

How to grow nectar flower mixtures

This note has been written for Entry Level Stewardship (ELS) agreement holders. It provides guidance on how to establish and manage nectar flower mixtures under ELS option EF4. Successful nectar flower mixtures can provide significant environmental and agricultural benefits. Flowering plants in the farmed landscape increase the availability of essential food sources for a range of nectar-feeding insects, including butterflies and bumblebees. Bumblebees in particular contribute to the pollination of agricultural crops like oilseed rape and field beans.

Introduction

ELS option EF4 nectar flower mixture is a valuable part of your stewardship agreement, but it can be difficult to establish and manage. The main problems are generally:

- Sowing at the wrong time and too deeply.
- Unsuitable, shady, wet locations.
- Insufficient active management in the first year.



2 year old north-facing EF4 strip with high weed burden

All situations are unique, but these two pictures illustrate the difference that careful site selection, sowing and management can have to the amount of nectar your EF4 plot can provide.



2 year old south-facing EF4 with low weed burden

The picture on the left shows a north-facing spring sown EF4 strip that had been mown once in the establishment year and has a high weed burden. The one above shows an autumn sown EF4 patch that had been mown three times in establishment year and has a low weed burden.

Growing an EF4 nectar mix is a challenge, but then so is managing the range of crops and varieties in your normal rotation, across all sorts of soil types and seasons. By applying the same care and skill used to grow crops to the establishment and management of EF4 strips you can deliver the same high quality and provide important nectar sources for the pollinators on your farm.

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For additional practical guidance see *Further information* below.

Establishment

What to sow

You can obtain ready-made nectar-rich seed mixtures that meet scheme requirements from seed merchants. You should check that the mix used meets the scheme rules, includes at least four nectar-rich plants and that no single species makes up more than 50% of the mix by weight.

Examples of nectar-rich plants include:

- early and late flowering red clover;
- alsike clover;
- common vetch;
- tufted vetch;
- lucerne;
- sainfoin; and
- birds-foot trefoil.

It also helps to include some native wildflowers as these can provide nectar over a longer period.

Examples of suitable species include:

- musk mallow;
- yarrow;
- field scabious; and
- common knapweed.

Standard seed rates are between 10-20 kg/ha.

A typical 10 kg/ha mix is:

- 20% birdsfoot trefoil;
- 20% sainfoin;
- 20% alsike clover;
- 36% red clover;
- 2% musk mallow; and
- 2% common knapweed.

Where to sow EF4

Nectar flower mixtures are best established on sunny, sheltered, low fertility south-facing sites. They fit well in less profitable areas and corners of the farm, but shaded and wet sites should be avoided.



A suitable location for a nectar rich margin

Any weed problems, particularly perennial weeds such as creeping thistle, should be controlled before establishment.

The size of plot is less important, but larger patches are likely to be easier to manage with existing farm machinery. The maximum size of each nectar flower patch is 1 ha and these should be spread around the farm.

When planning where to locate EF4 remember that it will need in-season management and depending on the location you may need to leave access in your farm crops for this.

EF4 should not be planted beside semi-natural grasslands because the non-local wild flower seed could contaminate the native wild flower community.

When to sow

There are two main sowing windows:

- **Spring sowing** (mid March to the end of April).
- **Late-summer sowing** (mid July to end of August).

Generally late summer sowings are more successful than spring sowings because the soils are warmer and moisture more consistently available.

Sowing clover in September should be avoided because these legumes are slow growing and they need plenty of time to establish and grow before winter sets in as frosts and frozen soil can damage the seedlings.

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How to sow

Seedbed quality and moisture availability are as critical as the calendar date. Most of the seeds in your EF4 mixture will be small so seedbeds need to be fine and firm (finer and firmer than most combinable crop seedbeds).

Sowing seed too deep will fail so forget drilling and use broadcasting.

The best practice is to broadcast the seed onto the seedbed surface to get a good spread and then to roll it in so that you:

- get good seed to soil contact;
- retain moisture; and
- reduce the risk of slug damage (particularly on heavier soils!).

To achieve the recommended sowing rate of 10 to 20 kg/ha you need to take care that the equipment is calibrated properly. You may also want to use an inert carrier to aid consistent seed distribution, for example, barley meal, poultry chick crumbs or sawdust.

Management

Management during the first 12 months

There are no shortcuts to good establishment which is essential.

High soil fertility generally means more weeds and these will smother slower growing species if the plots are not mown. Mowing controls annual weeds but not the sown species so don't be afraid to use the mower, particularly in the first year.

On most sites best practice is for 2 - 3 cuts in the first 12 months. The volume of cut material is typically low and provided a flail mower is used it is generally not a problem to leave the cuttings. However, if there are a lot of bulky cuttings which could smother the sown species, it is best to remove them.

As a guide if you look down into your EF4 and can't see the species you have sown because of weed or luxuriant growth, it's time to cut. Don't worry if you don't see any flowers in the first year due to cutting, they will be there in abundance in year 2.

There is a risk that mowing will kill wildlife. This risk is significantly reduced if the first cut is done early in the year, so that any ground nesting birds find the patch unattractive. Generally you should aim to start cutting around the end of March.

Management of the established sward

Once the sward has become established the following cutting regime should be followed.

Early cutting to stimulate late flowering

Cutting half the plot between mid-June and first week of July will stimulate late flowering and nectar provision in late summer. This is essential for some of our rarer bumblebees. Cutting with a flail mower is best practice, but do not cut if breeding birds are present.

Late end of year cut

Cut the whole area between 15 September and 31 October. If there is little vegetation leave the cut material on the ground. If there are bulky cuttings these smother the sown species, and should be removed.

Where grass weed pressure becomes a problem, the use of a grass weed killer can be considered, but this will require a derogation and you will need to notify Natural England using the derogation notice form the link to this is available under *Further information* below.

Re-establishing the sward

Research has shown that nectar production declines significantly after the third year of flowering and that plots need to be re-established at this point to ensure your EF4 continues to deliver valuable nectar resources across the farm.

In some cases it can be beneficial to move your EF4 plot within the field and to re-establish it on cleaner ground. You can either put the previous area back into crop production or you can put it into a wild bird seed mix option. Both will benefit from the fertility created by the legumes.

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EF4 quick checklist

- Pick the right site and patch size – larger, sunny areas are best. Up to a maximum of 1 ha.
- Don't pick weedy, shady, wet sites they will make management harder.
- Sow in blocks/strips at least 6 m wide at the edges of fields.
- Don't drill but broadcast your seed mix and roll after sowing.
- Cut up to 3 times in the first year after sowing to get the desired species well established.
- Once established manage the plots as per the ELS handbook prescriptions by cutting.
- Cut half the area to 20cm between mid June and the first week of July to help prolong and maintain nectar provision, but do not cut in June/July if nesting birds are present.
- Cut the whole area to 10 cm between 15 September and 31 October, removing or shredding dense cuttings.
- Re-seed after 3 years as the pollen and nectar species decline in productivity so pollinators on your farm don't lose out.

EF4 and other ELS options

Nectar flower mixtures are one of a variety of habitats needed throughout the lifecycle of bumblebees, butterflies and other pollen-and nectar-feeding insects.

From when they first emerge in March to when the new queens hibernate in late September, bumblebees need a continuity of food, including pollen as well as nectar. You can provide this by linking a variety of ELS options and other habitats across the farm. For further guidance see the Bumblebee Conservation Trust factsheets listed under *Further information* below.

Further information

Natural England Technical Information Notes are available to download from the Natural England website: www.naturalengland.org.uk.

For further information contact the Natural England Enquiry Service on 0845 600 3078 or e-mail enquiries@naturalengland.org.uk.

See also

Growing Farmland Wildlife DVD produced by Defra, Natural England and industry partners Wildlife Farming Company, RSPB, and Syngenta. Available from Natural England publications as NEX19. This contains easy to follow tutorials from site selection to annual management.

Factsheets available from the Bumblebee Conservation Trust www.bumblebeeconservation.org/ include:

- *Managing wildflower meadows for bumblebees*
- *Grassland restoration and creation for bumblebees*
- *Orchard management for bumblebees*
- *Managing hedges and edges for bumblebees*

The following factsheets are also due to be published:

- *Pasture management for bumblebees*
- *Managing field margins for bumblebees*

Derogation notice forms

Can be obtained from the Natural England website at:

www.naturalengland.org.uk/ourwork/farming/funding/es/forms/default.aspx.

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