

PP-152 [Bee Health]
Toxicity of active substances used in agriculture towards bees

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The purpose of this work was to provide farmers with a tool to minimize the impact towards bee health when carrying out phytosanitary treatments with pesticides.

For this purpose, a table was produced on the toxic effects on honey bees *Apis mellifera* of active substances currently allowed in Italy for phytosanitary treatments and their persistence in the environment and when available, the same data were reported for other bee species (*Bombus terrestris* and *Osmiaspp.*

The toxicity class was determined on the basis of the lowest LD50 value for acute oral or contact exposure. The following reference values were used for all three species: < 2 µg/bee = high toxicity; 2-100 µg/bee = medium toxicity; > 100 µg/bee = low toxicity. In the absence of this data, that for ingestion toxicity was used. In case both results were available, the lower one was considered. In case the degree of toxicity was not among species, the value for the most sensitive species was provided.

The table is user-friendly in that the level of toxicity to bees was indicated by three colors, making it possible designed to be as to understand the data immediately.

The following databases were consulted to compile the table on toxicity: ECOTOX, TOXNET, PAN Pesticide Database, PPDB-Pesticide Properties Database, BPDB-Biopesticide DataBase, EFSA documents, Win BDF-Agrochemicals Data Bank.

In order to compile the table on sublethal effects, a literature search on the topic was conducted. A second table was also produced showing the active substances for which sublethal effects on other bee species *Apis mellifera*, *Bombus terrestris* and *Osmia spp.* were found.

The tables are made available free of charge to all interested parties-farmers, technicians, beekeepers and their organizations-both via the web (in A4 format, pamphlet, for letterpress and poster) and in print. The tables are aimed to be a valuable document to promote good agricultural practices for the protection of bees, both farmed and wild.