

# BIOLOGY OF THE CITRUS BUTTERFLY, *PAPILIO DEMOLEUS* *DEMOLEUS* L. (LEPIDOPTERA, *PAPILIONIDAE*) IN DJAHROM

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## Introduction:

The citrus butterfly, *Papilio demoleus demoleus* L., sometimes called the lemon butterfly (Ebling, 1959), is one of the pests of citrus orchards especially citrus nurseries and seedlings in southern Iran. The insect is distributed in Persian Gulf and Oman coastal area, Khuzestan, Fars and Baloochestan (Farahbakhsh Gh., 1961). The larva which is called citrus caterpillar or orange dog feeds on tender leaves and eats them from the edge right into mid-rib. In case of severe infestations, the young nursery plants become deprived of leaves.

This research was conducted to study place of oviposition, number of eggs laid by the female, hatching period of eggs, larval and pupal periods, the length of adult life and the length of life cycle in Djahrom area which has more than 3000 hectares under citrus cultivation.

## Materials and Methods

Cages of a cubic wooden framework with dimensions of  $80 \times 40 \times 50$  cm covered with metallic mosquito nets were used for orchard experiments. Plastic cages with dimensions of  $22 \times 15 \times 8$  &  $18 \times 8 \times 5$  cm were used for laboratory experiments. The cages were placed in the Citrus Research Office yard in Djahrom which is located near citrus orchards and there were 8 citrus trees (sour orange, sweet orange, sour lime and mandarin). One pot of blossoming petunia was put in each cage as nectar source for newly emerged adults. Two pots of previously examined related citrus plants were also placed in each cage as food sources. Only one male and one female butterfly of the same age were kept in each cage. Behavior of different stages were carefully observed from 7 AM. to 6 PM.

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## Results

The eggs are laid singly on the underside of the tender leaves. A single female deposits 12-77 eggs, 38.17 on the average. The average time required for incubation, larval and pupal stages were 3.61, 16.68 and 8.54 days respectively, from the end of April until the end of September. In October the incubation and larval stages averaged 8.91 and 30.85 days. The length of adult life had an average time of 6.21 days. The pupal stage averaged 89.91 days in winter. The life cycle had an average of 34.51 days. The pest had 4 to 5 generations under Djahrom conditions (table 1).

Table 1 - Length of egg incubation, larval,<sup>1</sup> Pupal and adult stages of citrus butterfly on citrus (average time)

| stage   | April to June | July & August | September & October | November | Remarks            |
|---------|---------------|---------------|---------------------|----------|--------------------|
| Egg     | 3.76          | 2.47          | 4.61                | 8.91     |                    |
| Larva   | 16.28         | 15.94         | 17.82               | 30.85    |                    |
| Pupa    | 8.35          | 7.44          | 9.85                |          | in winter<br>89.91 |
| Adult   | 5.81          | 4.91          | 6.30                |          |                    |
| Average | 34.20         | 30.76         | 38.58               |          |                    |

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