

**THE OCCURRENCE OF *SPODOPTERA LITURA*
(FABRICIUS) AND *HELICOVERPA ARMIGERA* (HUBNER)
ON EGGPLANT¹**

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The insect pests of eggplant (*Solanum melongena* Linn.) were treated by Gabriel (1997. *Insects and Mites Injurious to Philippine Crop Plants*, NCPC, UPLB. iv + 171 p.) together with those of sweet and pungent pepper (*Capsicum frutescens* L. and *C. annuum* L., respectively) and tomato (*Lycopersicon lycopersicum* (L.) Karsten) under the lumped heading "Nightshade Family (Solanaceae)." However, the said compendium as far as eggplant and other solanaceous crops are concerned is incomplete. In addition, the lumping of solanaceous crops under one heading unnecessarily disregarded the relative host-specificity of some pests, except for some clues that can only be gleaned with caution from common names.

In Gabriel's compendium, the common cutworm, *Spodoptera litura* (Fabricius), and the corn earworm, *Helicoverpa armigera* (Hubner), are two of the lepidopterous pests listed under solanaceous crops. *S. litura* was listed as among those chewing on young branches and leaves while *H. armigera* was listed as a chewing insect on fruits, i.e. as the tomato fruitworm. On eggplant, the only insect listed on fruits is the shoot/fruit borer, *Leucinodes orbonalis* Guenee.

However, during our screening trials to evaluate the resistance of eggplant to *L. orbonalis* and other pests for our DA-BAR and IPM-CRSP PhilRice projects, the common cutworm and the corn earworm were observed for the first time feeding on whorls (curled, immature leaves that form loose heads) and flower buds of eggplants. The locations were in the eggplant growing areas of Nueva Ecija and Pangasinan in the dry season of 2001-2002. As far as known, there have been no specific studies or reports on the occurrence of these two pests at several stages of eggplant growth and development. The occurrence of the two pests, although not surprising as they are polyphagous, are, therefore, **new records** for eggplant. Hence, this short note aims to document this occurrence and the very serious damage it caused during our screening in the said season. Hopefully, this will also help alert farmers that these pests occur in great numbers during El Niño and the regular long dry spells.

There were 23 entries of farmers' and commercial varieties of eggplant tested in replicated trials in both sites. The large eggplant fields planted with 'Parat' and 'Mansanitas' varieties in Aliaga, Nueva Ecija surrounding our experimental plots were heavily infested with the early larval instars of these two pests. 'Parat' and 'Mansanitas' are two native varieties that have been grown for the last 20 years

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by most eggplant farmers in this region. These two varieties have the characteristic thick shoots with small round hairy leaves that make a suitable feeding site for the caterpillar. It was noted that only early instar larvae feed on these plant parts.

On the other hand, the test plants on 'Parat' and 'Mansanitas' plots in Bantog, Asingan, Pangasinan were observed to accommodate some cutworm and earworm during the vegetative stage. The damage on the shoots or whorl by these two pests was not very prominent. The eggplant hybrid, 'Casino', is predominantly planted (commercial scale) in this area and because 'Casino' does not have a thick shoot or whorl, no earworm feeding was observed.

Surprisingly, at the onset of the harvesting period in both experimental areas, many fruits were infested with the last instar larvae of these two pests. It was possible that during this time, corn and other plants in the nearby fields served as hosts and became the source of infestation during the vegetative and harvesting periods.

The damage of these two pests on eggplant fruits was even more serious compared to that caused by the shoot/fruit borer *L. orbonalis* (Fig. 1). Once the fruits are bored by the later larval instars, the holes become bigger and continue to expand as the fruits grow. It was observed that early instar larvae preferred to infest the whorl or shoots (Fig. 2) while the last instar larvae were the ones infesting the fruits at harvest period. The entry holes also served as their exit holes unlike *L. orbonalis* whose exit holes are sometimes not visible. In our screening, there was not even a single variety of eggplant that escaped damage. Damaged fruits were obviously not marketable, compared to those damaged by *L. orbonalis* whose entry/exit holes are relatively smaller and may be undetected by the untrained eyes of some traders and consumers.

Based on our findings, *H. armigera*, in particular, now competes with the shoot/fruit borer, *L. orbonalis* as a serious pest of eggplant fruits. There are already many common names given to *H. armigera*, namely corn earworm and tomato fruitworm as mentioned earlier, tobacco budworm, sorghum headworm, cotton bollworm and bean podworm. In this note, this pest is also documented for the first time as the eggplant fruitworm and this may be used as a standard common name for its occurrence on eggplant just to avoid confusion with *L. orbonalis* whose standard common name is the eggplant shoot/fruit borer. In view of these findings, we therefore propose a revised list of eggplant pests in Table 1.

The exceptionally high level of population of the common cutworm and eggplant fruitworm during harvesting period could be due to the long dry spell from October 2001 to March 2002 in these two regions. Although the farmers do not have any problem with irrigation as their fields are supplied with water from irrigation canals and facilities, the other conditions then guaranteed the abundance of other alternate hosts for these two lepidopterous pests. It was also possible that the high infestation of cutworm and fruitworm may have been due to excessive use of basal and foliar fertilizer that resulted to very fresh and succulent plants.

Therefore, there is a need to look at these insect pests as similar events may happen again. When the El Niño phenomenon hit the country in 2000, these two particular pests became very serious problems in other crops like onions in Nueva Ecija, Ilocos and mostly Luzon area. To abate serious pest problems in the future, it is better to inform the farmers and help them search for appropriate pest management measures.

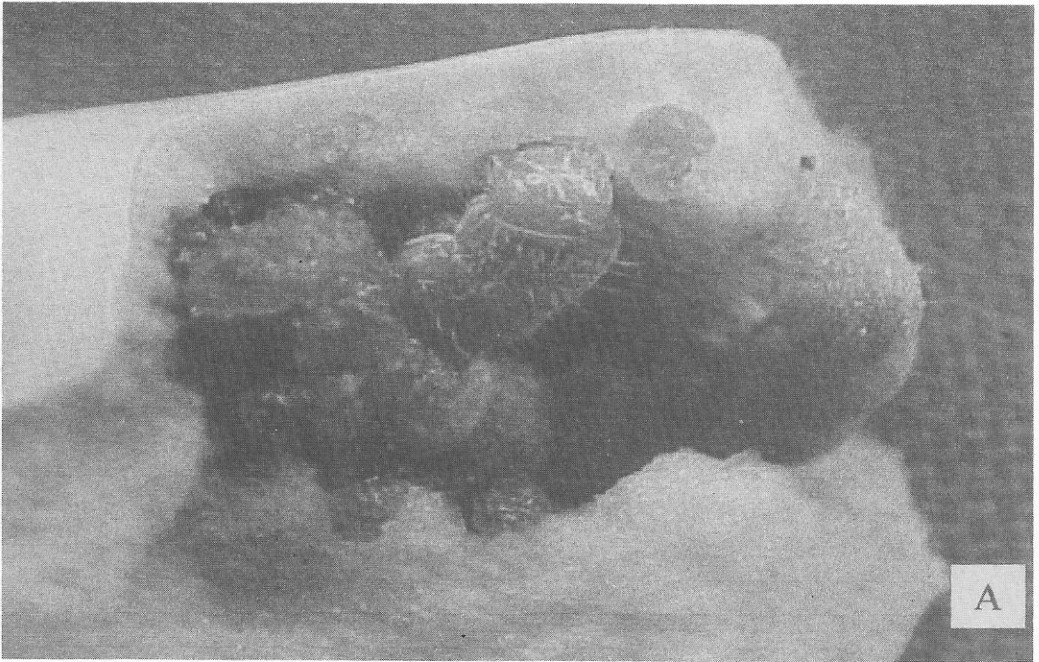


Figure 1. The eggplant fruitborer, *Helicoverpa armigera* (Hubner) feeding on Acc. 89-002 (A); The common cutworm, *Spodoptera litura* (Fabr.) and eggplant fruitworm damage on eggplant fruits at harvest period (B). The black arrows are both the entry and exit holes.



Figure 2. The early larval instar of eggplant fruitworm, *Helicoverpa armigera* (Hubner), feeding on the “whorl” or shoots of the Nueva Ecija native variety ‘Parat’.

Table 1. List of eggplant lepidopterous insect pests at different plant stages (modified from Gabriel 1997).

Parts Affected	Common Name	Scientific Name
Whorl and shoots	Common cutworm	<i>Spodoptera litura</i> (Fabricius)*
	Eggplant shoot/fruit borer	<i>Leucinodes orbonalis</i> Guenee*
	Eggplant fruitworm	<i>Helicoverpa armigera</i> (Hubner)*
Young branches and leaves	Black cutworm	<i>Agrotis ipsilon</i> (Hufnagel)
	Black armyworm	<i>Mythimna separata</i> (Walker)
	Common cutworm	<i>Spodoptera litura</i> (Fabricius)
	Rice armyworm	<i>Spodoptera mauritia</i> (Boisduval)
	Corn semi-looper	<i>Chrysodeixis eriosoma</i> (Doubleday)
	Bagworm	<i>Eumeta</i> sp.
	Sweet potato hornworm	<i>Agrius convolvuli</i> (Linnaeus)
	Tussock caterpillar	<i>Lymantria lunata</i> (Cramer)
	Phycitid moth	<i>Phycita clientella</i> (Zeller)
Eggplant fruitworm*	<i>Helicoverpa armigera</i> (Hubner)*	
Flowers buds and flowers	Common cutworm	<i>Spodoptera litura</i> (Fabricius)*
	Eggplant fruitworm*	<i>Helicoverpa armigera</i> (Hubner)*
Fruits	Eggplant fruitworm*	<i>Helicoverpa armigera</i> (Hubner)*
	Eggplant shoot/fruit borer	<i>Leucinodes orbonalis</i> Guenee
	Common cutworm	<i>Spodoptera litura</i> (Fabricius)*

*New additions to the list

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