Then in a next step in our risk assessment study on side effects we evaluated the impact of sublethal concentrations of Xentari® (0.01% via the sugar water and the pollen) on the foraging behavior of bumblebees with a new experimental setup in the laboratory. Here no change in the behavior of the workers was seen.

Overall the results showed that the tested Bt insecticides cause an effect on the biology of *B. terrestris*. However, more information about relevant environmental concentrations is necessary before making final conclusions about the compatibility of these compounds with *B. terrestris*.

**Can pesticide acute toxicity for bumblebees be derived from honeybee LD50 values?**

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**Abstract**

Pesticide acute toxicity towards animals is commonly assessed using lethal doses (LD50). The LD50 can be generated with two routes of exposure: when animals ingest the pesticide (oral LD50) or when it is in contact with it (contact LD50). Toxicity values for honeybees are usually used in ecotoxicological risk assessment inferring that honeybees represent the pollinating insects. LD50 values are also measured for bumble bees but to a lesser extend.

The first step of this exercise was to collect known LD50 (contact and oral) values measured for both honey bees and bumble bees.

Based on the LD50 values of 20 pesticides, the relationship between oral LD50 values of honey bees and bumble bees was calculated with the regression formula. The same calculation was done with contact LD50. Results showed that there was an approximate relationship; toxic active ingredients for honey bees were also toxic for bumble bees. However, when honey bee LD50 values in the toxic range (LD50 < 1 µg/bee) and less toxic range (LD50 > 1 µg/bee), were compared to bumble bee LD50, the relationship was very much less statistically significant. This both counted for the oral and contact LD50 values. It is concluded that the known LD50 values of honey bees could indicate broadly a range of LD50 values for bumble bees. However, for toxic and less toxic substances, the LD50 for bumble bees cannot be derived from known honey bee LD50 values. It must be noticed furthermore that the LD50 values for honey bees, presented in literature and databases of universities and legislation offices vary significantly.

**IV. Test methodology (laboratory, cage, field, sub-lethal, etc.)**

**Influence of the brood rearing temperature on honey bee development and susceptibility to intoxication by pesticides**

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**Abstract**

The brood rearing temperature is one of the most precisely controlled physiological parameters in a honey bee colony. Adult bees keep the brood area centre at 35 ± 1°C. In order to maintain the temperature within this narrow range, the high or low external temperature is contrasted by thermoregulation behaviours. Thus, normally only slight deviations from the optimal level may occur. Nevertheless, in particular situations the brood may be subject to conditions of suboptimal temperature. For example, a slight bee poisoning, causing