

**Summary of a PhD Thesis presented to obtain the scientific degree in Agricultural Sciences
at the Agrarian University of Havana**

**ENTOMOFAUNA ASSOCIATED TO SOYBEAN VARIETIES, *Glycine max*
(L.): HARMFULNESS, POPULATION FLUCTUATION AND NATURAL
ENEMIES OF THE PHYTOPHAGE COMPLEXES OF GREATER
AGRICULTURAL INTEREST**

Leonel Marrero Artabe

Universidad Central de las Villas

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Soybean is an important economic crop in the world. Although insect pests are known to produce several losses in Cuba, they have not been sufficiently studied. Thus, the insect population in soybean farms in Havana and Matanzas provinces was monitored. The entomofauna associated to the varieties Incasoy -24 and Incasoy-27 was informed for the first time and the insect infestation on Cubasoy-23 and Doko genotypes was updated with several species as new reports for the crop and two insects for Cuba. The information obtained allowed the elaboration of an interactive software containing pictorial keys of the insect pests of soybeans and their natural enemies as well as complementary data as a support for the field diagnostic. The insects with higher incidence belonged to the families Crisomelidae, Noctuidae, Thripidae and Pentatomidae. The damages produced by insects under field, laboratory and greenhouse conditions were assessed and those produced by stink bugs were characterized using histological techniques and by physiological and molecular biology studies evaluating their effect on grain quality and yield. The population fluctuation of stink bugs and their natural enemies was discussed contributing to widen the knowledge about them. The greatest grain damages were caused by the heteropterous *Piezodorus guildinii* West, *Jalysus reductus* (Barber) and *Prachiliorachius bilobulatus* L., *Maecolaspis brunnea* Fabricius and *Anticarsia gemmatilis* Hubner showed the highest rate of daily foliage consumption causing severe attack intensity under field and greenhouse conditions. Cubasoy-23 was the most vulnerable variety to the attack of defoliating pest complex. Defoliation higher than 15% was shown to affect the absolute and relative growth rates and yield components impeding the possible physiological recovery of the crop. On the other hand, the variety Incasoy-27 showed the highest attack by stink bugs causing decreases of the grain protein contents. In all the varieties studied, the infestations by pentatomid were over the economic damage threshold with the highest incidence during R4-R6 phases. Temperature was the most closely related variable with infestation. The parasitoid *Trissolcus* sp. and the entomopathogenic fungi *Beauveria bassiana* and *Aspergillus* spp. were effective natural enemies but not effective enough as to decrease the pest population. Considering all the results achieved, a Soybean Integrated Pest Management Program was proposed for this crop.