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Pasture for Pollinators

Interim report executive summary

The Pasture for Pollinators project looks at how dairy farmers can manage their forage resources to conserve and enhance populations of pollinators, bumblebees in particular, as an integral part of their commercial production systems.

The practical work is based on six organic farms, all part of Calon Wen Organic Milk Cooperative, based in North East Wales, Ceredigion and Pembrokeshire. Management practices included:

- Using a **specialised seed mixture** (Dual Purpose Four Year herbal ley from Cotswold Seeds) which included flowering species such as: Bird's-foot trefoil; Clovers (red, white, sweet and alsike); Yarrow; and Chicory. Where possible and appropriate these were compared to 'standard leys' based predominantly on rye grass and clover.
- **Leaving uncut field margins**. When the fields were cut for silage/ grazed, a 4 m strip down one side of the field, at least 100m long, was left uncut/ un-grazed to provide a refuge for pollinators. This strip was allowed to mature, and cut/ grazed when the next silage cuts were taken/ the field grazed down, generally when flowering was over.
- **Habitat management:** Opportunities to manage other habitats on the farm (e,g, hedgerow, deferred grazing on unimproved or semi-improved pastures) were identified

In each data collection season, two surveys were carried out on each of the farms, where the farmers had managed to leave the margins. The surveys were carried out by Bumblebee Conservation Trust researchers Anna Hobbs and Sinead Lynch. Transects were carried out on both standard and herbal leys on: Margins left uncut/ un-grazed after cutting/ grazing; and Cut/ grazed margins on the opposite side of the cut/ grazed field to the uncut/ un-grazed margin. In addition, plant surveys were undertaken by placing fifteen 1m x1 m quadrats in each margin and listing plants used as a nectar/ pollen source by pollinators; and estimating percentage cover and counting the number of floral units for each plant species.

In addition, potential habitat for bumblebees and other pollinators was noted during the site visit.

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From the data analysed so far from 2018 and 2019, higher numbers of bumblebees and other pollinators, and greater numbers of pollinator species have been recorded in uncut/ ungrazed agricultural ley margins compared to cut/ grazed ley margins when surveyed within 2 weeks of silage being cut/ grazing. The results indicate that leaving uncut/ ungrazed margins in agricultural ley fields could help support bumblebee and other pollinator populations, especially in terms of 'bridging gaps' in forage (nectar and pollen resources) during the season when a continuous supply of forage is required by these species (from around March through to October).

Additionally, the results compiled so far, indicate that greater numbers of species and abundance of individual pollinators may be supported by the more species-rich herbal fertility building Project ley (or fields which have been seeded with an agricultural ley but retain a variety of wildflower species as well), compared to less species-rich agricultural leys. NB not all data has been analysed yet and when it has, the sample size is too small to test for statistical significance.

The whole farm surveys identified a range of habitats that could support bumblebees and other pollinators including; Hay fields and semi improved grazing; bare earth; tussocky grass; hedge banks; gorse & bramble; woodland margins; trackside verges; ditches; scrub; and saltmarsh. Recommendation were made on a farm specific basis to manage these habitats to enhance pollinator populations.

This project has generated a substantial amount of interest, and considerable effort has gone into communicating the project and its findings, including: Preparation of knowledge exchange materials; media campaigns (broadcast, print and social); presentations at conferences and events; and on farm open days

On the whole the project has run smoothly, and a large volume of quality data has been collected. However, there have been some practical difficulties experienced and some key lessons were learned including:

- It has been difficult to coordinate survey visits across 6 geographical dispersed farms such that researcher and farm availability, flowering of ley and margin, and favourable weather conditions all coincide. We have worked to improve communication between farmers and researchers to get the timing right and have some success, but we have had to accept that it conditions will not be ideal on every farm on every occasions.

- In some cases, margins were not left in error, and this been largely because contractors were not aware of the project or had forgotten they were supposed to leave margins. We have addressed these by improving communication and improving the marking of making the border between the margin and the main field.