

Fruit Acreage Survey Specifications

The specifications for the Fruit Acreage Survey were developed considering the 1986 survey as a starting reference. A major objective for the 1993 survey was to publish data that corresponded to the official estimates for bearing acres. Official estimates are not available for total acres or tree inventories, so this was incorporated into the specifications as an unofficial target. Funding and resources were a prime consideration in designing this survey.

The Fruit Acreage Survey was designed as a multiple frame survey using a list of fruit operations as a sampling universe, including an allowance from the June Area Frame survey to represent orchards not on the list. The list of orchards and vineyards was stratified into small, medium, and large. To insure coverage of each fruit, the large stratum was defined to include operations according to the acreage of individual fruit, and a target coverage of at least half of the state's total for each fruit. The large stratum included any operations meeting one of the following criteria: 100 acres of apples or grapes; 50 acres of pears; 20 acres of sweet cherries or peaches; 10 acres of apricots or prunes; or any tart cherries or nectarines. This procedure resulted in 600 fruit operations being in the large stratum.

The small stratum was sampled at 50 percent. There were about 1,600 small operations on the list of which 800 were surveyed by mail. There were 1,500 medium size operations on the list and all of them were included in the survey. An expansion of the fruit acreage from the area frame (accounting for acreage not represented by the list) accounted for about 20 percent of the state's total acreage.

Data collection started June 14 with the mail phase. Telephone follow up and personal interviews of medium and large operations started July 12. Data collection was completed October 1.

Summarization of Data

Questionnaires received from growers were reviewed for completeness and key entered in the computer. Data for the entire operation were checked and summarized to a state total. More detailed information was requested for each block that identified the variety, rootstock (for apples), year planted or topworked, spacing pattern, and acres and total trees in each block. The grower also identified the specific county where the block was located so multiple counties could be reported in the same questionnaire. This detailed information was used to adjust the total information for the operation.

Some operations reported only the total acreage of each fruit and not the detailed block information. The totals were adjusted proportionally to the reported block data. The reference date was January 1, 1993, so plantings made during 1993 were not to be included. Data for 1993 plantings were deleted from the summary.

Operations that could not provide data during the survey period were handled according to their stratum. Reports for the small stratum were expanded to account for all fruit growers in this stratum (approximate expansion factor of 6.5). Data from medium stratum fruit growers were also expanded (approximately 1.25) to account for the nonreporting operations. Data were inputted for nonreporting large operations. The small operations accounted for 7 percent of the state's total fruit acreage, mediums accounted for 35 percent, and large accounted for 58 percent.

Bearing age was a major objective of the survey. Bearing age is a function of many factors including the variety, rootstock, and year planted or topworked. The table illustrates the range of years that was used to classify the

survey data as bearing age. The rootstock (standard, semi-dwarf, or dwarf for apples) is not shown in the table, but was a factor which is somewhat reflective of the tree density. The detailed data from the block were used to provide an adjustment of those orchards who reported only total acreage by fruit.

About two-thirds of the state's total acreage was reported in the survey and about half of the state total was reported in the detailed block data. Coverage of each fruit varied, but this amount of raw data provides a very sound basis to estimate the totals. Estimates were rounded to allow representation wherever possible such that the sum of the estimates added to the state total.

Data published from this survey were made in two publications. A four-page release was issued November 29 showing the total and bearing age estimates for all fruit. State and district estimates were included in this preliminary report, plus some detailed information for apples. The final report will include more information for each fruit, including the variety and year planted for acres and trees. The preliminary report was sent to news media and any grower who requested a copy of the survey results. Distribution of the final report will be complimentary and by request.

A copy of the questionnaire, the supplement, partial listing of fruit varieties, and the spacing table used for the survey are shown in appendix A.

Years for Trees to Reach Bearing Age, by Fruit, Tree Density, and Planted or Topworked

Fruit and Variety	Trees per Acre							
	Less than 300		300 to 499		500 to 799		800 +	
	Planted	Topworked	Planted	Topworked	Planted	Topworked	Planted	Topworked
Apples								
Red Delicious	5	5	4-5	4	4-5	4	3	2-3
Braeburn	3-4	3-4	3-4	3	3	3	3	2-3
Criterion	3-4	3-4	3-4	3	3	3	3	2-3
Fuji	3-4	3-4	3-4	3	3	3	3	2-3
Gala	3-4	3-4	3-4	3	3	3	3	2-3
Golden Delicious	5	4	3-4	3	3	3	3	2-3
Granny Smith	3-4	3-4	3-4	3	3	3	3	2-3
Jonagold	3-4	3-4	3-4	3-4	3	3	3	2-3
Jonathon	4-5	3-4	3-4	3-4	3	3	3	2-3
Rome Beauty	4-5	4	3-4	3-4	3	3	3	2-3
Apricots		4		4		4		4
Cherries, Sweet		5		4		4		4
Cherries, Tart		4		3		3		2
Nectarines		4		3		3		3
Peaches		4		3		3		3
Pears		6		6		6		6
Plums/Prunes		4		4		4		4
Grapes		-		3		3		3

The bearing age for each fruit was determined on a block basis. Apple bearing age was calculated as a function of density, rootstock, and if the acreage were planted or topworked. Rootstock and topworked was not requested for the other fruit.