

Comparative efficacy of some biocontrol agents and carbofuran against disease complex caused by *Meloidogyne incognita* and *Rhizoctonia solani* on *Pseuderanthemum atropurpureum*

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ABSTRACT : The efficacy of some bioagents was compared with the traditionally used nematicide carbofuran for the control of the root-knot nematode, *Meloidogyne incognita* and root-rot fungus, *Rhizoctonia solani* in pot container under greenhouse conditions. The results obtained in the present experiment showed that the simultaneous inoculation of *Pseuderanthemum atropurpureum* plants with *M. incognita* Race-3 and *R. solani* caused significant damage in plant growth and physiological parameters. The inoculation of the biocontrol agents viz., *T. atroviride*, *T. asperellum*, *P. lilacinus* and bare root dip treatment with carbofuran significantly reduced the plant damage caused by concomitant inoculation of *M. incognita* Race-3 and *R. solani* in *P. atropurpureum*. However, on the other hand the application of *A. niger*, *C. epiphyllum*, *C. verticillata*, *M. hiemalis* and *V. glaucum* did not significantly improve the various plant growth parameters in comparison to untreated and *M. incognita* Race-3 and *R. solani* inoculated plants (control-II). The data clearly revealed that the intensity of root-rot caused by *R. solani* was reduced in the plants treated with *T. atroviride*, *P. lilacinus*, *T. asperellum* and carbofuran as compared to untreated and *M. incognita* Race-3 and *R. solani* inoculated plants (control-II). The plants treated with these fungal bioagents and nematicide not only reduced the intensity of root-rot but also delayed the appearance of collar-rot and crown-rot symptoms. The maximum delay in the appearance of collar-rot and crown-rot symptoms was observed in the plants treated with *T. atroviride*, followed by *P. lilacinus*, carbofuran and *T. asperellum*. Hence, the present study concluded that the biocontrol agents namely *T. atroviride*, *T. asperellum* and *P. lilacinus* are effective against the disease complex caused by interaction of *M. incognita* Race-3 and *R. solani* on *P. atropurpureum* by significantly reducing the damage in terms of plant growth and the physiological parameters.

Key Words: Management, *Trichoderma* spp. *M. incognita*, *R. solani*.