In vitro Evaluation of Different Fungicides on the Mycelial Growth and Sclerotia Production of *Sclerotinia sclerotiorum*

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SUMMARY

***In vitro* effect of two systemic fungicides *viz.*, carbendazim and metalaxyl at different concentrations (25, 50 and 100mg/ml) and three non-systemic *viz.* captaf, mancozeb and copper oxychloride at different concentrations (100, 250 and 500 mg/ml) were evaluated against mycelial growth and sclerotia production of *Sclerotinia sclerotiorum* causing stem rot in mustard. Among all the five fungicides carbendazim was observed to compeletly (100%) inhibit the mycelial growth and sclerotial production of the fungus.**

Key words : Mycelial growth, Sclerotia , *Sclerotinia sclerotiorum.*

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The mustard is an important edible oilseed crop of the country. Although cultural, agronomical and environmental factors are responsible for low productivity but occurrence of pests and diseases is an other important factor. Rot of mustard has become important in recent time in India and elsewhere with high disease incidence and severe yield losses leading to discouragement of growers of the crops. It has recently emerged in a serious for in many parts of country (Kumar and Thakur, 2000). In Uttar Pradesh it causes losses as high as 72 % (Chauhan *et al.*, 1992). Therefore present study was undertaken to assess the potential of different chemicals (fungicides) for the management of Sclerotinia rot of mustard crop.

MATERIALS AND METHODS

Effect of five fungicides on the growth of *S. sclerotiorum* was studied by poisoned food technique as described by (Nene and Thapliyal, 1979). Three concentrations of each fungicides were prepared in sterilized distilled water (Table 1). To obtain the desired concentration of fungicides in the medium, amount of stock solution to be added in PDA was calculated by using the formula :

$$C_1V_1 = C_2V_2$$

where,

C_1 = Concentration of stock solution (mg/ml)

C_2 = Concentration of fungicide (mg/ml)

V_1 = Volume (ml) of the stock solution to be added.

V_2 = Volume of PDA medium.

Required amount of stock solution was poured in 60 ml of sterilized molten PDA to get final concentration of 25, 50, and 100 mg/ml for systemic and 100, 250 and 500 mg/ml for non systematic fungicides. Such treated PDA medium was poured into sterilized Petri plates @20 ml/plate and allowed to solidity. After solidification, the poisoned medium was inoculated with 5 mm discs of *S. sclerotiorum* taken from 3 days old culture. Petri plate containing PDA served as control. The treatments were replicated thrice. Observations on colony diameter and number of sclerotia formed were recorded after 4 and 21 days of inoculation, respectively. The data so obtained were computed to per cent inhibition of growth (I) over check by using the formula :

$$I = \frac{C - T}{C} \times 100$$

where,

C = Radial growth in check

T = Radial growth in treatment

RESULTS AND DISCUSSION

The results presented in Table 1 indicated that all the fungicides at different concentrations under test proved inhibitory to *S. sclerotiorum* and significantly reduced the colony diameter as well as production of sclerotia in compared to check. Carbendazim was found most