

**B-11 Isolation and identification of natural microbial parasites of insect pests**

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Entomopathogens have a great potential in biological control of insect pests, without causing environmental damage. However, there have been a few attempts in the past to identify entomopathogens in Sri Lanka. Therefore, a survey was conducted in 7 locations for identifying natural microbial parasites on plant pests.

During the course of this survey, dead/diseased insects were collected and the cause of mortality was identified. Observations were made directly under the microscope as well as by keeping the specimens in a moist chamber for about 24 h to allow the fungal structures to develop. Fresh insect specimens were surface sterilized using 5% solution of NaOCl, and body parts of the insects were dissected and plated on potato dextrose agar to which was added 0.5g chloramphenicol/l to avoid microbial contamination.

Plates were incubated at  $25 \pm 1^\circ\text{C}$  for 10 days. Fungal and bacterial entomopathogens were identified based on external symptoms, morphology of spores. Sporulating structures and their configuration are given in Table 1.

**Table 1. Entomopathogens identified and their target pests.**

	Pathogen	Target pest	Location
1.	<i>Verticillium lecanii</i>	Bean whitetly ( <i>Bemisia tabaci</i> )	Bandarawela
2.	<i>Paecilomyces fumosoroseus</i>		
3.	<i>Nomuraea rileyi</i>	Cabbage looper ( <i>Plusia</i> sp.)	Bandarawela & Nuwara Eliya
4.	<i>Aspergillus fumigatus</i>	Cabbage aphids ( <i>Brevicoryne brassicae</i> (L.))	Marassana
5.	<i>Aspergillus fumigatus</i>	Cowpea aphids ( <i>Aphis craccivora</i> )	Marassana
6.	<i>Penicillium</i> sp.	Cabbage looper ( <i>Plusia</i> sp.)	Marassana
7.	<i>Paecilomyces fumosoroseus</i>		
8.	<i>Fusarium</i> sp.	Maize aphids ( <i>Schizaphis graminum</i> (Rond.))	Matale
9.	<i>Metarrhizium</i> sp.	Diamond back moth ( <i>Plutella xylostella</i> (L.))	Matale
10.	<i>Aspergillus flavus</i>	Grass hopper ( <i>Euprepocnemis alacris</i> )	Marawila
11.	<i>Nomuraea rileyi</i>	Cabbage caterpillar ( <i>Crocidolomia binotalis</i> Zell.)	Gannoruwa
12.	<i>Bacillus</i> sp.	Cabbage looper ( <i>Plusia</i> sp.)	Gannoruwa

Koch's Postulate results indicated that except *Fusarium* sp. and *Penicillium* sp., all others were pathogenic and killed their respective hosts. *Fusarium* sp. and *Penicillium* sp. did not kill their host, being weak pathogens.