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Study on efficacy of some botanicals against *Colletotrichum gloeosporioides* causing anthracnose disease in brinjal (*Solanum melongina* L.)

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Anthracnose disease is one of the major problems in brinjal (*Solanum melongina* L.) cultivations and the use of eco-friendly botanicals for the control of this disease is a better alternative to synthetic fungicides. Laboratory studies were carried out to test the effect of some selected botanicals against *Colletotrichum gloeosporioides* causing anthracnose in brinjal and to select the most effective concentrations. In the first experiment, water extracts of Garlic (*Allium sativum*) bulbs, Turmeric rhizomes (*Curcuma domestica*), Heen Aratta rhizomes (*Alpenia galanga*), Guava leaves (*Psidium guajava*) and Wathupalu leaves (*Michania* spp.), were prepared as 0.05%, 0.1%, 0.5%, 1.0% and 1.5% dilutions while sterilized distilled water was used as the control to study effect of those concentrations on mycelial growth of the fungus, separately. Second experiment, based on the results of the first experiment for selected concentrations of each botanical, was arranged in a Completely Randomized Design (CRD) with three replicates to test the best botanical and concentration that reduce mycelial growth. Solutions from each concentration were incorporated to Potato Dextrose Agar (PDA) medium by the pour plate method. Those plates were centrally inoculated with 1 cm diameter mycelial discs of *C. gloeosporioides*, sealed and incubated at room temperature ($28^{\circ}\text{C} \pm 1^{\circ}\text{C}$). Radial mycelial growth of the growing fungus was measured every other day (starting five days after inoculation). In Garlic, significantly lower ($P \leq 0.05$) radial mycelial growth (5.3833 cm) was seen in 0.5% concentration of garlic compared to other concentrations. The mean radial mycelial growth of the fungus was highest in turmeric at 0.5%, and Heen Aratta both at 0.5% and 1.0% concentrations, respectively. All the concentrations tested with Wathupalu and Guava leaf extracts showed significantly lower radial mycelial growth than the control. When all those best concentrates (0.5% Garlic, 0.5% Turmeric, 0.5% and 1.0% Heen Aratta, 0.05%, 0.1%, 0.5%, 1% and 1.5% Guava and 1.5% Wathupalu) were tested together, 0.1%, 0.5% and 1.5% concentrations of Guava leaf extract and 1.5% concentration of Wathupalu leaf extract showed significantly lower radial mycelial growth indicating their suitability for inhibiting growth of *C. gloeosporioides*.

Keywords: anthracnose, botanicals, *Colletotrichum gloeosporioides*, *Solanum melongina* L.