EFFECT OF DIFFERENT SOIL AMENDMENTS FOR SUPPRESSION OF FUNGAL PATHOGEN IN *MAE*

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Sclerotium rolfsii Sacc. is a soil borne fungal pathogen capable of causing diseases on a wide range of agricultural and horticultural crops. Collar rot caused by *S. rolfsii* is one of the most destructive diseases of *Mae* (*Vigna ungiculata L. (Walp.) subsp. sesquipedalis*) cultivations in Sri Lanka. For the control of *S. rolfsii*, use of fungicides is not practical due to exorbitant cost and environmental hazards. Use of soil amendments with bio control agents are substitutes to fungicides. Studies were undertaken at the Horticultural Crops Research and Development Institute, Gannoruwa to evaluate effects of plant extracts under *in vitro* and soil amendments, using locally available plants, and antagonistic *Tricoderma* spp. against *S. rolfsii*. In a pot experiment, leaves of *Azadirachta indica*, *Tithonia diversifolia*, *Gliricidia sepium*, roots of *Panicum maximum*, crushed seeds of *Brassica juncea* and *Tricoderma* compost were used to identify the suppression of *S. rolfsii*. From each plant material 75 g was mixed with 1.5 kg of sterilized soil and 500 sclerotia/1 kg of sterilized soil were applied as inoculum. One set of sclerotia were directly introduced to plant-soil mixture. Other set of sclerotia were introduced after one week from preparation of the mixture. The results indicated a significant reduction in collar rot in pots, treated with *A. indica* and *P. maximum*. Concentrated solutions of 50% and 100% of leaf extractions (5 ml, 10 ml and 15 ml) *of A. indica*, *T. diversifolia*, *G. sepium*, root extraction of *P. maximum* and seed extraction of *B. juncea* were mixed with Potato Dextrose Agar (PDA). After 4 days, the treatment of 15 ml at 100% of *B. juncea* showed 82.8% significant mycelial growth inhibition. Use of 15 ml at 50% of *A. indica* was found most efficacious with a mycelial growth inhibition of 58.9%. The lowest mycelial inhibition was recorded by *P. maximum* in both concentrations. Antagonistic potential of the four isolates of *T. viride* and one isolate of *T. harzianum,* on the phytopathogenic *S. rolfsii* was investigated in dual culture plates. After 5 days from inoculation, HORDI and Japanese isolates of *T. viride* were the most effective with significant mycelial inhibition at 66.7% and 61.7%. These results indicate that amendment of soils with plant extracts and bio control agents can be exploited in the management of collar rot caused by *S. rolfsii* of *Mae* in an eco-friendly manner.

Keywords: Bio control, Collar rot, plant extracts, Soil amendments, *Tricoderma* spp.