

**FIRST RECORD OF *CALLOSOBRUCHUS PHASEOLI* (GYLLENHAL)
(BRUCHIDAE: COLEOPTERA) IN ISRAEL***

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ABSTRACT

Callosobruchus phaseoli (Gyllenhal) (Bruchidae) was found in infested seeds of *Dolichos lablab* for the first time in Israel. This bruchid is known to attack leguminous seeds in storage and is a serious pest of stored seeds in warm regions. Preliminary data on its bionomics are given, showing that in cowpeas, at 30 C and 65% RH this insect can develop one generation every 25 days. **KEY WORDS:** *Callosobruchus phaseoli*, *Dolichos lablab*, stored seeds, Israel.

The family Bruchidae contains about 1300 species which breed mainly in leguminous seeds and are found all over the world. However, most of these species develop in tropical and subtropical regions (Southgate, 1979). Several members of this family are of economic significance, as they breed in grain legume crops and develop several generations in one year. This group of species is known as "storage bruchids", as distinct from the "field bruchids", which infest seeds in the field and cannot develop in mature dry seeds (Calderon, 1958).

Among the storage bruchids the genus *Callosobruchus* is especially noted as consisting of some very serious stored legume pests. Two of these species, namely *Callosobruchus maculatus* (F.) and *Callosobruchus chinensis* (L.) are well established in this country and are pests of economic importance, breeding in several hosts such as seeds of cowpeas (*Vigna unguiculata*), chick peas (*Cicer arietinum*) and others (Calderon, 1962).

The newly introduced *Callosobruchus phaseoli* (Gyllenhal) was found in seeds of *Dolichos lablab*, growing as an ornamental plant in a private garden in Hadera (Central Coastal Plain), apparently imported from tropical Africa. It is noteworthy reporting that this insect destroyed almost 100% of the seeds in the sample obtained. The identification of *Callosobruchus phaseoli* from Israel was confirmed by Mr. B.J. Southgate, from the Slough Laboratory, England.

The origin of *C. phaseoli* is in the Old World, particularly Asia and Africa, together with other *Callosobruchus* species. Its occurrence in the New World is due

TABLE 1. BIOLOGICAL DATA ON *CALLOSOBRUCHUS PHASEOLI*
(AT 30° C, 65% R.H.*)

	Development in <i>Vigna unguiculata</i>	Development in <i>Cicer arietinum</i>
Oviposition, number of eggs per couple	59 ± 7	42 ± 5
Length of development, from oviposition to emergence of 50% of the adults, in days	24.8 ± 0.1	29.2 ± 0.2
Length of development, from oviposition to emergence of 100% of the adults, in days	45.0 ± 0.3	43.0 ± 0.7
% of adult emergence	74.5	64.0

*The figures are averages ± standard errors, from a group of 50 adults in 50 seeds (each test in 5 replicates.)

probably to travellers carrying infested seeds across the Atlantic. It has spread to several countries in the Americas and was recorded from Hawaii. *Callosobruchus phaseoli* is presently an established pest of cowpeas in Brasil (B.J. Southgate, 1983, personal communication), where it is considered a more serious pest, than *Callosobruchus maculatus*.

In the laboratory this species oviposited and developed for several generations in chick peas (*Cicer arietinum*) and in cowpeas (*Vigna unguiculata*). However, in beans (*Phaseolus vulgaris*), although it oviposited readily, it didn't complete its life cycle. This finding differs from the information given by De Luca (1962) who records *Phaseolus vulgaris* L. as one of the hosts of *Callosobruchus phaseoli*. Among the other hosts listed are *Phaseolus calcaratus* Roxb., *Phaseolus lunatus* L., *Phaseolus mungo* L., and also other leguminous seeds like: *Cajanus indicus* Spreng., *Pisum sativum* L. and *Pisum arvense* L.

Preliminary experiments were conducted in order to obtain some basic data on the biology of this species. The results are given in Table 1. The data obtained show that cowpeas as well as chick peas are suitable hosts for this insect. The result also suggest that cowpeas are a better host for *Callosobruchus phaseoli* than chick peas, considering the higher percentage of adult emergence from the total number of eggs oviposited. The development time of one generation in cowpeas being only about 25 days, is also of practical value.

Evidently, *Callosobruchus phaseoli* is a potentially serious pest on stored legume seeds in Israel. This note shows, how importing a beautiful ornamental plant, like *Dolichos lablab* can lead to the introduction of a major agricultural pest.

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