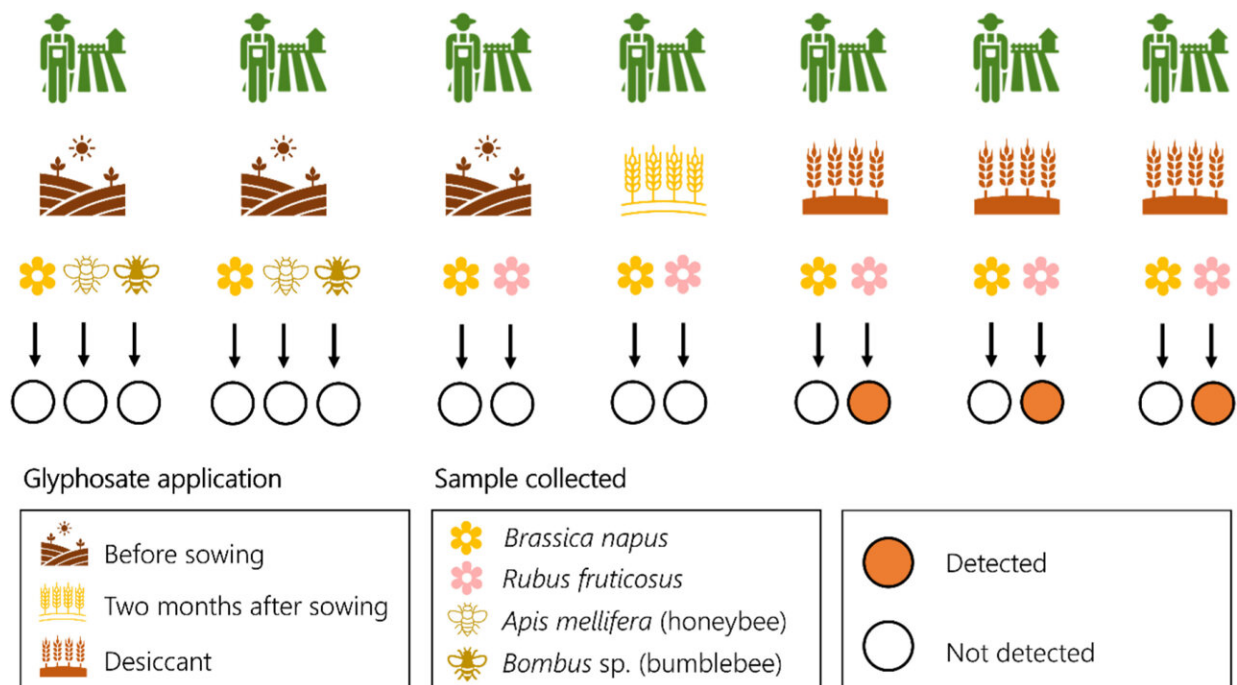


# Bees are exposed to EU's most common weedkiller via wildflower nectar

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Application timing of the glyphosate product in the seven fields and the respective detections in the collected samples. Credit: *Heliyon* (2022). DOI: 10.1016/j.heliyon.2022.e12179

Bees may be at risk from exposure to glyphosate—an active ingredient in some of the EU's most commonly used weedkillers—via contaminated wildflower nectar, according to new research from Trinity and DCU scientists.

Residues of glyphosate have previously been found in nectar and pollen collected by bees foraging on plants that have been selectively targeted with weedkiller, but this is the first time it has been reported in unsprayed wildflowers growing near sprayed fields.

And although glyphosate is intended to only kill plants it has been shown to harm the digestive systems of honeybees and bumblebees, which makes them more vulnerable to infections, and it may have other negative consequences.

Elena Zioga, Ph.D. Candidate in the School of Natural Sciences at Trinity College Dublin, is first author of the research article that was recently published in the journal *Heliyon*.

She said, "This is the first time glyphosate is reported in unsprayed wildflowers under conventional farming conditions and while we need more research to find how much higher glyphosate concentrations would be in directly sprayed plants, we know [wild bees](#) and honeybees will visit the contaminated wildflowers to collect pollen and nectar. They will thus be exposed to glyphosate and that could impact their health and the critical pollination service they provide."

"Glyphosate is the most frequently used weedkiller within the European Union and is also very common in other parts of the world. The residues we found in nectar in this study exceeded the European maximum permitted levels of glyphosate in honey and honey bee products, which suggests they could be harmful to honeybees and those eating the honey."

Elena sampled farmed fields of oilseed rape and nearby growing blackberry wildflowers in seven different locations in East and South-East Ireland.

In three of these locations, glyphosate residues were found in pollen and nectar of the blackberry flowers within a week after spraying took place. When the weedkiller was used as a pre- or post-emergence spray on oilseed rape crop (two months before sampling), no residues were detected.

Zioga added, "Knowing that [bees](#) may be exposed to glyphosate residues in the environment makes it important that more research takes place to assess the glyphosate impact on more bee species."

"As an additional priority, we recommend the immediate investigation of glyphosate as a desiccant before harvesting crops to better understand how this impacts non-target flowering [plants](#) growing near [crop fields](#) to enable a greater evidence base for evaluation of the renewal of market authorisation for [glyphosate](#) in the European Union."

**More information:** Elena Zioga et al, Glyphosate used as desiccant contaminates plant pollen and nectar of non-target plant species, *Heliyon* (2022). [DOI: 10.1016/j.heliyon.2022.e12179](https://doi.org/10.1016/j.heliyon.2022.e12179)

Provided by Trinity College Dublin

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