . .	20

# Trends in Organic Tree Fruit Production in Washington State: 1988-1998

by David Granatstein

*Washington State University Center for Sustaining Agriculture  
and Natural Resources, Wenatchee, WA*

## **Acknowledgments**

The author would like to thank the following organizations for supplying data for this report: Washington State Department of Agriculture Organic Food Program, Washington Growers Clearinghouse, CF Fresh Inc., Oregon Tilth, California Certified Organic Farms, Organic Crop Improvement Association, Northeast Organic Farming Association, Organic Growers of Michigan, Pennsylvania Certified Organic, Mountain State Organic Growers Association, Virginia Department of Agriculture, and the Idaho Department of Agriculture. Patty Dauer conducted the data gathering and manipulation, and produced the tables and figures. Thanks to Chris Feise, Miles McEvoy, and Tom Schotzko for reviewing the manuscript and providing helpful comments.

## **Executive Summary**

The acreage of organic tree fruit production in Washington State expanded rapidly during the late 1990s due to strong growth in market demand, potentially higher profitability, and the success of pheromone mating disruption in controlling codling moth, a key pest. Washington State leads the nation in the production of organic apples, while California is the leader in most other tree fruit categories.

Currently more apple acres are making the transition to organic production in Washington State than are certified. Thus the supply will more than double in the next 2 years. Red Delicious is the largest volume variety grown on organic orchards and will continue as such for some time. Acreage of organic pears has increased slightly over the past 5 years, with d'Anjou the dominant variety. Stone fruit acreage is not increasing. Control of cherry fruit fly is a major obstacle to organic cherry production.

Overall, organic orchards still represent less than 2% of the commercial orchard acreage in Washington State. Expect continued growth as some market analysts predict organic food sales could reach as high as 10% of total food sales under current pricing. Reduced prices to consumers would likely expand the market. While organic fruit production generally is more profitable than conventional production, some organic growers did experience net losses in 1998 on certain apple varieties. The increasing supply of organic apples, both domestic and international, could exceed the growth in demand and erode prices. This situation occurred in 1990 after the Alar incident. On the other hand, demand growth may continue to absorb the additional supply as has occurred for the past 8 years. Organic production allows growers to diversify markets and to be in compliance with anticipated regulatory changes.

## **Introduction**

Organic farming in Washington State has grown dramatically in size and scope during the 1990s. Two main factors are responsible: steady growth in the markets for organic foods have maintained a premium price to growers, and growers considered organic production as a way to prepare for loss of production tools such as pesticides. The advent of pheromone mating disruption as an effective and available control technique for codling moth, the primary pest of apples in Washington, removed a major barrier to organic production. As a result, organic apple acreage has increased dramatically. Many growers are considering or implementing organic production to offset low apple prices in the conventional market. However, a major increase in supply of organic fruit could easily overshoot demand and depress organic fruit prices, as happened in 1990 after the Alar incident.

This report compiles statistics on organic tree fruit production in Washington State for the first time. The information provides a picture of the current trends to enable growers to make more rational decisions about participating in the organic market. Organic crop statistics generally are unavailable. This publication offers a first attempt to rectify that situation in Washington State.

## **History**

Organic farming as a definable production system dates back to the 1930s and 1940s. Prominent spokespersons such as J.I. Rodale, Sir Albert Howard, Lady Eve Balfour, and Rudolf Steiner advocated farming methods that maintained their reliance on biological processes, especially a “healthy” soil. Their comments appeared just after the “Dust Bowl” and at the time when growers were first adopting commercial fertilizers and pesticides. The general philosophy proposed natural products for food production were desirable and synthetic ones were not; and healthy soils led to healthy plants that resisted pest attack, while healthy plants led to healthy animals, including people.

After the publication of Rachel Carson’s *Silent Spring* in 1962, the consuming public became increasingly aware of issues regarding modern farming practices. A small percentage of consumers began searching for food products grown with the organic philosophy. The environmental awareness of the 1970s led to increased demand for such “organic” foods, although the aggregate production was a fraction of 1% of the total food supply. During this period, buyers of organic food began to see the need for a system to verify the claims of “organically grown,” as these products usually were sold at a substantial premium price. This led to the development of the early organic certification systems, including one developed by Tilth Producers Cooperative in Washington State.

## **Washington State Organic Program**

State legislatures began passing laws defining and regulating organic farming in the 1970s, starting with Oregon in 1972. The Washington State Legislature passed the Organic Food Products Act in 1985, and in 1987, authorized the creation of an organic certification program to be managed by the Washington State Department of Agriculture (WSDA). The WSDA Organic Food Program began certifying farms in 1988, representing the starting point for records on organic production in the state. The WSDA program works with organic growers, processors, handlers, and retailers to ensure the validity of the claim of “organically grown.” Program personnel process applications, inspect farms and facilities, collect samples for pesticide residue analysis, and assist with the development of rules. The Organic Food Program, based in Olympia, WA, can be reached at (360) 902-1877.

## **National Organic Program**

In 1990, the US Congress passed the “Organic Foods Production Act” as part of the federal Farm Bill. This bill directed the federal government to develop an organic certification system at the national level to standardize procedures among the 46 public and private certification groups in existence. The core definition of organic production includes the following language: “...using cultural, biological and mechanical methods...to fulfill any specific function within the system so as to: maintain long-term soil fertility; increase soil biological activity; ensure effective pest management; recycle wastes to return nutrients to the land; provide attentive care for farm animals; and handle the agricultural products without the use of extraneous synthetic additives or processing...” In 1998, the first draft of a national organic standard was published. More than 280,000 people sent comments to USDA, virtually all in opposition to the draft. Another draft is expected in the year 2000.

When the USDA finally implements a national program, existing programs, such as the one at WSDA, must comply with the national standards and must receive accreditation from the USDA to act as a certifying body. WSDA officials expect few changes from the current state program.

## **Data Collection**

To date, no entity has compiled and published statewide statistics on organic production in Washington State. Most organic growers in the state are certified through the WSDA program, and thus WSDA records have provided the bulk of the information on farm numbers, acreage, and size for this report. The author manually examined the file of each organic fruit grower for historical records of fruit type and acreage. Data were entered on a county basis, by year, by crop type, by acreage, and by size. Summary statistics were calculated for each county and for the state as a whole. For apples and pears, acreage by variety information became available in 1998 and was broken out for analysis. Also, 1998 records indicated first or second year transitional status. Previous records did not contain this detail.

The data compiled from WSDA records represent a reasonable estimate. Numerous inaccuracies were encountered due to report format changes from year to year, missing data, data combined among crops, and inconsistency in acreage definition (e.g., total field acres, acres in production, certified acres but not producing). The analysis of farm size is based on the reported organic acreage and does not account for farms with other crops, or farms that have a mix of organic and conventional acreage.

Organic tree fruit data for California, the other major producer of organic deciduous tree fruit, came from records of the California Certified Organic Farms organization. Their data began in 1990 and were continuous until the present. Only summary reports were available; thus, some of the data were not useable. Where possible, acreage estimates were cross-referenced with other data to help determine accuracy. Certification programs in other states having commercial apple production were contacted to develop the profile of organic apple production across the U.S. In most cases, these programs provided their best estimate of the total number of certified apple acres in their state for 1998.

The Washington Growers Clearinghouse, a shipper-funded service that tracks weekly fruit volume movement and price, began collecting data on organic apples and pears in 1996. Their price and volume data provided the majority of the price and volume data in this report. Prices are reported as dollars per packed box FOB (before any shipping charges). They initially collected data only from shippers in north central Washington. Since March 1, 1999, they have

added data from the Yakima Valley. Currently, their reporting may cover 66% of the total fruit volume statewide, assuming 95% inclusion from the Wenatchee District and 50% inclusion from the Yakima District. It is not known whether the percentage of organic fruit covered by their reporting is the same. Thus, the price and volume data presented here are estimates and may not fully represent organic fruit sales. In addition, CF Fresh Co., an organic products broker/sales firm in Sedro-Woolley, WA, provided organic apple pricing for 1995-1997.

As some portion of organic production is sold without an organic designation, any report of organic fruit volume will likely underestimate the true quantity. Also, the extent to which the range of prices for a given type of organic fruit on a given day differs from the range in the conventional market is not known.

For the purposes of this report, organic tree fruit refers to apples, pears, cherries, plums, peaches, nectarines, and apricots. Apples and pears are considered pome fruit, while the others are classified as stone fruit. Some of the data sources lump all stone fruit together, while others separate some but not all fruit types. All stone fruit acreage is reported as one category except for the most recent data from Washington State, which reports individual fruit types on the application form, allowing separate tallies for each type.

### Trends in Farm Numbers and Acreage

Washington State is the largest producer of apples, pears, and sweet cherries in the U.S. Based on the data we collected, Washington State appears to be the leader in organic apple acreage, followed closely by Arizona and California (Table 1). As more acreage makes the transition to organic, Washington organic apple acreage may double over the next 2 years.

Table 1. Estimated U.S. Organic Tree Fruit\* Acreage in 1998.

	<b>Apples</b>	<b>Pears</b>	<b>Cherries</b>	<b>All Fruit</b>
Total U.S.	9275	2005	413	14169
Washington	1809	449	95	2466
WA transition	2672	169	90	2930
California	1540	800		4130
Arizona	2000 (est.)		30	2060
Colorado	374	87	173	869
Oregon	350	500	25	1180
Wisconsin	300			300
Pennsylvania	150			150
Virginia	50			54
Michigan	20			20
New York	10			10

\* only includes pome fruits and stone fruits

From discussions with certifiers across the country, the semi-arid regions of the West have a major climatic advantage for producing organic tree fruit. Both Michigan and New York are major apple producers but have virtually no organic acreage due to difficulties controlling pests (both fungal and insect).

Figures 1- 6 illustrate the trends in organic tree fruit production in Washington and California over the past 10 years. While no data were available for California prior to 1990, the effect of

the Alar incident is obvious in the Washington data. Growers were motivated to try organic production in 1990 due to low demand and prices for conventional apples. At the time, the organic program rules required only a 1-year transition, but the rule was slated to change to a 3-year transition over the next 2 years. Thus, many growers withheld conventional treatments after harvest in 1989 and, by following the organic production regime, had a certified crop by autumn 1990. Significant attrition of these new organic growers occurred in 1991 and 1992, mainly due to problems controlling codling moth in apples and to reduced prices for organic apples, caused by the rapid increase in supply. The attrition was less pronounced in California than in Washington, and organic stone fruit acreage has steadily increased from that time. Washington organic pear acreage also increased after 1990 and has not shown a drop-off. This may be due to a few larger pear growers who have maintained stable production.

Numbers of Washington organic fruit farms from 1988 to the present (Figure 7) demonstrate the same trend as acreage. While a number of larger acreages (>100 acres) have been certified organic, the average farm size (organic acres only) has increased from 11.6 acres in 1988 to 20.7 acres in 1998 (Table 2). The percentage of organic fruit farms in the smallest size class (<5 acres) increased from 20% in 1988 to 32% in 1998, yet the percentage in the 5- to 10-acre and 11- to 20-acre size classes decreased, and the number of larger organic farms increased. In 1998, nearly 27% of the organic fruit acres appeared on farms of greater than 100 acres in size. This compares to 24% in 1993 and 14% in 1990 when total acreage greatly increased. Table 3 shows the distribution of farm size by county for 1998. Average farm size is lowest in Yakima, Chelan, and Douglas counties, and highest in Grant and Benton counties.

Washington State tree fruit production concentrates in the central, semi-arid irrigated region of the state. Six counties (Benton, Chelan, Douglas, Grant, Okanogan, and Yakima) account for 89% of the overall acreage, based on the 1997 census of agriculture. These same counties also contain the bulk of the organic tree fruit acreage (Figure 8, Table 4). However, Stevens County has a cluster of organic fruit farms along the Columbia River. The three dates shown in Figure 8 represent contrasting conditions for organic producers. In 1990, the year after Alar, the industry saw a great influx of new organic producers. By 1993, steady yearly growth occurred in organic fruit acreage in response to the steady growth in markets. In 1998, interest in organic fruit production was expanding rapidly, as evidenced by the increase in acreage. One striking change over time is the decreased dominance of Chelan County, the early leader in organic tree fruit production. By 1998, Grant County led organic apple production in the state, followed by Okanogan, Yakima, and Chelan. One large organic pear orchard in Okanogan County makes it the top organic pear producer in the state. The relative dominance of a given county can change quickly with the entry of one or a few large units into organic production, as is occurring in Douglas and Okanogan counties. The growth of organic production in all the major fruit districts suggests they all have conditions amenable to organic tree fruit production.

Figure 1. Certified organic orchard acreage in California, 1990-1997.

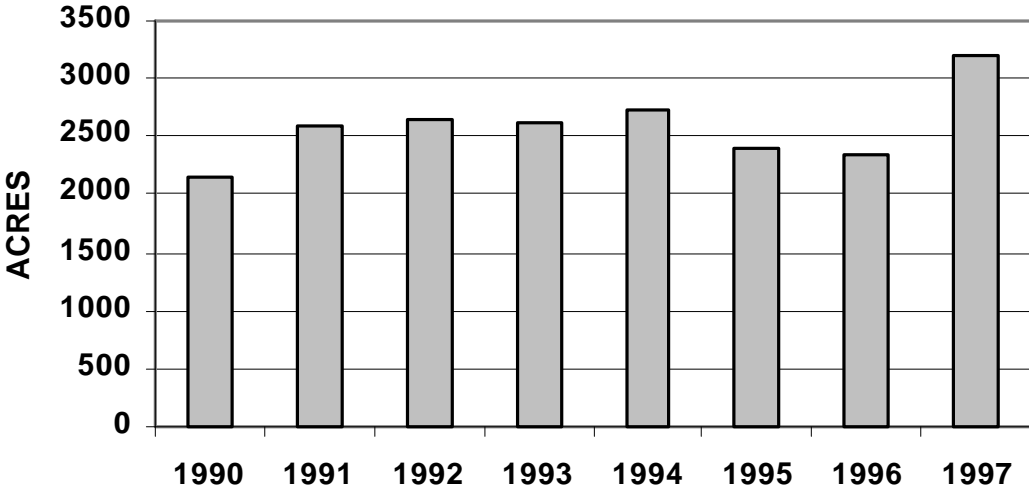


Figure 2. Certified organic apple acreage in California, 1990-1997.

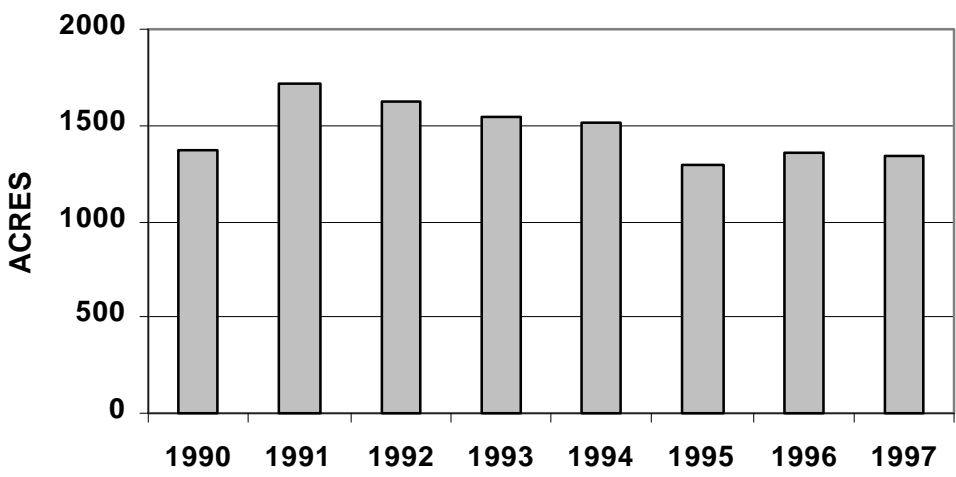




Figure 3. Certified organic pear and stone fruit acreage in California, 1990-1997.

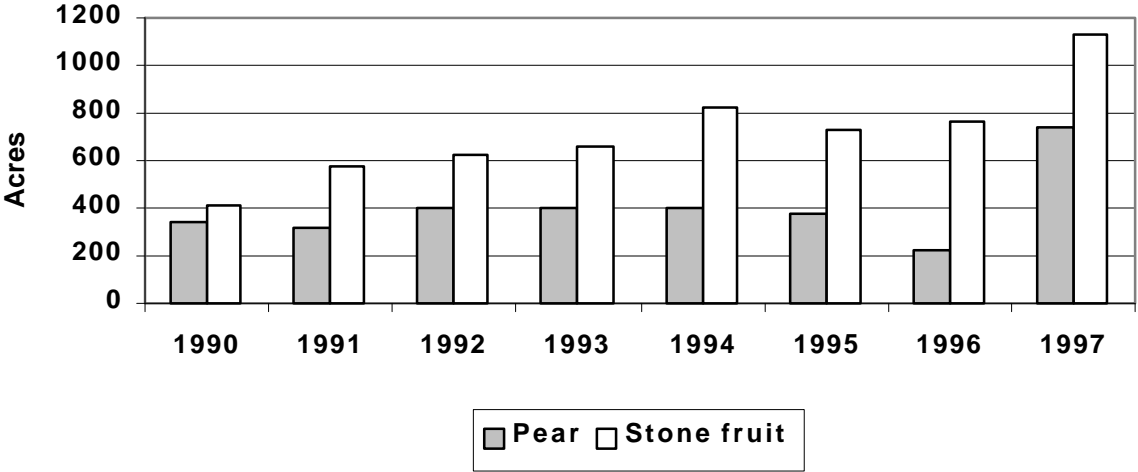


Figure 4. Certified organic orchard acreage in Washington, 1988-1999.

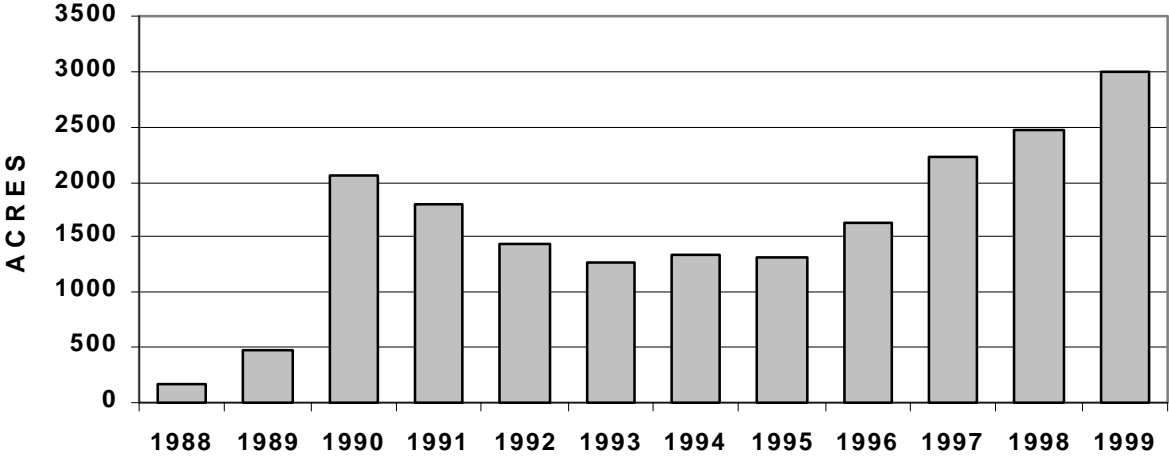


Figure 5. Certified organic apple acreage in Washington, 1988-1999.

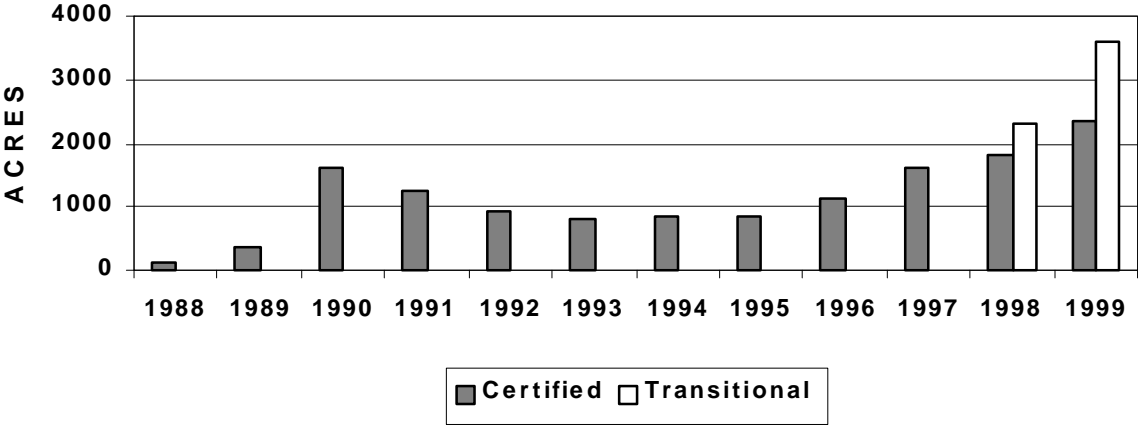


Figure 6. Certified organic pear and stone fruit acreage in Washington, 1988-1998.

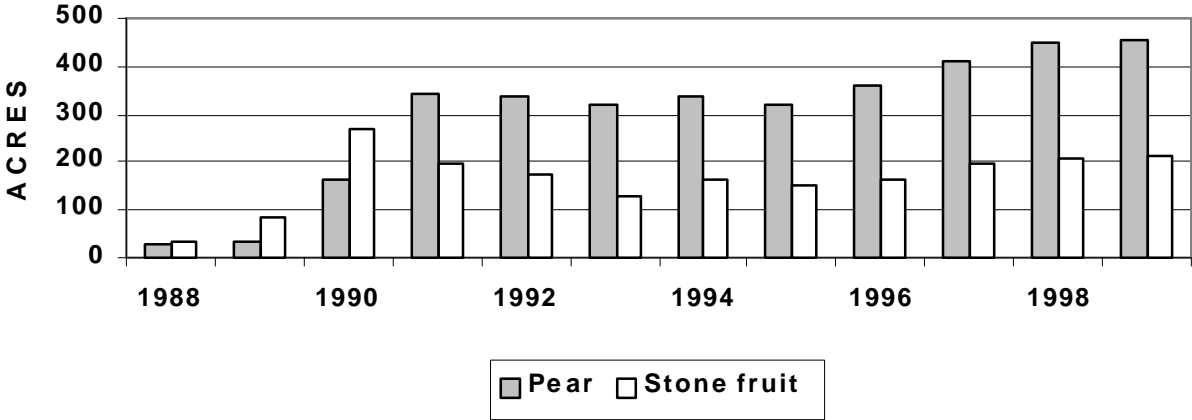


Figure 7. Number of organic tree fruit farms in Washington State, 1988-1998.

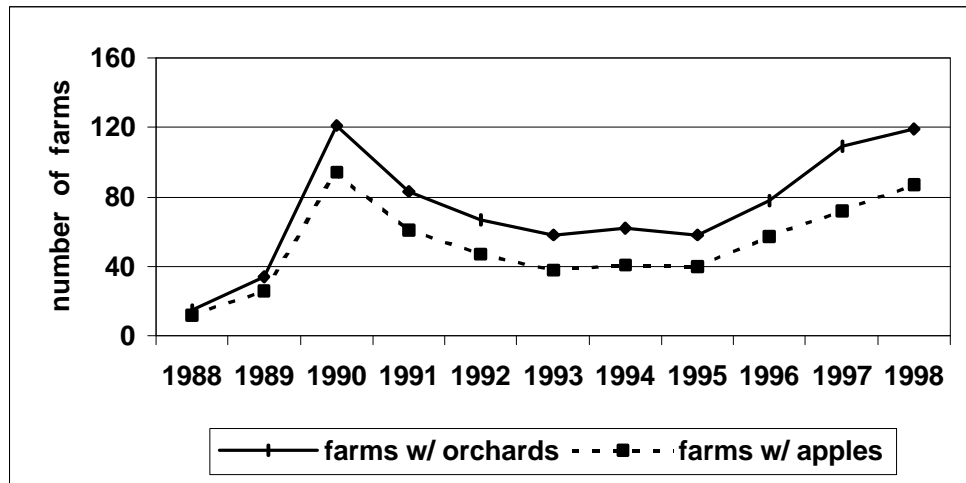


Table 2. Changes in size class of organic orchards in Washington State, 1988 –1998.

Year	organic acres in orchard	No. farms per size class						total # farms w/ orchards
		< 5	5 - 10	11 - 20	21 - 50	51 - 100	> 100	
1988	174	3	7	4	0	1	0	15
1989	482	10	14	4	5	0	1	34
1990	2066	31	41	21	19	7	2	121
1991	1793	26	21	17	12	6	3	85
1992	1439	22	19	12	11	4	2	70
1993	1261	14	20	7	10	5	2	58
1994	1349	17	19	9	9	6	2	62
1995	1330	14	17	10	9	6	2	58
1996	1638	22	20	15	12	7	2	78
1998	2466	39	28	21	18	9	4	119

Table 3. Organic orchard acreage in selected Washington State counties, 1998.

County	no. farms	farm acres	avg. farm size (ac)	Number of farms per size class					
				< 5 Ac	5 - 10 Ac	11 - 20 Ac	21 - 50 Ac	51 - 100 Ac	> 100 Ac
Okanogan	20	631	31.5	9	3	3	3	0	2
Grant	14	538	38.4	2	2	2	3	4	1
Yakima	24	393	16.4	4	9	7	3	1	0
Chelan	24	349	14.5	10	4	5	4	0	1
Douglas	12	226	18.8	5	1	1	4	1	0
Benton	3	129	43.0	0	0	1	1	1	0
WallaWalla	4	96	24.0	1	2	0	0	1	0
Total of all	101	2361	23.4	31	21	19	18	8	4

Figure 8. Organic orchard acreage in selected Washington State counties: 1990, 1993, 1998.

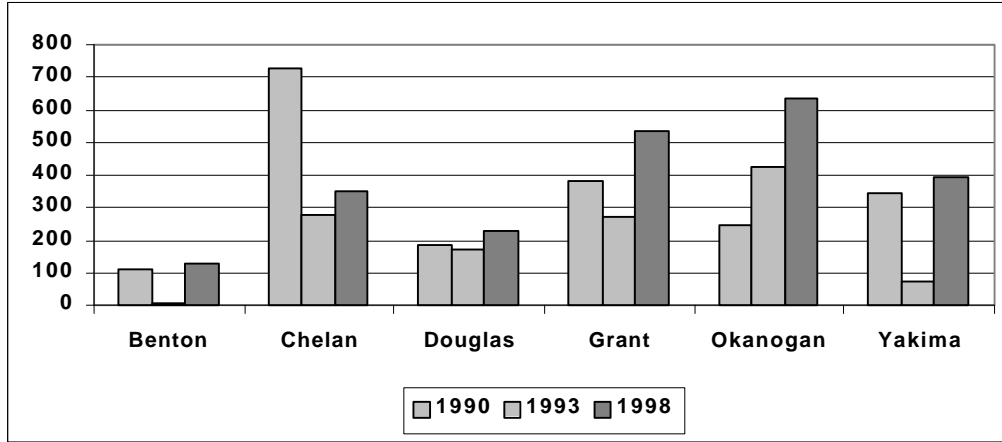


Table 4. Organic orchard acreage in Washington State for 1993 and 1998: Breakdown by county and crop.

County	No. of farms	Ffarm acres	Apple	Pear	Cherry	Stone fruit
<b>1993</b>	<b>58</b>	<b>1261</b>	<b>807</b>	<b>323</b>	<b>55</b>	<b>76</b>
Benton	1	9				9
Chelan	18	279	200	61.5	9	8
Douglas	8	170	140	8	15.5	6
Grant	5	272	239	13		20
Klickitat	1	6	2.5	3.5		
Okanogan	14	426	170	232	21	4
Stevens	4	27	8.5	2.5	1	15
Yakima	7	72	47.6	2	9	14

County	No. of farms	Farm acres	Apple	Pear	Cherry	Apricot	Nectar.	Peach	Plum
<b>1998</b>	<b>119</b>	<b>2466</b>	<b>1809</b>	<b>448</b>	<b>95</b>	<b>35</b>	<b>26</b>	<b>25</b>	<b>28</b>
Benton	4	149	140						9
Chelan	23	361	266	68	9	9	4	4	1
Clallam	3	8	7	0.35					1
Douglas	12	222	174	8	25	4	5	4	3
Franklin	1	16	16						
Grant	14	525	475	17	15	14	2	0.25	0.25
Kittitas	1	1	0.5		0.5				0.1
Klickitat	2	12	5.5	6.5					
Okanogan	19	624	314	286	18	2		4	
Pierce	1	5	5						
Skagit	3	4	1	3					
Stevens	5	35	12	3.5	1	4	2	11	1.5
Thurston	2	2	1.5	0.5					
WallaWalla	4	101	95						6
Yakima	25	403	297	55	27	2	13	2	6

While the growth of organic tree fruit acreage in Washington has been substantial, it still represents only a small fraction of the total fruit acreage (Table 5). The percentage of apples could increase appreciably if total apple planting should slow due to poor economic conditions and if all the acres in transition become certified. Total cherry acreage is rapidly increasing in the state. However, cherry fruit fly control remains a major barrier to expansion of organic cherry production. The availability of new organically approved pest controls for cherry fruit fly in the next few years could remove this barrier.

Table 5. Organic orchard acreage as a percentage of total Washington orchards, 1996-1999.

	1996	1997	1998	1999
Apple	0.68	0.96	1.05	1.33
Pear	1.49	1.68	1.84	1.87

### Fruit Varieties

In 1998, the WSDA began requesting specific fruit varietal information as part of the organic farm application. These data are presented for apples and pears. Red Delicious is the leading organic apple variety by acreage and will continue to be so based on the large acreage in transition (Figure 9, Table 6). No other clear trends emerge. Conversations with growers indicate that Gala and Golden Delicious are relatively amenable varieties for organic production, while Fuji can be problematic. But for many organic consumers, Fuji is the preferred variety. To date, no specific varieties have been developed for organic production. Scab-resistant varieties from the East Coast (e.g., Liberty) are available but generally not necessary in the semi-arid fruit districts. British Columbia organic growers report experimenting with a new apple variety that shows particular promise for organic production.

Figure 9. 1998-1999 Washington organic apple acreage, by variety.

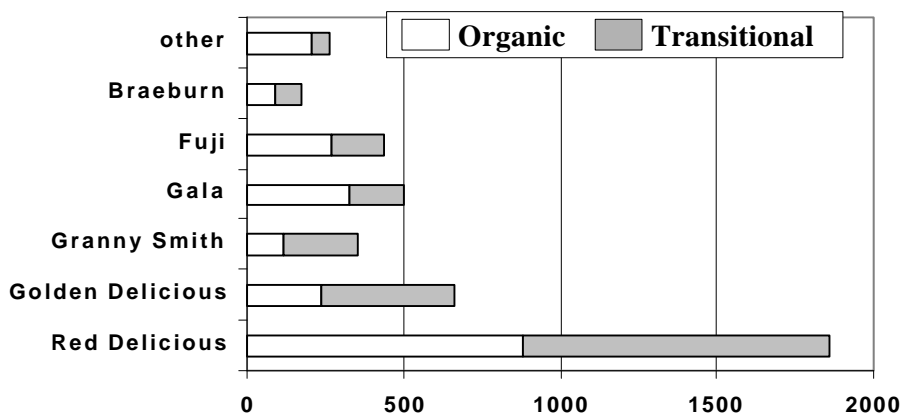


Table 6. Acreage of organically grown apple and pear varieties for selected Washington counties, 1998.

<b>APPLE</b>	Benton	Chelan	Douglas	Grant	Okanogan	Walla Walla	Yakima	Total
Red Delicious	17	89	72	164	93	80	166	681
Gala	20	76	33	53	26	1	13	222
Fuji	15	11	14	35	72	4	13	164
Granny Smith	68	4	1	59	12		14	158
Golden Delicious		14	49	30	16		39	148
Braeburn		1		80			2	83
Rome				3	32		9	44
Ginger Gold		36					7	43
Jonagold		14		5				19
Cameo					7	2	2	11
Newtown				8	3			11
Pink Lady						8		8
Sansa				6				6
Earligold					3			3
Spartan					3			3
Winter Banana					3			3
Winesap							4	4

---

<b>PEAR</b>	Benton	Chelan	Douglas	Grant	Okanogan	Walla Walla	Yakima	Total
Bartlett		18			11		36	65
Anjou		25	6	4	194		8	237
Bosc		20	2	4	39		10	75
Asian		2		5	29		1	37
Seckel		1			2			3
Comice				4	4			8
Alsate					5			5

Figure 10. Washington organic pear acreage, by variety, 1998/99.

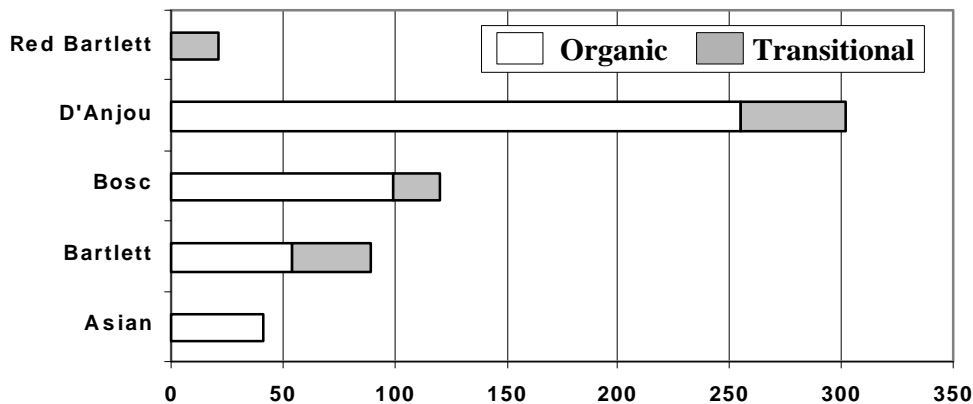
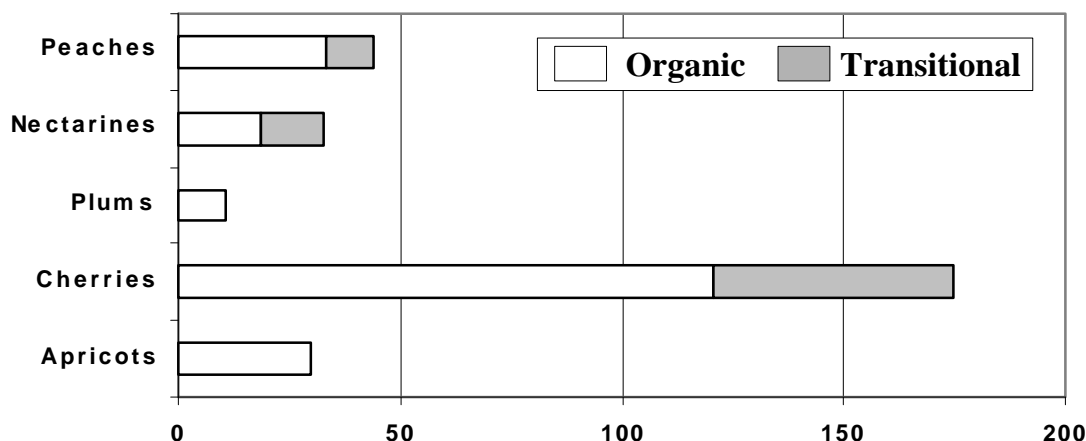


Figure 11. Washington organic stone fruit acreage, by type, 1998/99.



The d’Anjou winter pear is the dominant variety in organic pear production (Figure10). Soft fruit growers are converting more acres to cherries, but little new acreage is appearing for the other fruit types (Figure 11). Not all cherry growers reported varieties, but for those who did, Bing was the dominant variety grown organically.

### Organic Fruit Volume and Price

Several private organizations in Washington State track tree fruit volume and price on a weekly basis and make this information available to the industry at large or to their members. The Washington Growers Clearinghouse Association, based in Wenatchee, WA, began collecting organic apple and pear sales information in 1996. The initial data came from some, but not all, shippers in north central Washington. In 1998, the association began receiving information from the Yakima Valley, the other major fruit shipping region. Again, only some shippers supplied organic information. The data presented below are not comprehensive and may not accurately reflect trends.

Figure 12 and Table 7 present sales volume of organic apples and pears, respectively, for the crop years 1996-1998. Volume reflects the number of railcar equivalents, with each car representing 1000 boxes of fruit. A box of apples weighs 42 lb. net, and a box of pears weighs 45 lb. net. Red Delicious and Golden Delicious have provided most of the fruit volume in the past, but other varieties are increasing in supply. Gala and Fuji volumes are equaling or exceeding Golden Delicious volume.

For pears, d’Anjou is the dominant variety. No data were available on volume of organic cherries or other soft fruit.

Figure 12. Organic apple sales volume, Washington State, 1996-1998.

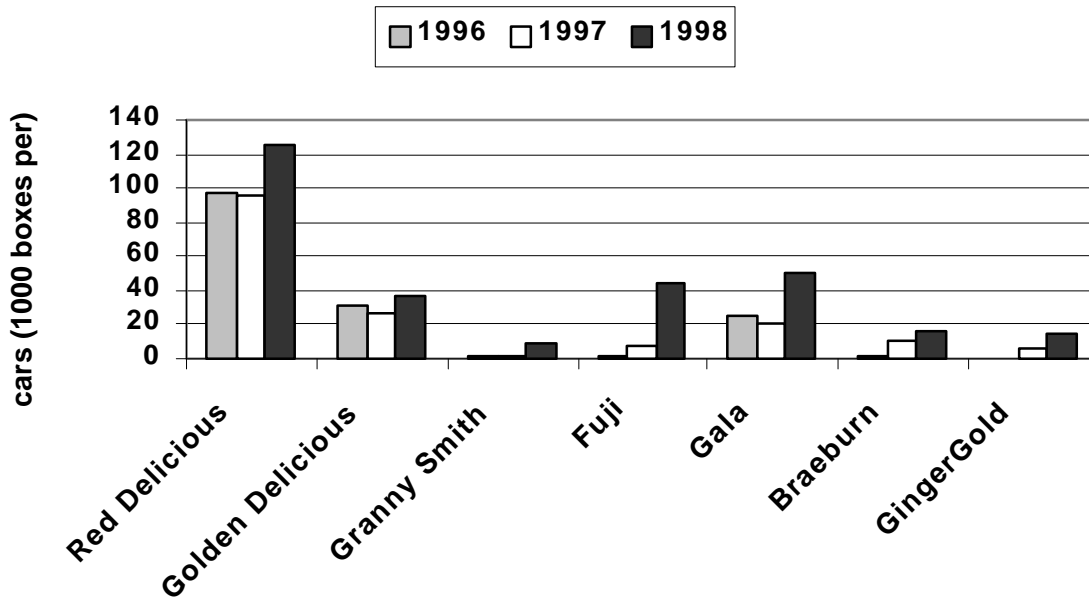


Table 7. Organic pear sales volume (in cars), Washington State, 1996-1998.

	<u>1996</u>	<u>1997</u>	<u>1998</u>
Bartlett	0.8	1.1	3.3
Red Bartlett	0.1	0.1	0.2
D'Anjou	11.0	13.4	18.2
Bosc	2.4	4.3	2.2

Apple price reporting normally is specific to variety, size, and grade. For this report, we used the market year average for each variety. While this obscures much of the information, it makes it easier to look for trends. No trend is evident over the 4-year period regarding impacts of increasing supply of organic apples (Figure 13).

Figure 14 plots average monthly prices for three varieties of organic apples for the 1997 and 1998 market seasons. Gala supplies appear to run out by May. In Figure 15, Red Delicious prices are highest early and late in the season. This trend is not apparent for conventional Red Delicious apples during the same time period, but the U-shaped seasonal pattern is a historical feature of Red Delicious prices over the past 20 years (T. Schotzko, pers. comm.).



Figure 13. Organic apple prices (\$/ packed box FOB) by variety, Washington State, 1995-1998.

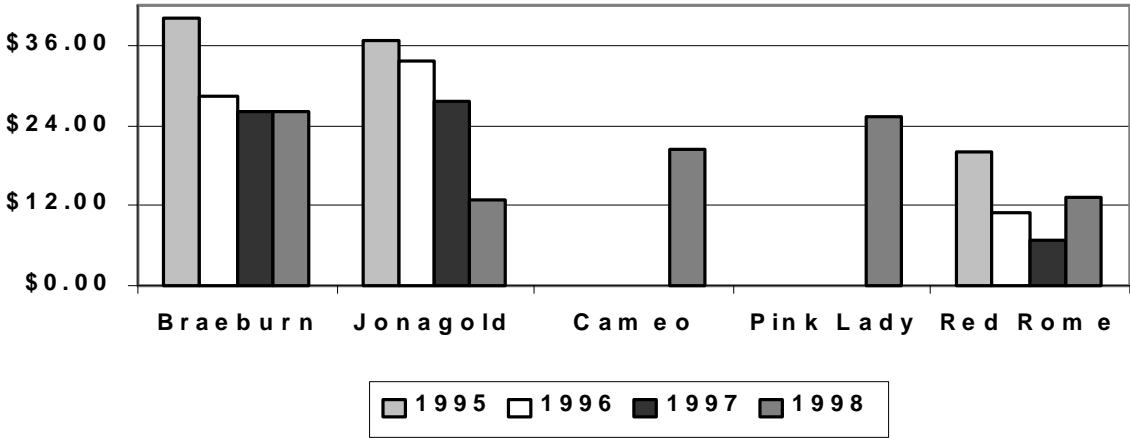
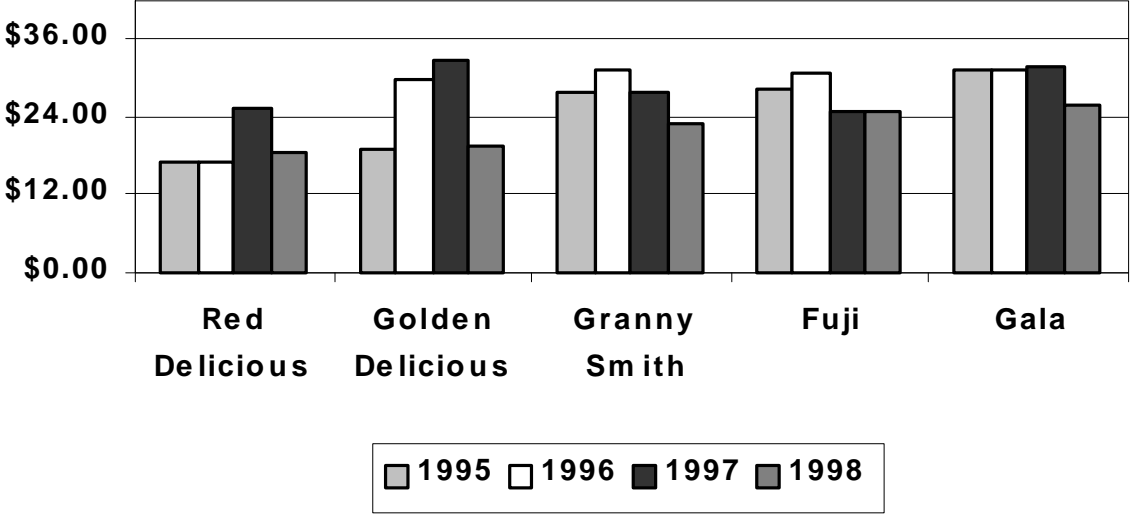
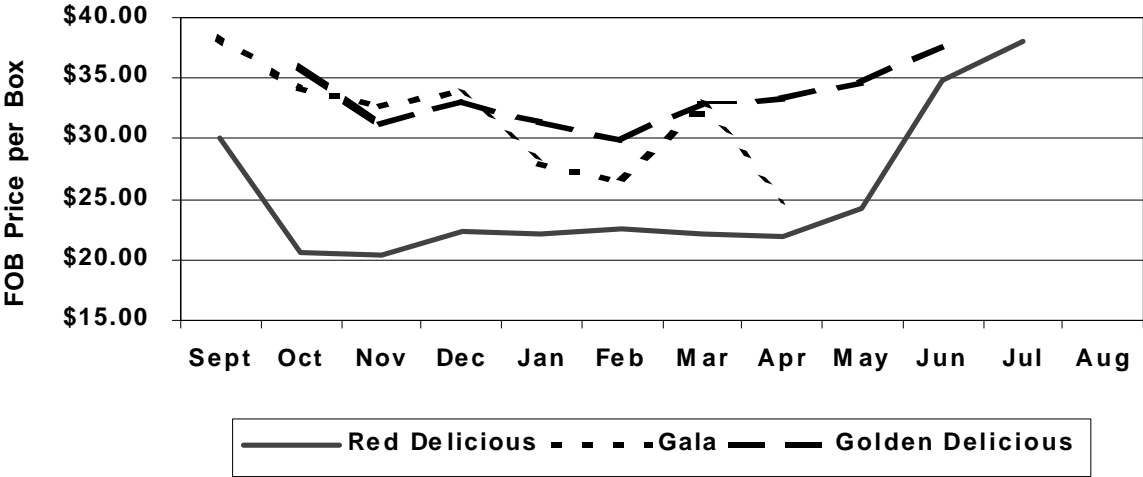


Figure 14. Monthly organic apple price trends in central Washington (\$/packed box FOB), 1997-1998.

1997 Prices



1998 prices

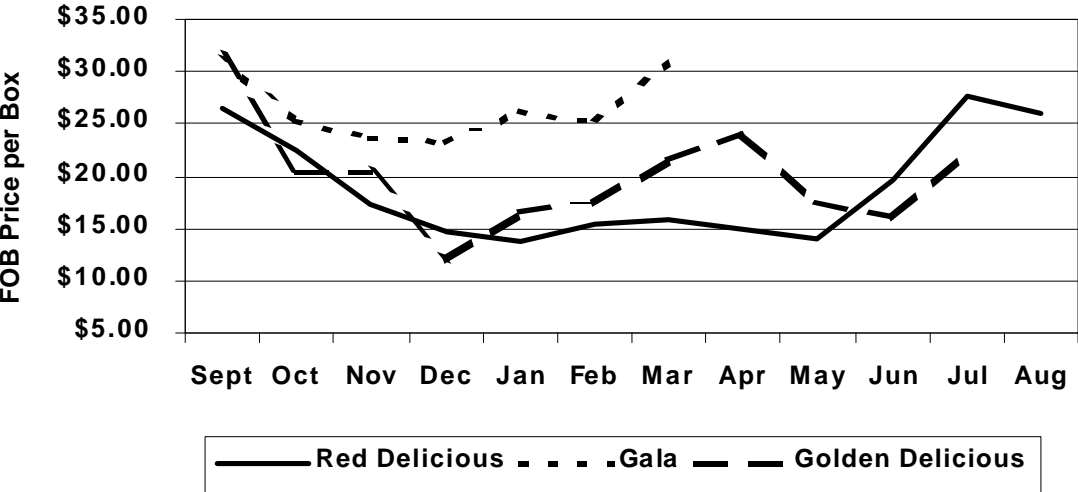
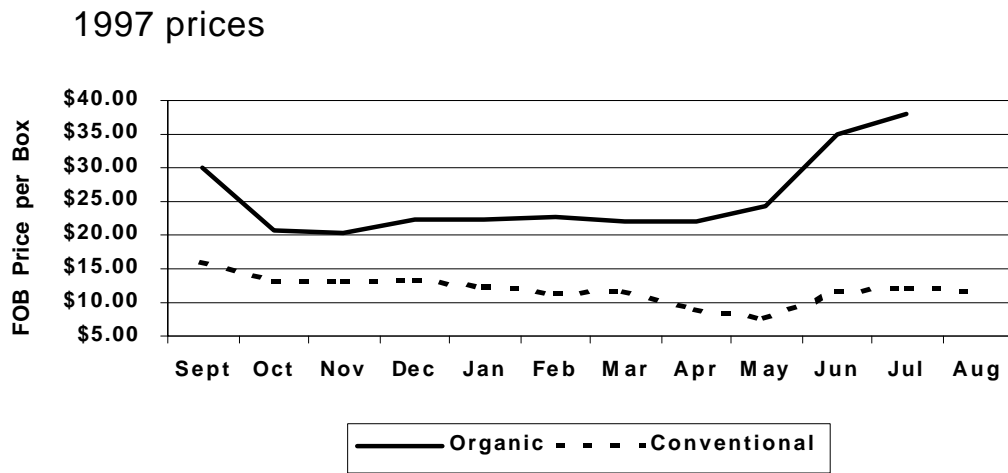


Figure 15. Monthly Red Delicious price trends in central Washington, 1997-1998.



1998 prices

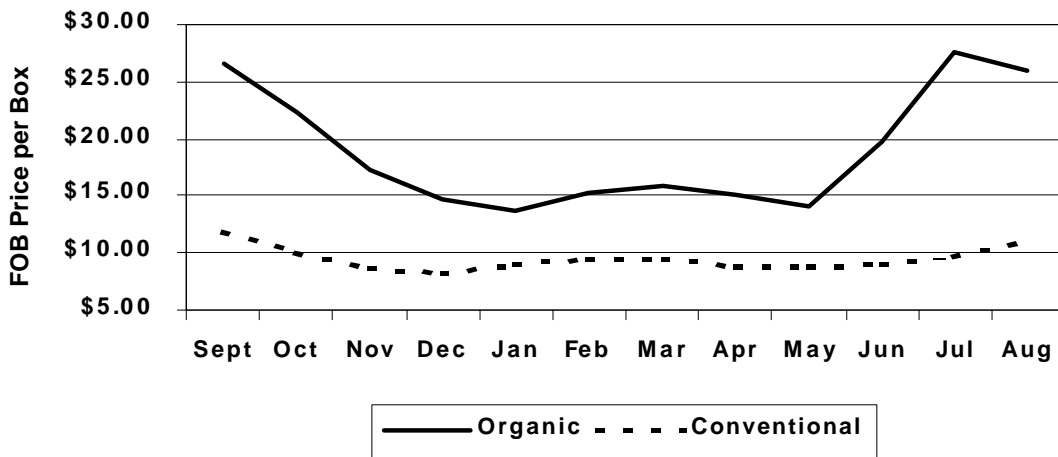


Figure 16 compares organic and conventional apple prices for 8 varieties over a 4-year period. The price premium varies from year to year, and the direction of the change differs depending on variety. Organic growers estimate their production costs are 20 to 30% higher than for conventional production, or approximately \$3 to \$5 per packed box. Thus, if price premiums for organic apples do not exceed this level, organic production becomes less profitable than conventional. Organic price premiums for this same 4-year period appear in Table 8 as a percentage difference from conventional price.

Figure 16. Apple price comparisons (\$/packed box FOB) in central Washington, 1995 - 1998.

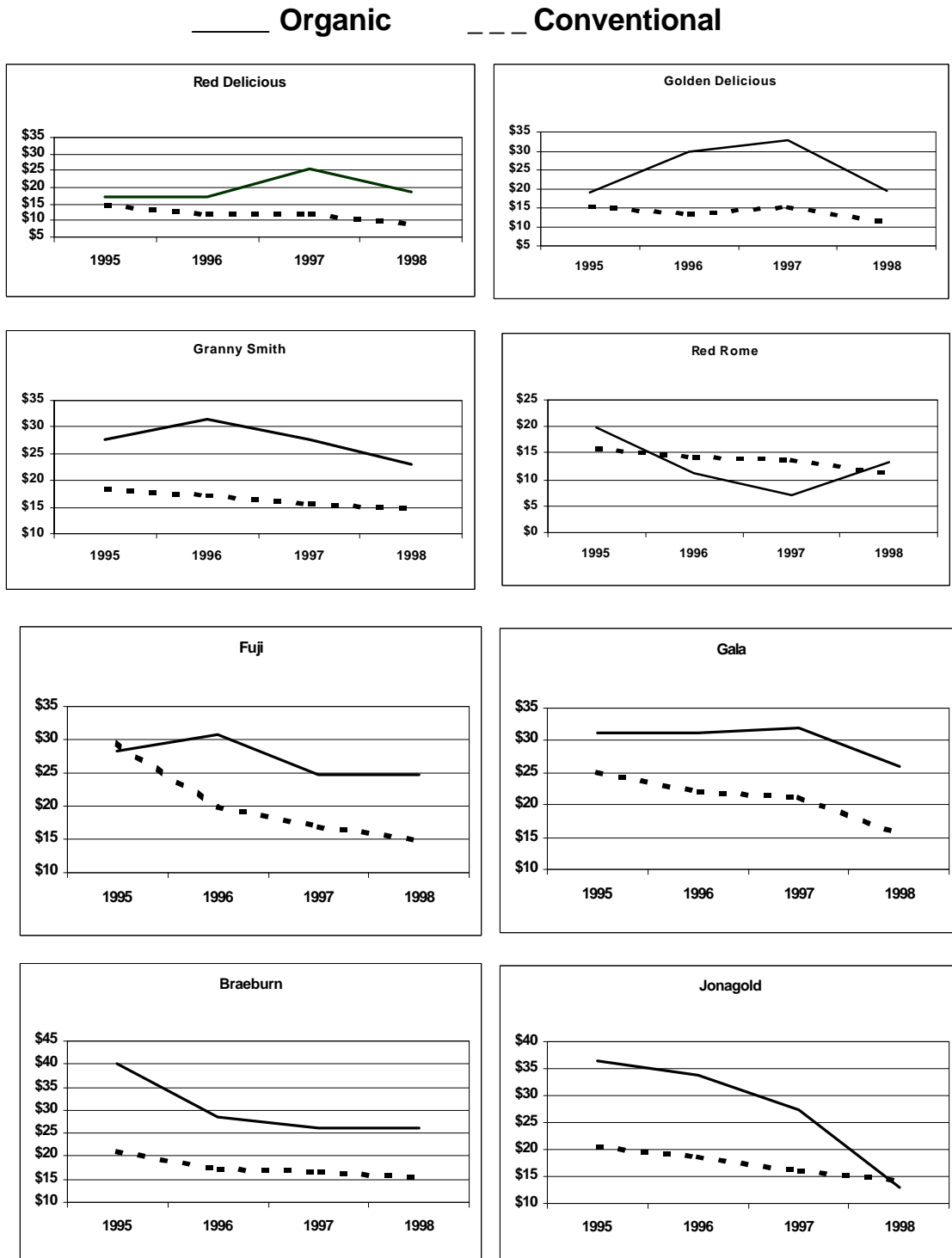


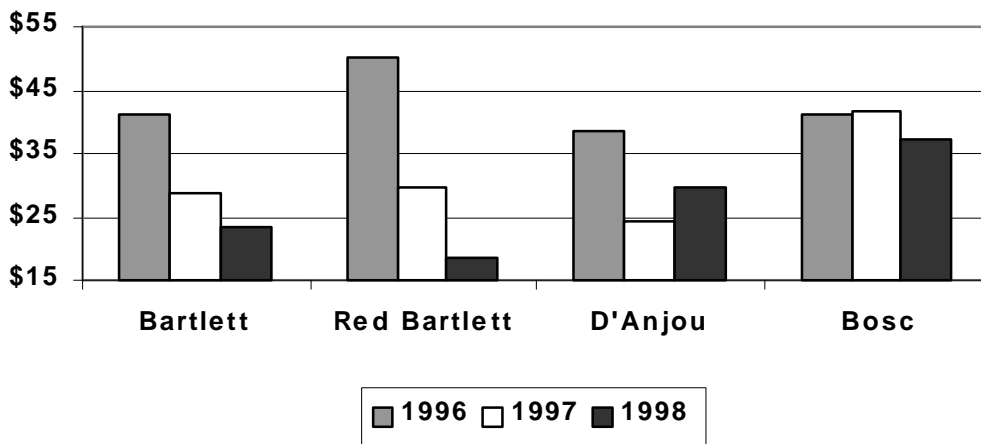
Table 8. Price premiums for organic apples as a percentage difference from conventional prices: Central Washington, 1995-1998.

Variety	1995	1996	1997	1998
Red Delicious	16	40	111	99
Golden Delicious	23	120	112	75
Granny Smith	50	81	76	53
Fuji	-4	54	45	66
Gala	24	41	48	65
Braeburn	25	-22	55	69
Jonagold	78	80	70	-10
Cameo				1
Pink Lady				8
Red Rome	90	65	-49	17
<b>Average</b>	<b>38</b>	<b>57</b>	<b>59</b>	<b>44</b>

For most varieties in most years, the organic premium exceeded \$5 per box, which would cover the added costs of organic production. The one exception is organic Red Rome, which had prices lower than conventional in 2 out of 4 years. In looking at the price comparison data, examine cost of production and actual price in addition to price premiums to determine the actual impact on profitability. In the absence of published enterprise budgets for organic apple production, we can only estimate organic production is profitable if prices exceed \$15 to \$18 per box. Conventional market prices also influence the level of organic price premium. Declining conventional prices with stable organic prices lead to an increase in the apparent premium, but not necessarily in profitability.

Organic pear prices for 1996 through 1998 appear in Figure 17. Bosc pear has the least volatile price. Prices for other varieties rise and fall in similar patterns, probably related to the size of the crop in a given year.

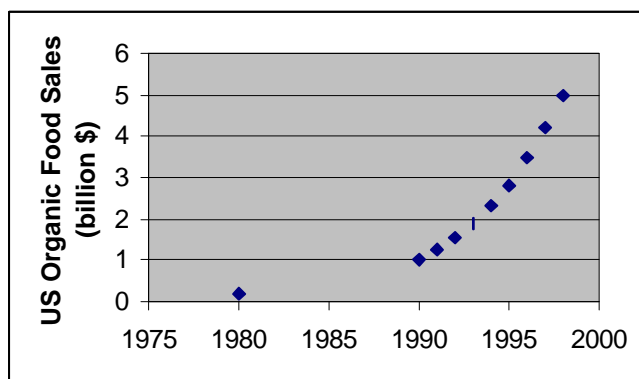
Figure 17. Organic pear prices (\$/packed box FOB), central Washington, 1996-1998.



## Markets for Organic Food

For the past decade, the steadily increasing demand for organic fruit generally exceeded the increasing supply. The notable exception occurred in 1990, when a huge influx of new acreage followed the Alar incident. Prices dropped dramatically as supply exceeded demand. Figure 18 portrays the growth of organic food sales over the past decade.

Figure 18. Organic food sales in the U.S., 1975-2000.



Source: Organic Trade Association

Certain food categories have grown much faster than the average. For example, branded products have grown by more than 40% per year, and sales of organic dairy, grain snacks, and candy grew by nearly 90% in 1998. The expansion of natural food supermarkets accounts for part of the growth. The U.S. produce industry estimates organic produce sales are roughly 2% of all produce sales, equaling about \$700 million per year. To support the growth of organic product volume, the produce industry has developed good marketing and distribution systems for organic fruits.

According to a national consumer survey by The Hartman Group in 1996, about 7% of the population reflects attitudes that profile a “core organic” purchaser. Currently, only 2% of food sales are organic. The organic market share may expand another 5% with no major shift in consumer attitudes. Many marketing experts predict organic sales will not likely exceed 10% of the market share. However, further food safety stories and reductions in price for organic products could easily raise this ceiling. Most consumers indicate price sensitivity around a 10% to 15% premium for organic foods. If more large farms come into organic production, the premiums may drop, thus further stimulating demand.

In addition to fresh markets, processor markets exist for both peeler grade and juice grade organic fruit. The juice market has been relatively strong. Expanding sales of organic baby food have created good processor markets as well. Organic prices nearly always exceed conventional market prices.

The rapid increase in organic apple acreage may put downward pressure on prices, especially for Red Delicious. Consumers are reporting general dissatisfaction with Red Delicious and may choose only to spend a premium price for organic apples of another variety such as Fuji. Processors often require specific varieties and will pay a premium to acquire them. Growers

marketing through specialty channels often have strong consumer loyalty. A few growers pack their own fruit, while most use a commercial packinghouse. Several organic brokers are available for marketing services as an alternative to a standard sales desk.

As market pressures increase, a few organic growers are looking for ways to further differentiate their fruit. Strategies include local and direct markets, gift packs, unusual varieties, and additional labels that address environmental and social issues not covered by organic certification.

### **Other Trends**

Viewing the continuing success of organic management, more mainstream growers are accepting organic production as an alternative and experimenting with it. This has led to an increase in public and private research on production methods that fit organic systems, and to expanded educational opportunities for growers to learn about organic production. As more “soft” pest management tools are developed, companies are looking at separate formulations that can meet the strict organic standards. One example is the new biopesticide Success®, a microbial fermentation product. The active ingredient is suitable for organic certification but the inert ingredients are not. The manufacturer plans to develop a formulation to meet organic certification. This material could be an important new pest control tool for organic fruit producers.

While only a few major supermarket companies in the U.S. are actively promoting organic foods, the situation is different in Europe. Some countries (e.g., Denmark) have very active government support to expand organic production and increase market share. In Switzerland, where fruit from Integrated Fruit Production (IFP) programs was the cutting edge for years, one supermarket chain is now moving to preferential sourcing of organic produce. Organic foods have not penetrated the food service market to any extent in the U.S. This represents an opportunity, however, food service tends to be highly price oriented.

During the debate over the development of the U.S. organic standards, a few voices have suggested expanding the scope of the standards to better address the original philosophy of organic farming. This might include more specific oversight of soil management beyond the exclusion of synthetic compounds, including soil organic matter status, nutrient cycling performance, and erosion control. One organic certification program recently inserted language referring to conditions for the farm workers employed. Another eco-label program evaluates farms relative to their impact on fish and wildlife.

Tree fruit producers in other countries also are exploring organic production. New Zealand’s active research program focuses on developing organic production to serve export markets. Argentina and Chile both are expanding organic acreage aimed at the export market. In Argentina where a major fruit company has a 50-hectare organic apple block within its 700-hectare farm, production costs are nearly identical with conventional production. France has about 4000 hectares of organic apple production, and Italy and Poland are reportedly shifting thousands of hectares into organic production. A recent international survey on integrated and organic fruit production lacked good response, so worldwide totals of organic tree fruit production cannot be estimated (E. Dickler, pers. comm.). However, organic tree fruit production appears to be increasing internationally. Much of it is aimed at the export market.

As organic farming expands, growers will face more pressure to make their products into a commodity, bringing the associated pressures to grow larger. Existing organic farms of several thousand acres prove it can be done; however, if supply begins to exceed demand, the price premium can be expected to erode. Smaller growers will be in a better position to take advantage of other attributes of their farms and products and to search out markets that will pay a premium. Mid-sized organic growers probably will feel the most pressure, as with their conventional counterparts.

## **References and Further Reading**

Bezdicsek, D.F., J.F. Power, D.R. Keeney, and M.J. Wright. 1984. Organic Farming: Current Technology and Its Role in a Sustainable Agriculture. Special Publ. 46, American Society of Agronomy, Madison, WI. 192 pp.

Edwards, L. 1998. Organic Tree Fruit Management. Certified Organic Associations of British Columbia, Keremeos, BC. 240 pp.

The Hartman Group. 1996. The Hartman Report: Food and the Environment, A Consumers' Perspective. Phase 1. The Hartman Group, Bellevue, WA.

Organic Trade Association. 1999. Personal communication, data on total U.S. organic food sales.

Rodale, J.I. 1945. Pay Dirt. Rodale Press, Emmaus, PA. 242 pp.

Tourte, L. and K. Klonsky. 1998. Statistical Review of California's Organic Agriculture, 1992-1995. University of California Agricultural Issues Center, Davis, CA. 97 pp.

USDA. 1980. Report and Recommendations on Organic Farming. USDA, Washington, DC. 94 pp.

USDA. 1998. The European Organic Food Market. Final Report PSL 9367/JAG/KH. USDA / U.S. Embassy, The Hague. 63 pp.



**By David Granatstein, M.S., Washington State University Center for  
Sustaining Agriculture and Natural Resources, WSU Wenatchee.**

**COOPERATIVE EXTENSION**



College of Agriculture and Home Economics

Copyright 2000 Washington State University

WSU Cooperative Extension bulletins contain material written and produced for public distribution. You may reprint written material, provided you do not use it to endorse a commercial product. Alternate formats of our educational materials are available upon request for persons with disabilities. Please contact the Information Department, College of Agriculture and Home Economics, Washington State University for more information.

Issued by Washington State University Cooperative Extension and the U.S. Department of Agriculture in furtherance of the Acts of May 8 and June 30, 1914. Cooperative Extension programs and policies are consistent with federal and state laws and regulations on nondiscrimination regarding race, sex, religion, age, color, creed, national or ethnic origin; physical, mental or sensory disability; marital status, sexual orientation, and status as a Vietnam-era or disabled veteran. Evidence of noncompliance may be reported through your local Cooperative Extension office. Trade names have been used to simplify information; no endorsement is intended. Published December 2000. Free Subject codes 262, 234, 341 EB1898E