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A new bioprocess to produce low cost powder formulations of biocontrol agents to manage soil borne pathogens of pulses

F A Mohiddin¹ and Mujeebur Rahman Khan²

¹Sher-e-Kashmir University of Agricultural Sciences and Technology of Kashmir, India

²Aligarh Muslim University, India

A novel process to produce biopesticides based on *Trichoderma harzianum*, *Pochonia chlamydosporia*, *Bacillus subtilis* and *Pseudomonas fluorescens* have been invented. The bio-pesticides were developed by taking 1 part of stock culture (sawdust: soil: 5% molasses, 15:5:1) of the biocontrol agents and 20 parts carrier (fly-ash: soil: 5% molasses mixture, 5:3:1) (w/w). Greatest CFU counts of the microorganisms were recorded at 25°C or room temperature during 2–12 weeks of 32 weeks long shelf life test. Seed treatment with the biopesticides at the rate of 5 g/kg seeds carried 103-6 CFU/g seed of chickpea and pigeonpea. The treatments with *T. harzianum* and *P. chlamydosporia* effectively controlled the wilt (*Fusarium oxysporum* F. sp. Ciceri, *Fusarium udum*) and root knot (*Meloidogyne incognita*) on chickpea (*Cicer arietinum* L.) and pigeonpea (*Cajanus cajan* L.) and greatly reduced the soil population of the pathogens. The biocontrol agents established in the soil and their CFU increased significantly ($p < 0.05$), being greater in pathogen infested soils ($p < 0.05$) than non-infested soil during 4 months period.

Biography

F A Mohiddin is an Assistant Professor in Division of Plant Pathology Aligarh Muslim University, India.

famohiddin@rediffmail.com

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