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A SUCCESSFUL METHOD OF SPRAYING AGAINST LOOPER CATERPILLARS AND OTHER SPRINGTIME PESTS

By J. C. ROWBOTHAM, Horticultural Instructor.

A DESCRIPTION of a method which has proved successful over the past two seasons on the orchards of Messrs. J. L. Parke and W. Parke, of Donnybrook, should prove of interest to the large number of apple growers who during past seasons have suffered losses due to excessive blemishing of fruit by looper caterpillars (*Chloroclystis lacticostata*) and other spring pests.

Before growers will accept any suggestion of change from accepted practices the questions asked will be firstly, "Is the cost of this method less than the old?" and secondly, "Do results justify a trial?"

The following description should prove beyond all doubt that there is not only a saving on all the costs of actual spraying, but also there is a bigger return from the higher quality fruit produced.

Although both the orchards mentioned received the same treatment, for the sake of simplicity the figures to be quoted will refer only to the operations carried out on the property of Mr. J. L. Parke. This orchard consists of about 1,000 apple trees, mainly Granny Smiths, the other interplanted varieties being Yates and Delicious. If the orchard had contained earlier varieties such as Cleopatras and Jonathans, these trees would have been sprayed a little earlier to meet the slightly advanced time of flowering.

The spraying outfit used by Mr. Parke was self-built and has a vat capacity of 135 gallons, the pump being driven by a power take-off from the tractor which tows the plant. As it was considered that the sprayer would have been overloaded had the hose operators ridden on it, a trailer was attached to carry them (Fig. 1). It is intended for future operations to secure a heavier unit which will carry the two men and dispense with the trailer.

Before describing the actual spraying operation, it is well to state here that a



Fig. 1.—The home-made power sprayer used by Mr. J. L. Parke, which was used to such good effect. The tractor was driven along every alternate space between the rows of trees.

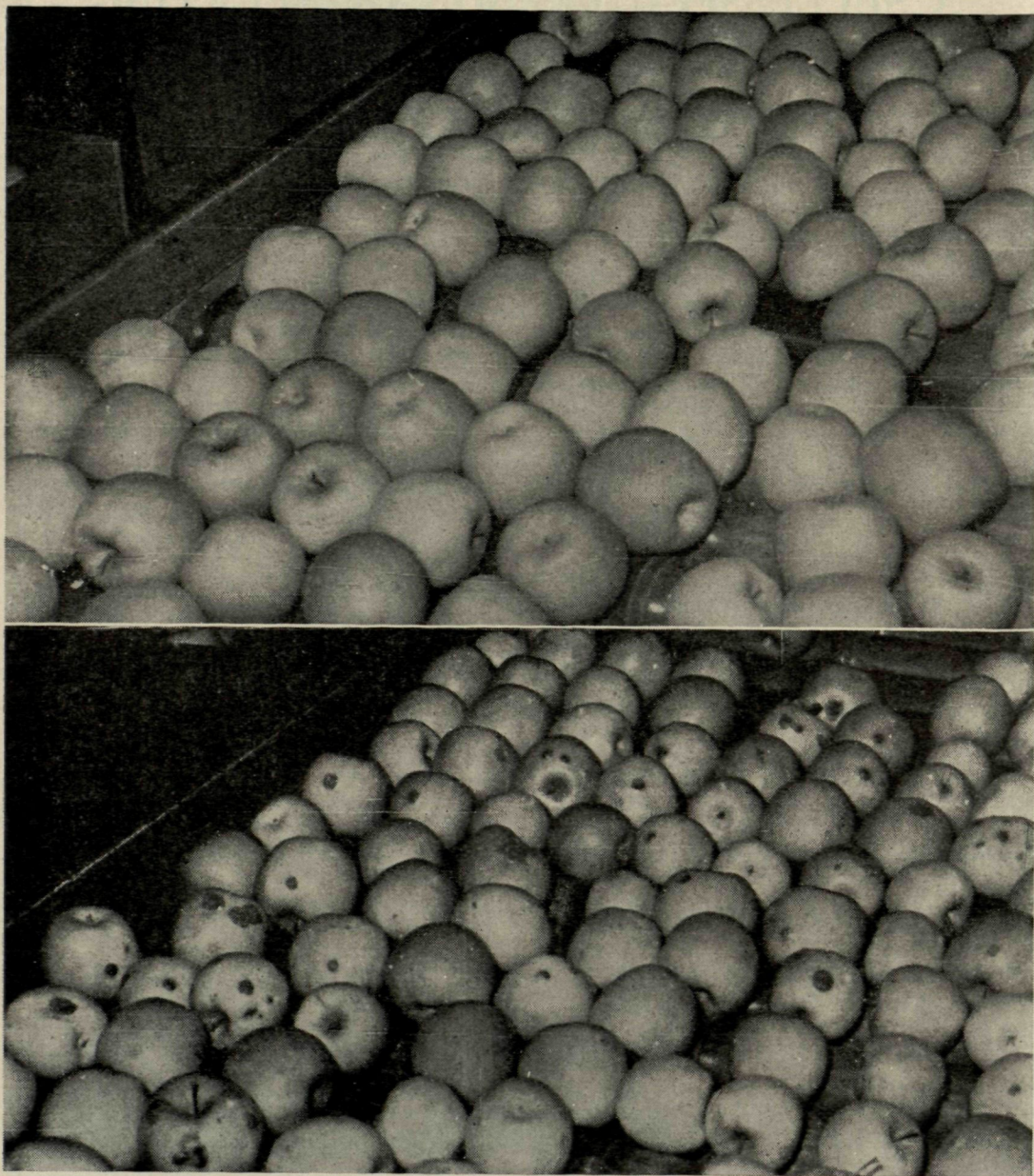


Fig. 2.—The top picture shows the excellent result of spraying to control looper caterpillars, an attractive line of Mr. Parke's Granny Smiths on the rollers. The lower picture reveals the blemishes caused by the caterpillars on a line of unsprayed Granny Smiths. Both photographs were taken showing fruit on the rollers of a packing house at Donnybrook.

winter or dormant spray consisting of red oil at the rate of 1 gallon to 18 gallons of water was applied in August in the usual manner, using the same outfit minus the trailer. The sprayer was driven down each row and the operators, using hoses, walked around each tree. The time taken was two and a half ($2\frac{1}{2}$) days and $11\frac{1}{2}$ vats of spray mixture was used.

For the looper spray only two vats, totalling 270 gallons were necessary and the time taken, including the mixing, was half a day or about one-fifth of the time required normally. The operators travelled on the trailer and sprayed the trees while moving at $3\frac{1}{2}$ to 4 miles per hour. The plant was driven down each second row only, so that trees were sprayed from one side. Complete coverage was neither aimed at nor achieved. The insecticide used was 20% D.D.T. emulsion and the quantity was $1\frac{1}{2}$ gallons or $\frac{3}{4}$ gallon to each vat of 135 gallons the concentration was approximately 0.1%.

Good control was assured because being a contact spray any egg laying moths moving around the trees would die and any grubs hatching and crawling around in search of apples would be killed also.

The spray was applied at a pressure of 200lb. to the square inch using Myers "Way" nozzles, which deliver a rather coarse stream. The time chosen was at late petal fall, that is when the largest apples were as big as peas, and a few late blossoms were still showing on the trees.

The biggest factor to be considered in successful control of loopers is the fact that there are only a critical few days during which any spray will check the pest. If the weather is at all unsettled during this period it will be readily conceded that it is much easier for a grower to find three or four hours of suitable conditions than the two or three days needed for the slower method.

In the comparison of costs in the following table it has been assumed

that if the usual looper spray had been applied Mr. Parke would have used $11\frac{1}{2}$ vats of mixture and needed $2\frac{1}{2}$ days to do the job, as was the case with the oil spray.

	Parke's Method*			Old Method		
	£	s.	d.	£	s.	d.
1. Labour, based on three men at £2 15s. a day	4	2	6	20	12	6
2. Materials	2	18	6	16	11	6
3. Fuel for tractor		8	1	2	0	5
	£7	9	1	£39	4	5

* $1\frac{1}{2}$ gals. 20% D.D.T. Emulsion and time $\frac{1}{2}$ day, as against $8\frac{1}{2}$ gals. D.D.T. over $2\frac{1}{2}$ days.

All costs based on prices at present ruling in Donnybrook.

As for the results, it can be said that at picking time Mr. Parke's crop was of excellent quality, looper and cut-worm marks could not be found and all fruit was remarkably free of malformation and dimpling.

Out of the first "run" of 95 cases delivered to the packing shed there were 74 cases of export quality, four boxes of oversized fruit and four boxes of culls, mostly sunburn. Over the whole of the crop handled the fact that there were only 44 boxes of rejects and Good grade per 1,000 boxes picked speaks volumes. In contrast to this, on an adjoining unsprayed orchard the owner states that looper damage this past season has cost him £600.

Another nearby grower whose apple trees could have been sprayed by the usual method in about five days, found that 15 days had elapsed between start and finish. He has lost about 40% through blemishes and some fruit was worse than Good grade.

For the orchardist who produces a lot of Cleopatras (caterpillars are rather partial to Cleos.) a line packing 40%

Good grade and worse would show a poor return. Fancy Export Cleopatras net return this season was 13s. to 14s. per case, while the net return for Good grade was from 4s. to 7s.

As for the difference in returns in the case of Granny Smiths, a glance at the two lines depicted on the sorting table

at the packing shed (Fig. 2) gives some idea of the difference in quality. Prices paid for Fancy Granny Smiths ranged from 27s. to 32s. f.o.r. and Good grade returned from 16s. to 22s. f.o.r. at Donnybrook. The really badly marked apples were selling at about 11s. including cost of a new case.

RAISING JAPANESE PLUM TREES FROM CUTTINGS

OCCASIONALLY prunings from Japanese plums used as stakes for peas, root readily and in a number of instances have made good trees. This applies particularly to such varieties as Santa Rosa and Satsuma. Interesting evidence of the performance of another variety has recently come from a Bedfordale grower, Mr. J. E. Dowell. Last year, after pruning a new Japanese variety called Purple King, he planted 18 cuttings, each about nine inches in length, in moist black loamy soil. The

cuttings grew vigorously and in some instances a single shoot approximated to eight feet in length.

This information is presented from the point of view of an interesting development rather than a recommendation that Japanese plums should be propagated from cuttings. However, as far as this variety is concerned, there does appear some evidence that it would make a vigorous stock for other varieties of Japanese plums.—H.R.P.

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