

**A NEW ALTERNATIVE IN THE BIOLOGICAL CONTROL OF THE RUBBER TREE LACE BUG (HEMIPTERA: TINGIDAE)**

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**(A new alternative in the biological control of the rubber tree lace bug (Hemiptera: Tingidae))** – The rubber tree is a plant cultivated with the purpose of extraction of the natural rubber (latex), being an important segment of the Brazil economy. Among the main plagues that attack the culture, he stands out the tingid, *Leptopharsa heveae* Drake & Poor (Hemiptera: Tingidae) and among their main natural enemies they stand out the lace wings, the mushroom *Sporothrix insectorum* and the egg parasitoid *Erythmelus tingitiphagus* (Soares) (Hymenoptera: Mymaridae). The objective of the work was to report the potential of this natural enemy use, as auxiliary in programs of integrated handling of this pest of rubber plantations. The study was developed in the farm of company “Plantações E. Michelin Ltda.”, municipality of Itiquira, Mato Grosso, from October 2005 to February 2006 and from August 2006 to January 2007, being collected ripe folioles of five rubber tree clones (RRIM 600, PR 255, PB 235, PB 217 and GT 1), counted the number of eggs by foliole and the number of emerged parasitoid of the same ones. It was verified an average parasitism rate of 18.8% in the first period and 24.2% in the second.

**Key words:** Chalcidoidea, Euphorbiaceae, *Hevea brasiliensis*, Mymaridae.

**(Uma nova alternativa no controle biológico do percevejo de renda da seringueira (Hemiptera: Tingidae))** – A seringueira é uma planta cultivada com a finalidade de extração da borracha natural (látex), sendo um segmento importante da economia do Brasil. Dentre as principais pragas que atacam a cultura, destaca-se o tingídeo *Leptopharsa heveae* Drake & Poor (Hemiptera: Tingidae), e entre seus principais inimigos naturais o parasitoide de ovos *Erythmelus tingitiphagus* (Soares) (Hymenoptera: Mymaridae). O objetivo do trabalho foi relatar o potencial de utilização deste inimigo natural como auxiliar em programas de manejo integrado desta praga de seringais. O estudo foi desenvolvido na fazenda da empresa “Plantações E. Michelin Ltda.”, município de Itiquira, Mato Grosso, no período de outubro de 2005 a fevereiro de 2006 e de agosto de 2006 a janeiro de 2007, sendo coletados folíolos maduros de seringueira de cinco clones (RRIM 600, PR 255, PB 235, PB 217 e GT 1), contabilizados o número de ovos por folíolo e o número de parasitoides emergidos dos mesmos. Foi verificada uma taxa média de parasitismo de 18,8% no primeiro período e 24,2% no segundo.

**Palavras-chave:** Chalcidoidea, Euphorbiaceae, *Hevea brasiliensis*, Mymaridae.

*Hevea brasiliensis* Müell. Arg. is original from Brazil. It presents the largest reproductive capacity and the largest genetic variability (COSTA, 2001; FRANCISCO *et al.*, 2004). It is a tree with perennial cycle, of tropical origin, cultivated and utilized in an extractive way, with the purpose of natural rubber production (CAMPELO-JÚNIOR, 2000). From the retreat of its habitat, it started to be cultivated in big monocultures, mainly in Asian countries. In Brazil, its cultivation has obtained great success in South-East and West-Center regions, in Bahia and more recently in the west of Paraná (MARINHO, 2006).

The heveiculture has been expanding in a considerable way in planted areas in Brazil since 1970. This increase was related to two factors: high prices in the domestic market and ecological conditions favorable to the cultivation (BERNARDES, 1992). Nowadays there are more than 200 thousands hectares of lands filled with rubber tree plantations, distributed in several areas of the country (ABREU, 1996).

Amongst the main pathogens and key-pests of heveiculture, some organisms stand out: the fungus responsible for the disease known as “South American Leaf Blight”, *Microcyclus ulei* (P. Henn.) (SCOMPARIN, 2000), the mites of the families Eriophyidae (*Calacarus heveae* Feres,

1992, *Phyllocoptruta seringueirae* Feres, 1998, and *Shevtchenkella petiolula* Feres, 1998) and Tenuipalpidae (*Tenuipalpus heveae* Baker, 1945) (FERES, 1992; FERES, 2000; FERES *et al.* 2002), and the lace bug of the family Tingidae, *Leptopharsa heveae* Drake & Poor (Fig. 1) (VENDRAMIM, 1992).

This lace bug attacks the leaves of rubber tree grown in nursery, in young plantations and in productive plantations. The adult is characterized by the reticulated and honeycombed look of hemelytra and thorax, whitish color, presence of testaceous thorns, long legs, reticulated and tricarinated pronotum, hemelytra extended at the back of the abdomen (TANZINI, 1996). They have paurometabolic development and undergo by five ecdises until reach the adult stage (MOREIRA, 1986). The layings are endophytic, with isolated eggs on the lower page of rubber tree leaves, leaving the operculum exposed (TANZINI, 1996).

According to MOREIRA (1986), both lace bug young stages and adults are located on the lower part of the leaves, sucking the sap and destroying the parenchyma, making the chlorophyllian function of the plant difficult, besides producing injuries which favor the appearing of microorganisms. The attack in high infestations causes a reduction of 28% in the growth in height and of 44.5% in the diameter of plants stem, in slips (MOREIRA, 1986) or even

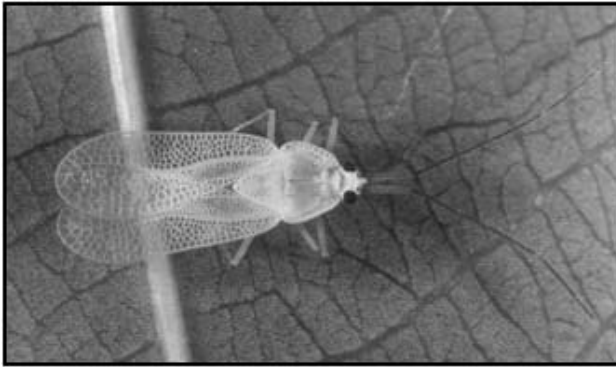


Fig. 1. Adult *Leptopharsa heveae* (Hemiptera: Tingidae) at the abaxial face of rubber tree foliole (Credit of the picture: Fernando da Silva Fonseca – “Plantações E. Michelin Ltda.”).

a fall in latex production in up to 30% (TANZINI & LARA, 1998).

The main natural enemies of lace bug recorded in literature are the green lacewings, the entomopathogenic fungus *Sporothrix insectorum* Hoog & Evans, and the parasitoid of the family Mymaridae, *Erythmelus tingitiphagus* (Soares). COSTA *et al.* (2003) observed *L. heveae* eggs parasitized by this microhymenopteran (Fig. 2) in leaves of clone PB 235 in the municipality of Pindorama, SP, observing a parasitism rate of 7%.

This study was carried out from October 2005 to February 2006 and from August 2006 to January 2007 in the farm of the company “Plantações E. Michelin Ltda.” (latitude 17°22’S and longitude 54°44’W), located in the municipality of Itiquira, Mato Grosso. The folioles were collected weekly, washed in sodium hypochlorite 1.5% solution, let to dry and disposed in plastic bags. The areas containing the postures of *L. heveae* were demarcated using a projector pen. Later the sacks were inflated using an air compressor

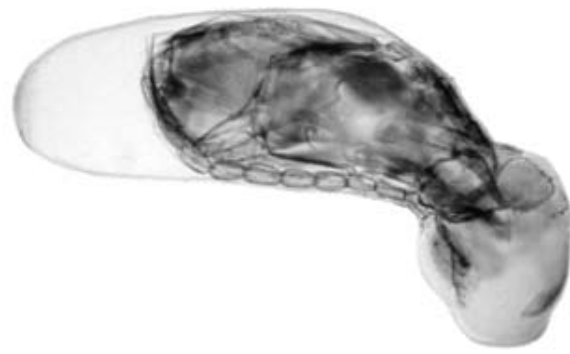


Fig. 2. *Leptopharsa heveae*'s egg parasitized by *Erythmelus tingitiphagus* (Hymenoptera: Mymaridae).

and then sealed and transferred to acclimatized room (25 ± 1°C). Five days after, the material was examined under stereomicroscope and the number of adult parasitoids was annotated.

It was observed an average parasitism rate of 18.8% in *L. heveae* eggs, collected in leaves of rubber tree clones in the first period of the study, and an average parasitism rate of 24.2% for the same clones in the second period.

This natural enemy shows to be a promising biological control agent of this serious pest of *Hevea* plantations in Brazil. However, more researches are necessary in order to implement a mass creation system and liberation of this natural enemy in the field.

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