

Insect Pest Problems and Control Strategies
Appropriate to Small-Scale Corn Farmers in Ecuador

By

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ABSTRACT

On-farm trials were conducted in Imbabura Province in northern Ecuador from October 1986 to July 1987, to observe insect pests and their damage in two corn varieties, with and without chemical fertilizer. A new early maturing soft corn variety (INIAP 130) was compared with the most common local soft corn (Huandango). There was no significant yield difference between the two varieties. However, the application of chemical fertilizer significantly increased yields in both varieties.

Observations of insect pests and their damage were taken in unsprayed fields at early whorl (25 to 29 days after planting) and mid-whorl (69 to 80 days) vegetative stages and while the ears were maturing (148 to 203 days after planting). Lepidoptera larva, Agrotis deprivata and Dargida grammivora, were the principal foliar insect pests; Peridroma saucia was also observed but was of minor importance. The number of plants damaged by insects and the severity of foliar damage were low at early and mid-whorl stages and the two varieties suffered similar levels of damage. Application of chemical fertilizer significantly affected damage at the early-whorl stage, increasing the severity of foliar damage and the number of plants damaged in the traditional variety, but signifi-

cantly decreasing these same variables in the early maturing variety.

The early maturing variety suffered significantly more earworm damage from Ecuador's three principal insect pests to ripening corn (Heliothis zea, A. deprivata, and Euxesta eluta). The percentage of ears damaged for the traditional and new varieties were, for all Lepidoptera larva, 24.4 and 35.6% respectively, and for E. eluta, 19.5 and 24.2%. Two parasites were reared from Agrotis deprivata larva collected in corn whorls, Thymebatis sp., Fam. Ichneumonidae and Archytas marmoratus, Fam. Tachinidae. In all cases variation in insect damage between farms was highly significant. The new variety's greater susceptibility to insect damage may reduce its adoption by the small-scale farmers it was developed for.