

CONTROL OF THE PEAR LEAF BLISTER MITE AND THE PEAR RUST MITE (ACARINA: ERIOPHYIDAE) IN BRITISH COLUMBIA¹

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ABSTRACT

Delayed dormant applications of endosulfan plus oil or ethion plus oil gave excellent control of both the pear leaf blister mite, *Eriophyes pyri* (Pgst.), and the pear rust mite, *Epitrimerus pyri* (Nal.) Lime sulphur as a dormant spray gave excellent control of the pear leaf blister mite but the delayed dormant application gave poor control. Both applications of lime sulphur gave good control of the pear rust mite.

Introduction

Lime sulphur as a dormant spray has been recommended for control of the pear leaf blister mite, *Eriophyes pyri* (Pgst.), for at least 60 years and has been quite effective if the spray was applied between the time the leaves start to drop in fall and before the buds start to swell in late winter. Many fruitgrowers are unable to apply sprays during this period due to snow cover, muddy orchard soil, lack of water for the sprayer or conflict with other orchard operations. Lime sulphur is becoming difficult to obtain and its cost has increased several fold during the last decade. Therefore, substitutes for the dormant application of lime sulphur are very desirable. Oil as a dormant or a delayed dormant spray has given good control of the blister mite in Oregon (Childs 1924) but has been less effective in British Columbia (Downing 1954). However, the combination of oil plus an organophosphate insecticide as a delayed dormant spray is recommended for control of the pear leaf blister mite in the State of Washington (Anonymous 1973). Endosulfan has been very effective against rust mites and when combined with oil has

been useful against other pests. Comparisons between these sprays and dormant and delayed dormant applications of lime sulphur were made for the control of pear blister mite and pear rust mite, *Epitrimerus pyri* (Nal.), in British Columbia.

Methods

Two Bartlett pear orchards, two and three acres (0.8 and 1.2 hectare) in size with trees spaced 15 ft. by 15 ft. (4.57 m) and infested with the pear rust mite and pear leaf blister mite were selected for the experiment. The orchards were divided into 20-to-50-tree plots so that there were 5 plots per treatment. Sprays were applied with a 1969 Turbo-Mist sprayer set to deliver 60 gallons per acre (673 litres per hectare). The dormant sprays were applied March 5 and the delayed dormant sprays March 16, 1973. On May 1, 1973, samples of all the leaves from 36 spurs per plot were examined and the numbers of blistered leaves were recorded. In mid-August, 1000 leaves and 100 fruit from each plot were examined and the numbers of blistered leaves and russeted fruit were recorded.

Results and Discussion

The effects of dormant and delayed dormant treatments are summarized in Table 1 for the pear leaf blister and in Table 2 for the pear rust mite.

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Table I. Average percentages of Bartlett pear leaves blistered by the pear leaf blister mite after application of sprays.

Insecticide	Amount per acre	Amount per hectare	Time of application	Blistered leaves, %	
				May 1973	Aug. 1973
Lime sulphur	15 gal.	168 l.	Dormant	0	0
Lime sulphur	15 gal.	168 l.	Delayed dormant	19	9
Endosulfan 50% W.P.	3 lb.	3.35 kg	Delayed dormant	0	0
Dormant oil	6 gal.	67.2 l.	dormant		
Ethion 25% W.P.	8 lb.	8.96 kg	Delayed dormant	0	0
Dormant oil	6 gal.	67.2 l.			
Check - no treatment				52	10

An outstanding result of this investigation was the excellent control of both the pear leaf blister mite and the pear rust mite given by the delayed dormant application of endosulfan plus oil or ethion plus oil. Lime sulphur as a dormant spray also gave excellent control of the pear leaf blister mite but the delayed dormant application gave poor control. Oviposition by overwintered blister mites had already commenced by the delayed dormant period and eggs laid prior to this apparently were not killed by lime sulphur. Against the pear rust mite, however, both applications of

lime sulphur gave good control.

The delayed dormant sprays of oil plus endosulfan or oil plus ethion could help with the control of pests other than the blister and the rust mite. In the State of Washington and some other fruit growing areas, endosulfan plus oil is recommended for control of pear psylla, *Psylla pyricola* Forester. Ethion plus oil provides good control of some aphids. Both endosulfan plus oil and ethion plus oil help in the control of the European red mite, *Panonychus ulmi* (Koch), and the San Jose scale, *Quadraspidiotus perniciosus* (Comstock).

Table 2. Average percentage of Bartlett pear fruit russeted by the pear leaf rust mite after application of sprays.

Insecticide	Amount per acre	Time of application	Percent fruit russeted at harvest, Aug. 14, 1973
Lime sulphur	15 gal.	Dormant	2
Lime sulphur	15 gal.	Delayed dormant	3
Endosulfan 50% W.P.	3 lb.	Delayed dormant	0
Dormant oil	6 gal.	dormant	
Ethion 25% W.P.	8 lb.	Delayed dormant	0
Dormant oil	6 gal.	dormant	
Check - no treatment			40

References

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