

Connecticut Agricultural Experiment Station

NEW HAVEN, CONN.

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SPRAYING SHADE TREES.

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Shade trees are sprayed during the summer months for the purpose of controlling various chewing and sucking insects which attack the foliage and occasionally to prevent injury from fungous diseases. By far the most common reason for spraying is to control certain chewing insects.

CHEWING INSECTS.

Elm Leaf Beetle: Over-wintering beetles eat holes in leaves during May and deposit on the under sides of the leaves clusters of yellow eggs which hatch about June 1, and the grubs feed on the under surface, skeletonizing the leaves, which in severe attacks turn brown and fall about July 15-20. Only elm trees are attacked. The remedy is to spray the under surface of the leaves thoroughly during the first week in June with lead arsenate, using 2-3 lbs. of the dry powder in 50 gallons of water. In all of the sprays it is advisable to add two pounds of calcium caseinate for a spreader.

Canker Worms: Eggs hatch with the unfolding leaves and the larvae feed upon the leaves of all kinds of deciduous trees. Spray with lead arsenate by the middle of May or as soon as there is enough leaf surface to catch and hold the poison.

Tent Caterpillar: Over-wintering eggs hatch with the unfolding leaves and caterpillars make nests or webs in the crotches of trunk and branches, and devour the foliage. Apple and wild cherry are the common food plants, but when exceptionally abundant as is the case this season, oak and other trees may be attacked. Spray about May 15 with lead arsenate.

White-Marked Tussock Moth: Curious and striking tufted caterpillars devour the leaves of various fruit and shade trees during June and August, there being two broods each year. These caterpillars have bodies striped lengthwise with brown and yellow and with red heads. There are four tufts of white or yellow hairs on the back, two pencils of black near the head and one on the tail. Spray with lead arsenate.

Other Tussock Moths: The hickory and tessellated tussock moths also feed upon shade trees the last half of summer but are seldom sufficiently abundant to need treatment.

Fall Web-Worm: White webs near the ends of the branches in late summer show the presence of this insect, which attacks all kinds of fruit, shade and

forest trees, often defoliating them. Applications of lead arsenate in August will prevent injury.

Walnut Caterpillar: Hickory, black walnut and butternut trees are attacked and often entirely defoliated by white-haired blackish caterpillars, which feed in clusters. Spray with lead arsenate in August.

Pine Sawflies: Several species of sawfly larvae feed upon the various pine trees which are now planted for shade and for ornament. Trees are occasionally defoliated, causing serious injury. Spray with lead arsenate as soon as larvae are noticed.

Other Caterpillars: Many other insects, such as gipsy moth, various leaf rollers, birch leaf skeletonizer, etc., feed upon the foliage of shade trees and may be controlled by a spray of lead arsenate.

SUCKING INSECTS.

Various species of aphids suck the sap from the leaves of nearly all kinds of shade trees. Conspicuous examples are the woolly beech aphid of the copper or purple leaf beech, the yellowish green aphids on birch trees and the green aphid on Norway maple. Aphids usually occur on the under sides of the leaves and give off a sweet sticky substance called "honey dew" which drips upon the lower leaves and upon the ground appearing like a coating of varnish. A black fungus or sooty mold grows in the honey dew, which looks as though covered with soot.

The proper treatment is to spray the under sides of the leaves with nicotine sulphate, one-half pint in 50 gallons of water. Either a pound of calcium caseinate or two pounds of dissolved laundry soap should be added as a spreader.

The woolly maple leaf scale can best be controlled by spraying the trunk and base of the larger branches of infested trees in March or April with liquid lime-sulphur (1 to 9) as for San José scale. The same treatment should be given tulip trees as soon as the leaves drop in autumn to kill the newly hatched tulip tree scales.

LEAF FUNGI.

These are about the only fungi that are controlled by spraying and fortunately comparatively few are injurious enough on our shade trees to warrant this attention. Among the most prominent and injurious of these are the Leaf Blotch of the European Horsechestnut, and the Anthracnoses of Maples, Oaks, Poplars, Ash and Sycamores. Less frequent and injurious are the Leaf Spots of the Elm and the English Hawthorne. Spraying for any of these troubles should begin before the first sign of spots appears on the leaves; for the anthracnoses this means as soon as the young leaves begin to break through the buds. The treatments should be repeated at least twice at intervals of two or three weeks according to the weather. Bordeaux Mixture of the home-made 4-4-50 strength is the best fungicide, though commercial forms can be used to less advantage, at the strength recommended. Stewart, of the Cornell Experiment Station, found that dusting with finely ground sulphur was effective in controlling the Leaf Blotch of the Horsechestnut. In yards it is desirable to rake together and burn in the fall the leaves of this tree or, better still, put them in the compost pile.