

## Lime Swallowtail Butterfly



*The lime swallowtail predominantly has yellow spots bordered by black with a blue eye-spot and a red spot on the lower part of the wing.*

The Lime Swallowtail Butterfly (LSB), *Papilio demoleus*, while beautiful is known to destroy citrus plants in Jamaica. The pest eats the leaves of orange and ortanique trees, leaving the fruits open to the sun. LSB seems to have originated from South East Asia travelling across the Atlantic Ocean to the Caribbean. Infestation was first noted in the Dominican Republic (2004), then Puerto Rico (2006), then Jamaica.



*Chewing damage of LSB on the leaves of a citrus plant.*

LSB was first detected in Bog Walk, St. Catherine devastating mainly plants in citrus nurseries. Young fields (1- 2yrs.) and flush of older trees were also affected. Since its identification in September 2006 there has been continuous surveillance of the LSB by Rural Agricultural Development Authority (RADA) extension officers in all parishes.

### Management Initiatives

#### 1. Quarantine

The quarantine of nurseries was the first initiative of the Plant Health Surveillance and Pest Response System (PHS&PRS). Citrus seedlings were placed under protected cover to prevent entry of the pest, monitor for stages of the pest and to ensure cleanliness of the plants before sale. Nursery dealers were only permitted to sell their citrus seedlings after a negative inspection was done by a representative of the Plant Quarantine Unit & Citrus Protection Agency (CPA).

#### 2. Spraying of Pesticides

Recommended pesticides labelled for control of eggs and caterpillars were alternated to remove any infestations present. Pesticide usage was mainly contained to nurseries in order to protect local species considered harmless.

### 3. Introduction of natural enemies

A major environmental friendly treatment to the leaves stripping of trees by LSB is to introduce natural enemies such as parasitic wasps and birds. Wasps were used to attack the caterpillars.



*Parasitoid wasps of LSB eggs(Ooencyrtus sp.)*

### 4. Research

Research was conducted on five large citrus orchards across three parishes: St. Catherine, St. James and Trelawny. The research identified the population growth of the LSB, the level of damage (Category 1 – 5) caused by LSB larvae and the role of local natural enemies.

### 5. Public Awareness

The Plant Health Coordination Committee (PHCC) and RADA have been working closely with the stakeholders being affected by the infestation. The general public is also made aware of the problem through appearances on radio and television programmes, as well as publications.

#### **Are we winning the battle?**

In June 2008 the CPA reported that there was no or low prevalence of the pest in eight citrus nurseries located across five parishes. Implementation of the quarantine protocol was successful in reducing the pest populations of LSB in citrus nurseries.

The LSB damage of citrus plant leaves does not lead to nutrient loss in the fruit itself. It is, therefore, recommended that the quarantine of the LSB be lifted.

Distribution of natural enemies will continue as their presence has contributed to a significant reduction of the LSB population. Additionally, LSB may be more fertile than our native species, so continuous control of their population growth is necessary in order to prevent unknown adverse impacts. The PHCC is currently developing a programme to rear these wasps locally to be spread throughout the island and reduce cost to import the predator species.

If you suspect that Lime Swallowtail Butterfly is on your premises, please contact the:

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Old Harbour  
983-2281  
983-2267  
bodlesresearch@moa.gov.jm

Rural Agricultural Development Authority (RADA)  
Hope Gardens (6)

977-1158

977-1161

(or visit the nearest RADA office to you)