

### Reference 31

Haaland, C; Naisbit, RE; Bersier, LF 2011 Sown wildflower strips for insect conservation: A review INSECT CONSERVATION AND DIVERSITY, 4, 60–80. 10.1111/j.1752-4598.2010.00098.x

### Background and objective

Sown wildflower strips have been introduced as agri-environmental measures in several European countries to enhance biodiversity. The objective of the study is to provide an overview of studies on sown wildflower strips and their effect on abundance and on diversity of insect in comparison with each alternative habitat type (including crop, crop edges, other margin types, grasslands), to evaluate their value as an agri-environmental schemes (AES). Here, the results regarding the comparison between wild flower strips and cropped lands are reported.

### Search strategy and selection criteria

Literature searches within the ISI Web of Science were carried out in June 2008 and throughout autumn 2008 with the following key words: wildflower strip or wild flower strip; sown strip; sown margin; wildflower margin or wild flower margin; wildflower mixture; wildflower area or wild flower area. 1) Studies focusing on insect diversity in sown wildflower strips; 2) conducted in Central and Northern Europe.

### Data and analysis

A simple meta-analysis was carried out on the collection of studies, using binomial sign tests to determine if a significant majority of studies showed a positive or negative effect of wildflower strips on abundance and on diversity in comparison with each alternative habitat type. Tests were two-tailed, and studies that reported no difference were treated conservatively by assigning a half count to positive and half to negative.

Number of papers	Population	Intervention	Comparator	Outcome	Quality score
32	Croplands and grasslands	Wild flowers strips	Crop (or crop edge) or grasslands	Metric: Insects 1) abundance; 2) diversity; Effect size: Not applicable	37.5

### Results

- Higher abundances of insects in wildflower strips or patches compared with crop edges or crop was shown in 14 out of 16 comparisons, and higher diversity in 11 out of 13 (a significant majority in both cases). Two studies found higher abundances and diversity in cropped habitats.
- Comparisons with grasslands are rare, but the abundance and diversity of insects in wildflower strips can be similar to that in extensive grasslands and higher than in conventional grasslands.

### Factors influencing effect sizes

- No factors influencing effect sizes to report

### Conclusion

Authors found that sown wildflower strips support higher insect abundances and diversity than cropped habitats, and sown wildflower strips have comparable insect numbers and diversity to that in extensively used grasslands, despite the fact that they are recently established habitats. Reviewers' note: We labelled the results as uncertain due to the lack of statistical testing.