

EFFECTS OF THE CHITIN SYNTHESIS INHIBITOR FLUFENOXURON ON THE PEST SUBTERRANEAN TERMITE *COPTOTERMES GESTROI* (ISOPTERA: RHINOTERMITIDAE)

IVES HAIFIG, VANELIZE JANEI, AND
ANA MARIA COSTA-LEONARDO

Universidade Estadual Paulista – UNESP, Campus Rio Claro, Instituto de Biociências, Depto. de Biologia,
Rio Claro, Brazil
e-mail: ivesh@rc.unesp.br

Subterranean termites are widely known by their substantial damage in urban areas. *Coptotermes gestroi* is an alien species originated from Asia, introduced accidentally in Brazil, where is responsible for severe economical impact. To reduce the use of insecticides in the termite management, some researchers are trying to improve the toxic baiting systems. The insect growth regulators (IGRs) are mostly recommended for toxic baits, because they are environmentally health and present a slow action. The aims of our study were to evaluate the effects of the chitin synthesis inhibitor Flufenoxuron on feeding consumption and survival of *C. gestroi* and to select the best concentration of this ingredient to use in toxic baits. For this, we used experimental units composed of a “nest” chamber, in which 2 g of workers and 40 soldiers were placed, connected to a “feeding” chamber containing a square (4x4 cm) of corrugated cardboard impregnated with Flufenoxuron, on concentrations of 10 ppm, 50 ppm, 75 ppm and 100 ppm. As controls, the cardboards were impregnated with distilled water or methanol. The experiments were evaluated after 20 and 40 days. The consumption was measured by variation in dry mass (initial minus final weights), and statistically analyzed by two-way ANOVA ($p < 0.05$). The survival was evaluated by weighting the live termites after each period, and was analyzed by Kruskal-Wallis test ($p < 0.05$). The data analysis showed a significant difference for consumption between the controls and the treatments ($F = 279.21$, $df = (5, 36)$, $p < 0.01$), and also between the 20 and 40 days of experiment ($F = 48.56$, $df = (1, 36)$, $p < 0.01$). For survival, the difference was significant only at the 40 days ($\chi^2 = 18.11$, $df = (5)$, $p < 0.01$). *C. gestroi* foragers fed significantly less on cardboard treated with 10 ppm than they did on controls, and less on the treatments of 50 ppm, 75 ppm and 100 ppm in comparison with 10 ppm and the controls. The survival of the termites decreased significantly in treatments with 50 ppm, 75 ppm and 100 ppm after 40 days. The results showed that the survival of the termites was smaller in the treatments with higher concentrations of Flufenoxuron. However, these same concentrations presented a slight feeding deterrence effect, which possibly influenced the survival of the termites. Future studies are necessary for evaluating whether Flufenoxuron is appropriate for use in toxic baits.

Key Words *Coptotermes gestroi*, baits, IGR