

Integrated management of pigeonpea wilt disease incited by *Fusarium udum* var. *Cajani*

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SUMMARY

Evaluation of different fungicides and biocontrol agents revealed that all the fungicides as well as biocontrol agents have significantly improved germination (%) over untreated control. Combination of seed treatment (T₉) with thiram+ carbendazim + *T. viride* + *Rhizobium* and soil application of *T. viride* was significantly superior and was at par with T₈, T₇, T₆, T₅, T₄ and T₂. All the fungicides alone or in combination with *T. viride* + *Rhizobium* seed treatment were significantly superior over control and were at par.

Key Words : Integrated management, Wilt, Pigeonpea

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Wilt of pigeonpea being mainly soil borne and to some extent seed borne, the management of the disease needs, integrated approach. The seed transmission of *Fusarium udum* externally as well as internally, is well documented in the literature (Nakkeeran and Devi, 1997). The internal seed transmission of *Fusarium udum* has been reported in susceptible and tolerant cultivars, but it was not internally seed borne in resistant cultivars. The internal seed borne nature of the fungus was confirmed by repeated laboratory studies and growing in pot test. Gowdar and Kulkarni (1999) conducted laboratory and glass house tests to determine the compatibility of antagonists (*T. viride* and *T. harzianum* @ 4 g/kg seed) with fungicide (carbendazim @ 0.05 per cent and captan @ 0.2 per cent as seed treatment) for the control of *Fusarium* wilt of pigeonpea caused by *F. udum*. In glasshouse tests, seed treated with carbendazim and

carbendazim + *T. viride* showed 90 per cent germination in comparison with 76 per cent in control.

MATERIALS AND METHODS

This experiment was planned in Randomized Block Design with three replications and nine treatments. Three biological agents ST₄ *Trichoderma viride*, ST₅ *Pseudomonas fluorescens*, ST₆ *Rhizobium* were used at the rate of 10 g/kg of seed of ICP-2376 (susceptible cultivar). Three chemicals viz., ST₂ thiram at the rate of 3 g/kg seed, ST₄ carbendazim @ 2 g/kg seed, ST₂ captan @ 3 g/kg seed, ST₇ thiram + carbendazim + *Trichoderma viride* + *Rhizobium* [(2 g/kg) (thiram and carbendazim), 10 g/kg (*Trichoderma viride* and *Rhizobium*) and ST₈ thiram + carbendazim + *Trichoderma viride* + *Rhizobium* + soil application (10 ml/kg of soil before sowing) were used for seed treatment and soil application. A control ST₀ was sown without any seed treatment and soil application. The experiment was conducted in pots using the sick soil from Agricultural Research Station Badnapur. The observation on germination (%) and wilting (%) were analyzed statistically.

RESULTS AND DISCUSSION

Different fungicides and bioagents were tested either by seed or soil application or by combination as shown in material and methods. Experiment was planned in Randomized

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