

SUGARBEET POWDERY MILDEW in Imperial Valley

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Powdery mildew of sugarbeet, caused by *Erysiphe polygoni* DC., was first reported in California in 1934 but did not become prevalent statewide until the 1974 season. Observations in Imperial County show wide differences in intensity of powdery mildew in various fields. In some sugarbeet fields many plants were completely covered with mildew while others had medium to light infestation of leaves. A question was raised as to whether it was necessary to treat every field in the valley for control of powdery mildew. To help answer this question a sulfur-dust airplane trial was initiated in the 1974-75 growing season.

A sugarbeet field was selected near the Salton Sea for the experiment since this area had previously shown early and severe mildew infestation. Previous work indicated that 40 pounds of sulfur dust per acre provided excellent control of sugarbeet powdery mildew. The field had been planted with the sugarbeet cultivar US H10 on August 21 and was first irrigated on September 2, 1974. Plots were 24 beds wide, 1200 feet long, and each bed consisted of a single row of sugarbeets. The plot was replicated six times. The two treatments were 40 pounds of sulfur dust per acre except for the check or no treatment areas.

Powdery mildew appeared in the field during the middle of December but inoculum density was not considered high enough for treatment with sulfur at that time. Inoculum and disease severity increased in January and the first airplane application of sulfur dust was applied on January 29, 1975. A second applica-

tion was made on February 19. Two weeks after application of the second sulfur dust new infestations of mildew were hard to find in the treated area. After March 25, powdery mildew was also declining in the untreated checks. No further applications were made for control of powdery mildew during the rest of the growing season.

Sugarbeet roots were harvested with a two-row mechanical digger on June 20 and 22, 1975. Yields were taken from the six middle rows of each plot. Results were as follows:

<u>Treatment</u>	<u>Tons/Acre</u>
Sulfur dust 40 lb./acre	40.56
No treatment	40.46

Results

There was no significant difference in yield of sugarbeet roots or percentage of sugar between plots treated with sulfur and those not treated.

These results indicate a need for accurate pest management techniques in the Imperial Valley to determine on a field by field basis whether control of powdery mildew will enhance root yield or sugar content of sugarbeet.

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