The trees selected for experiment were eighteen young pears of mixed varieties, planted in 1922 in a block of land newly broken in from pasture that year. Fifteen P. Barrys planted in 1921 among other older pears were also used.

SEASON 1922–23.

In 1922 the midge was detected in the tent traps on 14th September, but no female midges were found till 1st October. The Black Leaf and oil spray was first applied on 3rd October to the newly planted block of pears and to nine of the P. Barry trees.

On 10th October the first evidences of infestation were detected on some Beurre Diel trees next to the P. Barrys, and five days later it was seen on the P. Barrys which had not been sprayed. None of the sprayed trees showed any signs of the midge.

On 25th October the ground immediately around all the young pear-trees was sprayed with pure kerosene, with a view to attacking the pupæ which by that time would be due to hatch out from the first infestation.

On 1st November the P. Barry trees were sprayed with a mixture composed of molasses, 6 lb., to 100 gallons of water, and Black Leaf 40, one part in 1,000. This spray seemed to act well, for, despite daily rain showers, by 8th November the newly formed shoots showed no signs of midge-infestation, and the odour of the Black Leaf could still be detected on the sprayed leaves. This was not due to the kerosene spraying of the ground, as other trees so treated but which had not received the Black Leaf and molasses mixture showed infestation. It was decided then to continue to treat the P. Barry trees with this spray, and use the Black Leaf-oil spray only on the newly planted pears.

The next application of the Black Leaf and molasses mixture to the P. Barrys was on 21st November, three weeks after the first. It was found, however, that this interval was too long, because, although the Barrys were nearly free from infested leaves at the time the second spray was applied, by 27th November a fairly wide infestation was manifest, and as the leaves were by then beginning to blacken it seemed probable that the eggs were layed just prior to the second spray. The constant rains during the first fortnight of November no doubt contributed to the failure of the remedy. The spray was repeated on 6th December, but with little effect, and for the rest of the year the Barrys were markedly infested with midge.

Turning again to the block of newly planted pears which had been sprayed on 3rd October with the Black Leaf and oil mixture, in common with other pears the ground round these trees was treated with kerosene on 25th October, but the trees were not again sprayed with the mixture till 10th November. At this time scarcely one infested leaf could be found on the eighteen trees, which had made satisfactory growth and had acquired a good crop of leaves.

On 21st November a female midge was observed laying eggs on one of these trees, showing that the spray had lost its effect during the eleven days which had elapsed since its application. The spray