

Measuring the Apple Industry from the 2002 Census of Agriculture

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According to the latest Census of Agriculture the grower community continues to shrink. The really tough prices in the late 1990's have taken a serious toll on grower numbers and acreage. Revised numbers for 1997 indicate that there were 4,910 growers producing apples on 215,464 acres in Washington. The National Agricultural Statistics Service (NASS) originally reported in 1997 that there were 4,207 growers with 204,674 acres of apples. The revised figures are the result of a major effort on the part of NASS to build a more complete list of producers, by 2002, for the entire country.

The census is now indicating that the Washington apple industry lost 21% of the growers and 20% of the acreage that existed in 1997. Grower numbers, and acreage by size of orchards, declined in all size categories, as can be seen in tables 1 and 2. Based on the new census, 1,040 apple orchard operations ceased to exist between 1997 and 2002. In addition, 42,654 acres of apple orchard were removed.

Proportionally, the bigger reductions in grower numbers occurred among the smallest and the larger operations. Orchards with 50 to 100 acres of apples declined 30% in just 5 years and 26% of the orchards with 100 or more acres disappeared. If we view the numbers from a "mixed" perspective it can be seen that 59% of the growers who left the industry had less than 25 acres. At the same time 77% of the acreage that was removed was located in orchards with 50 or more acres.

While both grower numbers and acreage fell there was little change in the proportion of growers controlling the bulk of the acreage. In 1997 9% of the growers controlled 60% of the acreage. Now that 9% have 63% of the acreage. The 20/80 rule of thumb that is often cited continues to hold in the case of apples as 18% of the growers have 78% of the acreage. In 1997 20% of the growers had 78% of the acreage.

Table 3 provides a closer look at the largest operations in the industry – those over 100 acres in size. The largest orchards (over 50 ac.) did not decline in numbers or proportionally as rapidly as the smaller operations. Orchards with 100-250 acres fell in number by 32% and their total acreage fell by 35%. The largest operations are down in number by 7.4%, but total acreage only declined by 2.6%

While consolidation seemed to be the "name of the game" among warehouses and sales agencies in recent years the numbers in this census suggest a battle for survival with the larger operations being relatively more successful.

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One obvious question regarding the disappearance of 42,653 acres of apple orchard is whether those acres were planted to another fruit. Table 4 lists the acres of the different tree fruits reported by growers in Washington. Sweet cherries (11,897 ac. increase), grapes (19,498 ac. increase), and pears (3,048 ac. increase), combined, account for 34,443 acres of the 42,653 acres or 80%.

Another way to view the industry is on the basis of sales. As a general rule it appears to this observer that sales of at least \$500,000 are needed to generate enough income to support a farm household without outside income. On that basis only 525 orchardists (13.5% of all apple growers) don't require outside sources of revenue.

Table 5 shows the distribution of apple orchards by the dollar value of sales. It is difficult to talk about changes between 1997 and 2002 as no adjustments have been applied to these data to reflect the larger number of growers thought to have been growing apples in 1997.

Table 6 shows orchards by type of organization. The industry in Washington continues to be centered on the family. Over 71% of the operations are owned by individuals or families. If we add in family corporations the proportion increases to 86%. Nonfamily corporations, trusts, estates, and cooperatives represent only 2.48% of all operations and control only 8.5% of the acreage. If one accepts the possibility that the 1997 numbers for nonfamily corporations, trusts, estates, cooperatives, etc. as reasonably close to the true numbers, then the portion of the orchards under their control declined regardless of the total acreage figure in 1997. The proportion of acreage in the control of that group has declined from either 13.5% (215,464) or 11% (204,674) to the current 8.5%.

The other characterization of growers offered here is by age and occupation. First, average age of apple orchardists in Washington continues to increase as it reached 55.1 years in 2002, up from 53.8 years in 1997. In fact, almost half of the orchardists (49.3%) are 55 or older and nearly 25% are 65 or older. Table 7 shows the number of producers by age and by whether or not farming is their principal occupation. Also shown is the total acreage owned by the people in each age group.

Those growers who do not consider farming to be their primary occupation represent about 27% of the growers and have 15% of the acreage. Conversely, those growers who consider farming to be their primary occupation represent 73% of all growers and farm 85% of the acreage.

Ignoring the farming/nonfarming distinction, it is interesting to note that, in 2002, 48.5% of the acreage was farmed by the 49.3% of the growers who were 55 or older. Essentially half of the acreage is in the hands of growers who have reached retirement age or will do so in the not too far distant future.

Table 8 contains county and region data on apple grower numbers and acres of apple orchard in each county/region. Since the 1997 numbers are based on the original

census report it is not possible to determine if any county acreage increased. For example, Grant County acreage appears to have increased. However, since the number of acres in 1997 is now thought to be 215,464 rather than the 204,674 shown here it is possible that Grant County may have lost apple acreage also. Probably the most interesting information in table 8 is the change in acreage in Benton, Okanogan, and Yakima Counties. Using the original 1997 numbers apple acreage in those 3 counties each declined 26%-29%. In general terms during that 5 year period from 1997 to 2002 one acre out of every 5 acres of apple orchard was removed.

The bottom part of table 8 combines some of the county data into regional groupings to better show geographic changes (or lack of change). NCW includes Chelan, Douglas, and Okanogan counties. North Basin contains the data for Grant and Adams, So. Basin includes Benton, Franklin, and Walla County data. The "Other" category combines the remaining entries.

Because of the tough times faced by the apple industry in recent years and the immediately obvious tree removal activities that have been undertaken there is a temptation to draw the conclusion that agriculture is declining.

After apple trees are removed, other crops, including houses, can be planted. The census report allows us to look at change a bit more broadly than just apple orchards. The census report shows, by county, the total acreage in orchards, tree nuts and vineyards. Table 9 shows the 2002 acreage and farm numbers as well as the adjusted 1997 acreage and farm numbers.

When viewed from this perspective one starts to get a different impression of agriculture in these counties. It has been assumed by some people that production agriculture is on the decline in Chelan County. These data suggest otherwise. While apple acreage has declined, that decline has been more than offset by the planting of other fruits and vines. On the other hand Yakima County has seen a shift of over 15,000 acres out of orchards, tree nuts, and vineyards. While it can't be inferred from this that this land has been taken out of production, Yakima County did lose about 45,000 acres of harvested cropland between 1997 and 2002.

Okanogan County was the only other major growing area to suffer a significant loss of acreage.

Sweet cherries and vineyards were major acreage contributors in those counties with increased acreage. For example, half of the increase in Grant County acreage can be attributed to an increase in vineyards.

In the final analysis the hard times of the late 1990's are reflected in the latest census numbers. There has been a rapid exodus of growers. Acreage has shrunk even more than expected. The industry has not attracted many new young producers. At the same time the evidence suggests that growers are diversifying to minimize the

effects of low returns to one crop or another and, so, agriculture continues to be an important activity throughout the fruit growing districts.

Table 1: Number of Apple Orchards by Acres of Orchard – Washington.

	1992	1997	2002
	Number of Farms		
Less than 5 ac	1,380	1,554	1,250
5-25 ac	1,698	1,643	1,338
25-50 ac	729	718	571
50-100 ac	449	541	376
More than 100 ac	340	454	335
Total	4,596	4,910	3,870
	%	%	%
Over 50/Total	17	20	18
Over 100/Total	7	9	9
Less than 25/Total	67	65	67

Data taken from various censi.

Table 2: Total Acres by Size of Orchard

	1992	1997	2002
	Number of Acres		
Less than 5 ac	2,501	2,819	1,999
5-25 ac	21,163	20,531	16,494
25-50 ac	25,216	24,846	19,827
50-100 ac	30,382	37,205	26,102
More than 100 ac	89,846	130,063	108,388
Total	169,108	215,464	172,810
	%	%	%
Over 50/Total	71	78	78
Over 100/Total	53	60	63
Less than 25/Total	14	11	11

Data taken from various censi.

Table 3: Size of Apple Orchard by Acres Harvested: Large Operations.

	1992		1997		2002	
Size in Acres	Farms	Acres	Farms	Acres	Farms	Acres
100-250	248	37,192	326	49,802	221	32,238
250-500	54	18,155	74	24,270	64	21,615
More than 500	38	34,499	54	55,991	50	54,535
% of Total	7.4	53.1	9.3	60.4	8.7	62.7

Source: Op. Cit., Table 1.

Source: Op. Cit., Table 43.

Table 4: Fruit Acreage in Washington

	1997		2002	
	Farms	Acres	Farms	Acres
Apples	4,910	215,463	3,870	172,810
Apricots	325	1,379	283	1,205
Sweet Cherries	2,109	22,938	2,432	34,835
Tart Cherries	231	1,475	168	2,111
Figs	D	D	5	1
Grapes	966	43,017	1,199	62,515
Kiwifruit	21	8	30	20
Nectarines	183	1,237	217	1,530
Peaches	447	3,007	406	3,359
Pears, Bartlett	NA	NA	1,485	13,529
Pears, Other	NA	NA	1,409	17,450
Pears, All	2,001	27,931	1,862	30,979
Persimmons	NA	NA	9	5
Plums and Prunes	280	830	317	1,034
Total Acres		317,285		310,404

Source: Taken from 2002 Census of Agriculture, Washington, Vol. 1, Part 47, Table 31.

Table 5: Apple Orchards by Market Value of Crop Sold, 1997, 2002.

	1997			2002		
	Number of Farms	Acres	Ave. Size	Number of Farms	Acres	Ave. Size
Less than \$5,000	828	6,419	7.8	487	1,736	3.6
5,000 - 10,000	223	1,694	7.6	283	614	2.2
10,000 - 25,000	378	3,288	8.7	430	2,173	5.1
25,000 - 50,000	408	5,225	12.8	471	4,282	9.1
50,000 - 100,000	522	10,420	20.0	484	7,953	16.4
100,000 - 500,000	1,243	52,421	42.2	1,190	44,683	37.5
500,000 - 1,000,000	322	32,458	100.8	278	23,365	84.0
More than \$1,000,000	283	92,749	327.7	247	88,006	356.3
Total	4,207	204,674		3,870	172,812	

Source: Op. Cit., Table 1.

Source: 1997 Census of Agriculture, Washington, Table 50.

Source: 2002 Census of Agriculture, Washington, Table 56.

Table 6: Apple Orchards by Type of Organization.

	1992		1997		2002	
	Number of Farms	Acres	Number of Farms	Acres	Number of Farms	Acres
Individual or Family	3,422	73,398	2,896	70,041	2,766	59,999
Partnership	566	32,601	573	44,851	445	36,414
Corporation; Family	492	44,306	605	66,003	563	61,685
Nonfamily	85	15,944	96	20,541	57	10,563
Trust, Estate, Cooperative, Etc.	31	2,856	37	3,239	39	4,149
Total	4,596	169,107	4,207	204,675	3,870	172,810

Source: Op. Cit., Table 1.

Source: 1997 Census of Agriculture, Washington, Table 47.

Source: 2002 Census of Agriculture, Washington, Table 58.

Table 7: Summary of Orchardist by Age and Principal Occupation, 1997 and 2002.

	1997				2002			
	Farming		Non-Farming		Farming		Non-Farming	
	Number of Farms	Acres	Number of Farms	Acres	Number of Farms	Acres	Number of Farms	Acres
Under 25	6	548	2	D	8	151	0	0
25 - 34	122	6,609	78	D	94	5,407	31	645
35 - 44	563	38,771	335	6,217	423	19,423	173	2,053
45 - 54	710	51,208	517	10,024	900	54,624	387	6,577
55 - 64	705	41,169	332	5,297	697	43,357	327	10,900
65 and over	659	35,652	178	7,994	690	24,619	140	5,053
Totals	2,765	173,957	1,442	29,532	2,812	147,581	1,058	25,230

D not reported to avoid disclosure of individual operations.

Source: 1997 Census of Agriculture, Washington, Table 48.

Source: 2002 Census of Agriculture, Washington, Table 60.

Table 8: Acreage and Number of Orchards by County, 1992, 1997 and 2002.

	1992			1997			2002		
	NO.	ACRES	AVE.	NO.	ACRES	AVE.	NO.	ACRES	AVE.
ADAMS	28	2247	80.3	43	3457	80.4	42	3524	83.9
BENTON	211	10746	50.9	218	18425	84.5	214	13118	61.3
CHELAN	826	17825	21.6	690	17096	24.8	558	14195	25.4
DOUGLAS	411	14126	34.4	353	14383	40.7	284	12490	44.0
FRANKLIN	121	5347	44.2	161	9000	55.9	151	9093	60.2
GRANT	243	24154	99.4	318	33615	105.7	287	36480	127.1
KITTITAS	42	1095	26.1	39	1859	47.7	34	495	14.6
KLICKITAT	22	305	13.9	27	516	19.1	33	1171	35.5
OKANOGAN	631	25395	40.2	503	24164	48.0	448	17752	39.6
SPOKANE	63	453	7.2	44	227	5.2	74	574	7.8
WALLA WALLA	23	4042	175.7	22	5222	237.4	31	8489	273.8
YAKIMA	1454	61910	42.6	1334	75264	56.4	1100	54036	49.1
OTHER	521	1462	2.8	455	1446	3.2	614	1393	2.3
TOTAL	4596	169107	36.8	4207	204674	48.7	3870	172810	44.7

	1992			1997			2002		
	NO.	ACRES	AVE.	NO.	ACRES	AVE.	NO.	ACRES	AVE.
NCW	1868	57346	30.70	1546	55643	36.0	1290	44437	34.4
YAKIMA	1454	61910	42.58	1334	75264	56.4	1100	54036	49.1
NO. BASIN	271	26401	97.42	361	37072	102.7	329	40004	121.6
SO. BASIN	332	20135	60.65	379	32647	86.1	365	30700	84.1
OTHER	648	3315	5.12	565	4048	7.2	755	3633	4.8

Source: Agricultural Census.

Table 9: Land in Orchards, Tree Nuts and Vineyards, by Selected County, 1997 vs. 2002.

	Farms		Acres	
	1997	2002	1997	2002
State	6781	6108	318256	311194
Adams	49	42	3840	3963
Benton	455	425	40245	41765
Chelan	1126	1011	30892	32621
Douglas	605	501	18861	16764
Franklin	270	224	15523	16614
Grant	432	370	44490	50260
Klickitat	77	85	2803	6603
Okanogan	661	548	30620	24819
Walla Walla	53	94	8420	12624
Yakima	2114	1809	115638	99834

Source: Op. Cit., Table 1.

Source: 1997 Census of Agriculture, Washington, Table 50.

Source: 2002 Census of Agriculture, Washington, Table 56.