

A SUMMARY UPON ORCHARD SPRAYING EXTENSION.

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Wisconsin apple growers still find difficulty in applying spraying methods in their orchards, for the control of the codling moth and apple scab. To meet this difficulty, the Horticultural Department of the Experiment Station has for the past two years conducted spraying demonstrations in five counties in the state. Relative to this work, it is important to emphasize the following:

First, the work has been done under actual orchard conditions. Equipment has been selected and methods used such as would be adapted to commercial and farm orchards in Wisconsin.

Second, careful attention has been given to get an accurate estimate of the losses due to attacks of the codling moth and apple scab in unsprayed orchards. A comparison of these results has been made with results taken from sprayed trees in the same orchard and upon the same varieties.

Third, the above has been taken as a basis for recommending spraying as a profitable investment and insurance against attacks of the codling moth and apple scab.

The writer has made estimates of the damage done by the apple worm both upon single unsprayed trees and upon the collected fruit from unsprayed orchards. These tests have included largely such varieties as Longfield, Fameuse, McMahan, Wealthy, Northwestern Greening, Newell's Winter, McIntosh Red, and Wolf River. A crop of about forty barrels of Northwestern Greenings taken from twenty trees in Kewaunee county—unsprayed in 1909—showed about 95 per cent of apples infested with the apple worm. The percentage of unsound fruit in this orchard on Wolf River, Fameuse, Pewaukee ranged from 50 to 95 per cent. During 1908 and 1909, similar tests were made at Richland Center, Richland county; Baraboo, Sauk county; and Oshkosh, Winnebago county. The percentage of unsound fruit on unsprayed trees ranges from 40 to 90 per cent.

Orchard spraying has been done in the orchards where the above conditions were found. A block of trees from two to five acres has been sprayed and the percentage of unsound fruit calculated. From 60 barrels of Northwestern Greenings taken from



R. T. Smith Farm, Oshkosh, 1909. Wealthy apples, unsprayed, showing: $2\frac{3}{4}$ baskets sound apples; $3\frac{3}{4}$ baskets unsound.



Field Meeting Oshkosh, 1909. University Extension; Spraying.

sprayed trees at Baraboo in 1909, fifty-four barrels were sound and seven barrels unsound, making a percentage of unsound fruit of 11 per cent. From 145 barrels of McMahons harvested from sprayed trees on the farm of Henry Dworak at Casco, Kewaunee County, 135 barrels were estimated sound and ten barrels unsound, giving a percentage of unsound fruit of 7.2 per cent. At Oshkosh in 1909, on the farm of R. T. Smith the average percentage of unsound fruit on sprayed trees, all varieties, was 6.5 per cent. The average percentage of unsound fruit from unsprayed trees was 81.7 per cent.

The above figures represent only in part the data collected but will give an idea of average conditions. The beginner in orchard spraying must understand that orchard spraying means making a business-like investment and giving close attention to such details as 1, selection of desirable equipment and spray materials, and 2, timing the applications in accordance with the development of the pests in the orchard.

The following estimate of complete equipment is given using 200 bearing trees as a basis. The reader is asked to notice that all material and equipment is purchased new, and that on the average farm there is considerable chance to economize upon the statement given. The average orchardist shows a tendency to neglect the work by selecting equipment and material unsuitable for the purpose and otherwise neglecting essential details.

Total Investment for Spraying 200 Bearing Trees.

Barrel pump	\$20 00
25 feet 1/2" hose, 5 to 7 ply	3 00
Bamboo extension rod	2 00
Vormorel nozzle and attachment	2 00
1 pump barrel	1 00
3 mixing barrels	3 00
2 stock solution barrels	1 00
2 mixing pails	20
Blue vitrol, 160 lbs.	12 80
Lime, 200 lbs.	80
Poison	10 00
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Total	\$55 80
Additional for 100 gallon tank	10 00
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