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In vitro evaluation of botanicals, bio agents and fungicides against basal stem rot of coconut caused by *Ganoderma lucidum*

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ABSTRACT : Basal stem rot disease also known as Ganoderma wilt, caused by *Ganoderma* spp. is a major disease, limiting coconut production in Karnataka. Bioefficacy of five botanicals *viz. Alium sativa, Nerium oleander, Tinospora cordifolia, Osimum sanctum* and *Aegle marmelos,* Seven isolates namely *Trichoderma viridae* (GKVK), *Trichoderma harzianum* (GKVK), *Trichoderma asperillum* (GKVK), *Trichoderma harzianum* (HRS), *Trichoderma harzianum* (NBAII), *Trichoderma harzianum* (KRN) and *Trichoderma harzianum* (MYS) and ten systemic and three contact fungicides were evaluated under *in vitro* conditions against *Ganoderma lucidum*. Among the five botanicals evaluated only *Alium sativa* found significantly superior in inhibiting the growth of the pathogen at all concentrations followed by *Osimum sanctum* at the concentration of 15 and 20% found effective in inhibiting the growth of *Ganoderma lucidum* and they have recorded hundred and eighty five per cent inhibition, respectively. Among the antagonists tested *Trichoderma asperillum (GKVK)* was found superior over all other bio agents by recording maximum inhibition of 76.00 per cent followed by *Trichoderma viridae (GKVK)* which has recorded 74.89 per cent. Least inhibition of 61.78 per cent was recorded in *Trichoderma harzianum (KRN).* Among the thirteen fungicides evaluated Carbendazim 50%WP @ 0.1%,Carboxin 37.5+Thiram 37.5% @DS @ 0.3%, Difenoconazole 25% EC@0.1%, Propiconazole 25% EC @0.1%, Tebuconazole 25.9%EC @0.15%, Tebuconazole + Trifloxystrobin 75% WG @0.04%, Tetraconazole 3.8% w/w EW @0.1%, Tetraconazole 3.8% w/w EW @0.15% and standard check Hexaconazole 5%SC @0.1% has recorded cent per cent inhibition and showed superior over other fungicides .The Azoxystrobin 23% SC @0.1% which has recorded zero per cent inhibition followed by 30.66% in Pencycuron 22.9% SC@0.1 % on 9 DAI. The present study indicated that plant products and biocontrol agents have shown significant inhibition of *Ganoderma lucidum* and was comparable with fungicides.

Key Words : Coconut, *Ganoderma lucidum*, biocontrol agents, chemicals, *in vitro* evaluation.