

Sowing strips of flowering plants has limited effect on pollination

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Many pollinating insects benefit from a small-scale agricultural landscape with pastures, meadows and other unploughed environments. In landscapes dominated by arable land, they lack both food and nesting places. Sown flower strips can increase the availability of food for pollinating insects, and are therefore assumed to benefit pollination. However, new research from Lund University in Sweden shows that the effect of the sown flower strips on pollination is limited and cannot compensate for the advantages of a varied landscape.

Researchers at the Centre for Environmental and Climate Research at Lund University have studied how [pollination](#) varies in different agricultural landscapes, by placing pots with either wild strawberry or [field](#) bean in field borders. Plants that were placed in a small-scale agricultural landscape, with pastures and other unploughed environments, were better pollinated than plants in landscapes dominated by arable land.

The researchers also investigated how sown flower strips, i.e. flower plantings which farmers often create to benefit pollinators, affected pollination in the different landscape types. In landscapes dominated by arable fields, pollination increased adjacent to the flower strip. A few hundred metres further away, however, the sown flower strips had no effect on the pollination of wild strawberry and field bean. In more small-scale agricultural landscape, the sown flower strips instead reduced pollination of adjacent plants, likely because the increased amount of [flowers](#) resulted in competition among flowers for pollinating insects.

"In our study, pollination was highest in small-scale agricultural landscape, with pastures, meadows and other unploughed habitats. Wild bees are important pollinators and manage better in a landscape with a lot of field borders and other unexploited environments. In intensively farmed landscapes, where such environments have disappeared, we can increase pollination, at least

in the immediate vicinity, by sowing flowering plants to attract pollinating insects," says Lina Herbertsson, one of the researchers behind the study.

Farmers can receive financial support to implement measures that promote biodiversity, some of which may also benefit pollinating insects. An evaluation is currently underway of the EU's common agricultural policy, CAP, which among other things regulates the support for greening measures, aimed at reducing the climate impact of European agriculture and promoting biodiversity in the agricultural [landscape](#).

"Our study underlines the importance of carefully designing measures intended to increase biodiversity, in order to achieve the desired effect. The same measure could have different impact in different places. If we want to increase pollination in varied agricultural landscapes, it seems to be a better strategy to restore and maintain pastures and meadows, and to manage field borders in a way that favours the local flora, rather than adding sown strips of flowering [plants](#)," concludes Lina Herbertsson.

More information: Lina Herbertsson et al. The impact of sown flower strips on plant reproductive success in Southern Sweden varies with landscape context, *Agriculture, Ecosystems & Environment* (2018). [DOI: 10.1016/j.agee.2018.03.006](https://doi.org/10.1016/j.agee.2018.03.006)

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