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Research Note

Evaluation of various fungicides and bio-organics against foot rot disease of finger millet caused by *Sclerotium rolfsii* SAAC

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ABSTRACT : The studies were undertaken for the management of foot rot disease of finger millet (nagli or ragi). Rresults of poisoned food technique revealed that the fungicides *viz.,* Tilt (0.05%), Hexathir (0.2%), Score (0.05%) and Contaf plus (0.05%) were best as they totally inhibited mycelial growth. These treatments were followed by Bavistin (44.44%), Dithane M-45 (40.77%), Blue copper (38.22%) and Captaf (34.11%). In bio-organics, maximum per cent reduction was achieved due to Chetna (54.88%). As compared to this, Purna (24.11%), Reviver (21.55%) and Amogh (21.11%) gave less per cent reduction of test fungus over control.

Key Words : Foot Rot, *Sclerotium rolfsii*, Nagli, Fungicide, Bio-organics, Finger millet

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Finger millet [*Eleusine coracana* (L.) Gaertn] is an important millet crop grown in India. Foot rot of nagli or ragi caused by *Sclerotium rolfsii* Sacc. has been found quite serious and wide spread. It is most destructive disease of the crop as it infects the crop in seedlings stage resulting in complete failure of the crop. Under suitable condition, it causes 40 to 50 per cent loss (Basta and Tamang, 1983). Taking in to account the economic importance of the disease, the investigations were made on the disease and its causal agent.

The efficacy of various fungicides (hexathir, bavistin, blue copper, dithane M-45, tilt, score, captaf and contaf plus) and bio organics (chetna, purna, reviver and amogh) on growth and sporulation of the isolates of the pathogen was studied using poisoned food and inhibition zone techniques. A technique in which nutrient medium was poisoned with fungitoxicant and bio-organic toxicant on which the test fungus grew. It was followed here for *Sclerotium rolfsii*. For this, all the glassware used in the study were sterilized prior to use. PDA was used as a medium. PDA was prepared and sterilized at 15 lbs per square inch for 15 minutes in an autoclave and then it was distributed in 250 ml capacity conical flasks. Required quantity of each fungicide and bio-organic was added in each flask, so as to get the desired concentrations. The fungicides and bio-organics were thoroughly mixed in the medium and poured in sterilized Petri plates. Concentrations of each fungicide and bio-organic were replicated thrice. The culture of the test fungus, *Sclerotium rolfsii* was grown on PDA for 4 – 5 days until the Petri plates were fully covered but did not form the sclerotia.

The fungal discs of 0.5 cm diameter were cut with the help of sterilized cork borer and transferred aseptically under the condition of Laminar Flow Bench at the centre of each Petri plate, containing poisoned PDA medium. The suitable control of PDA without fungicide and bio-organic inoculated with fungal disc served as control. The plates were incubated at 28 ± 1^0C in incubator and observations for colony diameter and sclerotial formation were recorded until whole of the plate in control treatment was fully covered with mycelial growth.

Per cent inhibition of growth was calculated by the following formula (Horsfall, 1956):

$$X = \frac{Y - Z}{Y} \times 100$$

where,
X = Per cent inhibition
Y = Growth of fungus in control (cm)
Z = Growth of fungus in treatment (cm)

Data obtained on per cent inhibition was subjected to statistical analysis.

The total eight fungicides and four bio-organics were