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NEW CONTROLS TESTED FOR POWDERY MILDEW

Sulfur has been used to control powdery mildews for nearly 100 years, and of all the organic fungicides developed in the 1930's and 1940's, none was more effective than sulfur in controlling mildew. In the past six years, however, three fungicides have been developed which hold promise of being more effective than sulfur. These are Karathane, Phaltan, and Actidione.

Each of these materials has appeared better than the others in certain mildew control trials, but they have seldom been tested under severe mildew conditions such as occur in the Pacific Northwest.

A three-year program was initiated the past season to compare Karathane, Phaltan, Actidione, and sulfur under Oregon conditions and to test any other materials showing promise in control of powdery mildew. A spray plot consisting of 360 rose plants was established. The three varieties, Nocturne, White Knight, and Poinsettia, were selected because of their extreme susceptibility to powdery mildew.

The treatments made were as follows: 1) Karathane (powder) 1 pound in 100 gallons. 2) Karathane (powder) 2 pounds in 100 gallons. 3) Karathane (emulsifiable concentrate) 6 ounces in 100 gallons. 4) Actidione PM 1 part per million. 5) Actidione PM 2 parts per million. 6) Phaltan 1 pound in 100 gallons. 7) Phaltan 2 pounds in 100 gallons. 8) Phaltan dust. 9) Sulfur (wetable spray), 10) Sulfur dust. 11) Control. 12) Control.

There was little mildew during July and early August of 1959 probably due to the hot weather and the open condition of the young planting. After July the plants were not sprayed or dusted until August 27; then treatments were made on September 9, 16, and 23. At this time mildew was very severe on the untreated plants.

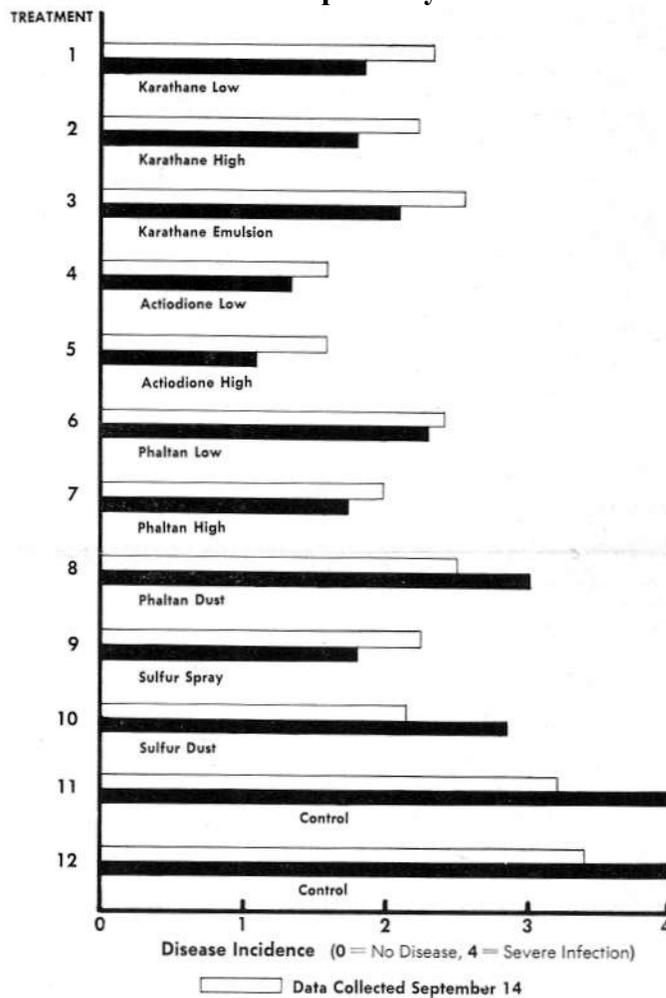
On September 14 and again on October 2 each block of six plants was rated twice for disease incidence. A rating system of 0- 4 was employed.

- 0= no mildew
- 1=light mildew
- 2 = moderate mildew
- 3 = heavy mildew
- 4 = severe mildew

The data collected on September 14 and October 2 are shown in Figure 1. By October 2 most of the treatments had eliminated some of the mildew found on September 14. Actidione was most effective of the materials tested.

At the higher concentration Karathane and Phaltan appeared to be at least as effective as sulfur. The dust treatments were least effective but this may have been due to inefficiency of application. These are preliminary experiments and observations, and no recommendations are being made at present. All of these treatments will be tested more thoroughly next season, and it is anticipated that recommendations will be forthcoming at that time.

Figure 1. Relative effectiveness of various treatments in control of powdery mildew



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