Institute of Organic Training & Advice

Results of Organic Research: Technical Leaflet 10

Sowing and Management of Multi-species Leys to Encourage Pollinators

An upland ley in July in South West Shropshire, managed according to the prescription for Countryside Stewardship Organic Multi-species Ley option.

Introduction

This technical Leaflet provides farmers and advisers with guidance on the selection and management of multispecies leys as a means of supporting pollinators. It draws on the research findings of the LegLink project (see IOTA Technical Leaflet 9) and combines the benefits of multi-species leys for soil fertility building, forage production and pollinator foraging.

Background

Maintaining pollinator populations is critically important for both wildlife diversity and for food production. It has been estimated that 35% of global food production is dependent on pollinators. Honey bees, bumble bees, butterflies, hoverflies and many other insects all play a part and their recent decline in both diversity and abundance poses a major threat.

In the past, organic farmers have relied largely on simple white or red clover leys for forage production and fertility building. The LegLink project showed the potential for mixing up many more species to get improved forage production and soil fertility (nitrogen and organic matter) and the added benefit for pollinators.

Forage species for pollinators

The selection of forage species for the benefit of pollinators should aim to increase floral diversity and ensure continuous flowering from April to August, particularly in May for bumblebees and hoverflies and in August for hoverflies and solitary bees. The All-species mix of 14 legumes and grasses used in the LegLink project (Box 1) was shown to have a significant benefit for pollinators.

Alsike clover
White clover
Crimson clover
Red clover
Black medic
Birdsfoot trefoil
Large birdsfoot trefoil
Lucerne
Sainfoin
Timothy
Italian ryegrass
Meadow fescue
Perennial ryegrass
Meadow pea *(poor to establish and not worth sowing).*

Box 1. The All-species mix

It is not necessarily appropriate to sow all species in a commercial situation; the species selected will be influenced by the farm's soil type and the fertility building and forage yield requirements of the ley. However, some common principles have been established which will help in the selection of a mix for a particular farm:

- Long flowering duration
- Use many species – probably at least 8
- Include several legumes, at least 3 and preferably 4
- Include grasses and herbs as well as legumes.

Select species that are known to suit the farm or are particularly good for target pollinator species, even if they are not included in the All-species mix. For example, knapweed, mallow, scabious and self heal are all valuable for pollinators, but unlike those in the All-species mix, they do not have any particularly valuable agronomic benefits and they are generally more expensive.

Management of Multi-species Leys for Pollinators

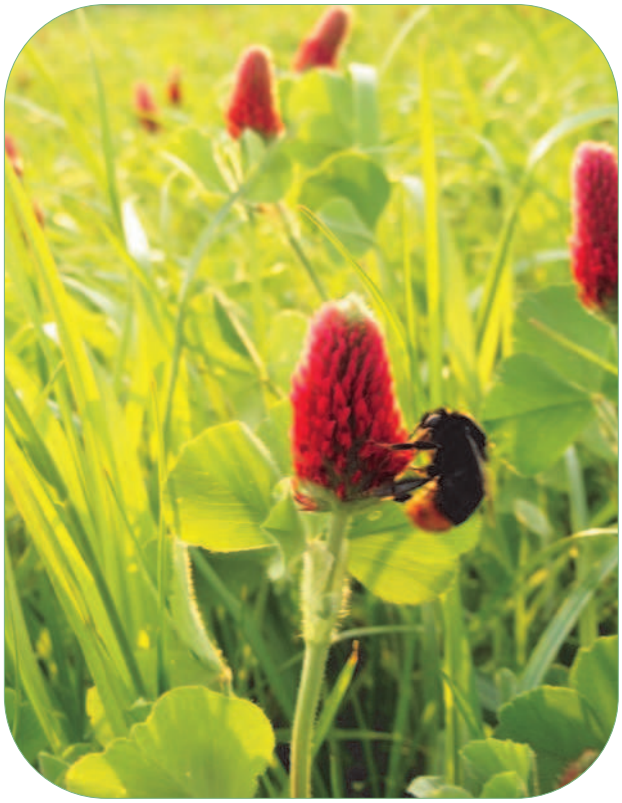
While the selection of suitable species is important, almost as important is how the leys are managed; heavy set stocking with sheep does not give the plants a chance to flower, so longer intervals between rotational grazing or mowing is preferable for the pollinators, though there will be an impact on forage quality if left for too long a period. This is reflected in the management prescriptions of the new grant options, below.

Grant Support for Pollinators

The new Countryside Stewardship provides several options for sowing and managing multi-species leys for the benefit of pollinators. The principle management prescriptions for 3 options are listed below. Full information is available on the Defra website: https://www.gov.uk/guidance/countryside-stewardship-manual

Organic Multi-species Ley Option OP4

This option for organic farming is based on the results of the LegLink project and is designed to encourage pollinators and other insects by including multiple species and a long flowering period. It pays £115/ha/year across the whole field. The specification is:



A Bumble bee on Crimson clover

The All-species mix in the LegLink trial

"In the first agreement year establish a multi species ley containing at least 5 species of grass, 3 species of legume and 3 herb species. The grass component must not exceed 75% of the seed mix by weight (kg/ha).

Once established, manage the multi species ley with rotational cutting and/or grazing as follows:

- *Cut/graze 50% of the option area between 1 April and 15 May. Do not cut/graze this area again until 1 August*
- *Cut/graze the remaining 50% of the option area between 15 May and 30 June. Do not cut/graze this area again until 15 September."*

Nectar Flower Mix AB1

This option for small blocks on conventional and organic land pays £511/ha has the following specification:

- E*stablish a mix of at least 4 nectar-rich plants and at least 2 perennials*
- *Establish the mix in blocks or strips between 15 March and 30 April or 15 July to 30 August*
- *Rotationally cut 50% of the plot area each year between 15 April and 31 May - don't cut the same area in successive years*
- *Cut the whole area between 15 September and 30 March, removing or shredding cuttings to avoid patches of dead material developing*
- *Do not graze between 15 March and 31 August*
- *Block sizes must be between 0.25 and 0.5 ha.*

Autumn sown Bumblebird mix AB16

This option is for conventional and organic land on larger blocks up to 5 Ha, pays £500/ha and has the following specification:

- *Establish a mixture of the flowering and seed bearing plants specified in the "How to carry out this option" section as soon as possible after harvest and before 7 September, in year 1 and year 3 of the agreement*
- *Sow a mixture based on suggestions below (Box 2)*
- *Blocks or strips must be at least 6m wide and at least 0.4ha - the maximum individual plot size is 5ha*
- *Top the established mixture between mid-February and mid-March in the second spring after sowing to promote legume flowering during early and mid-summer*
- *Return the option area back to the arable rotation from 15 August in the second year after establishment*
- *Maintain seed and flower provision, re-establish the mixture every 2 years.*

Bird & insect plant species	Proportion by weight
Winter triticale	18%
Winter barley	18%
Fodder radish	15%
Crimson clover	15%
Birds foot trefoil	10%
Gold of pleasure	5%
Kale	5%
Common vetch	5%
Common or black knapweed	2%
Rough hawkbit or wild carrot	1.5%
Ox-eye daisy	.5%

Box 2: Autumn sown Bumblebird mix

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