Towards Biological Control of Tea Diseases

A Balasuriya[1] and N H L Pradeepa[2]

[1]Head, Plant Pathology Division, Tea Research Institute, Talawakele
[2]Research Assistant, Plant Pathology Division, Tea Research Institute, Talawakele

Biological control involves the changing of outcome of the interactions among the environment, pathogen and the host plant with the involvement of one or more other organism/s.

Biological control helps replacing at least in part, the more hazardous chemicals, i.e. fungicides. They can be useful in meeting the ever-increasing cost of chemical fungicides. Tea-drinking populations are increasingly becoming health conscious and therefore they prefer teas that are either free of or least contaminated with chemical pesticides. Most of all. the biological control methods are environmentally friendly and allow to sustain biodiversity.

A number of potential investigations were undertaken using several organisms and in combinations. A strain of *Trichoderma harzianum*, which was isolated from tea soils of Kottawa, was tested against two common pathogens of tea under *in vitro* conditions. Percentage inhibition of mycelial growth of *Marasmius equicrinis* (causal agent of horse hair blight in tea) by *T. harzianum* was greater by about 12% than that effected by bitertanol (a traditional systemic fungicide).

Two types of bio formulations were prepared using the locally isolated, same *T. harzianum* strain; i.e. Granular formulation using rice grains and the Talc-based powder formulation. The former was used for field-testing against *Poria hypolateritia* (causal agent of red root disease in tea) in Moray estate and against *M. equicrinis* in St Joachim Estate. *T. harzianum*, in this formulation proved capable of bringing in comparable control on horse hair blight. In the initial investigations, *T .harzianum* gave the best control of *poria* at 2.1%, compared to the systemic fungicide, bitertanol at 10.4%, a performance about five times better!