

# Is there a risk posed to honeybees from use of thiamethoxam as a sugar beet seed treatment?

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## Study Objective:

To assess soil residues after cropping sugar beet grown from thiamethoxam-treated seed and the potential exposure of bees to residues in pollen and nectar from bee-attractive crops planted after sugar beet.

## Study Design:

Residues of thiamethoxam (TMX) and clothianidin (CTD) were analysed from:

- 1) Soil collected from fields where thiamethoxam-treated sugar beet seed had been planted at 94 sites across Germany.
- 2) Soil, pollen and nectar sampled from untreated crops planted in the season after thiamethoxam seed-treated sugar beet at 11 field sites across 5 countries.

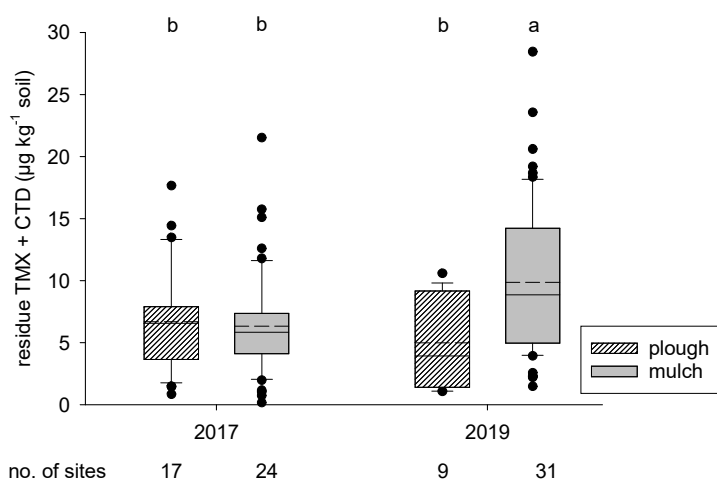


Fig. 1: Residue concentration in soil samples (dry matter) from 94 fields with different tillage; different letters indicate significant differences, *t*-test, *p*=0.05

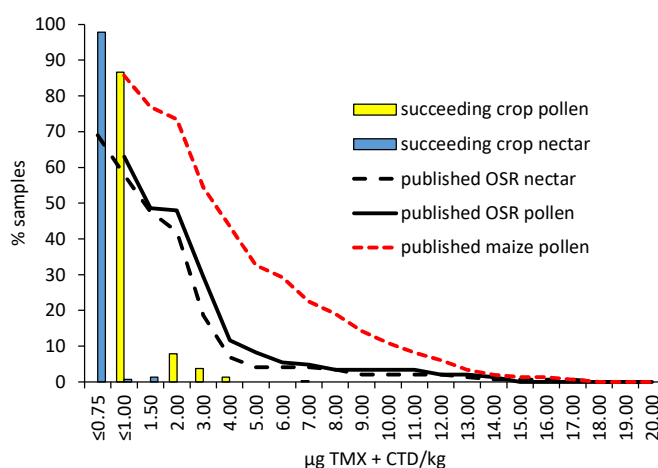


Fig. 2: Comparison of succeeding crop pollen and nectar data with published seed-treated crop residue data

- Mean residues in the soil monitoring were  $8.0 \pm 0.5 \mu\text{g TMX} + \text{CTD}/\text{kg}$  in the season after use.
- Residues decreased with time since last use and with lower application frequency.
- Residues in pollen and nectar were detected  $\leq 1 \mu\text{g a.i./kg}$  in 86.7% of pollen and 98.6% of nectar samples.
- Residues in pollen and nectar are lower in succeeding crops than those reported to result in sublethal effects in bees.

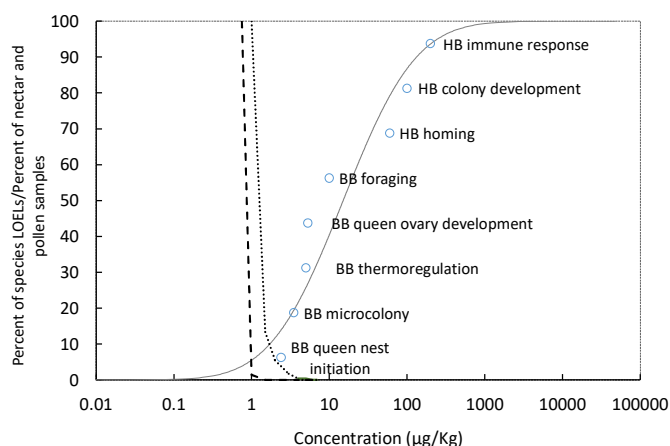


Fig. 3: Comparison of residues in nectar (dashed line) and pollen (dotted line) from succeeding crops with reported effect levels in bees (HB - honeybee, BB - bumble bee)

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