

## NOTAS CIENTÍFICAS

### OVERWINTERING STRATEGY OF THE BROWN STINK BUG IN NORTHERN PARANÁ<sup>1</sup>

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**ABSTRACT** - Field observations from April to October 1992, at the Field Experimental Station of EMBRAPA in northern Paraná, indicated that the neotropical brown stink bug (*Euschistus heros*, Heteroptera: Pentatomidae) overwinters under dead leaves. Insects were found underneath dead leaves of mango and coffee trees, as well as below fallen leaves of the legumes lablab and velvetbean. During this period insects remain inactive, slowly moving legs and antennae when disturbed. They are also darker (dark brown) than the normal (reddish light brown) color presented during Summer.

#### COMPORTAMENTO NA ENTRESSAFRA DO PERCEVEJO-MARROM NO NORTE DO PARANÁ

**RESUMO** - Observações de campo no período de abril a outubro de 1992, na Fazenda Experimental da EMBRAPA em Londrina, PR, indicaram que o percevejo-marrom (*Euschistus heros*, Heteroptera: Pentatomidae) passa o período de entressafra da soja sob folhas mortas no solo. Observou-se o inseto sob folhas caídas de plantas perenes, como a mangueira e o café, e de plantas anuais, como os feijões lablab e mucuna. Nesse período, os percevejos permanecem imóveis sob as folhas, e, quando perturbados, movem as patas e antenas lentamente. Também apresentam coloração mais escura (marrom-escuro) que a normal (marrom claro-avermelhado) observada durante o verão.

#### INTRODUCTION

The neotropical brown stink bug (*Euschistus heros*, Heteroptera: Pentatomidae) is one of the major pest of soybean [*Glycine max* (L.) Merrill] in South America (Panizzi & Slansky Junior 1985). In Brazil it attacks soybean particularly in warmer regions, being more abundant from north of Paraná to the central and west regions of the country (latitude range 24 to 16°S).

Usually *E. heros* feeds on soybean from late spring throughout Summer-early Autumn (December-April). As soybean matures and is harvested, insects disperse to alternative host plants. *E. heros* was

<sup>1</sup> Accepted for publication on November 11, 1993.

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found feeding on the weed *Acanthospermum hispidum* DC. (Compositae) during March-May (Panizzi & Rossi, 1991). With the beginning of winter in June this host cycle completes its cycle and the pentatomids move to other places. At the time soybean is not being cultivated, two other major pentatomids pest of soybean, *Nezara viridula* (L.) and *Piezodorus guildinii* (West.) remain feeding on alternative host plants, and eventually reproducing on them (Panizzi & Meneguim, 1989; Panizzi, 1992). However, the same is not observed to *E. heros* that becomes rare at this time. Few plants other than soybean are known to serve as hosts of *E. heros* (Link, 1979, Ferreira & Panizzi, 1982). This may be because of the restricted feeding habits of this pentatomid and/or limited study on alternative host plants.

During 1992, we started to search for *E. heros* during the time soybean was not available as a food source. Surveys were carried out in the Field Experimental Station of EMBRAPA (Warta District, Londrina Co.) in northern Paraná, during April (just after soybean harvest) to October (just before soybean planting). Several cultivated (e.g., coffee, *Coffea arabica* L., Rubiaceae) and several uncultivated (e.g., *Ricinus communis* L., Euphorbiaceae) perennial plants were examined. Winter crops (e.g., wheat *Triticum aestivum* L., Gramineae) were also examined.

*E. heros* was not found on any of the plants examined. However, they were found under dead leaves of several plants on the soil. *E. heros* was found in great numbers (over 50 individuals/m<sup>2</sup>) below dead leaves underneath the canopy of mango (*Mangifera indica* L., Anacardiaceae) and coffee trees (during April) on several spots. They were also observed between dead leaves of the legumes *Dolichos lablab* L. and *Stizolobium* (= *Mucuna*) *aterrimum* Piper & Tracy, from late-Autumn to mid-Spring (June-October). These legumes were probably used as food sources before they became mature. *E. heros* presence was recorded weekly on all places during the periods mentioned. Usually the insects were darker (dark brown) than the ones observed on soybean during Summer (which are reddish and lighter brown) and showed slow movements of legs and antennae when disturbed (playing dead). This behavior indicates that these individuals were hibernating in these niches. After the periods mentioned, observations were discontinued because leaves were removed preventing further observations.

These observations revealed that *E. heros*, in contrast to *N. viridula* and *P. guildinii*, do not utilize alternative food plants to breed between two subsequent soybean seasons in northern Paraná. This pentatomid, because of its greater host plant specificity and adaptability to face periods of food scarcity by means of a partial hibernation, chooses the strategy of hiding on the soil underneath dead leaves to wait for more favorable conditions to start reproduction. The knowledge of this behavior may prove useful in developing strategies to manage populations of this pest prior to its colonization of soybean fields.

## ACKNOWLEDGEMENTS

We thank José F.F. de Toledo and Carlos C. Machado for critically revising this note. We also thank Jovenil J. da Silva for his field work assistance. This study was sponsored by Empresa Brasileira de Pesquisa Agropecuária (EMBRAPA), project 00585023-5, and by Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq). C.C.N. was supported by CNPq throughout a grant to A.R.P.

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