

The attractiveness of alternative crops in agricultural landscapes on local hoverfly populations

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For sustainable and insect-friendly agriculture, various measures such as the establishment of flower strips or reduction of pesticides are important to increase insect abundance. However, the selection and cultivation of the crops themselves and a higher diversification can also have a direct impact on the development of local insect populations. With flowering crops, farmers can provide important alternative food sources for flower visitors such as bees and hoverflies. Hoverflies, in particular, as important natural enemies in biological control, rely on nectar and pollen in the adult stage. In an experimental field trial, the attractiveness of different flowering crops was investigated. For this purpose, 21 different species of renewable energy, medicinal or dyeing plants were selected and grown in small plots. The plants selected were anise, buckwheat, caraway, chamomile, common chicory, coriander, cup plant, dyer's chamomile, dyer's dog, dyer's red, dyer's thistle, dyer's weed, Ethiopian rapeseed, fennel, flax, madder, mugwort, phacelia, toadflax, valerian and woad. To determine if a plant was attractive, the flowers were observed twice daily (morning and noon) for eight minutes each on three days per week, and all perceived and detectable visitors on the flowers were noted. The results showed the attractiveness of the plants to hoverflies and other insects (Hymenoptera, Lepidoptera, Coleoptera, Heteroptera, and other Diptera). Buckwheat, coriander, and chamomile were particularly attractive to hoverflies, while flax and other tested plants were visited little or not at all. The objective of this research is to identify plants that could be of benefit to farmers while providing an expanded food supply for insects. This study is being conducted as part of the FInAL project (<https://www.final-projekt.de/en/>).

