418/D

Insecticidal activity of *Hirsutella thompsonii* against cabbage aphids *(Myzus persicae)* and the determination of a low cost secondary medium for spore production

R.Samarasekara[1], D A S Siriwardhana[1]*, H M L I Herath[1] and M H N Arunashanthi[2],
[1] *Herbal Technology Section, Industrial Technology Institute, Colombo 07*
[2] *Department of Botany, University of Ruhuna, Matara*

Cabbage is a widely grown, important vegetable crop in the upcountry region of Sri Lanka. Limiting factors in the production of cabbage are insect pests, diseases and weeds. However in Sri Lanka the most serious problem in cabbage culture is insect pest damage. Because of adverse effects such as pest resistance, high cost and non-target effects, interest has been focused on developing alternative methods to control pests. The main objectives of this study were to identify the insecticidal potential of *Hirsutella thompsonii as* a biological control agent to control cabbage aphids *(Myzus persicae)* and to develop low cost and efficient secondary growth media for mass production of *H. thompsonii.*

Bio-assay data suggested that *H. thompsonii* isolate has shown insecticidal activity against laboratory reared cabbage aphids (LC_{50} =$2.91x10^8$ spores/ml) after five days. During first two days spore suspension showed no significant insecticidal activity against cabbage aphids, and significant impact was observed after 48 hrs of the application of *H. thompsonii.* However, five days after the application of *H. thompsonii,* spore suspension showed significant mortality of the host
($p<0.05$) compared with the control. However, crude filtrate obtained from Czapek-D j, broil il medium against cabbage aphids up to 1000 ppm level did not elicit any significant insecticidal activity.

During the first week there was no considerable amount of spore production of *H. thompsonii* in media containing hay, husk and bran. But from the second week onwards, the results showed considerable spore productions in all media combinations. After 20 days of incubation there was a significant difference ($p<0.05$) in spore production and maximum spore count of $2.11x10^9$ spores/g was detected on hay-bran medium compared to bran, husk-bran, hay and husk media. Spore production level was also satisfactory in bran (1.38×10^9 cfu/g) and husk-bran ($2.67x10^8$ cfu/g) media. Lowest CFU/g value was reported in hay media. The results of the present study showed that the spores of isolated *Hirsutella thompsonii* strain have the potential to be used as a successful bio-control agent against the cabbage aphid.

Acknowledgement: Financial assistance by NSF grant no: RG/2004/C/05 is greatly appreciated.