

Poster

Method development for the acute contact test on the solitary bee *Megachiles rotundata*. – LD₅₀ toxic reference

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Abstract

New methodologies, for solitary bees, need to be developed to fulfill the EFSA requirements.

Megachile rotundata, or the alfalfa leaf cutter bee, could be a good candidate for it. Cocoons of the *M. rotundata* are commercially available and adults are used as pollinators.

Females of *M. rotundata* are more exposed to the PPPs (Plant Protection Products) than males. Adult females collect not only pollen and nectar but also pieces of leaves to build their own nest. That's why, the new acute methodologies should be developed with adult females only.

To test the methodology, two consecutive tests were run. Commercial cocoons from Northstar Seed Ltd. Canada were incubated at 33 ± 2 °C and 60 ± 10 % RH in the dark. Once the males started to emerge, cocoons were transferred to the test conditions at 30 ± 2 °C and 70 ± 5 % RH with a light cycle of 16 : 8 h (L : D).

Ten newly emerged, meconium free, adult females were introduced per cage (at 20 °C). Female bees were acclimatised to the test conditions for 24 h, before the application. For food, pollen paste was supplied *ad libitum*.

Application was carried out at 20°C. After the application, bees were evaluated and mortality was recorded after 4, 24, 48, 72 and 96 h.

After 96 h, control mortality was below 10 % (6.7 %) and the LD₅₀ values for both test were nearly the same, 0.175 µg a.i. / bee for the first test and 0.174 µg a.i. / bee for the second test. Although the results showed the methodology could be considered valid, as the control mortality was below 10% and the LD₅₀ values were the same, this methodology needs to be tested again next year and a step farther with the acute oral test needs to be done.