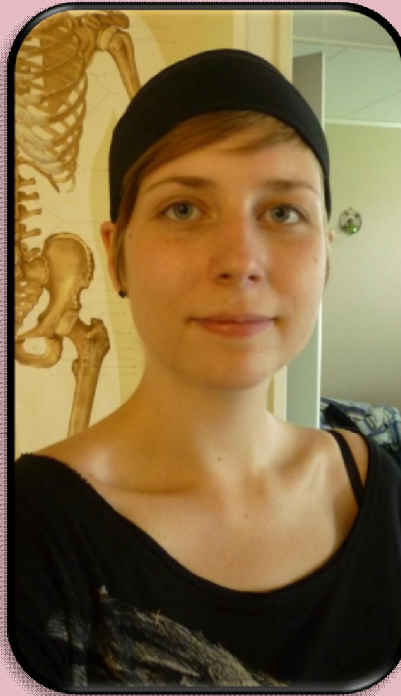


Conclusion

Imidacloprid does not affect activity level, feeding rate or mortality in honeybees. However, honeybees fed with imidacloprid did perform poorer than the control bees on the olfactory learning test and memory retention test.



If honeybees cannot remember the necessary information about a food source, then they cannot pass on vital information to the other workers. A decrease in food availability will affect the whole hive.

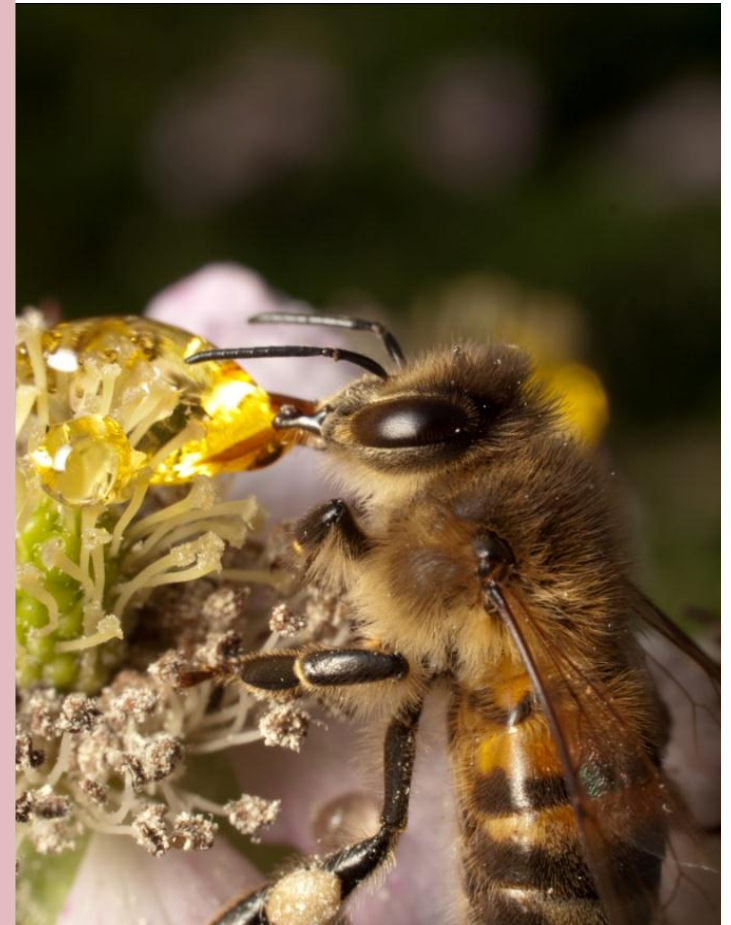


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Does imidacloprid have a negative effect on honeybee (*Apis mellifera*) behavior and olfactory learning?

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Background

A widely used group of pesticides is the neonicotinoids and they are highly efficient towards the so called sucking pests. The pesticides act on the insects nicotinic acetylcholine receptors, which are located in the insects central nervous system.

The pesticide is distributed all over the plant body, which means it will end up in both the pollen and nectar. When beneficial insects, such as honeybees and bumblebees, feed on the pollen and nectar, which could contain pesticide, they will also be affected.

The pesticide used in this current study is called imidacloprid and belongs to this specific group of pesticides and its possible negative effect on honeybee behavior and olfactory learning were tested.

Results

There were no changes in activity level, feeding rate or mortality, compared to the control bees.



Individuals fed with imidacloprid performed poorer on the olfactory learning and memory retention test, compared to the control bees.

Method

“Exp1: 10 bees were placed in a cage and fed with syrup mixed with different doses of imidacloprid.

“Activity levels were measured with the help of a video camera. Feeding rate (consumption) and mortality were checked every day.



“Exp2: Bees were caught, placed in small metal tubes and fed with different doses of imidacloprid.

“The bees were given three trials to make an association between an odour and a reward (sucrose).

“Their memory was tested 15 and 60 min after the last trial.

