



One of the Striking Exhibits of Fruit at the Canadian National Exhibition in Toronto Last September was the One Here Shown.
Exhibit arranged by the Fruit Branch of the Ontario Department of Agriculture.

How the Grower May Increase Orchard Profits

It May be Done Most Expeditiously by Reducing Cost of Production

BY PROF. H. A. SURFACE, PENNSYLVANIA

GOOD fruit land is generally cheaper than rich or more level farm land that may be less desirable for fruit production. Proper fruit soil produces trees of good size, and fruits of best quality and in large quantity; thus reducing the relative cost of production. Proximity to market or shipping station, to reduce the cost of hauling, is an essential factor.

Where there is good air drainage or local elevation, spring frosts do not so often injure blossoms or tender buds or fruits, and thus there are more frequent and larger crops, resulting in relative cost reduction.

Well-drained soil means healthy, vigorous trees. Wet soil means poor trees, and worst of all, apple tree diseases, such as root rot, collar blight, and others. Instead of a good income from a fine crop on healthy trees money must go to replace dead ones, or there will be very serious loss that comes from leaving vacant places in the orchard. Wet orchards should be well drained; but the economy of dynamiting is yet to be proved in general, for we know where it has been very unsatisfactory.

Good varieties are quoted constantly in price above poor kinds. Compare to-day's quotations on Stayman Winesap, Rome Beauty or Baldwin, with those of Ben Davis, Smith Cider or Shockley.

Adapted varieties give finer fruits and larger yields than those not adapted to the region, and of course as these sell more easily and for higher prices, they help to reduce the relative cost. A very important economic consideration is that it pays all commercial growers of a community to put their efforts into growing perfectly only those varieties (often but one or two) that are decidedly best there.

Healthy, young trees from reliable nurseries mean ready, vigorous growth without stinting by transplanting, and large early crops, if properly handled. Trees not true to variety ordered may mean years of loss.

Plant at sufficient distance, and on the square system. The writer now plants all permanent apple trees forty feet apart and all others at twenty. This permits profits from inter-cropping, cultivating each direction, and the development of large trees with full crops.

Low-headed trees cheapen the cost of production by reducing the work of pruning, spraying,

thinning and picking; and prevent heavy loss by wind falls, as well as mulch their own soil.

Reduce the necessity for expensive commercial fertilizers by growing legume cover crops. The writer uses chiefly crimson clover and buckwheat and harvests the latter. One orchard gave 84



A Sprayer to Fit Every Need.

busheis of buckwheat this year. In another the crimson clover was sown with cow horn turnips, and we had a good stand of the former, with over one hundred dollars' worth of excellent turnips, without detriment to the young trees.

Nitrogen, the expensive element in commercial fertilizers, is not needed where the legumes are grown in an orchard. We need buy only muriate of potash and acid phosphate, and need but little of these where orchards are comparatively young and occasionally cultivated.

Pruning can be done at any time of the year, if not too severe; and necessary severe pruning can be done at any time during the dormant

season. Thus it is a "filler" job that can be done with economy when more important work is not pressing.

For cover crops we grow our own seed between the cultivated tree rows in the young orchards, and in any orchard that will not produce fruit that year.

A uniform head of symmetrical trees helps to maintain the income by ensuring fruit where otherwise there would be vacant spaces.

Plant varieties to ripen in succession, and thus keep the pickers engaged.

We spray as many times as are necessary, but no more. This is four (or at most, five) times in the year for pomes, and three times for drupes.

Owing to our low-headed trees the thinning is done easily and quickly, mostly from the ground, and chiefly by women and girls, thus greatly reducing the cost.

There is much less financial loss from fallen fruits from trees with very low spreading tops, because less droppings and less bruising.

Low trees permit economy in time and methods of picking.

Cooperative or wholesale buying of supplies and selling produce helps much in reducing the cost.

Our friends may expect us to recommend the elimination of spraying for the scale by the introduction of scale parasites (of which much recently has been printed), but we can not yet be sure that in all orchards they will do their work as thoroughly as they have in our own and in hundreds of others we have carefully inspected in Pennsylvania. It is surely worthy of careful consideration. We have discovered and published regarding certain entomological conditions, and have been criticised by a few who have been too narrow to understand or believe them, and of course by certain agents of scale-spraying materials. We have seen enough to give firm faith in the adequate reduction of the San Jose Scale by minute internal hymenopterous parasites. If any unprejudiced person will come to Harrisburg, Penn., and go with me to see a score or more of orchards that have been cleaned of San Jose Scale by the parasites, and then not agree that these natural agencies have been efficient in suppressing the scale I am willing to pay the expenses of the trip. Hence, our recommendation to "Reduce the cost of production by the application of modern methods."

*Extract from an address delivered before the members of the Niagara Peninsula Fruit Growers' Association.