

## Comparison of populations of *Melanagromyza sojae* and *Liriomyza sativae* associated with Mung bean *Vigna radiata* (Linn.) Wilczek grown in Biratnagar, eastern Nepal

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Agromyzidae are popularly known as leaf miners. The larvae of these flies may form external stem mines, bore internally in stem of herbaceous plants or in the cambium of trees or feed on roots or flower heads. Approximately, there are 2750 described species with many species awaiting formal description.

Research was carried out at various times to rear these flies at various places of Eastern Nepal. Those studies showed that major or key pest which causes damage in the absence of effective control measure is stem fly *Melanagromyza sojae* (Zehntner). Thapa (1997, 2000) has reported 5 species from this host plant. These species were *Chromatomyia horticola* (Goureau), *Liriomyza sativa* Blanchard, *Ophiomyia centrosematis* (de Meijere), *Melanagromyza sojae* (Zehntner), *Melanagromyza hibisci* Spencer from Biratnagar, eastern Nepal.

Thapa (1997) again reported 8 species of economically important agromyzid flies from Eastern terai region, Biratnagar Nepal and discussed their range of host plants. Further, Thapa (2000) reared and described 13 species of agromyzid flies belonging to 5 genera by male genitalia preparation and surveyed and determined 100 species of host plants belonging to 81 genera and 23 families from Eastern Nepal. Poudyal (2003) has reported 4 species of agromyzid flies.

Mung bean *Vigna radiata* (L.) Wilczek var. K851 was at three locations A, B, C of Biratnagar (Lat. 26°20'N; Long. 87°16'E; Alt. 72 msl) by randomized block design. Fields A and B were situated at Biratnagar 18, P.G. Campus compound and third field C was situated at Biratnagar 17. Each field consisted of 66 plots. The beds/plots were numbered serially and 10 g of mung bean seeds was sown in each bed of the plots.

First sampling was done when the plant was between 10-15 days old. Five to ten plants were taken from each bed and were kept in polythene bags. Bags were sealed. Identification of bags was done with sticker, indicating field, plot number, sample number and date of collection of plants. The bags were checked near by a light source to see whether the flies emerged or not. The emerged flies were collected in glass vials and were properly labelled. The same procedure was repeated in all the three fields. In general, six species of flies belonging to 3 genera *Melanagromyza*, *Ophiomyia* and *Liriomyza* were reared. About 500 male flies were dissected and equal number of genitalia slides were made. Comparison of the populations of two species *M. sojae* and *L. sativae* was done using t-test (Tab. 1).

**Table 1.** The reared populations of *M. sojae* and *L. sativae* in three fields.

Sample Number	Field A				Field B				Field C			
	1	2	3	4	1	2	3	4	1	2	3	4
<i>M. sojae</i> reared	51	26	1	4	34	33	3	1	104	7	10	1
<i>L. sativae</i> reared	16	7	0	0	3	1	0	0	25	1	0	0

Calculated value of t for three different fields was  $t_{cal} = 1.21, 1.83$  and  $0.947$ , respectively. As the calculated value of t was found to be less than its critical value at 5% level for 6 d.f ( $t_{0.05, 6} = 2.477$ ), the null hypothesis was accepted i.e. there was no significant difference between mean populations of *M. sojae* and *L. sativae* reared from four different samples.

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