Section 1
Mites and Sap-Sucking Insects

A PRESENCE-ABSENCE SAMPLING PLAN FOR THE TWO-SPOTTED SPIDER MITE ON HOPS

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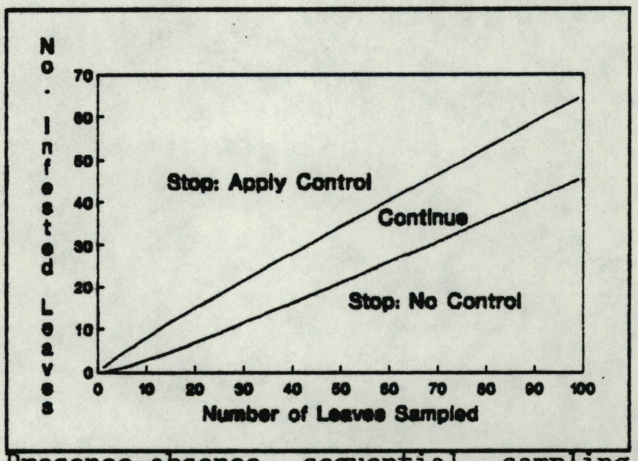
Sixteen hop yards were sampled for mites from 20 June through 24 August 1989. Twenty five vines were sampled per yard in 14 of the yards and 10 vines in two yards. One mainstem leaf was sampled at each of the 0, 1, 2, 3, 4, and 5 m heights from each vine. Mite eggs, immatures plus adult males, adult females, and predators were counted on each leaf under a 9X binocular microscope.

Mean height of mites increased from 1 to 2 m in mid June to 3 to 3.5 m in mid July. Mean height stayed at 3 to 3.5 m from mid July until sampling ended.

The linear relationship between *ln* mean and *ln* variance (Taylor's power law) was used to calculate a presence-absence sampling plan for adult females mites. The plan is based on adult females because they are easier to see than eggs and immature mites.

To sample a hop yard for mites, we recommend walking through the yard in a diamond-shaped pattern, selecting vines approximately at random, and picking one main stem leaf per vine at the mean height of the mites. Examine each leaf for the presence of adult females and record your findings. Recording the presence of predators is also important. After each sample, compare the total number of infested leaves with the figure at right. If the total number of infested leaves falls between the two lines, take another sample. If the total is less than the lower decision line, stop sampling and take no control action. If the total is greater than the upper line, stop sampling and apply a control. A control threshold of 10 adult females per leaf is used as an example. The economic threshold of mites on hops has not been established.



Presence-absence sequential sampling plan for adult female two-spotted spider mites on hops (P = 0.05).

This is a preliminary sampling plan based on one year's data. We plan to collect data next summer to complete the sampling plan. A similar sampling plan for the hop aphid has been finished and we hope to combine the plans.