LINKING POLLINATOR OCCURRENCE IN FIELD MARGINS TO POLLINATOR VISITATION TO A MASS-FLOWERING CROP

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Uncultivated field margins are important habitats for pollinators. They provide food, and nesting and overwintering sites for pollinators, helping to sustain pollinator populations in agricultural landscapes. However, wild flowers in field margins may also compete for pollinators with co-flowering crops.

In this study, we tested whether pollinator abundance and species richness in field margins predict abundance and species richness of crop visitors in an adjacent mass-flowering crop. We also examined the effects of landscape heterogeneity on pollinators in crop fields and margins. The study was conducted in 34 spring-sown turnip rape (*Brassica rapa* ssp. *oleifera*) fields and their permanent margins in boreal farmland landscapes of Southern Finland.

Total pollinator abundance and species richness in field margins were poor predictors of pollinator visitation to adjacent crop. This was due to differences in pollinator species composition between the habitats. However, high abundances of honeybees and bumblebees in field margins were related to high numbers of crop visitors from these taxa.

Species richness, total abundance, and the abundance of syrphid flies visiting the crop increased with increasing landscape heterogeneity, whereas, in field margins, landscape heterogeneity had little effect on pollinators. In field-dominated landscapes, wild pollinators were relatively rare crop visitors even if they occurred in adjacent margins.

Our results suggest that uncultivated field margins help conserve pollinators, but they do not always result in enhanced pollinator visitation to the adjacent crop.

Bumblebee of the Bombus lucorum group on turnip rape