

Studies on the Taxonomy and Bionomics of *Pseudonapomyza gujaratica* Sp.n. (Agromyzidae: Diptera) a Leaf-miner Pest on Maize and Sorghum.

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A new species of agromyzid leaf miner has been found infesting the crop of maize and sorghum in Gujarat State. The larvae of these flies make white, straight and linear mines in the leaves. This is the first record of a leaf miner attacking the crop of maize and sorghum. After examining the male genitalia of this fly, the species appeared to be an undescribed one. Later on, Dr. K. A. Spencer, England also confirmed it to be a new species. The name proposed for the new species is *Pseudonapomyza gujaratica*. The species was found to occur throughout the major maize growing tracts of Gujarat State.

External morphology, particularly the taxonomically important characters are described in detail. A new method to rear such flies in the laboratory was developed. Average fecundity was found to be 42 eggs per female. Average longevity of the male and female was found to be 3.625 and 7.250 days respectively. Average incubation periods vary from 6.43 to 7.34 days. Average larval duration was shorter (4.10 to 4.32 days) in *kharif* season and longer (5.04 to 7.56 days) in *rabi* season. Average pupal period varied from 6.95 to 9.86 days in *kharif* and 9.20 to 15.68 days in *rabi* season. The whole life-

cycle is completed in 3 to 4 weeks. Ecological study on larval period, pupal period, larval mortality parasite population and on pest population were studied in detail. Out of three parasites reared, larval parasite viz. *Achrysocharella* near *cardigastor* an eulophid parasite give good control over the field population. While the other two larval-pupal parasites viz. *Opius phaseoli* Fisher (Braconidae) and *Gronotoma* sp. (Eucolidae) were found to be seasonal, and give small control. Some predating spiders were also found to prey upon the larvae. As regard the plant host preference it was observed that maize was preferred to sorghum but it was not found to attack any other crop except these two crops. During the favourable season, it was also found to occur on some graminaceous weeds like *cyanodon dactylon*, *Eragrostis* sp. etc. Broad leaved hybrid sorghum was preferred to narrow leaved local varieties. Sparsely grown crop was preferred to thickly sown crop. Border line plants were more infested than thienterior ones. Older crop was preferred to younger crop. Plants under the sheds of big trees were more infested than plants growing in open sun.

This pest does not seem to do any damage to the crop beyond economic threshold, moreover, the parasitic fauna, particularly the eulophid parasites are to efficient in controlling the field population that it hardly reaches an alarming level at any time. However, observations recorded in the insecticide treated in relation to untreated crops indicated that this pest will easily be controlled by using Endrin and parathion that is being used for control of other pests of maize and sorghum.