D-36 Biological control of minor pathogens of chilli (*Capsicum annuum* L)

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Plants growing in certain fields show abnormal retarded growth and generally a causative agent cannot be identified. The organisms causing such "disease" are known as minor pathogens. Among nursery beds in various parts of the island, several "sick plots" could be recognized. The symptoms are not typical for any known disease and considered as caused by minor pathogens. In contrast to variety of micro-organisms isolated from soils of "normal" nursery beds, soil from "sick plots" of farmers' fields at Aralaganwila, Polonnaruwa gave rise to a strain of *Penicillum* sp. in isolation. This strain grew very rapidly and other organisms did not appear. In attempting to re-establish symptoms, garden soil was inoculated with a conidial suspension and chilli seedlings were replanted. Symptoms developed and the growth, measured as fresh weight, reduced to 60% against controls after 25 days.

Twenty three bacterial isolates from the rhizosphere of healthy plants were tested in dual culture plates for *in vitro* antagonism against the *Penicillium* strain and only one strain each of *Pseudomonas fluorescens, Pseudomonas*

putida and *Pseudomonas aeruginosa* were found to form inhibition zones. Those rhizosphere isolates were also used to test their ability to protect plants from *Penicillium*. Three day old seedlings were bacterized by dipping the root system in suspensions of bacteria in various concentrations and transplanted in soil mixed with the strain of *Penicillium*. The weight loss in plants bacterized with *P.aeruginosa* was only in 25% in comparison with 40% loss in unbacterized controls. *P.putida* was only marginally effective.

The results show that minor pathogens may result in considerable crop loss and hence should not be overlooked. Biological control may be used successfully to control such "disease".