Similar Comparative Low and High Doses of Deltamethrin and Acetamiprid Differently Impair the Retrieval of the Proboscis Extension Reflex in the Forager Honey Bee (Apis mellifera)

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Mots-clés	acetamiprid [8], deltamethrin [9], honey bee [10], insect [11], Neonicotinoid [12], Pesticides [13], pyrethroid [14]
Résumé en anglais	In the present study, the effects of low (10 ng/bee) and high (100 ng/bee) doses of acetamiprid and deltamethrin insecticides on multi-trial learning and retrieval were evaluated in the honey bee Apis mellifera. After oral application, acetamiprid and deltamethrin at the concentrations used were not able to impair learning sessions. When the retention tests were performed 1 h, 6 h, and 24 h after learning, we found a significant difference between bees after learning sessions when drugs were applied 24 h before learning. Deltamethrin-treated bees were found to be more sensitive at 10 ng/bee and 100 ng/bee doses compared to acetamiprid-treated bees, only with amounts of 100 ng/bee and at 6 h and 24 h delays. When insecticides were applied during learning sessions, none of the tested insecticides was able to impair learning performance at 10 ng/bee or 100 ng/bee but retention performance was altered 24 h after learning sessions. Acetamiprid was the only one to impair retrieval at 10 ng/bee, whereas at 100 ng/bee an impairment of retrieval was found with both insecticides. The present results therefore suggest that acetamiprid and deltamethrin are able to impair retrieval performance in the honey bee Apis mellifera.

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