



**WILDFLOWERS**  
ADVICE



It is estimated that since the Second World War 95% of the UK's wildflower meadows have been lost. The post-war development of herbicides and high yielding forage grasses meant that landowners were able to convert their old hay meadows into highly productive grassland. Although unimproved grassland and wildflower meadows are of low value from a forage perspective, they are extremely valuable for preserving our native species and providing a habitat for wildlife.

2 Around 15,000 hectares of unimproved grassland are believed to remain nationwide. This figure is now on the increase with many areas now being established with wildflowers. Road verges, farm field corners, public open spaces and even gardens are increasingly being established with wildflowers – all of which is of great benefit to protecting the unique botanical identity of the UK.

There are believed to be approximately 1500 species of wildflowers found in the UK. These can be placed into the following categories:

**Annuals**

Annual species are ones which complete their life cycle within a one year period. They typically establish from seed in the spring, flower, produce seed and completely die by the onset of winter. The continuation of the species is entirely dependent on the successful establishment of the seed produced. As their survival depends on the success of their seed, annuals have evolved to produce larger quantities of seed. Annuals require ground disturbance each year in order to establish, this is why they are seen growing in road verges, waste ground and on arable farm land. Annuals can provide a boost of colour to spring sown seed mixtures, although this will only last for one season as their seed will not establish in a developed sward.

Example species: Cornflower, Poppy, Corn Marigold.



**Biennials**

Biennial species complete their lifecycle in a two year period. In their first year of growth a biennial plant will produce leaves, roots and stems before going into dormancy over the winter months. In year two they will grow significantly, flowering and producing seed before completely dying. Biennial species are often characterised by their tall and upright growth habit.

Example species: Foxglove, Viper's, Bugloss, Great Mullein.

**Perennials**

The majority of wildflower species are perennial. Perennial species are ones which re-establish in the spring from their own rootstock. Most species will germinate from seed in year one, flower and produce seed in year two, go dormant over the winter and re-establish in the spring. Some perennials are short lived, only lasting for three to four years, whereas some species can survive for many years.

Example species: Knapweed, Cowslip, Field Scabious.



**Yellow Rattle**

Yellow Rattle is an interesting plant because it survives by drawing its nutrients directly from the roots of surrounding grass plants. This is useful because it helps to reduce the vigour of the surrounding grass plants, allowing more opportunity for other flower species to emerge and thrive. This makes it a key component of the majority of flower rich grasslands. It is an annual plant; however, it will happily re-establish itself in a mature sward unlike most other annual species.

**Sourcing seed**

Wildflower seed is produced in two different ways:

**Wild meadow collection**

Wild meadow collection is when seed is directly harvested from an area of wild, unimproved grassland. The sites harvested are ones which have never been knowingly altered by being sown with native species. The sites are harvested with the permission of the owner and care is taken to monitor the sites to ensure that the harvesting has no detrimental effect.

The harvesting is normally done with a machine called a brush harvester or with a very small combine harvester. Meadows can be harvested at differing times of the year in order to target different species. Two of the main species harvested directly from meadows are Yellow Rattle and Meadow Buttercup as these both mature and set seed from July.

**Field crops**

In order to produce a reliable and sustainable source of seed, wild collected seed can be field sown to create a manageable crop. Some species are quite slow to establish, so these are grown as individual plug plants which are then mechanically planted in the field. This creates a crop that can be managed by regular weeding and harvested at exactly the right time.



# SITE EVALUATION AND PREPARATION

## Site Evaluation and Mixture Selection

The properties and location of a particular site will have an influence on the species which will thrive. The main factors to evaluate are:

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- Soil fertility
- Soil moisture/drainage
- Soil type e.g. Sandy, Clay, Acidic, Calcareous
- Shade/light levels

Once the site has been evaluated, an appropriate mixture can be selected based upon the findings. If you are unsure of exactly what mixture to select, we are happy to advise you. Wildflower mixtures are unlikely to be successful in areas of high fertility. In such areas it is likely that a small number of species will become dominant and competition from grasses will be a problem. In areas of very heavy shade the potential to support a diverse range of species is also limited.

In high fertility areas it would be advisable to sow an annual mixture for several years, cutting and collecting the vegetation each year. This will help to remove nutrients from the soil potentially allowing for a perennial mixture to be sown in later years.

## Preparation

Good preparation is of crucial importance for a wildflower sowing to be successful. If unwanted species establish in amongst a wildflower sowing it can be very difficult, or near impossible to effectively control them. The main objective is to minimise the establishment of weeds following sowing.

## Site Clearance

Any existing vegetation should be cut and cleared from the site. It is important to remove any cut vegetation to prevent it from rotting down and enriching the soil. The remaining vegetation can be treated with a total herbicide, such as glyphosate.

## Cultivation

Once any vegetation has completely died back, the soil can be cultivated to a depth of around 100mm. Any remaining debris such as large stones or roots should be removed. If time allows, further weed control can be performed by allowing any weeds to germinate and spraying them with glyphosate. This can be performed multiple times to achieve a clean seed bed. Normally you can sow seed two weeks after an application of glyphosate, though it is advised to check manufacturer recommendations beforehand.

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# SEED SOWING AND ESTABLISHMENT

## Sowing

The sowing rates for wildflower seed mixtures are relatively low - there are two reasons for this:

1. Wildflower seed is often very fine, so a little goes a long way.
2. The aim is to achieve a relatively open sward in order to allow the wildflowers room to establish. This is the opposite of sowing lawn seed, where the objective is to develop a dense sward with a very high plant population.

To make sowing easier, it is possible to mix the seed with a 'carrier' in order to increase the volume. The material used is not crucial but the most common choices are dried sand, sawdust and compost for smaller areas. Wildflower mixtures do not require sowing deep - broadcasting the seed onto the surface and lightly raking or rolling is sufficient to achieve good seed to soil contact.

### Suggested sowing rates:

- 100% Wildflower Seed Mixtures = 2g/m<sup>2</sup>
- Grass and Wildflower Seed Mixtures (80:20) = 5g/m<sup>2</sup>

### Optimum sowing times:

- Spring – March to May
- Summer – June to July avoiding excessively hot and dry conditions
- Late Summer/Autumn – August to October

## Establishment

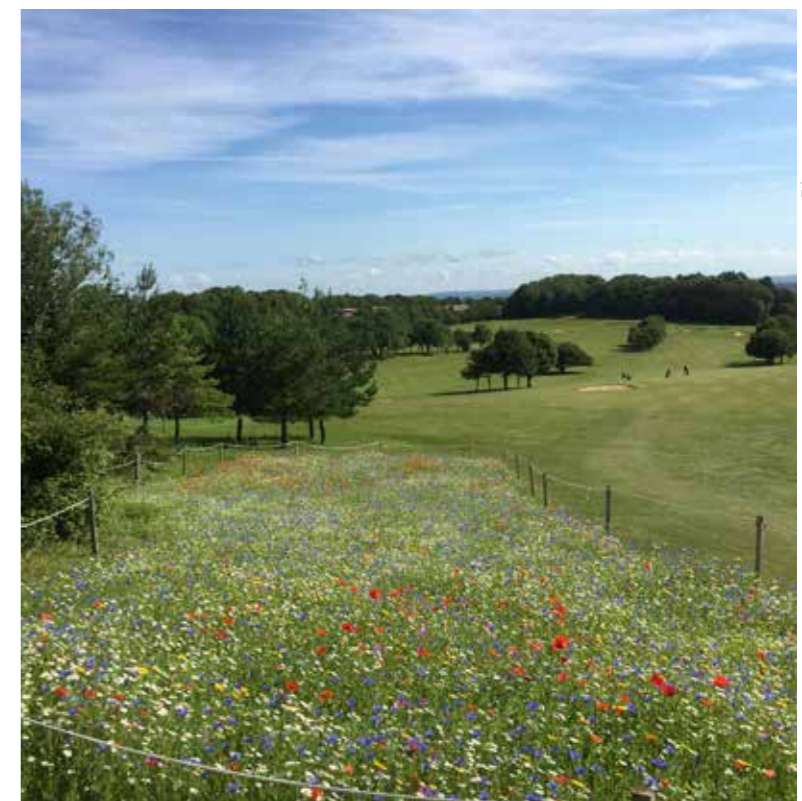
Wildflowers all germinate and establish at different rates. Some species may take a number of years until they emerge and begin to flower, whereas others flower in a matter of weeks. Some seeds require a prolonged period of exposure to cold in order to break their dormancy and germinate. Seed dormancy is a mechanism that inhibits germination until the conditions are ideal for successful establishment.

Annual wildflower species when sown in the spring will flower in the same year. Biennial and Perennial species will not flower in the first year of sowing except for a handful of species such as Oxeye Daisy and White Campion. For this reason it is often a popular choice to add some annuals into a perennial mixture when sowing in the spring.

When sowing a mixture containing grasses, it will be the grass species which germinate and establish first. This will act as a nurse crop for the wildflowers, sheltering them whilst they establish as well as preventing soil erosion by stabilising the soil.

The grasses selected to go into our mixtures have been deliberately chosen to be non-competitive, slower growing species.

Grass dominance is a common reason why wildflower sowings sometimes fail, so by including only slow growing species this is minimised.





# MAINTENANCE GET THE BEST FROM YOUR NEW WILDFLOWERS

## Sowing

In the first year full year it is advantageous to regularly cut the area to a height of 60mm through the growing season. Although this sounds detrimental, perennial species will not flower in year one, so no flowers are actually being lost. By cutting in the first year, the competition from the grasses is minimised and more light is allowed to reach the lower growing wildflower species at the base of the sward. If a mixture was sown containing annuals, these should be allowed to flower and then the whole area cut in July. This will prematurely end the flowering display from the annuals, but it will allow the perennials a better chance of establishment. In subsequent years the annual maintenance regime should consist of the following:

## Spring Cut

It is not uncommon for there to be an initial flush of grass in the spring. This can be detrimental to the wildflower species as they will only just be starting to grow and can be easily swamped out. By cutting to around 60mm and collecting the debris, the levels of grass growth will be reduced for the coming months allowing for more wildflowers to emerge.

## Summer/Autumn Cut

The optimum time to cut an area of wildflowers is in late July. This is replicating a traditional hay cut. By cutting and collecting the debris in July the maximum amount of organic matter possible is being removed from the area, minimising the amount of nutrients that can be returned to the soil. Cutting in late July does mean that the flowering period is sacrificed prematurely; however, cutting at this time will result in a more diverse species population. The later the cut is performed the less diverse the population will be. A compromise would be to vary the cutting time each year, or on larger sites cutting areas at different times on an annual rotation.

## End of Season

At the end of the year, before the onset of winter, a final cut can be made if required. This serves to remove any grass growth following the main summer cut, leaving the sward open and tidy through the winter months. At the end of the season it is also beneficial to disturb the sward either by raking or chain harrowing. This will open up the sward allowing room for more wildflower species to emerge.

## WILDFLOWER SEED ENSURES EASTBOURNE GOLF CLUB IS BLOSSOMING

### Willingdon Golf Club



Willingdon Golf Club course manager Luke Turner isn't just trying to create the perfect greens for members, he's also hoping to attract a much wilder set of visitors to the 18-hole course.

Set among the protected grassy downlands on the edge of the South Downs in Eastbourne, the 120-year-old course, recently listed as one of the top courses in Sussex, is a haven for birds and reptiles – and, more recently, wild flowers.

This year, as well as hand crafting bird boxes and reptile homes, Luke and his deputy James Wilkinson have turned an area of rough into a wildflower meadow that's attracting more than 25 species of butterfly.

"Greenkeepers and golf courses can sometimes be portrayed as environmentally unaware: that we are not concerned with the environment around us and ecology of our sites" says Luke, who has been working as a greenkeeper at Willingdon for eight years. "But we definitely don't see it like that here."

## Wild at heart

When an elderly member of the golf club passed away last year, Luke and James were approached by the family to create a memorial for them. They hit upon the idea of a wildflower meadow.

"I'd used Barenbrug's Cornfield Annual wildflower mix at a previous course and it was very effective, with very reliable germination, so I knew this would perform well," says James, who joined Willingdon in February. "It's a very versatile mix and seems to cope well, wherever you use it."

After selecting a specific site on the course in early spring, James and Luke broadcast the seed thickly using sand as a carrier. They sowed seed in multiple directions to ensure good coverage and lightly raked it over. By mid-May there was complete coverage with an inch of lush green growth, and at the beginning of July the first flowers began to emerge.

As a 100% annual mixture, with five of the most popular native flowers included: cornflower, poppy, corn marigold, corn

chamomile and corncockle, Barenbrug's mix is designed to give a big hit of colour. And that's just what it did.

"Over one weekend the whole area had transformed into a stunning carpet of colour," says Luke. "It was alive with butterflies and bees and it could be seen from two or three of our tees so it had a stunning visual impact for members. The end results were like something out of a brochure."

## Rare gem

Thanks in part to the mix's endurance – it stayed colourful throughout July, August and into September – the new wildflower patch attracted a record number of bees and butterflies at the course, including rare species such as Adonis Blue and Dingy Skipper.

It's something that might have made Willingdon course designer Dr Alister MacKenzie proud. In 1925, he redesigned the course to make more of its natural features and had a strong conviction that golf was good for health.

"We are trying to take the course back to its downland grassy routes, and make the site more ecologically varied," says Luke. "The golfing and greenkeeping industry has changed massively in the last 4-5 years and an increasing number of golf clubs are now pushing their commitment to ecology and making course management more sustainable. We actively promote and encourage that approach here."





# MIXTURES OUR WILDFLOWER RANGE

## Key Points

One of the main problems encountered with wildflower areas is grass dominance. Strong grass growth can easily smother out the slower growing wildflower species. To help minimise this, all of the mixtures contain Yellow Rattle. Yellow Rattle is a semi parasitic plant which limits levels of grass growth, allowing more room for other species to establish. Yellow Rattle is one of the key species found in many wild meadows throughout the country.

The grass blend used in the 80:20 mixtures contains grasses that are slower growing in order to minimise the risk of the wildflowers being smothered out. Some of the grass species in the mixtures are quite rare and are very attractive in their own right.

# ANNUALS

native and non-native annual wildflowers

## UNIVERSAL (ANNUAL & PERENNIAL)

A reliable mixture which will perform in almost any situation. Comprises a blend of reliable perennial and annual species which give instant colour by flowering in the first year.

- + Contains 20 wildflower species
- + Feature species: Cornflower, Poppy, Oxeye Daisy, Meadow Buttercup

## CORNFIELD ANNUAL

A 100% annual mixture designed to give a big hit of colour. Includes the five most popular UK native annual wildflower species. Can be added to other mixtures to provide impact in the first year.

- + Contains 5 wildflower species.
- + Feature species: Cornflower, Poppy, Corn Marigold, Corn Chamomile, Corncockle

## RED, WHITE & BLUE (NON-NATIVE)

Contains 26 species including Cornflower, Cosmos, Poppy, Delphinium and Californian Poppy.

## CLASSIC ANNUALS (NON-NATIVE)

Contains 18 species including Corncockle, Chrysanthemum, Nigella, Cornflower, Coreopsis and Poppy.

## PASTEL SHADES (NON-NATIVE)

Contains 8 species including Iberis, Candytuft, Nigella, Cosmos and Poppy.

## GROUNDCOVER - LOW GROWING (NON-NATIVE)

Contains 8 species including Mignonette, Alyssum, Candytuft, Marigold and Cornflower.

# PERENNIAL

native and non-native perennial wildflowers

## CLAY, HEAVY SOILS

Designed to be used on soils which are clay based, prone to waterlogging during the winter and sometimes drying out during the summer months.

- + Contains 20 wildflower species
- + Feature species: Meadow Cranesbill, Betony, Meadowsweet, Meadow Vetchling

## ACIDIC SOILS

A blend of wildflower species which are frequently found growing on soils with a low pH, such as heathland.

- + Contains 18 wildflower species.
- + Feature species: Devil's Bit Scabious, St John's Wort, Common Catsear, Autumn Hawkbit

## GENERAL PURPOSE, CLASSIC HAY MEADOW

A mixture of some of the most commonly found wildflower species in the UK. Can be used on a broad range of soil types.

- + Contains 13 wildflower species
- + Feature species: Yellow Rattle, Oxeye Daisy, Meadow Buttercup, Common Knapweed

## WETLAND AND WATER EDGE

Suitable for sowing in areas bordering lakes, ponds and watercourses. Typically the soil in these areas will be moist year-round.

- + Contains 24 wildflower species
- + Feature species: Yellow Flag Iris, Purple Loosestrife, Greater Birdsfoot Trefoil, Gypsywort

## HEDGEROW AND WOODLAND EDGE (SHADED)

A mixture which features species that will tolerate a degree of shade and are typically found growing along hedgerows, on the edges of woodland and in clearings.

- + Contains 21 wildflower species
- + Feature species: Foxglove, Tufted Vetch, Hedge Bedstraw, Wild Garlic.

## DRY, SANDY

Formulated to be used on soils which are sand-based, free-draining and very dry during the summer months.

- + Contains 21 wildflower species
- + Feature species: Lady's Bedstraw, Viper's Bugloss, Field Scabious, Toadflax

## COASTAL

Features species which are often found growing in a coastal environment. These species are typically quite hardy and tolerant of impoverished soils and a degree of salinity.

- + Contains 18 wildflower species
- + Feature species: Bladder Campion, Viper's Bugloss, Goatsbeard, Common Toadflax

## LOAM/VARIABLE SOILS

A mixture designed to be used on loam soils which are a mixture of soil types and tend to retain a degree of moisture. A reliable mixture that can be used on larger sites where the soil varies across the site.

- + Contains 22 wildflower species
- + Feature species: Tufted Vetch, Red Campion, Ragged Robin, Birdsfoot Trefoil

## CHALK, LIMESTONE, CALCAREOUS

Suitable for use on soils which are rich in chalk and limestone. These soils are characteristically quite thin, dry and low in nutrients.

- + Contains 23 wildflower species.
- + Feature species: Greater Knapweed, Wild Basil, Bladder Campion, Wild Marjoram

## SHORT FLOWERS

Ideal for smaller areas of such as along roadsides where restricted visibility may be an issue. The wildflower species used in this mixture will grow to approximately knee height.

- + Contains 16 wildflower species
- + Feature species: Rough Hawkbit, Forget-Me-Not, Bladder Campion, Betony

## TALL FLOWERS

Formulated using wildflowers which can grow to approximately thigh height. Can be sown alongside our 'Short Flowers' mixture to create a contrasting feature.

- + Contains 18 wildflower species
- + Feature species: Greater Knapweed, Field Scabious, Foxglove, Evening Primrose

## BEES AND BUTTERFLIES

A broad and reliable mixture that contains annuals, perennials and biennials. Each wildflower species contained in the mixture is featured on the Royal Horticultural Society 'Perfect for Pollinators' list. Annual species will provide instant results by flowering in the first year.

- + Contains 32 wildflower species
- + Feature species: Cornflower, Foxglove, Field Scabious, Kidney Vetch



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