

## A study to assess loss in seed yield of onion due to purple blotch disease caused by *Alternaria porri* (Ellis) Cif.

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### SUMMARY

The performance of eight different fungicides in controlling the purple blotch (*Alternaria porri* (Ellis) Cif. of onion was evaluated under net house condition (pot trial). Maximum disease control (79.58%) and thousand seed wt. (3.68 g) was recorded in foliar application of a mixture of hexaconazole (0.005%) + mancozeb (0.3%) followed by difenoconazole (0.025%) + mancozeb (0.3%) in reducing disease intensity (70.72%) as well as avoiding yield loss by 26.16 and 22.67 per cent, respectively over control.

**Key words :** Assess losses, *Alternaria porri*, Purple blotch, Fungicides.

Onion (*Allium cepa* L.) is one of the important underground bulb crop of tropical and subtropical countries. It is consumed throughout the year by almost all classes of people on account of its medicinal dietary value. It is also a good source of vitamin A, B and C, protein, phosphorus, iron and calcium. There are several diseases responsible for low productivity among them purple blotch of onion caused by *Alternaria porri* (Ellis) Cif. is important one. This disease causes losses to the extent of 35 per cent and sometimes 100 per cent in seed and bulb production (Ajrekar, 1923; Chupp, 1923; Skiles, 1953), hence the present investigation was carried out to assess losses due to this disease and develop feasible management options.

### MATERIALS AND METHODS

All the fungicides were tested on potted plants with the help of Completely Randomized Design under net house at department of plant pathology with their recommended dosages. Bulbs of cv. PILIPATTI were planted in pots (15" x 9") @ three bulbs in each pot. Plants were inoculated by spraying with fungal suspension at the age of 25 days under humid condition of green house. After 24 hours, the inoculated plants were sprayed with respective fungicides. Remaining three sprays of fungicides were carried out at 15 days interval. Control was maintained by spraying distilled water instead of fungicide. Each treatment was replicated thrice.

The detail of fungicidal treatments applied is given in the Table 1. The severity of disease was measured using 0-5 scale (Wheeler, 1969). After third and fourth spray, per cent of disease intensity was calculated as given below.

$$\text{Per cent disease index} = \frac{\text{Sum of numerical ratings}}{\text{No. of observations}} \times \frac{100}{\text{Maximum disease rating}}$$

Percentage of leaves infected were recorded by counting the number of total number leaves per plant and the number of infected leaves per plant from randomly selected five plants per pot. Seed yield per pot was recorded from each treatment. All the data recorded were analysed statistically by suitable transformation.

### RESULTS AND DISCUSSION

It is evident from the data presented in the Table 1 that all the fungicides tested were effective and significantly reduced the incidence of purple blotch and avoid yield losses as compared to control. Maximum disease control (79.58%) was recorded in foliar application of a mixture of hexaconazole (0.005%) + mancozeb (0.3%) followed by difenoconazole (0.025%) + mancozeb (0.3%) and chlorothalonil (0.2%) + hexaconazole (0.005%) resulting in 70.72 and 66.61 per cent disease control, respectively. The application of fungicides alone were also significantly reduced the disease. However, they were less effective in comparison to combined application of systemic and non-systemic fungicides.

The maximum yield of 29.24 g/pot was recorded in hexaconazole (0.005%) + mancozeb (0.3%) treatment which could reduce 26.16 per cent yield loss over control followed by difenoconazole with mancozeb, chlorothalonil + hexaconazole which gave seed yield of 27.92, 27.41 g/

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