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BIOCONTROL OF SOIL-BORNE FUNGAL PATHOGEN OF CHICKPEA AND PIGEONPEA

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Antagonistic activity of microorganisms can usefully be employed to control soil-borne plant diseases where genetic resistance is not available or to enhance the efficacy of low level of resistance. We evaluated 30 bacterial and 6 fungal cultures (*Aspergillus* spp.) for *in vitro* growth inhibition of *Fusarium oxysporum* f. sp. *cicer*, (wilt), *Rhizoctonia bataticola* (dry root rot) *Sclerotium rolfsii* (collar rot) of chickpea and *F. udum* (wilt) of pigeonpea. *In vitro* promising cultures were tested for the control of *R. bataticola* in laboratory and collar rot in pots as well as in field condition. The cultures showed major differences for their antagonistic activities against different pathogens. *Aspergillus* spp. were not very effective against any of the above fungal pathogens. However, four bacterial cultures inhibited growth of these pathogens in dual culture test (inhibition zones ranged from 1-2 cm). No culture was effective in controlling dry root rot infection using paper towel technique. Two of the bacterial cultures (*Pseudomonas* spp.) considerably reduced collar rot incidence in pots. Efficacy of the two cultures was substantially increased with the additions of Thiram. The collar rot incidence was reduced from 88% to 54%, showing a clear synergistic effect. Similar results were also obtained in two field tests. Both the bacteria, however, did not control wilt disease of chickpea in a wilt sick field. These results show that collar rot disease for which good genetic resistance has not yet been identified can be managed using this approach.