

**Ministry of Agriculture, Forestry and Fisheries  
Plantwise Programme Latin America and Caribbean**

**ToT WORKSHOP**

A close-up photograph of a bright orange ladybug with black spots, resting on a green leaf. The leaf has a prominent vein structure and small dark spots, possibly aphid damage. The background is a soft-focus green.

# **Natural Enemies**

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## Lady bird (Coleoptera: Coccinellidae)



Lady bird eggs (Photo: Yelitza Colmenarez)



Lady bird Larvae (Photo: Yelitza Colmenarez)

### Description:

Eggs are oblong, yellow, measure about 1 mm in length and are laid on end in groups on leaves and stems near aphids. Lady beetles are easily recognized in the field. Most lady beetles are predaceous as both larvae and adults. Young lady beetle larvae usually pierce and suck the contents from their prey. Older larvae and adults chew and consume their entire prey.



**Lady bird** (Coleoptera: Coccinellidae)



Lady bird pupae (Photo: Yelitza Colmenarez)



Lady bird adult (Photo: Yelitza Colmenarez)

**Description:**

Pupation occurs in sheltered places on stems or other substrates. Convergent lady beetles undergo complete metamorphosis and have one or two generations per year.

## Lady bird (Coleoptera: Coccinellidae)



Difference between green lacewing and Lady Bird Larvae  
(Photo: Yelitza Colmenarez)



Different species of Lady Birds – Adults  
(Photo: Yelitza Colmenarez)

### Description:

The lady bird larvae are alligator shaped and range from 7-8 mm in length. Metamorphosis is complete. The pupal stage duration is temperature dependent, lasting between 3 and 12 days. In the Barbadian cotton field a diverse group of lady birds are observed. One of the most common is *Cycloneda sanguinea* (first in the figure 2) and *Cryptolaemus montrouzieri* (Last one in the figure 2 of this page).



**Lady bird** (Coleoptera: Coccinellidae)

**Lady bird larvae feeding on Aphids )** (Photos: Yelitza Colmenarez)



**Description:**

Both adults and larvae of lady beetles feed primarily on aphids and occasionally on whiteflies, other soft-bodied insects and insect eggs.

**Green lacewing** *Chrysopa* sp. (Neuroptera: Chrysopidae)

**Green lacewing adult and a single egg** (Photo: Yelitza Colmenarez)



Description

Green lacewings are generalist predators and are commonly found in agricultural, landscape, and garden habitats. Adult green lacewings are soft-bodied insects with four membranous wings, golden eyes, and green bodies. Larvae prey upon a wide variety of small insects, including mealybugs, psyllids, thrips, mites, whiteflies, aphids, small caterpillars, leafhoppers, and insect eggs.

## Green lacewing (Neuroptera: Chrysopidae)



Group of eggs of green lacewing  
(Photo: Yelitza Colmenarez)



First instar larvae and a mature one of green lacewing  
(Photo: Yelitza Colmenarez)

### Description:

Some species of green lacewing adults are predaceous; others feed strictly on honeydew, nectar, and pollen. Females lay their tiny, oblong eggs on silken stalks attached to plant tissues. Depending on the species, eggs are laid singly or in clusters, each on an individual stalk. Eggs are green when laid, then darken before hatching. Larvae, which are pale with dark markings, look like tiny alligators. Larvae are flattened, tapered at the tail, measure 3-20 mm.



## Predatory Flies (Diptera: Syrphidae)



Adult fly – *Syrphus* sp. (Photo: Yelitza Colmenarez)



Syrphidae larvae (Photo: Yelitza Colmenarez)

### Description:

Syrphid flies are regularly found where aphids are present in agricultural, landscape, and garden habitats. Adults of this stingless fly hover around flowers; they have black and yellow bands on their abdomen and are often confused with honeybees. Females lay their whitish to gray oblong eggs, each measuring 1 mm singly on their sides usually near aphids or within aphid colonies.



## Predatory Flies (Diptera: Syrphidae)



Syrphidae larvae (Photo: Yelitza Colmenarez)



Syrphidae larvae (Photo: Yelitza Colmenarez)

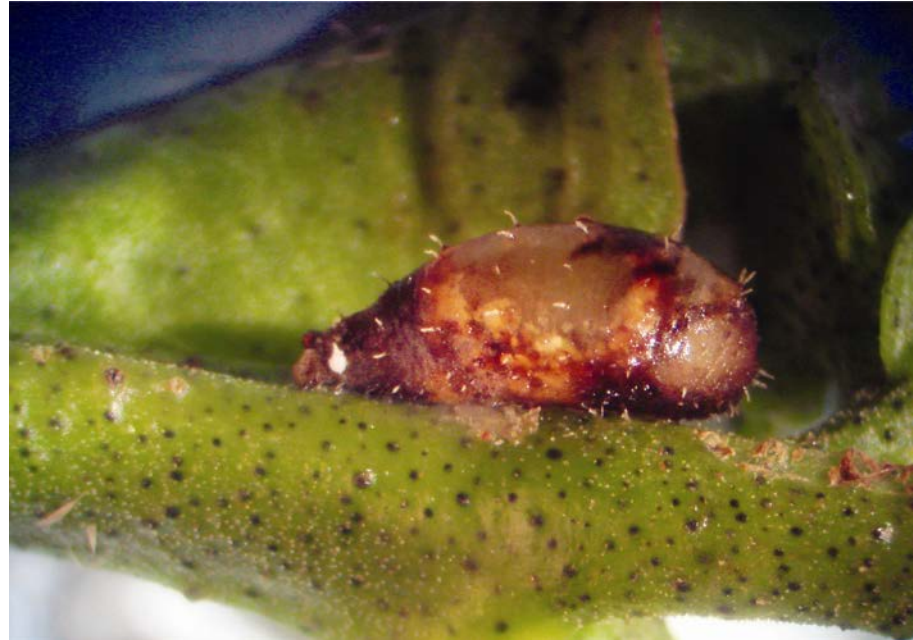
### Description:

Larvae are legless, maggot-shaped, and vary in color and patterning but most have a yellow longitudinal stripe on the back. Larvae vary in length from 1 to 13 mm depending upon their developmental stage and species.

## Predatory Flies (Diptera: Syrphidae)



Adult fly – *Syrphus* sp (Photo: Tom Murray)



Syrphidae pupae (Photo: Yelitza Colmenarez)

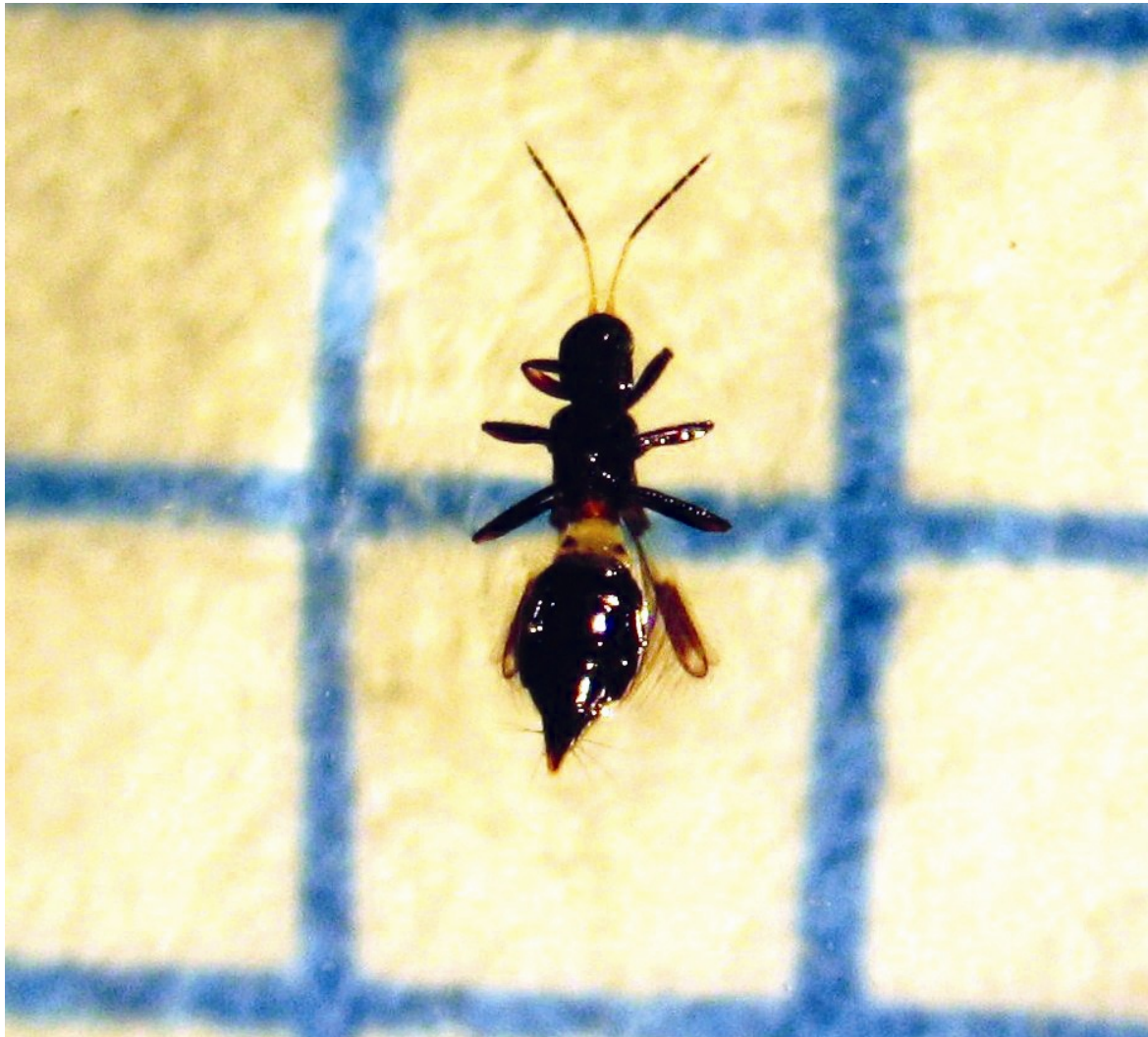
### Description:

Pupa are oblong, pear-shaped, and green to dark brown in color. Pupation occurs on plants or on the soil surface. Adult syrphid flies feed on pollen and nectar, while it is the larval stage that feeds on insects. Larvae of predaceous species feed on aphids and other soft-bodied insects and play an important role in suppressing populations of phytophagous insects.



## Predatory thrips *Franklinothrips* sp. (Thysanoptera: Aeolothripidae)

Predatory thrip adult (Photo: Yelitza Colmenarez)



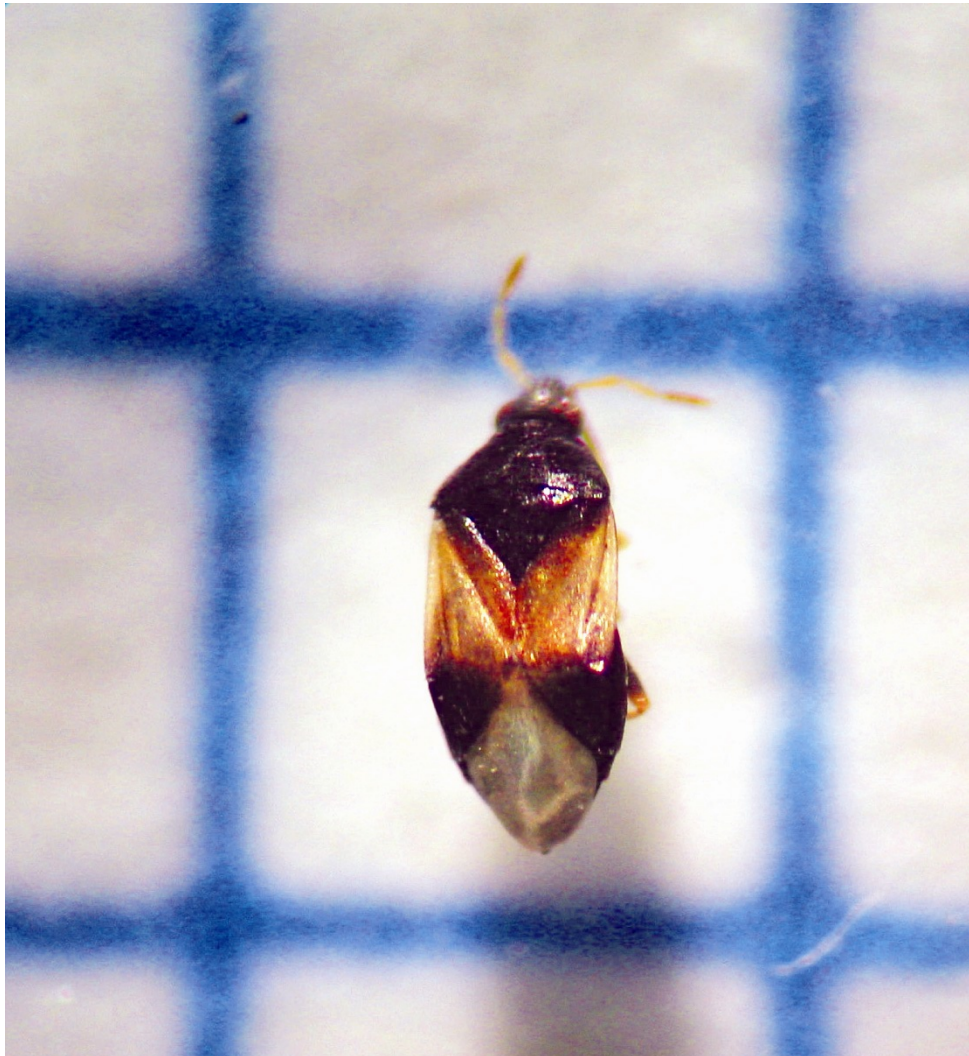
### Description

Adults of this species look like ants and ant-like behavioral patterns reinforce their mimetic color patterns and morphology. Adults and larvae are generalist predators and attack a wide variety of arthropod pests, including chili thrips, thrips palmi, spider mite, etc. The host plants on which these insects are found in association with prey are varied.



## Minute Pirate bug *Orius* sp. (Hemiptera: Anthocoridae)

***Orius* sp. Adult** (Photo: Yelitza Colmenarez)



### Description

Adult minute pirate bugs are small, 2-5 mm. They are generalist predators and are often the first and most common predaceous insects. Adults and nymphs feed on insect eggs and small insects such as psyllids, thrips, mites, aphids, whiteflies, and small caterpillars. Minute pirate bugs are common insect predators in many crops

## Ectoparasitoids



Larvae of *Alabama* sp. with the visible eggs of the ectoparasitoid (Photos: Yelitza Colmenarez)

### Description:

Those insects are external parasitoids. Some hymenoptera are ectoparasitoids, in which case the eggs are deposited near or on the host and the entire larval development takes place outside the body of the host. This is the case of *Euplectrus* (Eulophidae) (showed in the pictures), the larvae of which are attached to the integument of the host.

## Ectoparasitoids



Dead larvae with the pupae of the ectoparasitoid (Photo: Yelitza Colmenarez)



Adults of the ectoparasitoid (Photos: Yelitza Colmenarez)

### Description:

Typically, the parasite takes enough nutrients to thrive without preventing the host from reproducing. In a parasitoid relationship, the host is killed, normally before it can produce offspring.



*Trichogramma* sp.



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Parasitized eggs of *Heliothis* sp. and an empty egg from which the parasitoid has emerged



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*Trichogramma* sp. parasitizing an egg of *Heliothis* sp.

Description:

*Trichogramma* are extremely tiny wasps. They parasitize insect eggs, especially eggs of moths and butterflies. Some of the most important caterpillar pests of field crops, forests, and fruit and nut trees are attacked by *Trichogramma* wasps. However, in most crop production systems, the number of caterpillar eggs destroyed by native populations of *Trichogramma* is not sufficient to prevent the pest from reaching damaging levels.