D-81 **Control of major nursery pathogens of chilli *(Capsicum annuum* L.) with rhizosphere bacteria**

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Capsicum annuum var. *acuminatum* cv. MI-2 was used in this investigation to evaluate the potential of rhizosphere microflora to control its nursery diseases. *Rhizoctonia solani* and *Fusarium solani* were the commonly isolated pathogens from farmers' nursery beds.

Soil was inoculated with various concentrations of propagules of *R. solani* and *F. solani*. The LD_{50} values were calculated and used in subsequent experiments. A total of 9 out of 34 tested rhizosphere bacterial isolates showed inhibition zones in dual culture plates with *R. solani* and *F. solani* and were used to assess their potential for *in vivo* protection of plants. These isolates and several others which did not show *in vitro* antagonism were used for seed treatment at a concentration of 10^4 CFU/ml. Sterilized distilled water was used in the control.

Seeds were sown in garden soils inoculated with the pathogens at their LD_{50} concentrations and pre- and post-emergence damping-off were scored in a Randomized Complete Block Design. *R. solani* caused both pre- and post-emergence damping-off whereas, *F. solani* caused only post-emergence damping-off. *Bacillus subtilis* electro type II (Bs ET II) was able to bring down the *R. solani* pre-emergence damping-off from 23.1% to 6.9% and post-emergence damping-off from 35.1% to 14.1%. *Pseudomonas fluorescens* electro type IV (Pf ET IV) could only reduce pre-emergence damping-off. Above differences were statistically significant ($\propto$=5%) (23.1% to 13.8%). None of these were effective against *F. solani*. *B. subtilis* ET IX brought post-emergence damping-off by *F. solani* from 49.9% down to 32.5% (35% protection).

Accordingly we conclude that the different rhizosphere bacterial isolates acted differently in control of damping-off caused by *R. solani* and *F. solani* and suggest that a mixture of Bs ET II and Bs ET IX could be used to control damping-off of chilli cultivar MI-2.