ATTRACTIVENESS AND INJURY OF *Phaseolus vulgaris* L. GENOTYPES BY *Anticarsia gemmatalis* HÜBNER (LEPIDOPTERA: EREBIDAE)

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INTRODUCTION

The *Anticarsia gemmatalis* Hübner (Lepidoptera: Erebidae) is the most defoliator pest, causing economic damage to many species of crop plants, including preferentially, soybeans – [*Glycine max* (L.) Merrill] and common bean - *Phaseoulus vulgaris* L. (Herzog; Todd, 1980; Panizzi et al., 2004). These crops are extensively cultivated in Brazil, thus forming very simplified and vulnerable agroecosystems, resulting in problems such as the excessive and indiscriminate use of pesticides, with adverse ecological consequences to the environment. In an attempt to diminish pesticide use in cropping systems, alternative control methods have been investigated, and host plant resistance is one of them (Boiça Júnior et al., 2014). Searching genotypes that express tolerance and/or resistance to insect pest represents an important step for plant breeding.

Thus, the aim of this study we evaluated the attractiveness and the leaf injury caused by *A. gemmatalis* larvae in bean genotypes.

MATERIAL AND METHODS

Assays were conducted in the agricultural entomology Laboratory, UEG, Ipameri, GO, Brazil, under environmentally controlled conditions. The following common bean genotypes were evaluated for resistance to *A. gemmatalis* larvae: BRS Estilo, BRS Requinte, BRS Ametista, BRSMG Realce e BRS FC402.

The experiment consisted of free-choice and no-choice assays setup in completely randomized design with 10 replications each. For the free-choice test, leaf disks (2.2 cm diameter) prepared from the respective genotypes were arranged in glass arenas (14.0 cm diameter) lined with moistened filter paper, where two neonate larvae *A. gemmatalis* was released per genotype, totaling 10 larvae per arena. In the no-choice test, one leaf disk was placed in each Petri dish (9.0 cm diameter) two neonate larvae. In both tests, leaf disk attractiveness was recorded 72 h after the larvae were released. To evaluate leaf injury caused by the larvae, percentage of estimated injury ranging from 0 to 100% was assigned for uninjured leaf discs and fully injured leaf discs, respectively.

Data recorded from leaf disc attractiveness percentage and leaf injury percentage were transformed into arcsine $(x/100)^{1/2}$. Next, data were subjected to analyzed for normality (Levene's test) and variance homogeneity (Shapiro-Wilk test). Data were subjected to analysis of variance (ANOVA), and means were compared by Tukey's test ($P < 0.05$).

RESULTS AND DISCUSSION

The bean genotypes evaluated interfered in attractiveness and injuries caused by *A. gemmatalis* larvae. In the free-choice test, the percentage of *A. gemmatalis* larvae attracted was significantly lower for BRSMG Realce genotype when compared to the others; no difference was found among

other tested genotypes (Fig. 1A). The lowest percentages of injury were verified in the BRSMG Realce and BRS Estilo. The highest injuries were observed in the BRS Requinte genotype (Fig. 1B).

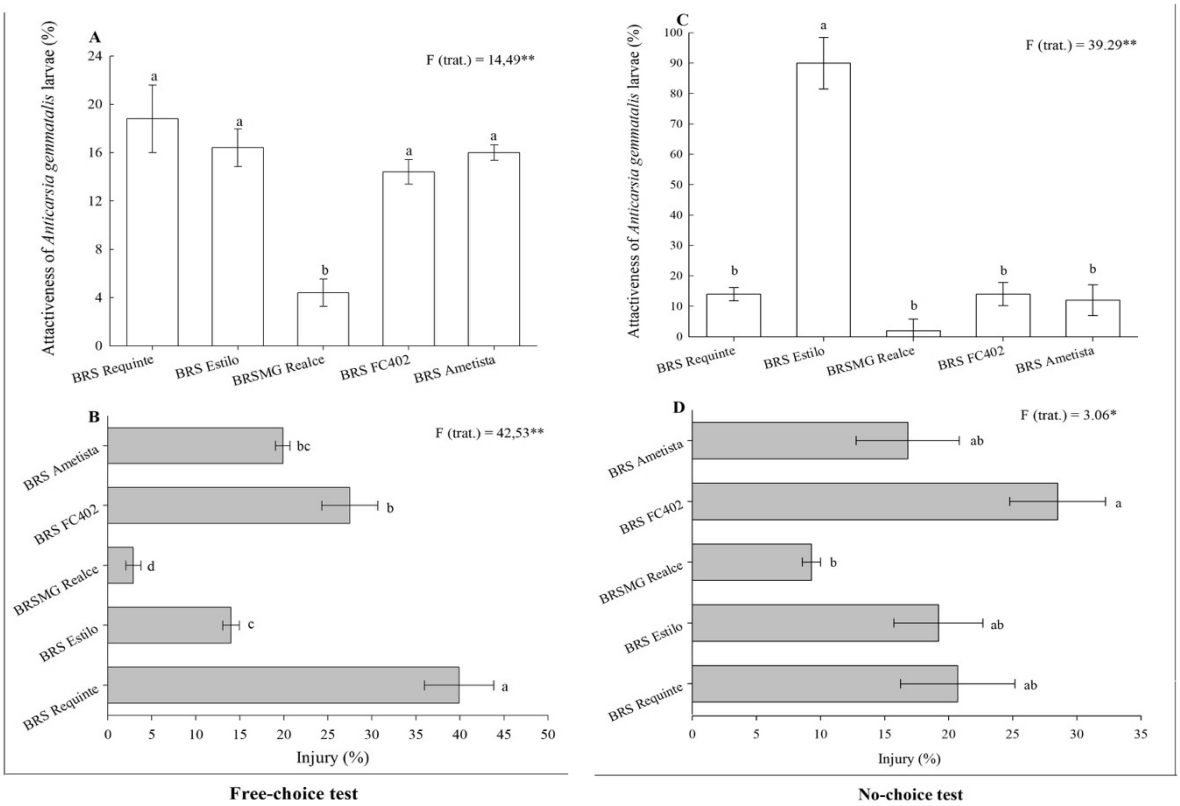

Figure 1 Attractiviness and injury percentage of common bean genotypes to larvae *Anticarsia gemmatalis* in free-choice (**A**, **B**) and no-choice test (**C**, **D**). Bars with diferents letters are significantly different by Tukey test at ** 1% and *5% probability.

In the no-choice test, the percentage of larvae attracted was highest in the BRS Estilo genotype (Fig. 1C). The BRSMG Realce was the least injured of *A. gemmatalis* (Fig. 1D).

The results illustrate that there was a direct relationship between the lower attractiveness of BRSMG Realce to the larvae and the lower injury percentage recorded in this genotype (Fig. 1). This leads us to infer that the genotype BRS Realce has compounds that may have inhibited attractiveness and consequently the feeding of the larvae. In addition, the lower preference for the BRSMG Realce may be linked to physical causes (leaf color). The leaves of this genotype have a light green color, while the others have dark green pattern. Additionally, we cannot rule out morphological factors (presence of trichomes) and the possible effect of chemical substances (volatile) that may have acted as deterrents to larvae feeding preference.

This study shows that BRSMG Realce genotype presents characteristics resistance in the non-preference category for feeding to *A. gemmatalis*.

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