

Is the European honeybee (*Apis mellifera mellifera*) a good representative for other pollinator species?

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DOI: 10.5073/jka.2012.437.047

Abstract

Pollinators are important components of biodiversity and provide a key ecosystem service through pollination (Klein et al., 2007). Honeybees, mainly *Apis mellifera*, are the most economically valuable pollinators for crop monocultures worldwide (Wantanabe, 1994), however, for several high-value crops, e.g., coffee, *Apis* pollination is less effective than pollination by local wild pollinator species (Klein et al., 2003).

Worldwide an increase of high-value crop farming and an accompanying increased dependency on pollination services occurs. For instance, data from Brazil indicate that total cropping area has grown with 70% and as a consequence pesticide use increased by 700 %. The current pollinator risk assessment is based on the European honeybee (*Apis mellifera mellifera*) and it is not clear if this is representative for other pollinator species.

In a first attempt to test if *Apis mellifera mellifera* is a good representative for other pollinators a first-tier contact LD50 test using dimethoate and deltamethrin was performed with several pollinator species originating from The Netherlands, Brazil, and Kenya, respectively. Thus acquired LD50 data will be used to construct a Species Sensitivity Distribution curve ranking the different species by their response to direct contact with the toxicant.

Tested species comprised European honey bee, bumble bee, Africanized honeybee, *Scaptotrigona postica* (stingless bee), African honeybee, *Melliponula ferruginea*. The presentation will present SSD curves for both dimethoate and deltamethrin and will discuss the results in the context of pollinator risk assessment.

References

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