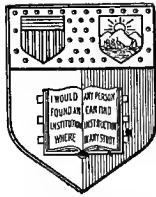


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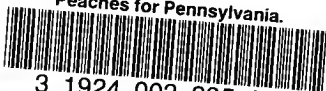


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# Peaches for Pennsylvania

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should be headed at about 18 to 24 inches, and from three to five limbs may be used in forming the framework for the tops. In later pruning, the main objects are to keep the annual growth well headed back, thus avoiding undue increase in height, and to keep the tops fairly open in order to secure light and ventilation for the fruit.

### Culture, Thinning and Picking.

As to cultural methods, peaches are generally considered to require more thorough and continuous tillage than apples. The tillage and cropping methods described for the latter in Bulletin 106, however, if thoroughly carried out, will generally prove satisfactory.

The proper use of fertilizers on peaches is a matter of some debate. Judging from analyses, peaches are more exhaustive on the land than any other fruit crop. But in spite of this, the value of fertilization is questioned by some growers, especially if they are making good use of cover crops. It is an interesting fact, however, that in Niagara county, N. Y., on nearly 3,000 acres of peaches it was found that over 87 per cent. of the acreage was receiving fertilizer of some kind.<sup>1</sup> Also the average return for five years from those orchards receiving manure was \$26 per acre higher than that from the unfertilized orchards, and the return from those receiving both manure and commercial fertilizer was \$46 per acre higher than from the unfertilized. This would indicate that a judicious use of fertilization should prove profitable in many cases. Care should be taken, however, not to stimulate growth unduly and especially not to prolong the seasonal growth so much as to prevent the entrance upon winter with well-seasoned wood.

Thinning is essential whenever the trees are unduly loaded. It is regularly practiced by all commercial growers. It enables the fruit to attain proper size, aids in the control of rot and avoids unnecessary exhaustion of the tree. Over-production and starvation are among the leading causes of failure and early decline in the average peach orchard. The thinning is done usually in the latter part of June, after the "June drop," leaving no peaches less than 4 to 6 inches apart, and removing especially those that are defective.

The proper time for picking depends largely upon the time required in reaching market. It also naturally depends much upon the carrying qualities of the variety and the cooling and shipping facilities available. The best color, quality and size are undoubtedly attained by permitting the fruit to ripen on the tree. When considerable time must elapse before reaching market, however, this is impracticable. In such cases, the fruit should be picked enough in advance to enable it to ripen in transit and approximately reach its prime when it arrives at the market. The softening of occasional specimens will aid in determining the right time for picking, but more detailed directions can hardly be given.

<sup>1</sup>Data from an orchard survey of Niagara County, made by Cornell University. Data furnished by M. B. Cummings, now of University of Vermont, Nov. 1908.

### Important Difficulties.

Important obstacles to success with peaches are yellows, brown rot, and borers.<sup>1</sup> Regular mounding and cutting-out is probably the surest method of control for the latter and is most generally practiced, though a safe and efficient covering would be most welcome and may be found in the sediment or sludge formed in making lime-sulphur. It should be renewed whenever any important breaks occur in the coating, however.

The mound or cover should be in place during the egg-laying period, which extends from about the middle of June to the middle of September in this State. The "mound" is formed by dragging up the earth all around the base of the tree to a height of 8 or 10 inches. Any protective covering should extend from about two or three inches below the general surface of the ground to a height of 15 or 20 inches. It is also well to remember that most of those that have been recommended are decidedly worthless.

In hunting the borers, which may be done either before or after the egg-laying period, it is well to have cheap labor go ahead and remove the soil, with hoes or other appropriate tools, and reliable men to follow and remove the "worms" after the bark has dried and their discolorations become more evident.

#### Yellows.

Peach yellows is an apparently contagious disease of unknown cause, for true cases of which there is now no remedy. It is important that one be able to recognize its symptoms, however, in order to remove the affected trees at the earliest opportunity and thus prevent its spread to those adjacent, with the resulting rapid destruction of the orchard. The most prominent marks of the disease are *premature ripening of red-spotted fruit*,<sup>2</sup> and *tufts of vertical, willowy shoots*, which appear on the branches or main limbs. Earlier and less evident symptoms are as follows: In a well-cultivated orchard, part of an apparently healthy tree stops growing, the leaves at the bases of its twigs *droop*, roll at the edges,<sup>3</sup> and turn yellow or reddish-green. Also leaf buds and blossoms may be prematurely,—the acceleration amounting in some cases to a few days only, while in others it may even cause them to start in the fall.

The disease is reported as likely to appear first in wet and poorly-drained areas; and most of the symptoms are apparently likely to be aggravated by winter-injury or other checks, especially checks to the transfer of food or starch. The recognition and treatment of the disease would be relatively easy if it were not for the fact that the same influences which aggravate the symptoms of yellows seem able to produce a good imitation of the disease.

These imitations are usually curable by good orchard practice,

<sup>1</sup>The San Jose scale is, of course, also an important enemy of the peach, but it is more easily controlled than on the apple, and in the same manner.

<sup>2</sup>The red spots are in the flesh.

<sup>3</sup>The rolling at the edges under these conditions is said to distinguish the disease from "Little Peach."

especially by heavy pruning and judicious nitrogen application. But the true cases are apparently only covered up temporarily by such treatment and in the meantime are menacing the general health of the orchard. The best procedure, therefore, is to eliminate so far as possible, the influences that tend to develop the "imitation yellows" by maintaining the best possible orchard practice and then destroying on sight all cases that do appear, on the assumption that they are true cases of yellows.

### Brown Rot, Scab, and Curculio Treatment.

The control of brown rot also involves that of the curculio and incidentally secures the control of peach scab or black spot which usually mars or destroys so much unsprayed fruit. A very satisfactory plan for this purpose is the one advised by Scott, of the Bureau of Plant Industry. It is rapidly becoming the regular practice of commercial peach growers. With slight modifications, the plan is as follows:<sup>1</sup>

(1) About the time the calyces (or shucks) are shedding, spray with arsenate of lead at the rate of two pounds to 50 gallons of water. In order to reduce the caustic properties of the poison, add milk of lime made from slaking two pounds of stone lime.

(2) About three or four weeks after the calyces drop, spray with 8-8-50 self-boiled lime-sulphur and two pounds of arsenate of lead.

(3) About one month before the fruit ripens, spray with 8-8-50 self-boiled lime-sulphur or with 1.003 lime-sulphur solution, omitting the poison.

The use of the clear solution in the third spray is handier, cheaper and avoids any important staining of the fruit, which may be quite serious with the self-boiled lime-sulphur in the last spray. The self-boiled is the only safe material to use in combination with commercial lead arsenate in the second spray, however. Our present experiments indicate that a strictly neutral ortho-arsenate of lead,  $\text{Ph}_3 (\text{AsO}_4)_2$ , is safest with lime-sulphur solutions, but even this combination cannot be recommended unconditionally on peaches as yet.

### Varieties.

The following list gives the principal varieties now in cultivation in the State, so far as the writer has been able to learn. It also includes some varieties that, judging by their behavior elsewhere, are of probable value here, and some that are widely known but are rather undesirable, as indicated by the accompanying descriptions. Further selection should, of course, be made on the basis of local experience and market. Six or eight varieties well distributed through

<sup>1</sup>For full discussion of the preparation and use of self-boiled lime-sulphur, see Farmers' Bulletin 440, pp. 33-40, obtainable from the Department of Agriculture, Washington, D. C.

the season are usually ample for the commercial orchard. These may well be selected from the following group of varieties, with the aid of our descriptions given later, supplemented by local inquiry: Greensboro, St. John, Waddell, Carman, Hiley, Champion, Belle, Ede, Elberta, Stump, Crosby, Fox, Smock, Iron Mountain, Stevens and Salway. This group gives a succession from early July to October, and the varieties are named approximately in order of ripening.

The relative commercial value of the varieties is indicated by stars. Two stars (\*\*) indicate those considered fully commercial; one star, those considered limited commercial. The others may be valuable commercially in some places when they are better known or they may be useful in home orchards.

The indications are intended especially for the location in which peaches are known to thrive. But even for them, local experience and especially the season of ripening with reference to market conditions may often require some modifications. Thus a variety may do well in a certain locality, but not be profitable because the market, at its season of ripening, is supplied with better fruit of another variety, possibly from another locality. This accounts for the fact that in some localities only those peaches ripening with Elberta or later are reported profitable, while in others many of the earlier sorts are very satisfactory. Study your market and fill in the gaps is a good general rule.

In the list, the harder varieties,—those apparently adapted to the more rigorous sections,—are marked with a dagger. All varieties are named approximately in order of ripening, with the exceptions that the varieties in each of the following groups seem from available data to be of practically the same seasons. St. John and Bishop; Waddell, Lewis and Connet; Mountain Rose, Champion and Oldmixon Free; Niagara and Reeves; Ede, Bokhara and Engle; Crosby and Chairs; Geary, McCollister and Smock; Stevens and Salway. There is also more or less overlapping in season with many of the other adjacent varieties.

**Sneed.**<sup>1</sup> Early July. White,<sup>2</sup> cling. Tree has broad leaves: usually a heavy bearer and small unless thinned, low quality and not valuable commercially.

**Victor.** White, semi-cling. Rather resistant to rot.<sup>3</sup> Much better than Sneed in quality; entirely red when ripe.

**Triumph.**† Yellowish-red, free. One of the extra early peaches, of medium size and quality, probably suitable for home use or local market, but usually not desirable commercially because of great susceptibility to rot.

**Greensboro.**†\* White, semi-cling. Tree very hardy and prolific; probably the earliest peach of any material commercial value. Fruit large, reported resistant to rot,<sup>3</sup> but rather delicate textured for distant shipment and only medium quality. Pick when apex begins to soften.

<sup>1</sup>For the meaning of stars, daggers, etc., see page 5.

<sup>2</sup>Refers to color of flesh.

<sup>3</sup>"Resistant" is not used in the sense of "immune," but means less susceptible than most others.

**St. John.\*** Yellow, free. One of the standards in Ontario and also reported very satisfactory in Delaware. Quality good. Often quite subject to rot, but this can be controlled by proper spraying.

**Bishop.** White, free. Reported one of the most satisfactory early peaches in the mountain orchards of West Virginia. Fruit large and very good. Worthy of trial in southern Pennsylvania.

**Waddell.†** White, free. Rather poor grower, but very prolific. Long blooming period and hence said to be less susceptible to frost injury. Medium in size and quality. Ripens too near Carman for best success.

**Lewis.†** Yellowish-white, free. One of the hardiest peaches and much valued generally for commercial use. Fruit medium to large and very good. Of Michigan origin.

**Connet.\*†** White, semi-cling. Another hardy variety which is reported unusually satisfactory in the mountain orchards of West Virginia. It ripens with Lewis and is said to be fully as productive, finer looking, and much freer from rot. Fruit large and very good. Apparently worthy of extensive trial in this state. A seedling of Chinese cling.

**Carman.\*\*†** White, semi-cling. Probably best of its season for market. Fruit large and of good quality. Ripens early in August. Tree very hardy and productive, one of the latest in blossoming.

**Hiley\*†** (*Early Belle*). White, free. Regular, but not prolific. Good shipper, uneven ripener. Much grown in Georgia.

**Mt. Rose.** White, free. High quality, often irregular in size and subject to rot; good for home use and local market, if picked while firm.

**Champion\*†** (*Illinois*). Creamy white, free or often semi-cling. Among the highest in quality, excellent for canning, moderate bearer, medium shipper. Somewhat susceptible to rot, but preventable by proper spraying.

**Oldmixon Free.\*** White, free. One of the old favorites, but apparently losing in favor in some parts of this state. High quality and prolific, but reported as often dropping before attaining full color.

**Early Crawford.** Yellow, free. A standard peach in many regions, but apparently losing favor in this state on account of shy bearing.

**Niagara.\*** Yellow, free. Supposed to be a seedling or possibly a bud-sport of Early Crawford<sup>1</sup> and reported a heavier bearer. Fruit equal to it in quality and of larger size. Considered promising, though not sufficiently tried to warrant unqualified recommendation.

**Reeves (*Favorite*).** Yellow, free. Excellent quality, and one of the old favorites, but often shy bearer; especially so on heavy soils.

**Thurber.\*** White, free. Prolific, good shipper; valuable where a white peach is acceptable.

<sup>1</sup>See Cornell Bulletin 262 : 282 for account of the origin of this peach.



**Belle\*\*†** (*of Georgia*). White, free. Early and heavy bearer; reported best of its season. Hardy in bud and very high quality. Ripens in late August or early September and must be watched as picking time approaches, as it ripens quickly.

**Engle** (*Mammoth*). Yellow, free. One of the best commercial peaches in Michigan, being reported preferable to Elberta for profit. Not sufficiently tried for recommendation.

**Ede\*\*†** (*Captain Ede*). Yellow, free. Very productive and uniform in fruit. Early in bearing. Excellent for canning; quality very good.

**Bokhara.†** Yellow, free. Said to be the hardiest desirable peach in Iowa. Quality fair. Value in Pennsylvania unknown, though apparently worthy of limited trial in the more rigorous sections.

**Elberta.\*\*** Yellow, free. The standard commercial peach and the variety most widely planted throughout the country, though distinctly less valuable than some others in certain localities of this state. Fruit very large and excellent carrier, but quality is only medium. Quality, as well as appearance, is much improved by proper maturing on the tree.

**Chairs\*** (*Choice*). Yellow, free. Another strong grower and often tardy in bearing, but very satisfactory with increasing age in certain orchards of southern Pennsylvania. Fruit large and good, tapering to apex.

**Crosby.†** Yellow, free or occasionally semi-cling. One of the hardiest in bud, and of high quality. Fruit tends to run a trifle

small for market, unless heavily thinned. Very heavy and regular bearer.

**Late Crawford.\*\*** Yellow, free. An old favorite, grown across the continent. Reported among the most profitable varieties in certain orchards of the state, while considered rather shy in others. The successes are in dry, airy locations, with rather light soil and thorough cultivation and other care. Said to be less satisfactory than Early Crawford in New Jersey.

**Ray.** White, free. A relatively new peach of Mississippi origin, that is doing very well in Eastern Pennsylvania, especially with H. S. Snavely near Lebanon. Tree stocky, good grower and very productive. Fruit larger than Belle and about equal to Oldmixon. Flesh white to the pit, good quality, though not quite as good as Oldmixon. Apt to ripen up quickly like Belle.

**Stump.\*** White, free. Very widely planted, and reported fine in some places in the state, while in others it seems to be less successful.

**Fox\*** (*Seedling*). White, free. Apparently one of the most desirable for its season. Growth vigorous and somewhat tardy in bearing. Fruit of medium size and quality.

**Mathews** (*Beauty*). Yellow, free. A strong grower, rather tardy in bearing. Fruit very large and good seller, but reported shy and generally unprofitable in the mountain orchards of West Virginia. Has done well with Dr. Funk in eastern Pennsylvania.

Said to be difficult to get true to name and is reported by some to ripen after Smock.

**Geary\*** (*Hold on*). Yellow, free. Among the most profitable in the orchards of D. M. Wertz, Franklin county. The soil there is light,<sup>1</sup> well elevated and has a good moisture supply. Fruit is firm and of good quality. Closely resembles Smock in tree and fruit.

**McCollister.\*** Yellow, free. Another of the leaders in Wertz's orchard; closely resembles the next variety in character of fruit and season.

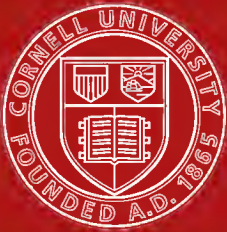
**Smock.\*\*** Yellow, free. This variety and Salway have done best in the orchards named above, and both are very highly recommended by other growers in our leading peach sections. They apparently do best in the conditions described for Geary.

**Iron Mountain.†** White, semi-cling. Considered desirable in some of the more rigorous sections, on account of hardiness. Quality medium.

**Stevens\*** (*Rareripe*). Creamy white, free. Tree vigorous and upright grower, and rather tardy but good bearer. Fruit large, good quality, and profitable because of lateness.

**Salway.\*\*** Yellow, free. One of the very best under proper conditions, but not good on low or heavy soil. See discussion under Smock. A very sure cropper and excellent market peach. Season about same as Stevens, early to mid-October.

<sup>1</sup>Classified by Bureau of Soils as Mont Alto fine sandy loam.



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