

March 3, 1910.

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tively be avoided. The laterals must not be alternate and opposite but should be spirally alternate and the distance between laterals if possible should be such that with the future growth of the tree these laterals will not become opposite as such a position tends to weaken the trees and while not as bad as a crotch is to be avoided.

#### PRUNING BACK BEFORE PLANTING

With regards to the pruning back of the head before planting, there is some diversity of opinion. Some recommend the pruning back to a whip; others commend the pruning back to strong buds, but at the same time following up the tree; while others claim that only such parts that are injured should be removed. I would not follow the last mentioned practice because I have noticed that where this was practised the growth took place at the end of the laterals and the tree was far from shapely; on the other hand, I found such conditions only in neglected orchards or ones that had apparently been planted partly as a curiosity and partly by the influence of the bountiful returns received by good growers or lucky ones.

The first method of cutting back to a whip does not seem to answer the purpose except where it is absolutely necessary especially in older stock which have already matured hard wood. However, in succulent growth and softer wood such as the peach, the practice is highly recommended by our best growers.

The second method of shortening-in all growth considerably and balancing up the tree is, in the case of apples, the best method. It strengthens the shoulders of the tree and develops a sturdiness and stockiness of growth that is highly desirable as it offers more resistance to winds, etc., with the result that the trees are more upright and present a more uniform appearance which is a valuable asset in a commercial orchard.

In concluding, I might sum up as follows: Buy young stock which has not already been pruned to any extent. Formulate some definite type of tree which you prefer and know to be desirable. Use your intelligence in pruning and you will be able to procure a proper shaped tree in two years. Do not neglect a tree in its young stages as all errors are more easily combated and remedied than when the tree is older. Keep the heads down and don't tolerate crotches.

#### Planting Strawberries

J. O. Duke, Essex Co., Ont.

I have found the best time to plant strawberries in Essex county to be as soon after the first of May as possible. I usually plant from May 1 to May 4. By this time the leaves have grown sufficiently to have a good "top" and the blossoms are beginning to form and can readily be pinched out before the plants are set in the ground. The ground is also warm by this time and the new planting soon begins to get a foothold in the soil.

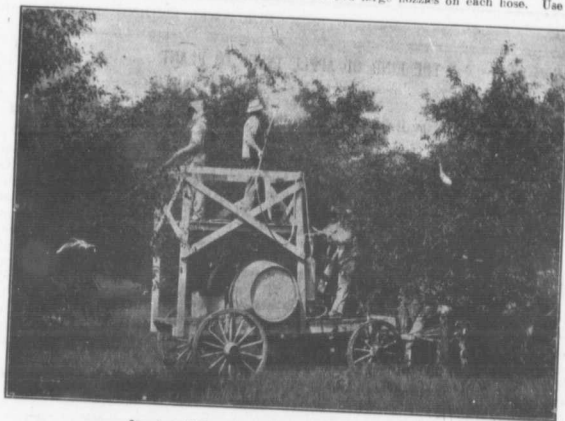
I have my land in good mechanical condition, having grown some hoe crop the previous year, thus ridding the soil of weeds and grasses. The day before expecting to plant I mark the field with a corn marker, four feet apart and just before planting I run out a furrow with a plow instead of digging holes for the plants. If the soil is finely worked up and well firmed, there will be no trouble in leaving a nice "land side" to the furrow, against which the plants are placed 18 inches apart and a handful of the moist earth of the newly-made furrow placed against it to hold it. When the plants are all "set," the furrow is filled with the plow. The plantation should be carefully cultivated with a fine-toothed, one horse cultivator within a day or so, and the job is complete.

I find this a splendid way to set a large plantation with enough hands to keep a team busy plowing and filling in the furrow, a large field can be planted in a short time.

#### Spraying Apples: Cost and Results

Maz C. Smith, Halton Co., Ont.

An orchard of ten acres will contain on an average 400 trees. To operate a power outfit, the labor of three men is required—two men to handle the spraying rods and one to drive the horse. The labor of the first two at \$1.50 per day would cost \$3; the team and man, \$4.50; should average about 1,500 gallons daily. The cost per gallon, therefore, would be one-half cent.



Spraying will increase the Percentage of Number One Fruit

The spread of insects and diseases makes it impossible to grow clean fruit without spraying. If there are only a dozen trees in the orchard they should be sprayed regularly. Spraying materials may be mixed at home and excellent preparations, ready for use with the addition of water, can be purchased commercially. Spray the orchard this spring and results will show that it pays.

For my first spraying, I use the commercial lime-sulphur at the strength of one to eleven. This is used just before the buds are opening. The concentrated lime-sulphur costs \$10 a barrel of forty gallons. Diluted at the strength mentioned, this would make 480 gallons of spraying mixture which would cost 2.08 cents per spraying gallon. Add this to the cost of labor per gallon and we have a total cost of 2.58 cents per gallon. The average tree will require five gallons of the mixture. At 2.58 cents a gallon, the cost per tree for the first spraying would be 12.9 cents.

For the second spraying for codling moth and fungi, which is done just as the blossoms have fallen, I use commercial lime-sulphur at the same cost per barrel but dilute it one to thirty, which makes 1,240 gallons at a cost per gallon of .83 cents. To this I add arsenate of lead, which can be bought in small packages at 14 cents a pound or less. I use five pounds of this to 100 gallons of water. This makes the arsenate of lead cost .7 cents a gallon. The labor costs just the same for the second and third sprayings as for the first. For this second spraying, the total cost is 2.08 cents per gallon of spraying material. At five gallons a tree, this makes the second spraying 10.15 cents a tree.

The third spraying should be given ten days to two weeks later than the second. The cost is the same as the second, namely 10.15 cents per tree. The total cost, therefore, of the three sprayings per tree is 33.2 cents for the season. At this rate 400 trees on ten acres would cost for spraying \$132.80. By using four gallons per tree and eliminating the third spraying, which is not necessary in all seasons, the 400 trees may be sprayed for \$73.76.

I prefer gasoline engines for power because they are most efficient and the cheapest to operate.

A gasoline engine can be operated for ten or fifteen cents a day for gasoline. The gasoline engine may be used for other purposes when not needed for spraying. I prefer a pressure of 175 pounds on the average. High pressure is particularly necessary for the second spraying, as you cannot drive the material into the calyx cups with a pressure of only sixty or seventy pounds. Use a pump of good capacity and one that will give the high pressure required. For best results use two large nozzles on each hose. Use the best

quality of hose that you can buy. Spray thoroughly and use lots of material.

#### RESULTS.

During the past season I sprayed about 100 acres of fruit, including apples, plums, pears, cherries, grapes, currants and gooseberries. The results with the currants were especially marked. The foliage was very heavy, the currants large, and I marketed them at higher prices than ever before. I did not have a blistered currant in the lot. In the case of the cherries, only those that were thoroughly sprayed were worth buying. I spray cherries just before the buds swell and again just after the small cherries form. Only two applications are made. I use the same strength as for apples.

I had equally good results with apples. One orchard that I took over and which had not been sprayed, pruned, plowed or fertilized in twenty years, gave me 2,000 barrels of fine fruit, the result of one year's attention, including spraying. I controlled the fungus completely and the codling moth to the extent of about 80 per cent.

It might seem a big item of expense to spend thirty-three cents a tree for spraying, but let us see. A bushel of culls is worth fifteen cents, and a bushel of good apples is worth fifty cents, a difference of thirty-five cents. The average tree should produce ten bushels, and if you convert one bushel of culls into one bushel of good apples, you are making thirty-five cents. If you have a tree of apples bearing ten bushels and do not spray them, you will have half culls. If you convert that five bushels into good apples, you will make \$1.75 profit on that tree, or \$700 profit on 400 trees. This is over and above what you could get if you did not spray. Take the cost of spraying off and it leaves a net profit of \$567. Besides this, you will strengthen the trees and make them produce better another year.

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