

in two- to eight-drill-row seedbeds. The PDB crystals were vaporized on rough boards about 6 inches wide and also on strips of cheesecloth mounted in the frames lengthwise and 3 to 4 inches above tops of the plants. Soil was ridged and pressed around the bottom edges of each frame after it was placed over the plants to prevent excessive leakage of the PDB vapor. Two to 5 pounds of PDB crystals per 100 square yards of seedbed were spread evenly over the boards on cheesecloth between 4 and 5 o'clock in the afternoon and the covers were wetted and placed on the frames. Treatments were started when downy mildew was first observed in the seedbeds. Some of the covered frames were left over the plants during the day and others were removed between 8 and 9 o'clock the next morning. Some plants were treated two and others three successive nights at weekly and fortnightly intervals.

Three pounds of PDB crystals per 100 square yards of seedbed applied in the afternoon of three successive days at weekly intervals gave good control of downy mildew. Two pounds of the crystals applied in a similar manner gave poor control, as there was not enough PDB vapor produced to kill the fungus. The 2- and 3-pound treatments did not injure the plants when the frames or covers were removed from the seedbeds at 8 or 9 o'clock in the mornings and the plants were left uncovered until PDB was applied again in the afternoons.

The 4- and 5-pound treatments made on three successive days at weekly intervals controlled downy mildew but burned the leaves and stunted the plants. Plant injury was worst when minimum nocturnal temperatures were 70° F. and higher during the treating period. Apparently, concentrations of PDB vapor injurious to the plants were produced when more than 3 pounds of crystals were used on each 100 square yards of seedbed and when high temperatures caused rapid vaporization of the crystals.

None of the treatments controlled the disease when applied during periods when nocturnal temperatures dropped to 40° F. or lower, as the fungus was not very active and most of the PDB crystals failed to vaporize at those temperatures. Treatments made at fortnightly intervals also were ineffective, as the disease developed during the two weeks between treatments.

When PDB crystals were spilled on the seedbed during application, plants in these areas were injured or killed. Plants also were injured or killed when treated with 4 to 5 pounds of the crystals per 100 square yards of seedbed and exposed continuously to PDB vapor 24 to 48 hours. The worst damage occurred