

Wildflower Meadows

Getting Started: Site Selection and Preparation

Site Selection

Meadows are plant communities of open ground and will grow on sites ranging from the very exposed (for example coastal) to the sheltered, including some light shade. Very dry and wet soils can support meadows and they will grow on acid and calcareous sites. Meadows generally require maintenance by annual cutting or grazing, without which they eventually turn into scrub or woodland. The exception is the Highland Meadow Mix – this is designed for high, exposed sites that are often inaccessible for annual cuttings, and which do not support lush growth. On these sites the Highland Meadow Mix does not need cutting after planting.

Preparation

- ⊗ Kill off any existing vegetation by spraying or by ploughing or digging it in (cutting it short first may help). Even existing grass should be killed, although if this cannot be done it may be possible to over-sow or slot seed to introduce wildflowers and other grasses (see below) but generally this is less effective and in some circumstances can fail.
- ⊗ Prepare a fine seed bed - a smooth surface with the soil broken down as much as possible. For small areas breaking soil down with a fork or rake will do. For larger areas, rotovating with a garden rotovator. For 'agricultural' size areas, rotovating or power harrowing.
- ⊗ In engineering projects, house building or creation of ponds where soil is being moved and there is a choice of subsoil and topsoil available, a mixture of topsoil and subsoil (about 50:50) for a depth of about 30 cm overlying subsoil is usually ideal, provided the topsoil is not excessively weedy (especially with Docks and other perennial weeds). Subsoil alone can be used but if the structure is poor and the fertility very low there will be a very slow establishment of wildflowers and frequently domination by plants such as clovers which do not depend on nitrogen in the soil for their growth.
- ⊗ If large numbers of weeds are expected on a site, for example a site which has been very weedy over a couple of years, a 'stale seed bed' technique can be used before sowing, to reduce the number of weed seedlings. This involves preparing the soil for sowing and allowing the weed seeds to germinate and then killing them by rotovating or spraying, repeating the process once or twice more. This delays sowing but can be worthwhile in reducing weeds. In extreme situations it can be carried over more than one season. Sites which have had grass growing on them for a long time often have a relatively low number of weed seeds present in the soil.

Sowing

Sowing rate: 3g per square metre:

i.e.: 100g for an area 6m by 6m, 1kg for an area 32m by 32m

Spring Sowing (Early March to June). You can sow as soon as it is possible to work the soil and the soil starts to warm up (later on wet soils). Late sowing after April is possible up to the end of June but there is an increasing risk in some areas of the country after May that seedlings will appear in very warm weather and the young plants will be vulnerable to drought. In other areas, the risk is quite small and, depending on weather conditions, sowing can be done throughout the summer.

OR

Autumn sowing (Mid-August to October). This gives plants the advantage of an early start in spring. The disadvantage is that the site will look bare over winter with the possibility of soil erosion on some sites and any seedlings that unexpectedly appear may later be killed by frost.

How to Sow

The mixture should be sown on or very close to the soil surface. Mix the seed very well as some seeds are very small and dense and will separate from larger and less dense seeds.

- ⊗ **By hand:** Choose a calm day as seed can be blown away easily. Divide the site up into at least four equal areas. Divide up the seed into the same number of equally-sized lots. You can use some dry sand, sawdust or even barley meal or coarse porridge to bulk up the seed so that it is easier to spread and to see where it has been spread.

Use the first lot of seed on the first area to get used to sowing at the correct sowing rate. Seed can be spread by hand from a box or bag using a wide swinging action (to cover up to 2m width). Walk up and down in a regular pattern, remember that it can be difficult to see the seed on the ground so you may have to look at your

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Wildflowers of Scotland

✉ scotiasseeds@btconnect.com

Mavisbank, Farnell, Brechin, Angus, DD9 6TR

☎ 01356 626425 📠 01356 629183

footprints or use a marker. If you can, use half of the seed for each area sowing in one direction and then use the other half sowing at right angles. This helps to avoid leaving any empty patches.

- ⊗ **Mechanically:** broadcast by seed or fertilizer spreader. Cut the rate down to a very low level to start with and sow twice as above. A seed drill can be used but it must be set to allow the seed to be sown on or very close to the surface.

After Sowing

Roll the ground after sowing. For small areas, seed can be trampled in by foot or even driven over by a quad bike for example if a roller is not available – the purpose is to press the seed into the soil surface so that it makes better contact with the soil and will absorb water from the soil more effectively.

A very light raking or harrowing before rolling can help to settle the seed into the soil, especially for sowings late in the spring or if dry conditions are expected but the seed should not be buried.

Management after establishment

An early cut is often useful after sowing as on most soils annual weeds will appear and grow rapidly (an exception to this is on soils where fertility is low). Cutting down the annual weeds allows light into the perennial species which have been sown and removes the competition for water and nutrients. This will result in faster establishment and a tidy appearance. Some judgement is required to decide whether and when a cut is helpful but when annual weeds grow to around 30 cm (1 foot) tall they can usually be cut to about 10 cm (4"). The grass seedlings can often be seen at this stage and the aim of cutting is to remove most of the weed growth without cutting the grasses and the wildflower seedlings (which are normally smaller than the grass seedlings). For early spring sowings, cutting after about eight weeks (and just occasionally) again after another eight weeks is often about right. The cut material should be removed so that it does not lie on top of the seedlings and smother them. Removal also helps to reduce the fertility of the soil, helping to reduce overall growth and create a good balance between the growth of wildflowers and grasses.

In some cases cutting the annual weeds may not be necessary, if there is little growth, few weed plants or the appearance is acceptable and the perennial species will often survive even quite a heavy infestation of annual weeds to take over in the second growing season.

At the end of the first growing season (September), the meadow should be cut and the cuttings removed.

Ongoing management

Our meadow mixes contain a range of perennial wildflowers and grasses that grow and mature at different rates. In the first summer season after sowing there should be fairly open growth and some of the quickly maturing perennial plants may flower, for example Red Campion, Ox-eye Daisy or Yarrow. Most of the broad-leaved species will begin to flower in subsequent years.

Occasionally, if fertility is very low, growth, including grasses, might be very slow.

Generally meadows should be cut and the cuttings removed once a year at the end of the growing season (normally September). Often this is the only management required. Cutting for hay earlier in the season is also possible.

Grazing may be used instead, with cattle or sheep for example grazing at the end and/or beginning of the growing season. Leaving the meadow ungrazed during the middle of the season allows the plants to flower. Generally, heavy grazing over a short period of time is preferable to light grazing over a long period as there is likely to be less selection of particular species, which may then be lost. 'Poaching' or the opening up of the soil by animals trampling the ground can be helpful in creating new sites for more seeds to germinate.

The exception to the above advice is the Highland Meadow Mix which, on exposed sites for which it is designed, will only need to be cut if grass growth is so vigorous that it is smothering other species.

If the grass in your mix appears to be dominating then it is worth considering adding Yellow Rattle (*Rhinanthus minor*). This plant is a hemi-parasite which photosynthesizes for itself but also parasitizes the roots of some plants, especially grasses. Because it removes nutrients from the grasses, they produce less growth and the balance of competition is changed in favour of the wildflower species in a mixture. Yellow Rattle also builds up in patches and then dies out, especially if the host grasses die out. The open patches are then colonized by wildflowers. Yellow Rattle seed is often included in mixtures but can also be added to established vegetation, in which case is sown in late autumn (October-November) after some light raking, rotovating or harrowing. Sow at 0.5-1 g/m² and roll. Germination occurs in spring and the annual plant grows and sets seed which can then spread through the meadow area.

Pull out or spot spray any perennial weeds such as Docks, Nettles and Ragwort.

Avoid adding fertilizer.

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