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WILDFLOWER STRIPS FOR CROP PROTECTION: WHAT DO WE KNOW? WHAT SHOULD WE KNOW?

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ABSTRACT

Wildflower strips (WFS) are known to support the conservation of a large diversity of insects and thus natural enemies (predators and parasitoids) that can control pests. However, the conclusions of studies looking at the efficiency of WFS to control pests are not unanimous. Indeed, the enhancement of pest control seems to depend on (1) the ability of flowers to attract the natural enemies at the right moment and (2) the capacity of natural enemies to migrate into the adjacent crops to attack pests. Therefore, constituting appropriate flower mixes may be an essential lever to enhance the efficiency of pest control. In this context, using functional diversity is promising. To our knowledge, few studies have tested the impact of the functional diversity of a flower mix on insect abundance and diversity and the control of pests.

Additionally, the management of the WFS, such as mowing, seems to be another lever that may affect pest control. Indeed, perennial WFS should be regularly mown to maintain initial flora. However, mowing may affect insect populations by temporarily destroying the habitat. Previous studies already assessed the impact of the mowing regime on insect diversity but knowledge on its impact on the trophic relations between these insects seems to be very limited.

Through this contribution, the insect diversity and abundance found to be associated with the different kinds of WFS and management applied will be discussed, as well as the further research needed.