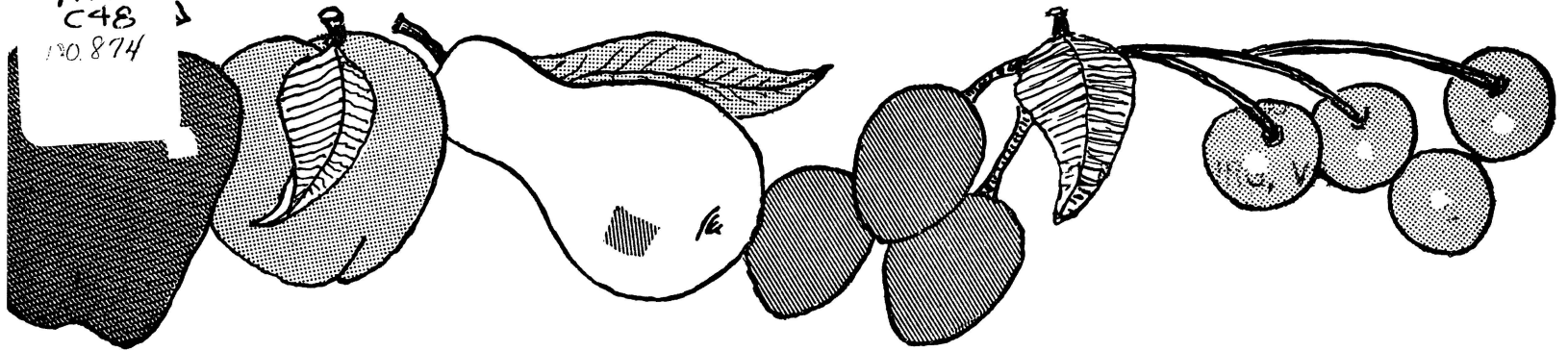


LD
5655
A761
C48
180.874



THINNING PEACHES

By

E. L. Phillips, *Associate Horticulturist*

Stationed at Piedmont Fruit Research Laboratory, Charlottesville, Va.

Circular 874

Revised February 1965

The value of thinning peaches has been known for centuries and has been encouraged as a commercial practice since the early 1800's. It is only in comparatively recent years, however, that it has become a standard practice among commercial fruit growers.

Although an expensive operation in many orchards, thinning is essential for the production of attractive, high-quality peaches of a size acceptable on a highly competitive market.

Experimental results have shown that thinning not only allows for an increase in size of fruits remaining on the tree, but it improves fruit color and quality, reduces limb breakage, and promotes general tree vigor. It also permits more thorough spraying or dusting for effective disease and insect control.

When To Thin

The time of thinning peaches has considerable influence on ultimate fruit size and time of ripening. Table 1 summarizes results of research in

TABLE 1.—Effect of Time of Thinning and Spacing on Size of Fruits of 3 Early-Maturing Peach Varieties.
(Percent fruits $2\frac{1}{4}$ " and up)

Spacing in inches	Time of thinning in weeks after bloom												Unthinned check		
	0			2			4			8					
	C	D	R	C	D	R	C	D	R	C	D	R	C	D	R
4	70	69	73	67	65	63	56	55	54	23	20	25	4	5	4
6	93	95	91	88	90	91	67	70	65	55	55	51			
8	96	95	93	94	92	90	83	80	78	58	55	50			
1 fruit per terminal	98	99	99	98	96	98	95	95	92	95	93	90			

C — Cardinal
D — Dixired
R — Redhaven

Virginia showing the value of early thinning to obtain fruit of marketable size.

Weather conditions, particularly frost hazards, should be considered in determining when to thin, and the amount of thinning to be done. Many growers have found an advantage in partially thinning heavy-setting varieties early and completing the job after the danger of frost is past.

It is a good practice to thin peaches according to the ripening sequence—beginning with the earliest and finishing with the later-maturing varieties. Early-maturing varieties have a much shorter period of fruit development than do Elberta and other later-ripening varieties, and consequently must be thinned very early for the greatest benefit. In fact, it is doubtful that final size of fruits of any variety will be greatly increased by thinning if it is delayed much after the pits begin to harden. This is especially true if a period of dry weather prevails during the early part of the growing season and at the time of harvest.

How Much To Thin

The amount of thinning to be done or the number of peaches to be removed from a tree is largely dependent upon the size of the tree and its bearing capacity. Tree vigor, variety, and availability of adequate nutrients and soil moisture throughout the growing season are also factors to be considered in spacing fruits on the tree.

Six to eight inches between fruits is usually recommended. There are varietal differences in the ability of peaches to size properly under close spacing, and varieties that tend to be small or those ripening early in the season should be thinned more heavily. The advantage of early thinning with wide spacing is borne out by the data in Table 1.

In many cases it is better to thin according to leaf area and bearing capacity and not according to a fixed spacing. It takes about 40 healthy, green leaves to produce a peach of good size. Estimate the number of bushels of fruit the tree should be able to support, consider the size of the fruit you want to produce, and thin accordingly. The figures in Table 2 should be helpful in determining your fruit spacing.

Table 2—Size of Peaches and the Number per Bushel.

Diameter in inches	Peaches per bushel
2	380
2 $\frac{7}{8}$	315
2 $\frac{3}{4}$	280
2 $\frac{5}{8}$	225
2 $\frac{1}{2}$	190
2 $\frac{5}{8}$	165
2 $\frac{3}{4}$	145
3	110

How To Thin

Numerous methods of thinning have been tried. Some growers combine thinning and pruning in one operation by delaying much of the detailed pruning until blossoming time when crop prospects can be more easily determined.

Heavy-setting varieties, like Redhaven, can be partially thinned by use of a brush or even a gloved finger moved rapidly along the underside of the twigs to dislodge open blossoms.

Another quite successful but little used method is to knock the blossoms off with a stream of water, using an orchard sprayer with a wide-open spray gun under 400 to 500 lbs. pressure. In each case it is necessary to follow later with hand thinning to complete the job.

Hand thinning is a slow, tedious, and expensive method of removing excess fruits. It should be started as soon as practical after bloom and be completed before the pits begin to harden. When thinning by hand, the stem of the fruit is grasped firmly between the thumb and forefinger and the fruit snapped off by a quick motion of the second and third finger.

Pole thinning is the method used by many growers. This system is not new, having been used frequently during World War II when labor was scarce. Pole thinning greatly reduces both the time necessary to do the job and the cost.

The tool most frequently used in pole thinning consists of a 4' or 5' section of bamboo or other light wood with a piece of $\frac{3}{4}$ " garden or spray hose about 15" long forced tightly onto the end of the pole, leaving some 8" to 10" of the hose extending beyond the end of the pole. A snug

fit is necessary so that the hose remains in place while being used.

Many modifications of this tool are in use. One of the most common is a 30" section of plastic pipe 1" in diameter. Advocates of the plastic pipe say it fits the hand better and is not as tiring to use, is lighter in weight, and remains usable longer than does spray hose.

Pole thinning is relatively simple. Peaches are removed by striking the limbs of the tree about 18" from their tips with the flexible part of the hose. A sharp, firm blow shatters most of those fruits which would normally fall with so-called "June drop", and those not firmly attached. With sharp, well directed blows, the remaining clusters and doubles can be broken and even single peaches removed without injury to others growing alongside. The average workman can, with practice, become quite proficient in the use of this method. In fact, 10- and 12-year-olds can do just as good a job, and in many cases better, than can adults.

Where care is used, pole thinning causes little permanent damage to trees. Far more damage is done in pruning and careless handling of equipment during cultivation. Some peaches are bruised and left attached to the tree, but with practice and care these can be kept to a minimum.

Some growers prefer to do a "rough job" with the hose and a "touchup" by hand. Even this saves considerable time and money since the removal by hose of those peaches which would normally fall during June drop eliminates the hand labor needed for their removal.

Unfortunately, pole thinning cannot be used to advantage on all varieties. There is a varietal difference in the ease with which thinning can be accomplished—some thin easily, others with difficulty. For example, Elberta, Golden Jubilee, Erly Red Fre, and Georgia Belle are relatively easy to thin by this method. Redhaven is a little difficult until it is at just the right stage of development. Halehaven is unusually difficult, regardless of the stage of fruit development.

It has been reported that certain varieties are easier to pole thin in some areas than in others. Perhaps the greatest difference in the case of thinning of any variety lies in the stage of fruit development at which thinning is attempted. It has been found that most of the later-maturing varieties thin most easily at, or just before, the June drop.

Early thinning is essential if maximum benefits are to be obtained. Since early varieties ripen

so quickly, the grower cannot afford to wait until the pole method can be used most effectively, and must thin either by hand or with chemicals.

Chemical thinning of peaches is still in the experimental stage. Although considerable research has been devoted to the problem, there is no completely satisfactory chemical thinner for peaches available at present.

More favorable results have been obtained with naphthylphthalamic acid (NPA) than with any other chemical used for thinning peaches in the East. It has been approved by the Food and Drug Administration when used as directed.

Unfortunately, for best results NPA must be used 3 to 5 days after full bloom. This is still too soon for chemical thinning in those areas subject to late-season frosts. Also, there have been reports of over-thinning where NPA was applied within 48 hours of a period of low temperatures (32° to 50°F.). Other factors such as variety, tree age and vigor, and concentration and volume of the thinning spray greatly influence the amount of thinning accomplished.

Although thinning results have not been entirely satisfactory, only minor foliage injury and fruit abnormalities have been reported in commercial orchards where NPA was used according to directions on the label. Growers who desire to thin peaches with NPA are advised to follow label instructions carefully. Exceeding the suggested concentrations could result in serious overthinning.

The **mechanical shaker** provides another method of thinning peaches. Although still in the experimental stage, this method shows considerable promise and has been used in many commercial orchards on a trial basis.

Several shaker designs have been tried, usually modifications of the type used in the mechanical harvesting of cherries, and operating from a tractor power take-off. A well-padded claw is clamped around a scaffold limb about 12" to 18" from the tree trunk, and the tree shaken with short, rapid strokes for a short period of time. The length of time and the rapidity of shaking varies with the type of machine used, size of the tree, variety, and stage of fruit development.

Thinning with the mechanical shaker can be done at a fraction of the cost of hand thinning, with a saving of both time and labor. Overthinning and damage to the tree has frequently occurred, however. Proper positioning of the clamps at right angles to the central axis of the limb is necessary to prevent severe bark injury. Careful attention must be given to the length of time the tree is shaken to avoid overthinning in the top.

In practice, a complete thinning job with either chemicals or the mechanical shaker cannot be expected. Some hand thinning will be necessary. However, by partial thinning, chemically or mechanically, the amount of hand labor and the total cost of thinning can be greatly reduced.



Issued in furtherance of cooperative extension work in agriculture and home economics, Acts of May 8 and June 30, 1914, in cooperation with the U. S. Department of Agriculture. W. H. Daughtrey, director, Agricultural Extension Service, Virginia Polytechnic Institute, Blacksburg, Virginia.