B-26: Relationship between weather pattern and pest control practices o pest status of vegetable leaf miner (*Liriomyza trifolii* (Burgess)

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Vegetable leaf miner *Liriomyza trifolii* (Burgess) (Diptera: Agromyzidae) h become a serious pest during the past 3 years. It inhabits over 1 dicotyledon plant species and causes serious visual damage to tomato, bea luffa and gherkins. Seeing the damage, farmers spray insecticides which a available to them. Farmers reported that these pesticides were not effecti Severe leaf miner damage occurred in some instances under dry weatl conditions while pest abundance was very low in the rainy period and locations where pesticides were widely used. Studies were undertaken understand the effect of weather pattern and cultural practices on leaf mi incidence.

Beans were planted at monthly intervals at Regional Agricultural Research Centre, Bandarawela, from January 1993 to February 1995. Number of leaf miners and active miners were counted at weekly intervals in 10 vines from each plot. There were 8 3 x 3 m plots, 4 untreated check plots and another 4 treated check plots. Untreated check plots were about 100 m away from treated plots which were treated with dimethoate at the rate of 2 ml/l. Similar counts were taken in selected farmer fields in the Badulla district. Farmers were selected and were categorised according to pesticide spraying on their field. They were interviewed and their pest control practices were recorded. Weather data collected at Bandarawela was utilized to study the relationship between leaf miner incidence and rainfall pattern. Insecticide evaluation was conducted as foliar application using RCB design for 3 seasons at Bandarawela. Seed treatment before planting beans with carbosulphan 25 stg was compared with untreated check and treated check in separate experiments to recommend insecticide seed dressings to control beanfly (*Ophiomia phaseoli* (Tryon) (Diptera: Agromyzidae) instead of foliar insecticides which cause leaf miner build up. Results were compared using Duncan's Multiple Range Test.

Leaf miner incidence decreased to negligible levels during rainy periods of both years 1993/94 and 94/95 (November to January). Severe damage occurred in the months of February, June, July,and August. Severity of damage was very high in locations with low elevations such as Nikapotha (in Haldumulla and Udagama in Haliela). Leaf miner incidence was more acute in fields which received repeated insecticide applications to control other pests and leaf miner itself. Use of seed treatment before planting controlled bean fly (*Ophiomyia phaseoli*) at early stage. (no damaged plants compared to 5% damaged plants in untreated check). This resulted in low leaf miner population (0-2 active mines) than in the plots treated with repeated foliar applications which had 0-8 active mines per plant upto 3 weeks. Leaf miner incidence had a close relationship with the rainfall pattern. Infestation was severe in lowland locations while it was very low in locations with high elevations. Insecticides such as Dimethoate, Methamidaphos, Chlorpyrifos and Ethofenprox were widely used by farmers. A few of the farmers from those interviewed applied less insecticides in 1994 than in 1993.

However in low elevations specially during dry months, close attention has to be made as damage can be serious. Prophylactic spraying of foliar insecticides such as dimethoate increase leaf miner infestation. Insecticides should be used only when need arises rather than prophylactic spraying.

Use of insecticides as seed treatments is effective as foliar sprays in control of bean fly.