

B-77: Biological, cultural and chemical control of cowpea (*Vigna unguiculata* (Walp) L.) collar rot incited by *Sclerotium rolfsii* (Sacc)

L C Wijetilaka

(Field Crops Research & Development Institute, Maha Illuppallama; Wye College, University of London, U K)

Collar rot in cowpea (*Vigna unguiculata* (Walp) L.) incited by *Sclerotium rolfsii* caused serious crop losses in the dry zone. The disease incidence was about 40% at the field level during Maha season. The pathogen has a wide host range and adopted to escape from soil antagonists. Therefore, it is difficult to control this fungus in the farmers field.

The *Pseudomonas fluorescense* (Pf5) isolate of bacteria isolated from field soil showed high antagonistic activity against *S. rolfsii* on King's B medium *in vitro*. The mechanisms of antagonism were found to be both antibiosis and siderophore formation.

Pf5 isolate reduced the cowpea seedling mortality significantly under greenhouse and field conditions. Coir dust and powder formulations of Pf5 isolate were found to be effective in reducing seedling mortality. Pf5 also showed compatible with fungicide, thiophenate-methyl (tops-in-m).

Therefore, integrated method of controlling the disease was effective when combining seed bacterization with fungicidal seed treatment. This approach is beneficial to adopt in sustainable agricultural systems of Sri Lanka.