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SUGGESTIONS FOR THE CONTROL OF HOP DOWNY MILDEW

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March 1948

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## SUGGESTIONS FOR THE CONTROL OF HOP DOWNY MILDEW

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by

G. R. Hoerner  
Extension Specialist in Hop Production

1. "Wild" hops. Downy mildew may be spread by wind for a distance of two miles! Escaped or volunteer hops growing in or near cultivated yards are a menace. They should be destroyed.
2. Field clean-up. Downy mildew may remain alive in the soil for at least two years! To reduce soil contamination, badly diseased vines should be cut, raked and burned as soon after picking as possible. Stationary picking machine refuse from badly diseased vines should be burned. If infected refuse is returned to the field as fertilizer, an application of from 150 to 400 pounds per acre of calcium cyanamide should be applied to the refuse before it is turned under in early spring. The same procedure should be followed where hand picking is practiced or where portable picking machines are used and diseased vines are left in the field until spring.
3. Pruning. Downy mildew may remain alive in the buds on the crowns, in crowns, or in the roots of infected plants. The disease may be spread by transplanting infected nursery plants or by using parts of infected plants in which the fungus may be hibernating. Prune crowns before growth starts in the spring. Remove the prunings from the yard and burn them.
4. Crown treatment. The purpose of crown treatment is to sterilize the soil around the hills to prevent infection of new shoots by contaminated soil. It is an effective and economical way to reduce the amount of downy mildew in Oregon hop yards. Use 2 ounces of either granular or powdered calcium cyanamide per hill, spread in an even layer over the crowns in a circle approximately 18 inches in diameter. Applications should be made as early in the spring as weather conditions will permit after danger of flooding is past; after old vines have been removed, and before new shoots appear above the soil surface. Calcium cyanamide should not be used on replants. On older plants it should be applied to the soil surface before hoeing or after the crowns have been recovered with soil following hoeing. Applications later than May 1 are not advised.
5. Spike removal. Yards should be patrolled at weekly intervals, from the time the first shoots appear, up to May 1. Remove all "spikes" as soon as they appear. Carry them from the yard in a tight container and burn them immediately. Workers who are plucking spikes should not be used in training, stripping or suckering.
6. Early training. Train as early as possible to prevent shoots from coming into contact with the soil.
7. Stripping. The first stripping should be done when the vines are being strung. Leaves left on the vines near the ground are most likely to become infected.

8. Suckering. Suckering should begin when the vines are being strung and continued at regular intervals throughout the season.

9. Dusting vs. Spraying. The most effective control programs employ liquid sprays only, as in England, or a combination of liquid sprays and dusts, as in New York. A large majority of growers on the Pacific Coast are not equipped to spray and prefer to dust. Unless better control is secured from a dusting program than has generally been obtained to date it may be necessary to return to the use of liquid sprays or a combination of sprays and dusts. Both are preventatives; neither are cures!

For 1948, however, the following dust program is suggested for early and late clusters:

(1) As soon as any "spikes" appear, whether or not training has been completed, make the first dust application.

(2) Dust immediately after the first training.

(3) Repeat at 10 day intervals throughout the growing season up to and including the first week in August.

(4) Use a mixture of 25 pounds of monohydrated copper sulphate to 75 pounds hydrated lime.

(5) Use an average, for the season, of at least 40 pounds of dust per acre per application.

(6) Dust, if possible, before rather than after rains or sprinkler irrigations.

(7) Establish a definite seasonal pattern of application. Drive in every other center and in alternate centers at each successive application, starting from opposite sides of the yard. For example, at first application drive between rows 1 and 2, 3 and 4, 5 and 6, etc. At second application drive between rows 5 and 4, 3 and 2, etc.

(8) Dust only when air is quiet, and if possible when humidity is high. These conditions commonly occur at night or in early morning.

(9) Dusters should have air velocity enough to reach over the tops of the vines and to drive the dust through the foliage. Do not depend on drift for complete coverage.

(10) Duster nozzles should be adjusted as the vines increase in height, to insure covering the under sides of the leaves and the tops of the vines.

Ask for advice, if in doubt, on methods, machinery or materials.