

RESEARCH ARTICLE

Evaluation of efficacy of *Neem* oil, castor oil, carbendazim, *Trichoderma harzianum*, *Trichoderma viride* and *Pseudomonas fluorescens* against *Alternaria carthami*

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SUMMARY

The efficacy of two botanicals viz., *Neem* oil and castor oil, one fungicide i.e., carbendazim and three bioagents viz., *Trichoderma harzianum*, *Trichoderma viride*, *Pseudomonas fluorescens* were tested in vitro and in vivo against *Alternaria carthami* inciting leaf spot safflower leaf spot/blight. In vitro efficacy of botanicals and fungicide was evaluated by poison food technique against *Alternaria carthami*. In vitro efficacy of bioagents was evaluated by dual culture technique against *Alternaria carthami*. In in vitro evaluation of fungicide and botanicals carbendazim found to be most effective and showed maximum inhibition of mycelial growth (43.33%) followed by *Neem* oil (30.53%). Among the bioagents maximum inhibition of radial growth of the test pathogen was noticed in *P. fluorescens* (87.36 %) which was found on par with *T. viride* (86.22 %). Mycelial growth of test pathogen was inhibited to an extent of 81.08 per cent *T. harzianum*. In in-vivo evaluation, combined seed treatment with of *P. fluorescens* (10 g kg⁻¹ seed) + carbendazim (2 g kg⁻¹ seed)+ *Neem* oil (10 ml kg⁻¹ seed) was effective in controlling *Alternaria* leaf spot/blight.

Key Words : Botanicals, Bioagents, Safflower, Leaf spot/blight

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