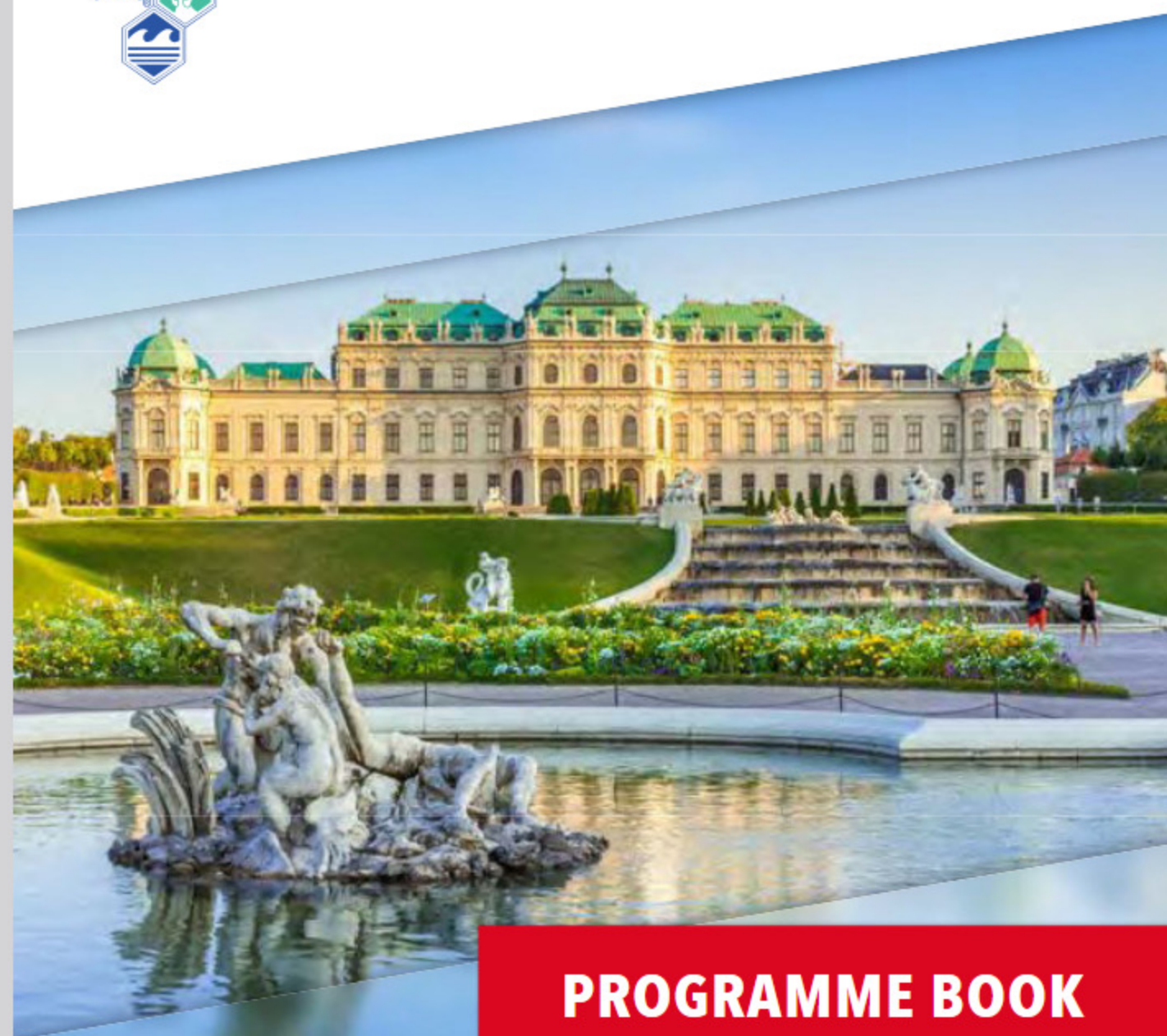


SETAC EUROPE 35TH ANNUAL MEETING

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INNOVATION FOR TOMORROW: PROGRESS IN SAFE AND SUSTAINABLE CONCEPTS



PROGRAMME BOOK



SETAC EUROPE 35TH ANNUAL MEETING

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6.09.P-We523 - Sensitivity study using the imidacloprid neocotinoid toxicity test for native bees of the species *Tetragonisca angustula* (jatai)

Abstract

Native bees play a fundamental role in pollination, contributing to reproducing approximately 90% of flowering plant species and 80% of economically important crops. However, pesticide contamination threatens this species' survival, resulting in reduced biodiversity in ecosystems and food supply. Therefore, it was necessary to determine safe doses of pesticides, such as imidacloprid, to ensure that the bee's function and survival are not compromised. The aim of this study was to determine the lethal concentration of the neocotinoid imidacloprid (commercial product) (LC50) and its lethal dose (LD50) for the jatai bee species (*Tetragonisca angustula*). To determine sensitivity through the acute toxicity test to exposure to this pesticide, adult bees were collected in the early hours of the morning and taken to the laboratory for the start of the toxicity test. The test which was carried out over a period of 6; 24; 48; 72 and 96 hours. The bees were kept under acclimatization in an incubator at a temperature of 28 °C, with food being replenished at all times during the test. The results of the study showed that imidacloprid has a considerable toxic effect on bees from 24 hours of exposure. During this period, the CL50 (1.0333 mg L⁻¹) and DL50 (1.00271 ng i.a./bee) were determined for the commercial product, imidacloprid. It was observed that for imidacloprid at concentration of 0.8 mg L⁻¹ the mortality rate was 55% in the first 24 hours, reaching 67% mortality during the 96-hour period, and for the highest concentration of 1.6 mg L⁻¹ in the first 24 hours of the test the mortality rate reached 100%.

Keywords: *Tetragonisca angustula*, stingless bees, LC50, LD50, neocotinoids.

Disclaimer/Disclosure:

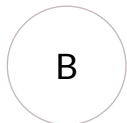
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