

SUMMARY

Isolation and Identification of mycopathogens of insects from Southern part of Sri Lanka

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Entomopathogenic fungi refer to fungi, which cause diseases in insects. Use of these fungi to control insect pests is one of the very promising alternatives to reduce the overuse of synthetic chemical pesticides. Survey on the locally available entomopathogenic fungi in natural environment is vital preliminary step for such programme. Objective of the present study was isolation and identification of subterranean entomopathogens in southern part of Sri Lanka and study the factors, which affect their distribution. For the selective extraction of these fungi *Galleria mellonella* (Lepidoptera: Pyralidae) larval bait technique was implemented. Pathogenicity of the extracted fungi tested under the laboratory conditions using the *G. mellonella* larvae. 4 major sampling sites along the southern coastal belt namely; Ahangama, Matara, Tangalle and Hambantota to represent major climatic zones were selected. Each major site further divided into 4 sub sampling sites. Soil samples were collected from 2 sites representing coastal zone and inner zone, which is 1km into the land of each sub sampling sites. Soil characteristics were analyzed and final instar *G. mellonella* larvae used to extract the entomopathogenic fungi in the soil samples. Fungi genera of *Entomophthora*, *Beauveria*, *Aspergillus* and *Paceliomyces* were isolated from the infected insects. Soil temperature ($p < 0.05$) and soil moisture ($p < 0.01$) was significantly different between dry zone and wet

zone sampling sites. Soil salinity significantly varied ($p < 0.01$) between the costal sites and inner sites. Abundance of entomopathogenic fungi is high in wet zone compared to the dry zone and higher percentage of entomopathogenic fungi extracted from coastal zone compared to the inner zone. This variation was significant in ($p < 0.05$) in Ahangama and Matara major sampling sites. According to the present study it can be stated that *G. mellonella* bait technique could be recommended for selective extraction of entomopathogenic fungi in soil, which could be useful in insect biocontrol programmes and biodiversity studies on entomopathogenic microorganisms.