

Washington State, National, and International Status of Organic Tree Fruit (2007)

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Statistics on organic tree fruit production in Washington State have been compiled by WSU-CSANR since 1998, with the goal of producing annual updates to provide growers and the industry with current information. This report provides a best **estimate** of certified organic tree fruit in Washington State and includes data from acreage certified by the Washington State Department of Agriculture (WSDA) Organic Food program, Oregon Tilth Certification Organization (OTCO), International Certification Services (ICS) and Quality Assurance International (QAI). Current data cover the period of calendar year 2007. Transitional acreage is included. However, growers are not required to register transitional acreage (since 2002) and the numbers presented here likely underestimate the actual total. Information for exempt producers (less than \$5,000 gross sales) who chose not to be certified is not included. Certified Naturally Grown, a new program developed as an alternative to the National Organic Program (NOP), currently has 16 approved small farms in Washington with an estimated 10 acres of mixed tree fruit. Price trend information is based on data from the Washington Grower's Clearing House Association. International tree fruit acreage data has been collected from a number of sources in order to estimate the organic production area and understand where production may be growing or declining.

Washington State is the leading producer of organic apples, pears and sweet cherries in the US; apple production is predominant in the state with an estimated 8,018 acres (73% of organic tree fruit acres). Production of organic apples and pears expanded rapidly in the late 1990s in response to market demand and potential price premiums. Organic production leveled off from 2002-2005 as price premiums decreased (likely due to excess supply and underdeveloped markets). Market demand currently exceeds supply for organic tree fruit and production is expanding rapidly. Organic apple area is expected to increase 78% by 2009 based on a current estimate of 6,291 transition acres (Tables 1 & A1, Figs A1-A3).

Table 1. Estimated organic **apple, pear and cherry** acreage in Washington State by year (acres).

Apple	1998	2000	2001	2002	2003	2004	2005	2006	2007
Certified	1,809	4,228	6,540	7,054	7,003	7,049	6,721	7,642	8,018
Transitional	2,308	3,997	3,415	590	719	844	1,111	4,100	6,291

Pear	1998	2000	2001	2002	2003	2004	2005	2006	2007
Certified	449	619	1,308	1,771	1,466	1,509	1,196	1,251	1,418
Transitional	169	1,040	642	192	80	201	234	276	630

Cherry	1998	2000	2001	2002	2003	2004	2005	2006	2007
Certified	95	193	303	507	513	581	624	782	1,026
Transitional	90	165	280	69	58	158	234	775	1,284

Values through 2002 include WSDA data only; QAI values included beginning 2003; OTCO data beg 2004.

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At over 1,400 acres, pears made up 13% of organic tree fruit area in Washington State in 2007. Pear acreage peaked in 2002 with 1,771 acres reported; production declined 32% by 2005. Initial high price premiums for both pears and apples narrowed in comparison to conventional prices, likely providing a disincentive to pear growers. While premiums have rebounded, certified pear acreage appears to be growing at a slower rate than apple or cherry; pear acreage is expected to increase 22% by 2008.

Cherry acres (1,026) currently account for 9% of the state's organic tree fruit area; production has been on an upward trend for several years after options for controlling cherry fruit fly became available. Organic cherry acres are expected to *double* by 2009, based on reported transition acres.

Of the total apple acreage in the state, 4.6% is certified organic. Organic pear and cherry acreage currently represent 5.6% and 2.9% of state acreage totals, respectively (Table 2). Importantly, Washington State producers are also increasing organic production of other soft fruits and reported over 1,200 acres of transitional peaches, apricots, nectarines and plums in 2007 (Table 3).

Table 2. Organic % of total Washington tree fruit acres - 2007.

	NASS 2006 (ac)	Organic 2007 (ac)	% of total
Apple	172,986	8,018	4.6%
Pear	25,200	1,418	5.6%
Cherry	36,000	1,026	2.9%

USDA-NASS and WSU-CSANR data

Table 3. Estimated organic stone fruit acreage Washington State (acres).

	1998		2001		2003		2005		2007	
	Cert	Trans	Cert	Trans	Cert	Trans	Cert	Trans	Cert	Trans
Cherry	95	90	303	280	513	58	624	234	1,026	1,284
Peach	25	-	126	31	175	-	179	9	194	456
Apricot	35	-	49	4	78	12	95	12	96	146
Nectarine	26	-	57	26	57	-	67	8	82	336
Plum/Prune	28	-	54	14	63	-	51	3	62	110
Other or NS**	-	-	-	-	-	-	22	4	64	185
Totals	209	90	589	355	886	70	1,038	270	1,524	2,517

*Cert = certified, Trans = Transitional **NS = not specified; may include any of the above categories or other categories not listed. Values through 2002 include WSDA data only; QAI values included beginning 2003; OTCO data beg 2004.

Growers should carefully evaluate market potential, variety demand, cost and needed returns when planning for future expansion. The current data, supported by responses from a packer survey (2006), point to a continued rapid increase of organic apple and cherry production in the next few years. Certified apple acres are expected to total over 14,000 acres by the 2009 harvest. With an average yield of 689 packed boxes per acre (based on fruit company survey response, averaged across years and varieties), total state organic apple production could exceed 9.8 million boxes (Tables 4, 5; Fig. A4). Gala and Fuji varieties will continue to have the highest volumes. An important change in the U.S. market has been the development of strong processor demand for organic apples, and to some extent pears. Pear juice concentrate is a neutral sweetener and thus has a niche in the organic processed foods market. Pre-sliced organic apples are experiencing strong demand; this market offers prices exceeding what lower grade and size fruit used to command, thus essentially establishing a floor price for fresh market apples. High grade, large fruit is also being diverted to pre-sliced processors.

Fresh apple slices shipments in the U.S. for 2006-07 accounted for 2.8 million boxes compared with 1.3 million boxes in 2004 (*WGCH Annual Apple Price Summary, 2006-2007 Marketing Season*).

The level of market saturation for organic apples is not known; consumption is expected to continue to increase. However, with projected growth, organic apples will comprise about 10% of all apple acres in the state. Previous market research on organic foods has suggested a penetration rate of 10-15% of the population as a potential ceiling. Apples (and other fresh fruit) represent a high priority organic purchase for many consumers and thus market penetration could exceed this. Fruits and vegetables accounted for 40% of organic food sales in 2006, with a growth rate of 24% (OTA, 2007). Once the current demand for organic tree fruit is satisfied, future expansion needs to keep this growth rate in mind to avoid another oversupply situation with its expected price declines.

Table 4. Estimated projected growth in certified tree fruit acres in Washington

	2005	2006	2007	2008* projected	2009* projected	% Increase 07-09
Apple	6,721	7,642	8,018	11,744	14,309	78%
Pear	1,195	1,251	1,418	1,527	1,557	44%
Cherry	624	782	1,026	1,557	1,857	125%

* Projected growth WSDA, QAI, OTCO and WSU-CSANR Warehouse survey data

Table 5. Actual and projected certified apple acres and production in Washington State, by variety.

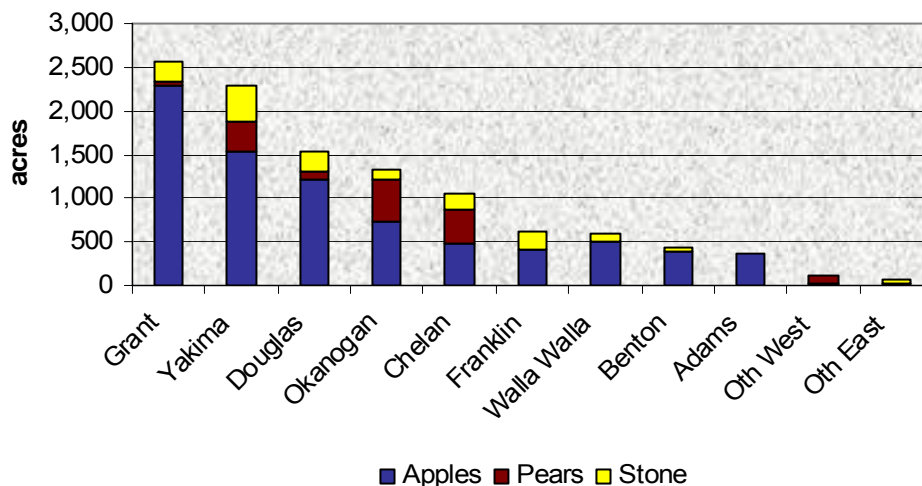
	2005	2006	2007	2008*	2009*	% Increase 07-09	Average box/ac**
Gala	1,364	1,543	1,672	2,404	2,938	76%	752
Fuji	1,137	1,201	1,299	2,025	2,520	94%	710
Red Delicious	837	914	1,018	1,336	1,834	80%	724
Granny Smith	744	969	1,006	1,443	1,660	65%	645
Golden Types	743	799	866	1,160	1,380	59%	967
Cripps Pink	607	638	596	933	985	65%	665
Braeburn	503	579	599	935	1,021	70%	622
Honeycrisp™	178	298	339	541	678	100%	552
Others & NS	608	702	404	968	1,293	107%	564
Total	6,721	7,643	8,018	11,745	14,309	78%	

* 08 and 09 are projected from WSDA data; ** boxes per acre values are averages reported in warehouse survey and represent a range of orchard maturity, growers, conditions and years. $14,300 \text{ ac} * 689 \text{ box/ac} = 9.8 \text{ million boxes}$

State Geographic Distribution

Organic tree fruit production is based primarily in the central, irrigated regions of Washington State. Over 60% of the certified apple acres are in Grant (28%), Yakima (19%) and Douglas (14%) counties. Eighty-three percent of the organic pear area is in Okanogan, Chelan, and Yakima counties. Yakima County has 30% (285 acres) of the certified cherries, and 344 acres in transition. Chelan, Franklin, Douglas and Grant counties share 54% of the cherry acres; Chelan county growers reported the highest number (390) of transition cherry acres (Fig. 1, Tables A2-A4).

Figure 1. County distribution of estimated organic tree fruit acres in Washington State, 2007.



WSDA, OTCO and QAI data

National acreage

Washington State leads the nation with over 50% of the certified apple acres. National organic tree fruit production is primarily located in the semi-arid irrigated regions of the Western U.S., where climatic conditions and absence of key pests makes organic production of high quality fruit more feasible. Data collected by USDA-ERS and WSU-CSANR show that over 90% of organic apple production occurs in these locations (Table 6, Fig.A5). Some western states have experienced considerable declines in organic apple acreage (e.g. Colorado, Arizona) due to market competition, low demand varieties or other reasons. National organic apple acreage peaked in 2001 with a new peak expected over the next few years. No similar national data are available for organic pears or cherries.

Table 6. Estimated US organic apple area by region (acres).

State	1997	2000	2001	2003	2005	2006	2007
WA	1,707	4,321	6,540	7,003	6,721	7,642	8,018
CA	1,883	4,423	4,853	4,045	3,402	3,358	3,900
AZ	3,178	1,795	1,715	835	865	865	881
CO	1,270	431	635	235	202	209	-
OR	9	350	350	265	123	108	-
ID	-	112	504	106	0	-	-
NV,MT,NM,UT	59	167	170	63	81	-	-
West total	8,106	11,599	14,767	12,552	11,394	-	-
Midwest	522	420	563	652	712	-	-
NY & NE	201	83	52	5	389	-	-
S & SE	17	28	20	1	12	-	-
US Total	8,846	12,130	15,402	13,210	12,507	-	-

Data sest from WSU-CSANR and USDA-ERS, CDFA, CO Dept of Ag, AZ Apple Grower's Assoc

International acreage

Organic tree fruit production is increasing in most world regions; apple area has grown an estimated 26% since 2001. World values reported here should be viewed as estimates (Tables 7-9). Annual data are not available for many regions, including the US. However, it is useful to compare available data and piece together the general trends. Specific regional data are found in Appendix tables A5-A19. The US, Europe and Turkey are the major organic apple producers. Turkey, Italy, Argentina and the US lead organic pear production, and Italy has >50% of the reported organic cherry area.

Table 7. Estimated trend of organic apple area around the world.

	Start acres	End acres	% Change	Start Year	End Year
US	15,401	12,507	-19%	2001	2005
Canada	800	1,536	92%	2000	2005
Europe	14,141	18,876*	27%	2000,2001	05,06,07
Turkey	4,098	6,774	65%	1999	2006
China	0	3,952	--	2001	2005
New Zealand	2,873	1,362	-53%	2001	2006
Australia	--	371	--	--	2005
Argentina	805	2,146	167%	2000	2006
Chile	580	1,282	121%	2001	2004
	38,697	48,806	26%		

*Actual end year total 51,178 ac; end year in table underestimated by >2,300 ac (UK) because start acres were not available. Sources: **US:** WSDA-OFP; OTCO; USDA-ERS, CDFR; AZ Apple Growers Association, CO Dept of Ag. **Canada:** COG. **Europe:** AgenceBio; AMA; ISMEA; MIPAF www.sinab.com; ZMP; S. Sansavini, **Turkey:** MARA (06); USDA-FAS (00) **Argentina:** SENASA; E. Sanchez. **Chile:** E. Sanchez; P. Ceroni Gaete, AAOC. **China:** Zhou Zejiang, OFDC. **NZ:** Pipfruit NZ; Bio-Gro NZ; USDA-FAS. **Australia:** ACO, BFA.

Table 8. Estimated recent organic pear area around the world.

	Certified acres	Transition acres	Trend	Data Year
US				
Washington State	1,418	630	↑	2007
California	547	?	↓	2007
Oregon, Colorado, Arizona	258	17	-	2006
Turkey	5,402	493	↑	2006
Italy	3,125	363	↑	2006
France	371	81	↑	2006
Austria	336		↑	2006
UK	228		↑	2006
China	2,964 ?	?	↑	2005
Northern Hemisphere	14,649 ?	1,584 ?		
Argentina	2,727	618	-	2006
Chile	82			2005
Australia	296			2005
New Zealand	20 ?		↓	2007
Southern Hemisphere	3,125 ?	618 ?		

See sources listed on international apple area Table 7.

Northern hemisphere

Market demand and successful research efforts to overcome climatic barriers have enabled tremendous growth in European organic production. Data reported from 13 EU countries total over

21,000 acres of organic apples with Germany (6,669 ac) and Italy (5,898ac) as leading producers. The Germany apple data includes minor pear acreage. Pear production in Europe is primarily in Italy with over 3,000 ac. Other important organic tree fruits in Italy include cherry (3,964 acres), peach (5,278 ac), apricot (4,602 ac), and plum (1,326 ac). As in the US, organic cherry acreage in Italy is expected to nearly double by 2008, with 3,243 acres now in conversion. The UK organic apple acreage of 2,372 acres includes cider apples that may represent up to 50% of the total area. Organic tree fruit production in France appears to have declined the last few years. Apple acreage was reported at 3,428 and 1,857 acres in 2004 and 2006, respectively. Decline is not for lack of market demand which is strong. Austria values indicate increasing production of apples (1,143 ac) and pears (336 ac), as well as cherries, and apricots. Only apple data were available for other EU countries at the time of this report.

Table 9. Estimated organic cherry acres around the world.

	Organic acres	Transition acres	Data year
US			
Washington State	1,026	1,284	2007
California	272	?	2007
Oregon	183	4	2006
Upper Midwest			125 C (2001) sour?
Italy	3,964	3,243	(2006); (2005 = 2,050 C, 2,112 T)
France	?		536 C (2000)
Turkey	924	493	(2006), sweet only; 2,810 ac sour
Northern Hemisphere	6,369	5,024	
Chile			348 C (2003)
Argentina			15 C (2003); 31 MT export (2006)
Australia			123 C (2005)
Southern Hemisphere	486 ??	??	

C = certified organic, T = transition

Turkey is a major producer and exporter of organic tree fruit with more than 6,700 acres of certified apples and 3,794 acres in conversion (*MARA*). Turkish pear and stone fruit production is also significant. Much of Turkey's organic fruit is exported. The data may include some duplication where the land area may have been reported for more than one crop.

China reported over 3,900 ac of organic apples and 2,964 organic pear acres in 2005, and has a growing interest in organic production (*Zhou Zejiang, personal comm*). However, an unknown portion of this land is certified by organizations not accredited by IFOAM or NOP. Also, there has been a 1.2 million hectare decrease in total organic land area in China reported since 2005 (*H. Willer, personal comm.*). More recent tree fruit estimates are not currently available.

Southern hemisphere

In the southern hemisphere, Argentina, Chile, New Zealand and Australia have favorable climates for organic tree fruit production. New Zealand certified apple production has declined 53% (to 1,362 ac) since 2001. Minor areas of pears and stone fruit also declined. Reasons for this include a limited export market, poor grower returns and disincentive to maintain certification because NZ does not have organic labeling regulations (*M. Glogau, personal comm.*). Argentina and Chile have more than doubled their production area. Argentina currently has an estimated 2,727 acres of certified pears and 2,146 acres organic apple (2006), primarily for export. The EU receives 76%; 22% goes to the US market (*E. Sanchez, SENASA*). Updated numbers for Chile were not available for this report; the recent upward trend there may be continuing, as in Argentina. Overall, the world market looks strong and growers are taking the opportunity to meet the increasing demand for organic tree fruit.

Variety acreage, price and sales volume trends, Washington State

Gala is the leading organic **apple** variety (21%) produced in Washington, followed closely by Fuji (16%), Red Delicious (13%) and Granny Smith (13%). Based on transition numbers, these percentages should be similar over the next few years. Bartlett (38%) and D'Anjou (32%) are the leading certified **pear** varieties. There are minor acres of organic specialty pears including Concorde, Tosca, Taylor's Gold, Forelle, Starkrimson and Comice; few transition acres were reported (Tables 10-11, Figs. A6 -A10). **Cherry** variety acreage information is not available.

Table 10. Estimated Washington certified apple acreage by variety by year (acres).

Variety	1998		2000		2002		2004		2006		2007	
	Cert*	Trans	Cert	Trans	Cert	Trans	Cert	Trans	Cert	Trans	Cert	Trans
Gala	223	157	596	577	1,434	76	1,341	167	1,543	861	1,672	1,266
Fuji	165	294	425	606	1,052	76	1,151	111	1,201	825	1,299	1,222
Red Delicious	687	768	1,512	984	1,251	168	985	113	914	422	1,018	816
Granny Smith	158	64	452	625	828	64	819	144	969	475	1,006	654
Golden Types	198	411	603	304	861	14	797	104	799	361	866	515
Braeburn	84	69	186	165	485	33	494	51	579	356	599	422
Cripps Pink	8	-	83	196	470	116	591	60	638	295	596	389
Honeycrisp™	-	-	-	-	151	11	165	50	298	243	339	339
Cameo®	12	24	93	350	191	21	191	21	210	29	219	44
Other & NS*	274	521	209	71	331	10	517	23	491	233	404	420
Total	1,809	2,308	4,159	3,878	7,054	589	6,533	821	7,642	4,100	8,018	6,087

*Cert = certified, Trans = Transitional; **NS=variety not specified. Other includes Jonagold, Winter Banana, Sonata, Rome, Empire, Sansa, Tsugaru, Jazz. Prior to 2003 only WSDA data included; QAI values included beg. 2003 and OTCO data beg 2004.

Table 11. Washington organic pear acreage by variety by year (acres).

Variety	2002		2003		2004		2005		2006		2007	
	Cert	Trans	Cert	Trans	Cert	Trans	Cert	Trans	Cert	Trans	Cert	Trans
Bartlett	431	67	455	11	433	55	360	89	402	46	480	117
D'Anjou	755	62	529	41	560	92	389	90	393	62	401	218
Bosc	370	23	284	6	270	2	224	-	214	22	218	36
Red Types	89	11	71	18	98	7	102	1	107	8	99	34
Asian	60	10	47	5	65	7	42	-	46	-	41	1
Other & NS*	66	20	80	-	83	38	78	54	89	139	179	224
Total	1,771	193	1,466	80	1,509	201	1,195	234	1,251	276	1,418	630

Prior to 2003 only WSDA data included; QAI values included beg. 2003 and OTCO data beg 2004. *NS = not specified; may include any of the above categories or other categories not listed.

Historically, price premiums for both organic apples and pears have tended to follow a pattern similar to conventional prices. When conventional prices dropped, organic prices dropped. Premium margins narrowed in 2001 and then rebounded. Unmet demand is keeping prices high, even with the dramatic increase (3x) of tracked organic apple sales volumes since 2002 (*Washington Growers Clearing House data*). Average organic **apple** premiums were lowest in 2001 at \$4.88/box FOB (29%) over conventional. Premiums averaged \$6-8/box FOB (40%) for the 2004-06 crop years. Over 3.1 million boxes were shipped during the 2006 crop year. Over the five-year period 2002-2006, organic premiums averaged from \$6.40/box for Granny Smith to \$7.99/box for Braeburn (Tables 12, A20-A21, Figs. 2-4). Fruit size can also affect premiums. Organic Gala WAXF #1 (size 80- 100) received premiums ranging from 66-82% (fall 2007) compared to 22% for size 113. Larger fruit (size72) had a similar box price to size 88 but a lower premium of 50% (Fig. A11).

Table 12. Five year average premiums (\$/box FOB) by variety, Washington State, 2002-2006

Apple	\$/box*	Pear	\$/box*
Gala	6.48	Bartlett	6.90
Fuji	7.57	D'Anjou	5.58
Red Delicious	6.64	Bosc	6.82
Golden Delicious	7.14	Red Bartlett	5.23
Granny Smith	6.40	Red D'Anjou	7.87
Cripps Pink	6.47		
Braeburn	7.99		

*Data are from Washington Growers Clearinghouse Association; all grades & sizes, CA and regular storage; season end.*Apples=42lb and pears=44 lb per standard equivalent box*

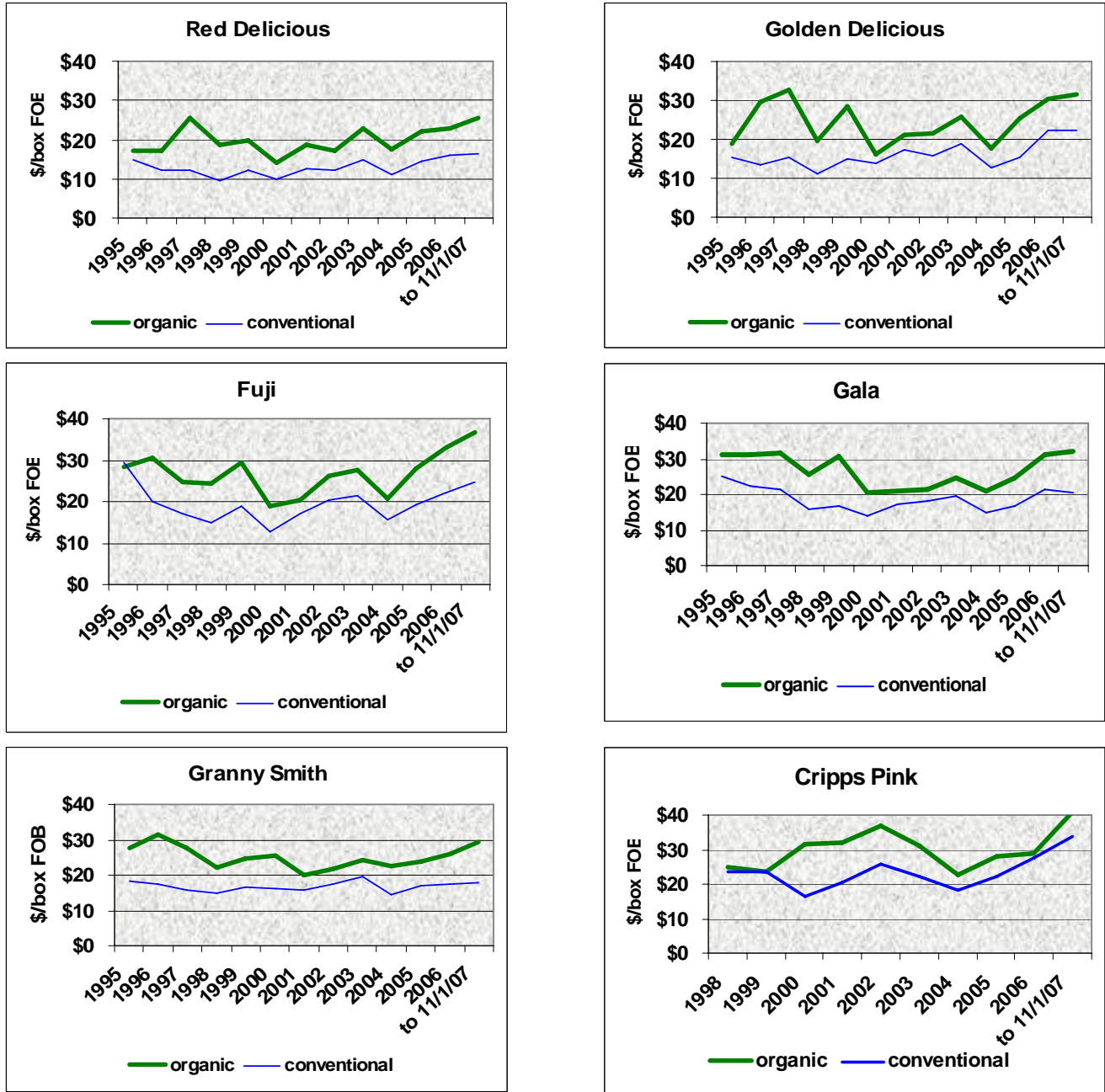
Average organic **pear** premiums were lowest in 2001 averaging \$2.37/box FOB, 17% over conventional market prices. As pear volume flattened, premiums increased and averaged \$12.79/box FOB (60%) for the 2006 crop year (Figs. 6-7; Tables A22-A23). The five-year average premiums ranged from \$5.23/box for Red Bartlett to \$7.87/box for Red D'Anjou pears.

Organic **cherry** sales volume is increasing. For the 2007 crop year, based on over 1.75 million (20 lb equivalent) boxes shipped, the average premium was \$15.57/box (38%). Premiums for 2004-06 are based on limited shipments (Fig.8).

Conclusion

National and international demand for organic tree fruit is expected to continue its growth; produce is the leading sector of organic food sales and apples are a key component. New fruit varieties and new products such as pre-sliced organic apples will also help drive sales. The growth of organic fruit in other countries may compete with Washington State products in export markets we now sell to, or compete in the domestic market with fresh product, counter-seasonal to our newly harvested fruit. While detailed cost of production studies have not been widely done for organic tree fruit in the state, reports from growers indicate that production costs can be comparable to conventional in a number of circumstances, and often decline over time with experience and improved orchard biological function. Thus, even if growth of organic tree fruit production exceeds demand in the coming years, a stable base of organic production will likely continue and be positioned to tap into value-added markets.

Figure 2. Apple price comparisons, organic and conventional, Washington State.



Data are from Washington Growers Clearinghouse Association; all grades & sizes, CA and regular storage. Prices for 2007 are for Nov 1, 2007; other years are at season's end.

Figure 3. Organic apple sales volume and price trends.

(Washington Grower's Clearing House data; all grades & sizes, CA and regular storage. Apple boxes = 42lb equivalent).

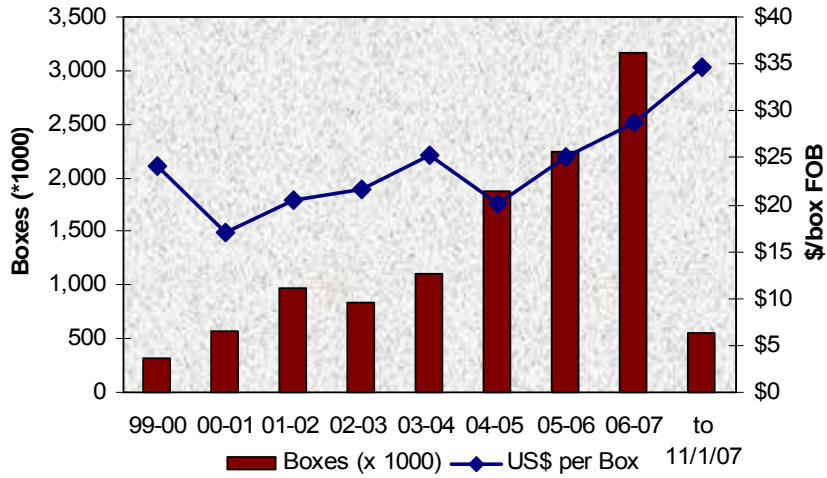


Figure 4. Organic apple sales volume trend in Washington State. (Washington Growers Clearinghouse data)

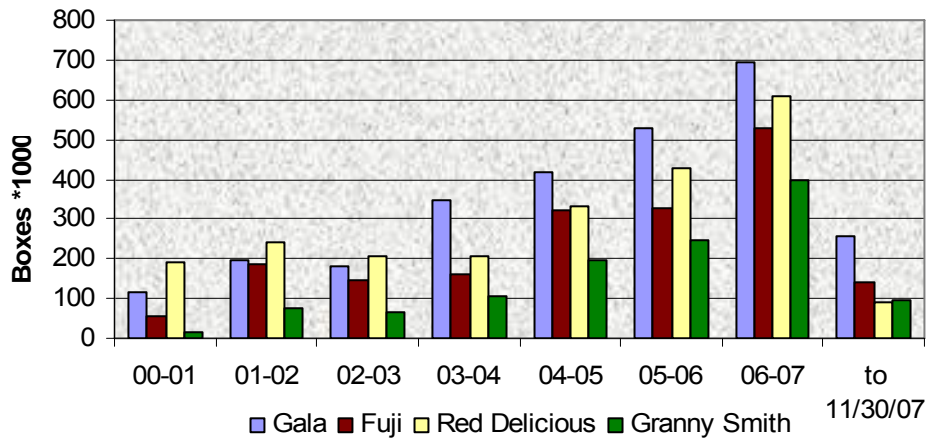
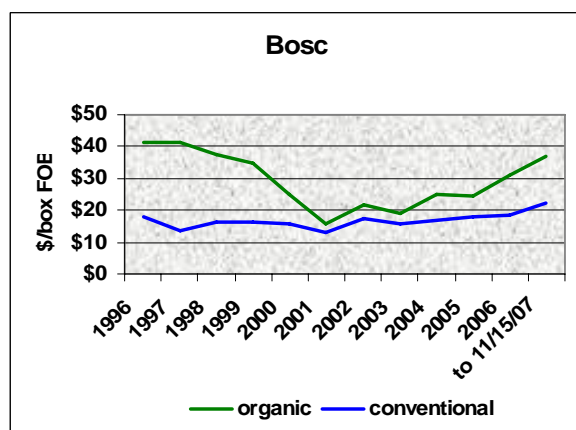
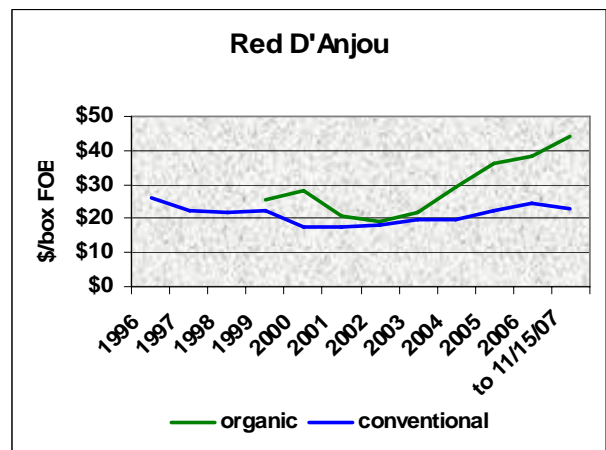
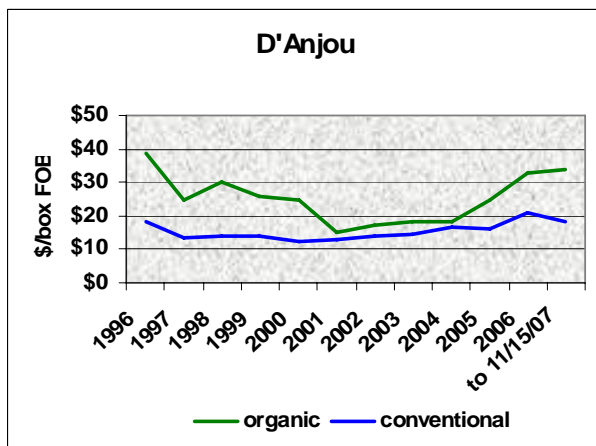
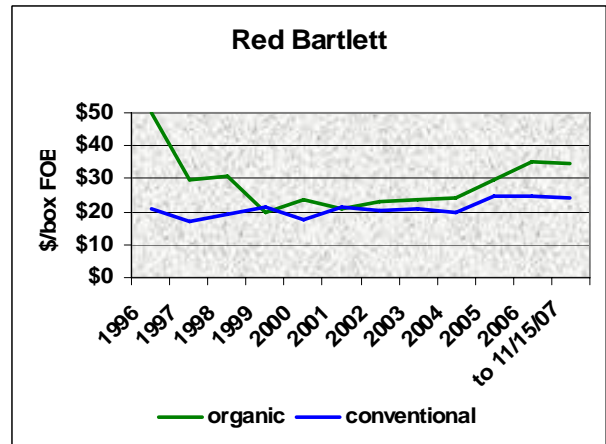
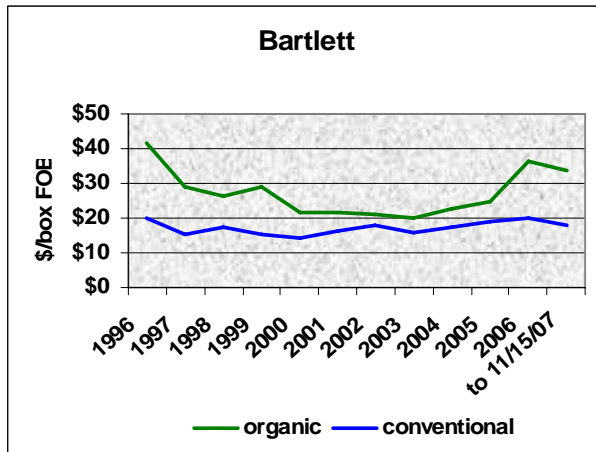
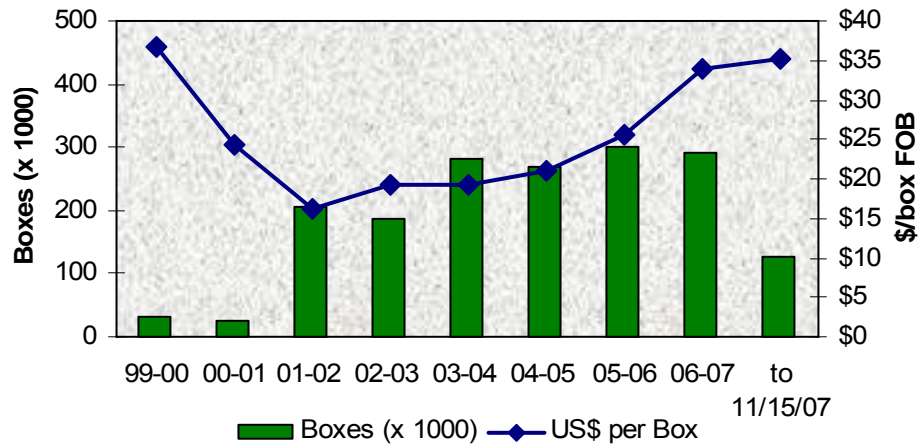


Figure 6. Pear price comparisons, organic and conventional, Washington State.



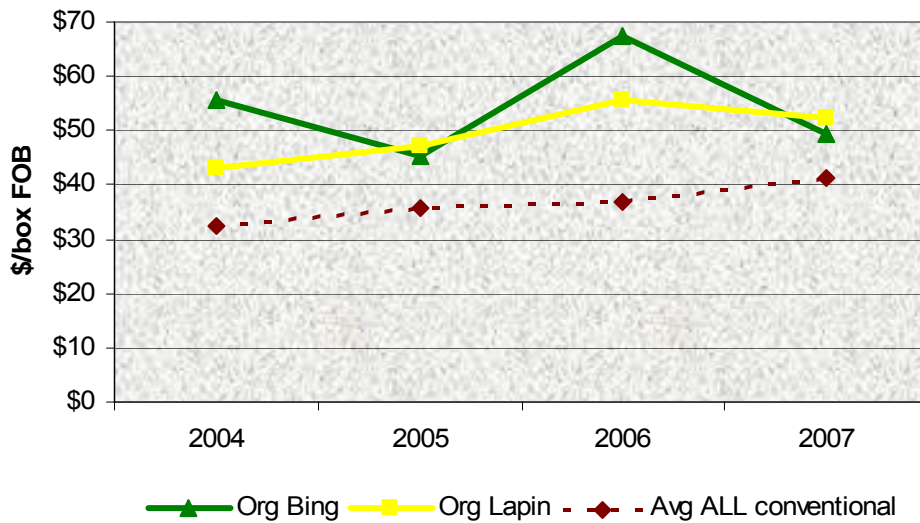
Data are from Washington Growers Clearing House Association; all grades & sizes, CA and regular storage. Prices for 2006 are to Nov 1, 2007; other years are season's end.

Figure 7. Organic pear price and sales volume trends.



Washington Grower's Clearing House Association data; all grades & sizes, CA and regular storage.
 Pear boxes = 44lb equivalent

Figure 8. Cherry price trends, organic and conventional, Washington State



Data are from Washington Growers Clearing House Association; all grades & sizes, CA and regular storage. Prices are season end averages.

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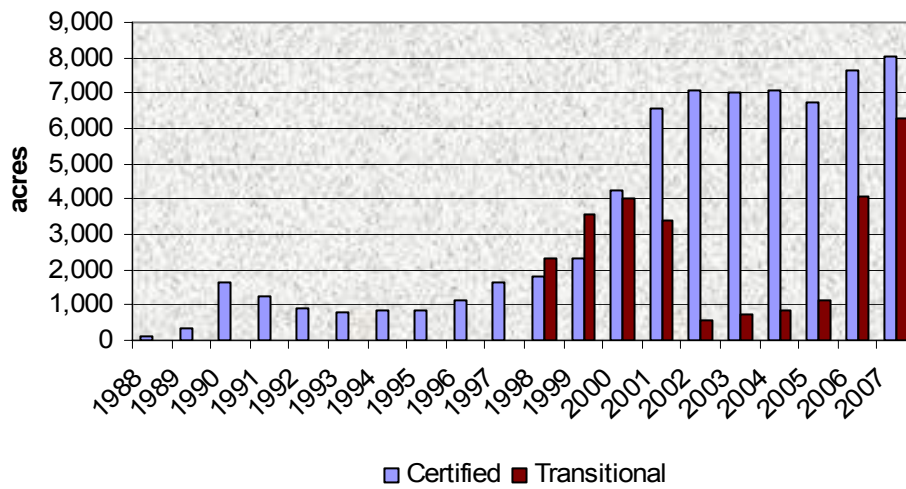
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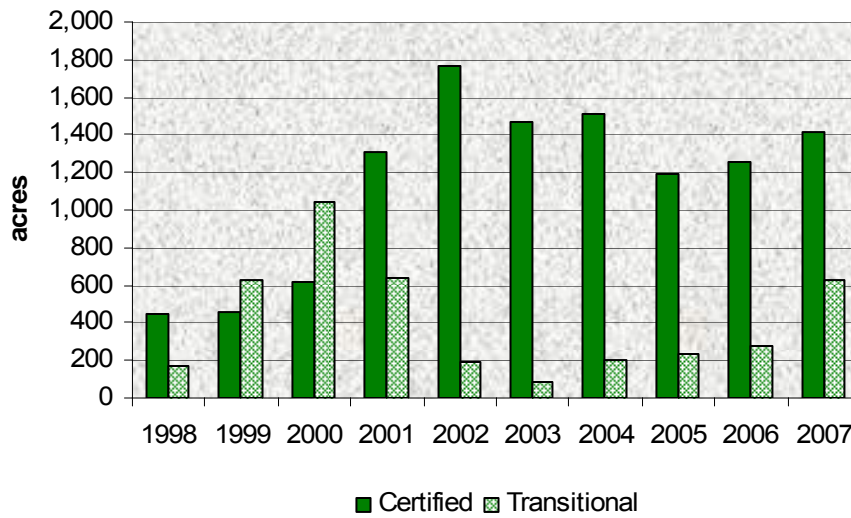
Appendix Figures

Figure A1. Estimated organic apple acreage, Washington State.



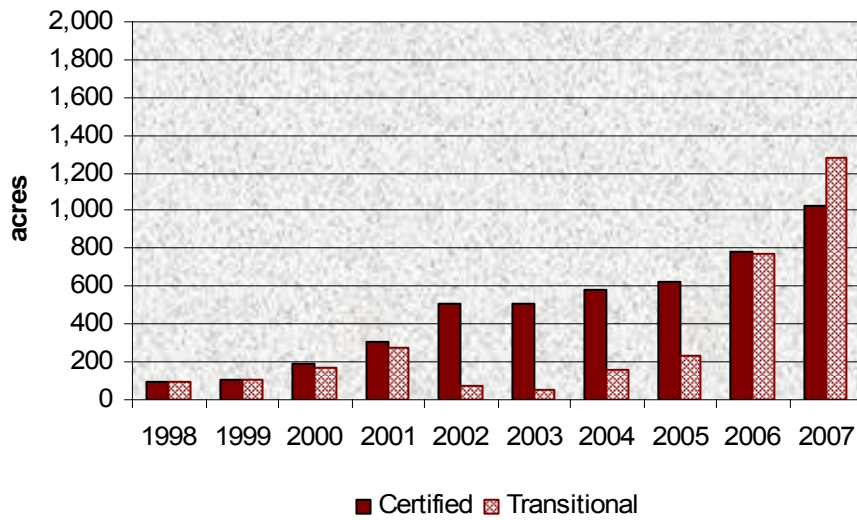
WSDA data through 2002; QAI values included beg. 2003 and OTCO data beg 2004.

Figure A2. Estimated organic pear acreage in Washington State.



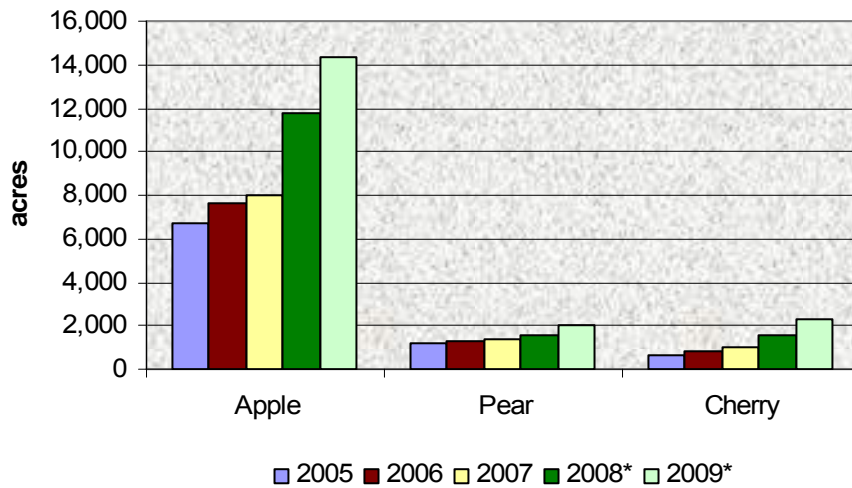
WSDA data through 2002; QAI values included beg. 2003 and OTCO data beg 2004.

Figure A3. Estimated organic cherry acreage, Washington State.



WSDA data through 2002; QAI values included beg. 2003 and OTCO data beg 2004

Figure A4. Estimated **projected** growth of certified tree fruit acres in Washington State.



WSDA, OTCO, QAI and WSU-Warehouse survey data

Figure A5. National organic apple production trend; total US, Washington, East and West.
 Combined data sets from WSU-CSANR and USDA-ERS

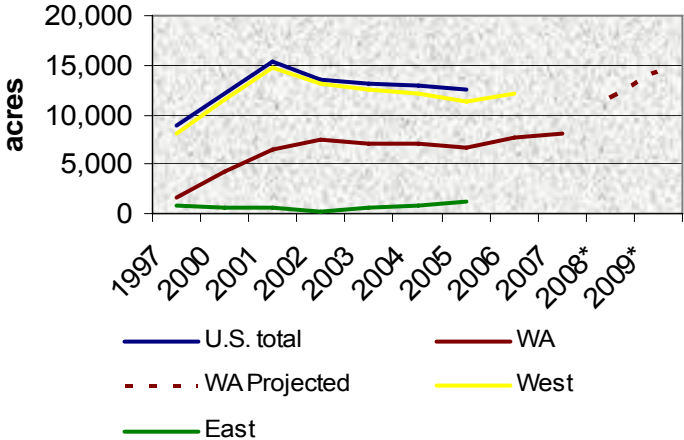


Figure A6. Estimated Washington State certified apple acreage by variety – 2007.
 WSDA, OTCO and QAI data

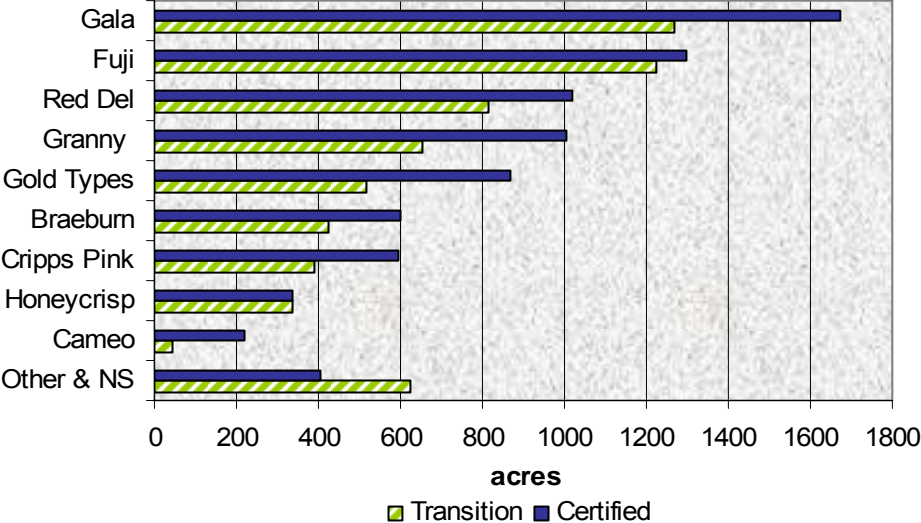
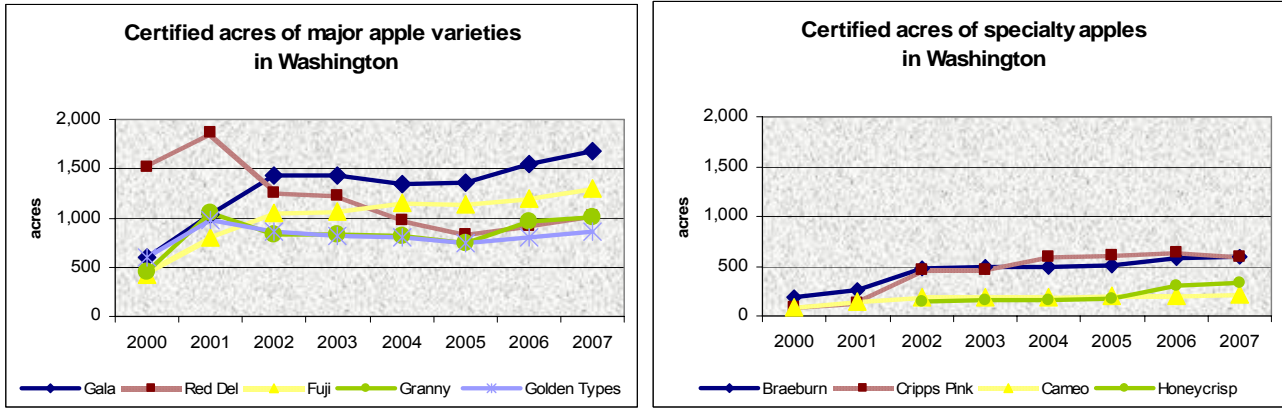


Figure A7. Organic apple variety trends in Washington State.



WSDA data through 2002; QAI values included beg. 2003 and OTCO data beg 2004.

Figure A8. Projected potential growth of organic apples by variety – Washington State. (WSDA, OTCO and QAI data)

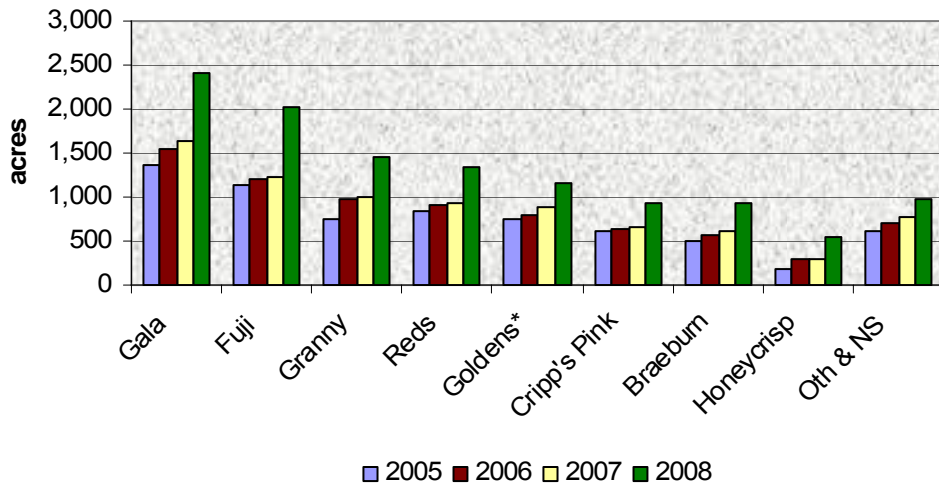


Figure A9. Estimated Washington State certified pear acreage by variety – 2007.
 (WSDA, OTCO and QAI data)

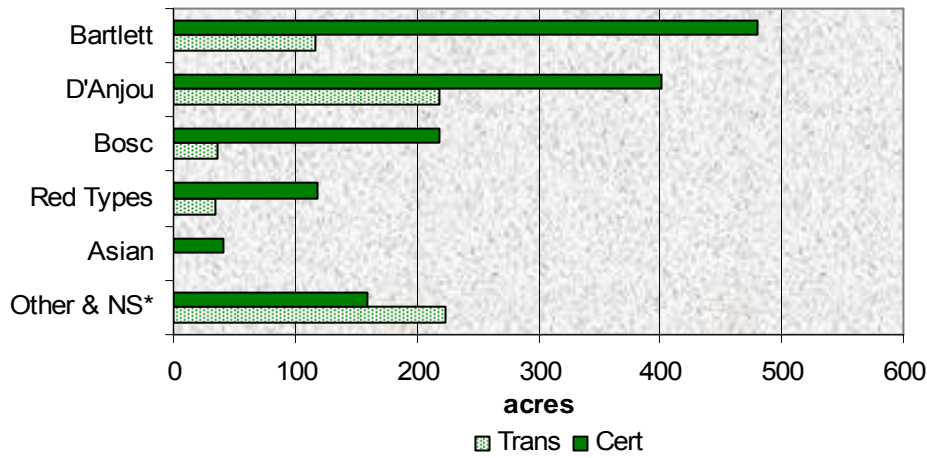


Figure A10. Washington State organic pear variety trends.
 (WSDA data through 2002; QAI values included beg. 2003 and OTCO data beg 2004. NS (not specified).
 Does not include Asian pear.)

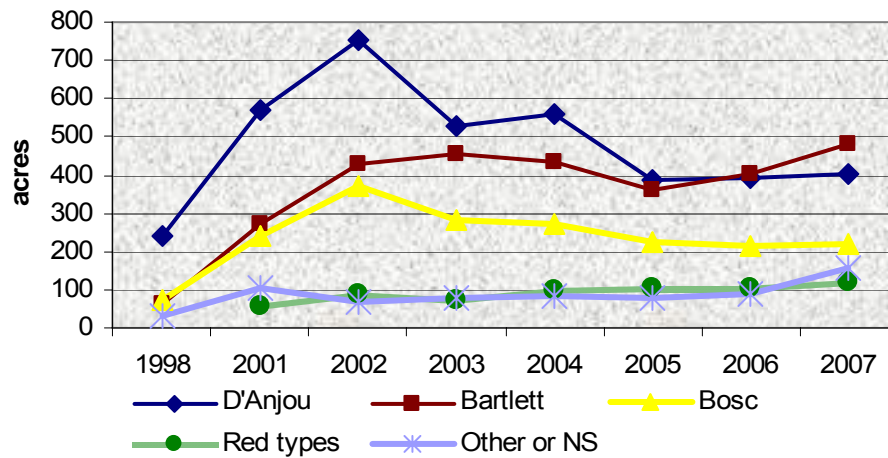
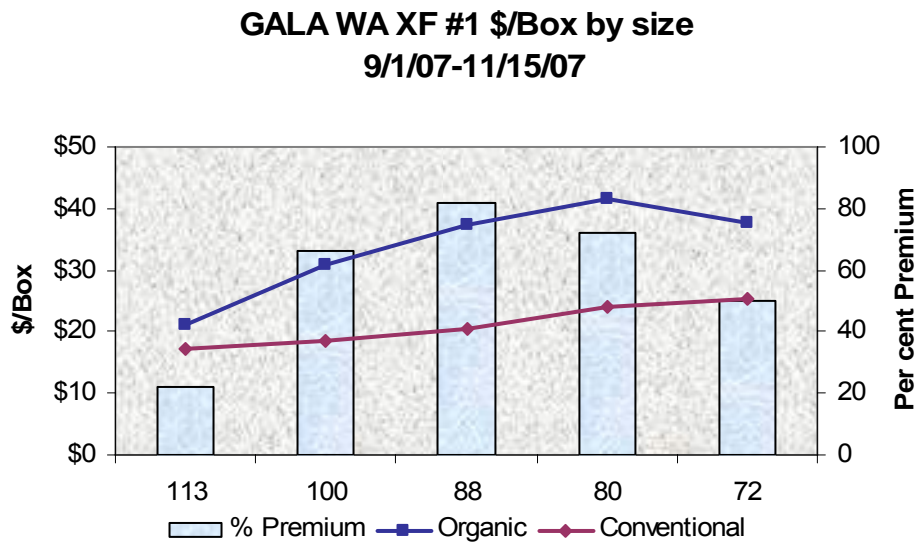


Figure A11. Organic and conventional Gala apple prices, by size – 2007



Washington Grower's Clearinghouse Association data; WA XF#1, regular storage, domestic

Appendix Tables

Table A1. Changes in estimated Washington certified organic tree fruit acreage.

Year	Apples (acres)	Annual Change (acres)	Annual Change %	Pears (ac)	Annual Change (acres)	Annual Change %	Soft fruit (ac)	Annual Change (acres)	Annual Change %
1988	109	--	--	29	--	--	36	--	--
1989	365	256	235	31	2	7	85	49	136
1990	1,632	1,267	347	164	133	429	269	184	216
1991	1,253	-379	-23	344	180	110	197	-72	-27
1992	930	-323	-26	336	-8	-2	173	-24	-12
1993	807	-123	-13	323	-13	-4	131	-42	-24
1994	849	42	5	339	16	5	161	30	23
1995	861	12	1	320	-19	-6	149	-12	-7
1996	1,115	254	30	361	41	13	163	14	9
1997	1,634	519	47	411	50	14	194	31	19
1998	1,809	175	11	449	38	9	208	14	7
1999	2,334	525	29	456	7	2	216	8	4
2000	4,228	1,894	81	619	163	36	385	169	78
2001	6,540	2,312	55	1,308	689	111	588	203	53
2002	7,054	514	8	1,771	470	36	899	311	53
2003	7,003	-51	-1	1,466	-305	-17	884	-15	-2
2004	7,049	46	0.7	1,509	43	3	910	26	2.9
2005	6,721	-328	-4.7	1,196	-313	-21	1,038	128	14.1
2006	7,642	921	13.7	1,251	55	4.6	1,217	179	17.2
2007	8,018	376	4.9	1,418	167	13.3	1,523	306	25.1

Values through 2002 include WSDA data only; QAI values included beginning 2003; OTCO data beg 2004.

Table A2. Estimated Washington organic apple acreage by county.

County	2001 (ac)		2003 (ac)		2004 (ac)		2005 (ac)		2006 (ac)		2007 (ac)	
	Cert	Trans	Cert	Trans	Cert	Trans	Cert	Trans	Cert	Trans	Cert	Trans
Grant	1,829	1,403	1,977	351	1,851	353	1,872	369	2,129	1876	2,299	2609
Yakima	1,321	774	1,425	46	1,310	61	1,179	110	1,452	651	1,542	684
Douglas	848	39	852	66	826	295	813	340	1,083	612	1,204	939
Okanogan	1,037	461	708	35	703	14	588	31	635	297	739	385
WallaWalla	464	-	424	-	436	106	421	106	511	10	511	50
Chelan	474	133	432	5	431	15	433	17	444	376	488	601
Franklin	109	502	521	95	664	-	626	-	564	113	407	525
Benton	432	91	396	125	561	-	521	-	437	21	399	104
Adams	-	-	233	-	217	-	217	138	336	145	378	393
Others	26	9	35	-	51	-	51	-	52	-	51	1
Totals	6,540	3,411	7,003	723	7,049	844	6,721	1,111	7,643	4,100	8,018	6,291

*Prior to 2003 only WSDA data included; QAI values included beg. 2003 and OTCO data beg 2004.

Some totals may not add exactly because of decimals.

Table A3. Estimated Washington organic pear acreage by county.

County	2001 (ac)		2002 (ac)		2004 (ac)		2005 (ac)		2006 (ac)		2007 (ac)	
	Cert	Trans	Cert	Trans	Cert	Trans	Cert	Trans	Cert	Trans	Cert	Trans
Okanogan	794	53	686	6	482	5	357	47	392	61	473	101
Chelan	258	301	575	21	567	111	409	112	383	28	376	104
Yakima	233	180	373	10	314	10	286	-	286	94	331	115
Douglas	-	-	21	-	13	75	12	75	58	75	105	29
Skamania	-	65	65	-	65	-	65	-	65	-	65	80
Grant	2	34	42	-	46	-	46	-	46	19	46	36
Other	21	9	15	-	22	-	21	-	22	-	19	1
Klickitat	-	-	-	-	-	-	-	-	-	-	3	164
Totals	1,308	642	1,777	37	1,509	201	1,196	234	1,252	276	1,418	630

*Prior to 2003 only WSDA data included; QAI values included beg. 2003 and OTCO data (0 ac) beg 2004.

Table A4. Estimated Washington organic cherry acreage by county.

County	2001 (ac)		2002 (ac)		2003 (ac)		2004 (ac)		2005 (ac)		2006 (ac)		2007 (ac)	
	Cert	Trans	Cert	Trans	Cert	Trans	Cert	Trans	Cert	Trans	Cert	Trans	Cert	Trans
Yakima	84	42	149	12	174	13	184	18	182	47	221	324	285	344
Chelan	32	42	65	12	56		95	12	103	14	153	23	160	390
Franklin	42	50	135		135		115		132	7	140	35	140	88
Grant	39	105	52	40	51	40	66	57	107	12	132	156	140	315
Douglas	37	16	43	3	43	3	58	71	39	71	62	64	115	81
Other			3		3		3		4	84	9	97	89	25
Okanogan	65	10	46	2	36	2	44		51		59	3	63	6
Benton		14	14		14		16		16		7	83	34	35
Totals	299	279	507	69	512	58	581	158	634	234	782	785	1,026	1,284

*Prior to 2003 only WSDA data included; QAI values included beg. 2003 and OTCO data (0 ac) beg 2004.

Table A5. Estimated area of organic apples in Europe, 2006

Europe	hectares	acres
Germany ¹	2,700	6,669
Italy ²	2,388	5,898
Great Britain ³	960	2,372
France ⁴	752	1,857
Austria ⁵	463	1,143
Switzerland ¹	367	906
Hungary ¹	250	618
Netherlands ¹	217	536
Belgium ¹	196	484
Denmark ¹	147	363
Norway ¹	64	158
Finland ¹	51	126
Sweden ¹	48	119

¹Zentrale Markt- und Preisberichtsstelle (ZMP) ²Italian Ministry of Agriculture and Forestry (MIPAF) ³UK Department for Environment, Food and Rural Affairs (Defra) ⁴AgenceBio ⁵Agrarmarkt Austria (AMA)

Table A6. Estimated organic tree fruit acreage in Germany (acres).

	2000	2001	2004	2006
Pip fruit	3,952	4,940	5,681	6,669
Stone fruit	988	1,359	1,235	988

ZMP data. Pip fruit is mainly apple; minor pear area. Stone fruit is mainly plum. Converted from ha; 1 ha=2.47 acres

Table A7. Estimated certified and transition tree fruit acreage in Italy (acres).

	2005		2006	
	Organic	Transition	Organic	Transition
Apple	4,125	412	5,898	1,173
Pear	1,759	412	3,125	363
Peach	3,176	1,393	5,278	2,035
Apricot	2,208	1,751	4,602	2,312
Cherry	2,050	2,112	3,964	3,243
Plum/Prune	566	351	1,326	546

Italian Ministry of Agriculture and Forestry (MIPAF) data www.sinab.it
 Converted from ha; 1 ha=2.47 acres

Table A8. Estimated organic tree fruit in the UK, 2006 (acres).

	Organic	Transition
Apple	2,372	124
Pear	228	5
Cherry	25	38

UK Department for Environment, Food and Rural Affairs (Defra) data

Table A9. Estimated certified organic tree fruit acreage in France (acres).

Crop	2004	2006
	Organic	Organic
Apple	3,428	1,857
Apricot	902	928
Peach	-	928
Pear	722	371
Plum	1,624	928
Total	6,675	5,013

AgenceBio data; Converted from ha; 1 ha=2.47 acres

Table A10. Estimated organic tree fruit acres in Austria (acres).

	2001	2004	2005	2007	% Growth (01-07)
Apple	736	914	924	1,143	55%
Pear	69	142	221	336	386%
Sweet cherry	20	26	61	58	195%
Sour cherry	30	39	0	0	--
Apricot	44	97	96	155	250%
Peach	25	31	34	44	78%
Plum	22	59	32	35	59%

Agrarmarkt Austria (AMA) Converted from ha; 1 ha=2.47 acres

Table A11. Estimated organic tree fruit acreage in Turkey (acres).

	# Farms	2006 Organic	2006 Transition
Apple	5,187	6,774	3,794
Pear	--	5,402	1,087
Apricot	359	5,252	3,599
Plum	--	5,184	921
Cherry, Sweet	--	924	493
Peach	--	189	184

Ministry of Agriculture and Rural Affairs (MARA), Turkey

Converted from ha; 1 ha=2.47 acres. May be some duplication of crop acreage in reporting system.

Table A12. Certified organic tree fruit acreage in Canada, 2005 (acres).

Province	Apples	Pears	Mixed Tree Fruit
Ontario	770	4	5
British Columbia	652	61	266
Nova Scotia	68	--	44
Quebec	37	--	--
New Brunswick	6	--	--
	1,536	65	315

Data: Canadian Organic Growers

Table A13. Estimated organic tree fruit acres in China.*

Crop	2001	2002	2003	2004	2005	2007
Apple	0	741	1,235	3,705	3,952	↓ ?
Pear	0	494	988	2,470	2,964	?
Peach	74	173	371	1,482	2,470	?
Almond**	247	741	1,235	2,470	4,940	?
Plum	0	99	371	494	494	?
Cherry	0	0	0	0	0	?

**Personal communication, Zhou Zejiang, Feb 2006; includes some acreage not certified by IFOAM or NOP accredited certifiers ** includes small apricot area. Converted from ha; 1 ha=2.47 acres*

Table A14. Estimated certified organic tree fruit area in New Zealand (acres).

	2000	2001	2007*
Apple	1,200	2,873	2,339
Pear	--	163	54
Cherry	--	26	12
Stone	--	161	53

Data: BioGro New Zealand Ltd; *2007 data includes both organic and transition area

Table A15. Organic tree fruit area in Australia, 2005 (acres).

	# Farms	Certified acres
Apple	10	371
Pear	8	296
Cherry	5	124
Peach	10	247
Nectarine	5	247
Apricot	3	124
Plum	6	185

Data: Biological Farmers of Australia

Table A16. Estimated certified tree fruit acreage in Argentina (acres).

	2004	2006	% change	Trans.
Apple	1,897	2,146	13%	494
Pear	2,845	2,727	-4%	618
Plum	50	988	~19x increase	--
Peach	50	--	--	--
Cherry	15	--	--	--

Data: SENASA, E. Sanchez, personal comm.; transition acres estimated for 2006 crop year

Table A17. Argentine organic fruit exports, 2006.

Export	Tons	%	05-06 % increase
Pear	16,575	61%	37%
Apple	10,000	37%	35%
Plum	798	3%	51%
Cherry	31	0.1%	--
	27,404		

Data: SENASA

Table A18. Estimated organic tree fruit area in Chile (acres).

	1999	2003
Apple	358	1,282
Pear	25	82
Cherry	12	348
Plum	49	143

Sanchez, personal comm.

Table A19. International data source organizations.

Country	Acronym	Organization
Argentina	SENASA	Servicio Nacional de Sanidad y Calidad Agroalimentaria
Australia	ACO	Australian Certified Organic
"	BFA	Biological Farmers of Australia
Austria	AMA	Agrarmarkt Austria
"	BMLF	Federal Ministry for Agriculture and Forestry
Canada	COG	Canadian Organic Growers
France		AgenceBio
Germany,		Zentrale Markt- und Preisberichtsstelle für Erzeugnisse der Land-, Forst-
European Union	ZMP	und Ernährungswirtschaft
Italy	MiPAF	Italian Ministry of Agriculture and Forestry
"	ISMEA	Instituto di Servizi per il Mercato Agricolo Alimentare
"	FIAO	Federazione Italiana Agricoltura Organica
NZ		BioGro New Zealand Ltd
Turkey	MARA	Ministry of Agriculture and Rural Affairs, Turkey
UK	DEFRA	Department for Environment, Food and Rural Affairs
US		Colorado Department of Agriculture, Organic Program
"	CDFA	California Department of Food and Agriculture, Organic Program
"	OTCO	Oregon Tilth Certified Organic
"	USDA-ERS	US Department of Agriculture - Economic Research Service
"	USDA-FAS	US Department of Agriculture - Foreign Agriculture Service
"	WSDA-OFP	Washington State Department of Agriculture Organic Food Program

Personal communication sources not listed in this table

Table A20. Price premium for organic apples in Washington State.

Variety	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	to 11/1/07
Red Delicious	\$13.39	\$9.20	\$7.65	\$4.02	\$6.27	\$4.66	\$7.86	\$6.14	\$7.71	\$6.85	\$9.25
Golden Delicious	\$17.19	\$8.53	\$13.40	\$2.25	\$3.96	\$5.73	\$6.73	\$4.95	\$10.08	\$8.22	\$9.57
Granny Smith	\$11.96	\$6.93	\$8.19	\$9.42	\$4.19	\$4.25	\$4.48	\$7.92	\$6.81	\$8.52	\$11.42
Fuji	\$7.75	\$9.42	\$10.53	\$6.30	\$3.13	\$5.85	\$6.42	\$5.42	\$8.98	\$11.20	\$11.86
Gala	\$10.35	\$9.76	\$13.97	\$6.86	\$3.58	\$3.38	\$5.10	\$6.20	\$8.00	\$9.71	\$11.60
Braeburn	\$9.27	\$9.87	\$9.65	\$7.17	\$4.77	\$6.03	\$8.62	\$7.15	\$9.35	\$8.81	\$8.90
Jonagold	\$11.34	\$0	\$8.95	\$2.14	\$2.39	\$0	\$1.53	\$3.02	\$4.00	\$7.58	\$6.20
Cameo	-	\$0.30	\$11.26	\$6.62	\$4.06	\$6.54	\$10.27	\$8.21	\$10.47	\$9.24	\$9.86
Cripps Pink	-	\$1.59	\$0	\$15.08	\$11.57	\$11.33	\$9.11	\$4.53	\$6.15	*\$1.23	\$7.12
Average	\$11.61	\$6.18	\$9.29	\$6.65	\$4.88	\$5.31	\$6.68	\$5.95	\$7.95	\$7.93	\$9.53

*Data from Washington Growers Clearing House Association; All grades & sizes, CA and regular storage. Season end averages and to season 11/1/07. * Cripps Pink conventional price 2006 season was up more than \$5/box from 2005 season.*

Table A21. Price premium for organic apples as a percent difference from conventional prices in Washington State.

Variety	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	11/1/07
Red Delicious	40%	111%	98%	64%	40%	50%	38%	52%	55%	53%	43%	57%
Golden Delicious	120%	112%	76%	90%	16%	23%	36%	36%	39%	66%	37%	43%
Granny Smith	81%	76%	46%	50%	58%	27%	24%	23%	54%	40%	49%	64%
Fuji	54%	45%	63%	56%	50%	18%	29%	30%	35%	47%	51%	48%
Gala	41%	48%	62%	84%	50%	21%	19%	26%	42%	48%	45%	57%
Braeburn	65%	55%	64%	52%	52%	27%	32%	46%	52%	57%	47%	41%
Jonagold	80%	70%	0%	57%	16%	15%	0%	8%	20%	23%	39%	29%
Cameo			1%	56%	45%	23%	37%	55%	55%	60%	47%	47%
Cripps Pink			7%	0%	91%	57%	44%	41%	25%	28%	*4%	21%
Average	69%	74%	46%	57%	47%	29%	29%	35%	42%	47%	40%	45%

Data from Washington Growers Clearing House Association; All grades & sizes, CA and regular storage. Season end averages and to season to 11/1/07. * Cripps Pink conventional price 2006 season was up more than \$5/box from 2005 season.

Table A22. Price premium for organic pears in Washington State.

Variety	1998	1999	2000	2001	2002	2003	2004	2005	2006	to 11/15/07
Bartlett	\$9.09	\$13.55	\$7.61	\$5.43	\$3.42	\$4.14	\$5.01	\$5.65	\$16.29	\$15.93
Red Bartlett	\$11.69	\$0	\$5.78	\$0	\$3.03	\$2.91	\$4.47	\$5.33	\$10.40	\$9.93
D'Anjou	\$16.17	\$11.81	\$12.05	\$2.20	\$3.19	\$3.50	\$1.32	\$8.47	\$11.41	\$15.50
Red D'Anjou	--	\$3.37	\$10.28	\$2.82	\$0.75	\$1.95	\$9.49	\$13.60	\$13.54	\$21.22
Bosc	\$21.47	\$18.20	\$9.05	\$2.51	\$4.07	\$3.01	\$8.42	\$6.31	\$12.30	14.63
Average	\$12.32	\$8.00	\$8.48	\$2.37	\$3.21	\$3.10	\$5.74	\$7.87	\$12.79	\$15.44

Data from Washington Growers Clearing House Association; All grades & sizes, CA and regular storage. Season end averages and to season 11/15/07.

Table A23. Price premiums for organic pears as a percent difference from conventional prices in Washington State.

Variety	1998	1999	2000	2001	2002	2003	2004	2005	2006	to 11/15/07
Bartlett	52%	89%	54%	33%	19%	26%	29%	30%	81%	90%
Red Bartlett	61%	0%	33%	0%	15%	14%	23%	22%	42%	41%
D'Anjou	115%	85%	96%	17%	23%	24%	8%	53%	54%	84%
Red D'Anjou	--	15%	58%	16%	4%	10%	48%	61%	55%	93%
Bosc	133%	110%	57%	19%	23%	19%	51%	35%	67%	66%
Average	90%	58%	60%	17%	17%	19%	32%	40%	60%	75%

Data from Washington Growers Clearing House Association; All grades & sizes, CA and regular storage. Season end averages and to season 11/15/07.