

## Establishing a meadow by adding wildflowers to existing grassland

Enriching the plant diversity of a grassy area to create a wildflower meadow can be less effective than sowing a full meadow seed mix that includes wild grasses into a seed bed of bare soil. This is because the competition that the existing grass provides may be too much for wildflowers to establish - seed may not make good contact with the soil and cannot germinate or, if the seed germinates, seedlings can be smothered by the more vigorous grass. Sometimes though it is not practical to take away existing grass and steps can be taken to maximise chances of successful establishment of wildflowers into existing grass.

### Step 1 – Yellow Rattle

The ideal method is to sow Yellow Rattle (*Rhinanthus minor*) and repeat over several seasons.

Yellow Rattle is an attractive annual plant that is a good source of nectar for bees. A hemiparasite, it photosynthesizes for itself but also parasitizes the roots of some plants, especially grasses. Because it steals food from the grasses, they produce less growth and the balance of competition is changed from grass dominating in favour of the wildflower species. Yellow Rattle tends to build up in patches and then die back as its host grasses thin out, leaving opportunities for colonization by other wildflowers.

Yellow Rattle is most successful where grass is cut very short (and the cuttings removed) and the area is harrowed or rotovated before sowing. This is done to damage the grasses as very healthy grass with access to high levels of nutrients can actually resist the attempted parasitization by Yellow Rattle. Alternatively, the area could be grazed by animals before sowing, this provides additional benefit of animals 'poaching' the ground and opening the grass sward.

The 'Rattle' seed can be sown onto the harrowed or poached areas and then trodden or rolled in - all it really needs is good contact with the soil. Its germination occurs early in spring. The sowing rate is at least 1g/m<sup>2</sup>. (it can be sown at a higher rate if desired).

Yellow Rattle must be sown in autumn. Unlike other plant species that require a period of cold to germinate but can have an artificial cold treatment, in a fridge for example, in the case of Yellow Rattle the time required for a cold treatment is too long (several months) and in addition Yellow Rattle needs to develop a relationship with its host's roots to survive early on in its life cycle. This also means you cannot successfully grow Yellow Rattle separately from its grass hosts. Yellow Rattle seed also does not store well and so using germination tested seed is advisable.

If you do not want to sow Yellow Rattle an alternative in the season preceding sowing wildflowers, is to cut the grass as often and as short as possible and remove the cuttings. This will weaken grasses, although not as effectively as using Yellow Rattle

### **Step 2 – adding other wildflowers**

You can sow other wildflowers along with the Yellow Rattle in the first year but allowing the Yellow Rattle to act on the grasses for a season first, and then sowing other wildflowers in the next autumn will give those other wildflowers a better chance. When you are adding other wildflowers we suggest you choose the wildflowers that are included in our meadow mixes such as our Mavisbank Mix, Wet Meadow Mix etc. These are grassland species that have evolved to live within a grassy plant community.

When adding to existing grassland, the other wildflowers should be sown at a rate of 1-2g/m<sup>2</sup>. The grassy area to be sown should be harrowed or rotovated robustly (or at least very harshly raked) to increase open soil and damage the grass. Seed should be hand sown across the surface area and rolled, or trodden in.

### **Step 3 – managing your meadow**

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 as long as the Yellow Rattle has finished flowering and shed its seed. Grazing with animals may be used for managing the meadow by grazing at the end and/or beginning of the growing season, leaving the meadow ungrazed during the middle of the season to allow plants to flower. Heavier grazing over a very short period of time is preferable to light grazing for a long period as there will be less selection of particular plants by the animals.