Anti fungal activities of Neem formulation

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Antifungal activity of Neem (*Azadirachta indica* , S: Kohomba) formulation on *Fusarium spp., Rhizoctonia spp.,* and *Curvularia spp.* was determined by agar plate method. *Fusarium spp., Rhizoctonia spp.,* and *Curvularia spp.* are common crop pathogens which attack on fruits, leaves and roots respectively. *Neem* formulation contains methanolic extract of Neem seeds, Neem oil and Citronella oil. 4000, 5000, 6000, 7000 ppm of Neem formulation and same concentrations of Daconil (positive control) were used for the experiment. Test solutions were added to the PDA (Potato Dextrose agar) medium, when the temperature of the sterilized medium was 45 ^{0}C. Circular fungi culture discs were kept in the center of the each plate and the diameter of the fungal culture was measured. Anti fungal activity was determined up to 4 days for the fast growth fungi, *Rhizoctonia spp.,* and up to 7 days for the slow growth fungi, *Fusarium spp.*, and *Curvularia spp* respectively. Diluted solution of the formulation without extract and oils at the highest test concentration served as control & untreated PDA medium served as blank. Each experiment was done in triplicates. Growth inhibition percentage was calculated by the equation (C - T / C) ×100 where C is hyphal extension (mm) of controls and T is hyphal extension (mm) of the crude extracts treated plates.

The study revealed that Neem formulation was active against *Fusarium spp., Curvularia spp. & Rhizoctonia spp.* The minimal inhibitory concentrations of Neem formulation were 6000 and 7000 ppm towards both *Curvularia spp.* & *Fusarium spp.* and *Rhizoctonia spp.* respectively. This formulation had higher activity against *Curvularia spp.* & *Fusarium spp.* than *Rhizoctonia spp..* Growth inhibiton % of *Curvularia spp* was 2.8% towards Daconil at 6000 ppm where as Neem formulation increased the inhibition % more than 70 times (80 %) that of Daconil for *Curvularia spp* at the same concentration. Compared with the positive control Daconil, Neem formulation had better activity. Growth inhibition % of both *Curvularia spp.* & *Rhizoctonia spp* for Daconil did not exceed 75% at any tested concentration. Further, these results showed that above fungi species are more sensitive for Neem formulation than Daconil. Therefore, this study revealed the promising antifungal activity of Neem formulation.

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