



BEE SPOKE

Benefitting Ecosystems through Evaluation of food Supplies for Pollination to Open up Knowledge for End users

SEED SELECTION

Use a native perennial mix with at least ten wildflower species (ideally minimum 20% of mix by weight) and three fine-leaved grasses (e.g. red fescue, etc.) tailored to site conditions and requirements.

Choose wildflower species with a range of floral structures, colours and flowering times to support a broad suite of beneficial insects.

Tailor seed mix to your area, soil type, exposure to sun, drainage etc. Seed companies produce a range of seed mixes for different soil types, fertilities, pH's, and shade.

Avoid plant species known to benefit pests. Use native wild seed rather than agricultural varieties for greater habitat persistence.

PREPARATION

The aim is to prepare a firm, fine, weed free seedbed for broadcasting seed in late summer (August/September), or in spring (March/April).

For successful wildflower establishment, avoid areas that are shaded, of high soil fertility, and prone to waterlogging.

Ensure that pernicious weed problems are completely controlled before sowing. This may take more than one season.

Remove dense ground cover, e.g. grasses using machinery during a dry period, or if this is not possible treat with a contact broad-spectrum herbicide. Then harrow-cultivate the soil bringing weed seeds to the surface.

Create a stale seedbed, allowing weed seeds to germinate, and then eliminate using a non-residual herbicide. Be aware that some herbicides can persist and damage the flowering crop that follows.

SOWING

Broadcast the seed, do not drill. Use a mechanical broadcaster, drill lifted clear from the ground, or broadcast by hand according to seed company recommendations.

Mixing the seed with sand, barley or wheat meal enables more even distribution when sowing by hand.

Roll area to firm the seed to soil surface, ideally just before rain is due.



How to Successfully Establish Perennial Wildflower Areas



Female mining bee (*Lasiglossum leucozonium*) © Peter Thompson



Green with red cultivator © Marek Nowakowski



Garden bumblebee (*Bombus hortorum*) © E. Jackson-Smith





MAINTENANCE

YEAR 1 (establishment year); maintain sward at a height of 5-10 cm with regular cuts to control annual weeds and encourage sown species to establish. Avoid allowing too much vegetation to develop before cutting as debris will smother emerging sown species. It is always best to remove cuttings.

YEAR 2 onwards; in spring, if the sward is >15 cm, an early cut can benefit some species. Otherwise cut in September to 5-10 cm.

If possible, cut and collect cuttings to reduce grass dominance and improve wildflower persistence. Depending on the climatic conditions in a growing season (e.g. rain promoting vegetative growth) additional cuts to 20 cm (May to September) is an option, but this should be monitored.

Monitor wildflower areas and spot-treat pernicious weeds e.g. docks and thistles. Avoid fertiliser, and herbicide drift into the wildflower area.



TROUBLE SHOOTING



PROBLEM: The mix I sowed in spring has not established.

REASON: Weather was too dry following sowing, or seed was sown too late in the year followed by insufficient rain e.g. May/June.

SOLUTION: If sowing March-April, aim to do this while sufficient soil moisture exists, or consider irrigating. If possible, wait until August/September. You might have to re-sow your wildflower strips.

PROBLEM: I sowed perennial wildflowers last autumn; I can only see annual weeds.

REASON: Sward not being regularly cut to a height of 5-10 cm in the first year.

SOLUTION: Cut wildflower strip before the annual weeds (poppies, fat hen, mayweed) set seed and maintain with regular cutting throughout the establishment year.

PROBLEM: I cannot see all the flowers that I sowed in the mix.

REASON: Some species take several years before they flower, and the overall composition of wildflower strips will change with time.

SOLUTION: Sow a seed mix suitable for your farm conditions and increase the number of species sown to increase the possibility of species establishing well.

PROBLEM: In year two, after sowing there are lots of pernicious weeds (e.g. docks).

REASON: Weeds not well controlled before sowing or have been encouraged by cultivation.

SOLUTION: Remove by hand or spot-treat with selective herbicide until wildflowers are better established. If large patches of weeds are present, cut regularly to reduce vigour.

Contributors to this guide include Michelle Fountain (NIAB EMR), John Holland (Game and Wildlife Conservation Trust), Duncan Westbury (University of Worcester), Mike Garratt (University of Reading), Marek Nowakowski (Wildlife Farming Company), Helena Elmquist (Odling I Balans), Lene Sigsgaard (University of Copenhagen), Claire Carvell (UK Centre for Ecology & Hydrology(UKCEH))

