

Hastings and similar areas of the state because of the excessive cost of frames and labor required to treat plants grown in narrow seedbeds. Furthermore, chloranil and nabam are as effective against the disease as PDB and can be applied at less expense.

As the earliest date the disease has appeared on seedling plants in the Hastings area during the last 13 years is September 19, it is safe to delay treatment of cabbage plant beds with fungicides for control of downy mildew until September 15 in that area. In other areas of the state where the disease is known to have occurred earlier in the fall, treatment for downy mildew control should be started sooner.

### SUMMARY

Data are presented showing results of tests conducted at Hastings from 1940 to 1953 for evaluating fungicides for control of downy mildew of cabbage.

**Fungicides Used in Plant Beds.**—Paradichlorobenzene gave good control of downy mildew in 1940 and 1941, when 3 pounds PDB crystals per 100 square yards of seedbed were applied between 4 and 5 P.M. on each of three successive days at weekly intervals. Treatment with 2 pounds of PDB crystals per 100 square yards of seedbed gave poor control and the 4- and 5-pound treatments injured the plants. Injury was highest when nocturnal temperatures (70° F. and higher) caused rapid vaporization of the PDB crystals. Treatments were not effective when made during periods when nocturnal temperatures were 40° F. or lower.

In tests from 1940 to 1943 bordeaux mixture, Flordo and Flordo K sprays gave good control of downy mildew when used at full strength but injured the plants. They gave poor control when used at half- and quarter-strength.

Downy mildew was not controlled satisfactorily when the plants were sprayed with Flordo Cl, Ceresan plus SS3 spreader-sticker, U. S. Rubber Co. No. 366, sulfur wettable and bismuth subsalicylate plus vatsol; or when the plants were dusted with copper-lime, copper compound A, sulfur and ferbam dust. Cuproicide spray used with or without emulsified cottonseed oil controlled the disease but injured the plants; oil increased the injury. Ferbam spray containing SS3 spreader-sticker also controlled downy mildew but was injurious to the plants.