

REPORT OF SPECIAL COMMITTEE APPOINTED TO WATCH EXPERIMENTS MADE FOR DESTROYING
THE CODLIN-MOTH.

Otahuhu Orchard.

Auckland, 18th June, 1903.

I BEG to submit herewith report of the committee appointed to watch experiments *re* spraying, for suppression of the codlin-moth, carried out during the season 1902-3 by the Agricultural Department at Otahuhu. The committee paid several visits during the season.

The spraying-work done under the supervision of Mr. W. A. Boucher began on the 11th November, when the Red Astrachans were sprayed. This variety was sprayed four times altogether, the last spraying being on the 21st December. The Cox's Orange Pippin trees were sprayed five times in all; the first spraying being on the 21st November, and the last on the 6th March. Ohinemuri and Simmonds' Winter varieties were sprayed eight times in all; the first spraying being on the 11th November, and the last on the 6th April.

The only formula used for the spraying-mixture this season was—White arsenic, 1 lb.; washing-soda, 2 lbs.; lime-water (saturated), 700 gallons. The spray nozzle used was one throwing not too fine a spray, as it is found that with the fine-spray nozzles the spraying-mixture cannot be thrown with sufficient force to reach the interstices of the clusters of fruit, just where the eggs of the codlin-moth will often be laid.

At a visit of the committee on the 31st January the apples were all pulled from a selected Red Astrachan tree, with the following result: Clean fruit, 390; moth-infested, 10; total number, 400; percentage of infested fruit, 2½. Everywhere this season this variety has suffered comparatively little from the attacks of the codlin-moth. The committee at this visit found all the trees healthy, and showing little signs of scorched foliage from the effects of the spraying, only one tree being slightly affected. The leaf-roller pest and the bronze beetle were not much in evidence. The season for fruit was about three weeks later than usual this past season.

The committee paid their next visit to the orchard on the 7th March, when two Cox's Orange trees were stripped of fruit for testing purposes, with the following result: No. 1 tree—Clean fruit, 814; moth-infested, 94; total number, 908; percentage of infested fruit, 10½. No. 2 tree—Clean fruit, 650; moth-infested, 53; total number, 703; percentage of infested fruit, 7½. No. 1 tree in this test was outside the enclosure where pigs were running, while No. 2 tree was inside the enclosure. In the latter case, as the figures show, the amount of infested fruit on the tree was nearly 3 per cent. less than in the case of No. 1 tree, which had not the assistance of the pigs to devour the fallen fruit. The fallen fruit from sixteen Cox's Orange trees was also gathered up and examined for codlin-moth, with the following result: Clean fruit, 4,013; moth-infested, 1,251; total number, 5,264 fallen apples; percentage of infested fruit, 23½.

Another visit was paid by the committee on the 21st April, when the fruit of two trees was gathered and examined, one being an Ohinemuri and the other a Simmonds' Winter, with the following result: No. 1 Ohinemuri—Clean fruit, 526; moth-infested, 192; total number, 718; percentage of infested fruit, 26½. No. 2, Simmonds' Winter—Clean fruit, 186; moth-infested, 23; total number, 209; percentage of infested fruit, 11. The result of the examination of the fallen fruit gathered off the ground in the case of these two varieties respectively was as follows: Ohinemuri trees—Clean fruit, 10,765; moth-infested, 6,606; total number, 17,371; percentage of infested fruit, 38. Simmonds' Winter trees—Clean fruit, 9,220; moth-infested, 4,685; total number, 13,905; percentage of infested fruit, 33½.

Taking the orchard on the whole there was a good average crop of fruit on the trees. No bands were used during the season, so that the spraying was the only means adopted for combating the moth, except in the portion of the orchard where pigs were kept.

The committee are of the opinion that it is very desirable to continue the experiments for at least another season, if not longer, in order to test the question of the possible injury to the trees from the spraying operations being continued for successive years, especially as, from some reason or other, the foliage on some of the trees looked far from healthy this year. To make the test a fair one, the committee have no objection to the application of a moderate dressing of manure to the trees, nor to any surface-cultivation which may be thought advisable. Another reason for continuing the experiments at the Otahuhu orchard for a longer period is that remedies against the woolly-aphis blight may be tried. Attempts to deal with this pest at the Henderson orchard by the application of pure kerosene resulted in no practical benefit. With regard to the leaf-roller and bronze-beetle pests, these were undoubtedly lessened by the spraying with arsenic in the Otahuhu orchard.

While the committee realise that the cost of the experiments at Otahuhu as carried out by the Department was necessarily higher than spraying operations would be when carried out by private orchardists after the best mixtures and methods had been ascertained and set forth by the Department, the committee nevertheless considers that the cost of these experiments should be stated as an approximate guide to fruitgrowers.

With regard to the Henderson orchard, which was also visited by the committee during the season, they wish to state that in their opinion nothing will be gained by continuing the experiments in this locality, where, owing to the nature of the soil, combined with exposure to strong bleak winds, the original idea of showing what might be done in fruit-growing in the district generally cannot be carried out with any prospect of success. The committee therefore recommend that no further experimental work be carried on in this particular spot.

The committee wish to state that Mr. Boucher has done his best at Henderson, and greatly improved the conditions by the cultivating and other work he has done there; but the practical results are not likely to be commensurate with the cost.

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Chairman, Visiting Committee.