

COTSWOLD

Grass Seeds

1974-2024

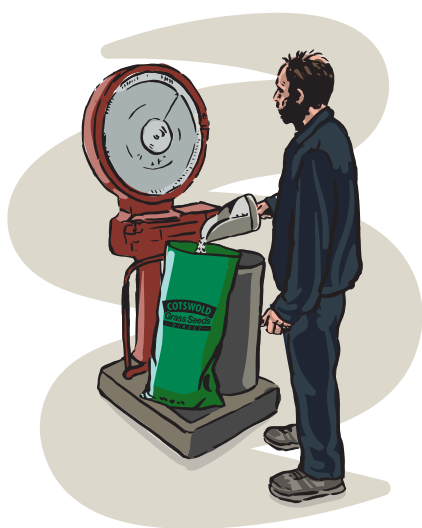


YEARS OF ADVICE

The right advice...



...fast delivery



...bespoke mixtures

INDEX

| | |
|-------------------|----|
| OVER-SEEDING | 06 |
| SILAGE & HAY | 08 |
| GRAZING & FORAGE | 16 |
| ROOT CROPS | 30 |
| EQUINE | 32 |
| SOIL REGENERATION | 34 |
| ENVIRONMENTAL | 44 |
| WILD FLOWERS | 48 |
| GAME | 52 |
| LAWN & LANDSCAPE | 56 |



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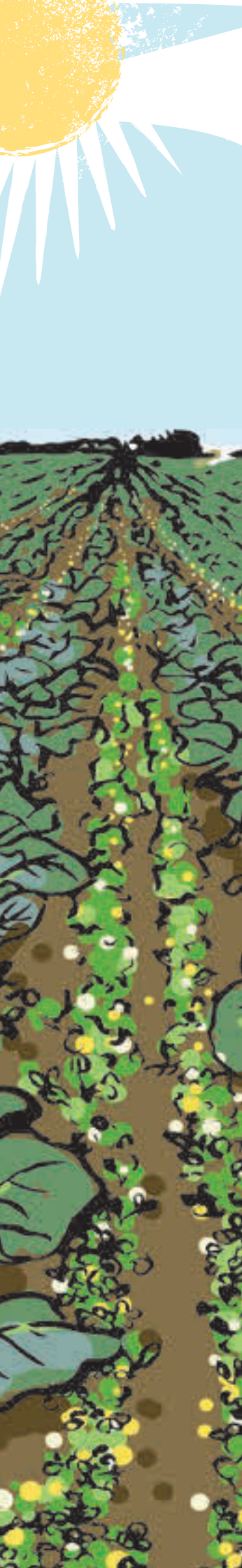
FarmED, based in Oxfordshire, provides learning spaces and events that inspire, educate and connect people to build sustainable farming and food systems that nourish people and regenerate the planet.

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If you are passionate about regenerative agriculture, farming with nature, and great food then join us on the journey. It's time to make a difference.



Welcome to the 50th!

Like many of you I've seen quite a few editions of this catalogue, so it's a milestone and a privilege to be presenting the 50th edition to you. I started at Cotswold Seeds in 2001 on the ground floor, literally, working part time in the mixing warehouse. Once I graduated university I took a permanent job in the summer of 2005 with Ian and Robin. A never ending stream of orders came downstairs to be mixed during those busy seasons. I didn't know much about grass back then but I understood how to mix seed, and realised that the forage production system we were a part of was complex and time-critical. Seeds arrived from different parts of the world and we mixed each order separately for the differing requirements of each farmer. Every order was unique. They still are. Many people assume that the mixes in this catalogue are fixed but in reality many of you make adjustments to them. We know that every field is different, used in a distinctive way and your seed mix needs to reflect this.



Many of you frequently compliment the Cotswold Seeds website, which has become, like the catalogue, industry leading. This, along with computerisation of our in-house systems is where myself and the team have spent considerable effort in creating a place for us to hold your farm seed records along with the increasing amount of useful information we hold on grasses, legumes and herbs. Between this catalogue, the website and our conversations with you, we will continue to provide knowledge and information for the next 50 years. A future which will be different to the past but one where farmers will still be central to providing solutions to food systems, climate change and nature. The latest SFI scheme is a good example and we have dedicated an article to this on page 37.

Finally, the cost and availability of seed is of the utmost importance. Although seed production continues to be a challenge as the weather becomes more extreme across the world, slightly lower consumption in 2023 has led to reasonable seed availability this year and in many cases we have been able to ease some of our prices to reflect this. Technical Manager Sam Lane along with Lizzie Arnold and their team are ready to advise on the best choices for you in 2024.

Let's keep our fingers crossed for a good growing season this year, and as always we look forward to hearing from you and discussing your needs.

Paul Totterdell
General Manager

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Confirmed farming group members can order online and be invoiced via their farming group account - select this option during checkout and you will be prompted for your membership number.

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Orders placed by 12 noon on the phone or online are normally despatched the same day to most parts of the UK (not weekends & stock permitting). We try and use our own vehicles for delivery where possible, and use third party carriers for all other areas. We always endeavour to mix your seed and dispatch on the day of ordering.

Seed varieties

In the event of shortages we reserve the right to use alternative varieties in our mixes without notice. Please check website for latest updates.



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Grasses



Grassland is the single most important source of forage for British farmers.

Our climate is ideal for grass growth, making grazed grass easily the cheapest source of forage for livestock. In order to capitalise on this great natural resource, extensive research over many decades has improved UK grassland productivity and its on-farm utilisation dramatically.

However, of the 50 or so different types of grass found in the UK, only a handful are cultivated on any scale, with the most important outlined here.

Ryegrass, which comes in many different forms, is the most widely sown of all grasses. Ryegrasses have high sugars and respond to nitrogen fertiliser better than any other grass species. These two qualities have made it the most popular grass for silage over the last sixty years (since the Plough Up policy of WW2 and the advent of cheap nitrogen fertiliser).

Increased demand resulted in the development of new varieties led by Sir George Stapledon at the Aberystwyth Plant Breeding Station. Other plant breeders across Europe followed suit and, as a result, we now have a comprehensive range of varieties to select from.

How Long Do Ryegrass Leys Last?

Perennial ryegrass based leys last between three and five years reliably. On good soils they can last longer, but all eventually deteriorate as unsown species such as meadowgrasses and bents increase to make up more of the sward.

There are differences within ryegrass species and between individual varieties. Generally, late heading perennial ryegrasses such as Toddington are very persistent with good ground cover. Earlier heading ryegrasses such as Kirial, a hybrid type, offer early season growth but do not persist as well.

In all circumstances, ryegrass leys should be considered temporary and should not be routinely extended beyond the duration recommended for each mixture. Over-seeding is a good way to prolong their life (see page 6).

1 Perennial Ryegrass (*Lolium perenne*)

This is the most persistent type of ryegrass and by far the most widely sown. It yields around 13t DM per hectare which is lower than Italian ryegrass. However, it is more flexible in use because it can be grazed or cut and made into silage, haylage or hay. There are many varieties to choose from, some are very leafy with little stem and are excellent for grazing, others have much earlier, upright growth which make them well suited to silage making. Most perennial ryegrasses last around five years or more.

2 Westerwolds Ryegrass (*Lolium westerwoldicum*)

Westerwolds is the highest yielding ryegrass with similar forage quality to the well known Italian ryegrass. Westerwolds is capable of extremely fast growth, is generous in response to nitrogen fertiliser and is grown largely for silage production. It is an annual, surviving for one season only. It may be sown in the autumn for production the following spring and summer, or planted in the spring for summer cropping. When sown in the spring it is ready for cutting after only 12 weeks and further growth will follow where soil moisture is plentiful.

3 Italian Ryegrass (*Lolium multiflorum*)

This is a short lived grass lasting for two years. It is very high yielding and reliably provides up to 18t DM per hectare on soils that suit it. (All ryegrasses yield less on light soils, especially in low rainfall areas.) It has a very open growth habit with fewer tillers than other grasses and is therefore better suited to cutting than grazing. Modern varieties offer high yields and good disease resistance.

4 Hybrid Ryegrass (*Lolium x boucheanum*)

This form of ryegrass is perhaps one of the best grasses available to the intensive farmer. The hybrid is a cross between the Italian and perennial forms of ryegrass and shares characteristics of both. The dominant parent determines how the variety performs in the field. Most hybrid varieties have the Italian gene dominant and the best cultivars provide the same or similar high yields

as Italian ryegrass. But, as they also contain some of the persistent genes of the perennial ryegrass parent, they last longer. The genes of the perennial ryegrass parent produce a plant with more tillers and more leaf which gives increased ground cover, making it better for grazing.

Tetraploid Ryegrass

Modern plant breeding has produced tetraploid ryegrass varieties. These are available in Italian, hybrid and perennial form. With double the number of chromosomes of the standard diploid varieties their characteristics differ. Tetraploid ryegrasses are highly palatable which leads to higher voluntary intakes, of great value in seed mixtures. However, they also tiller less than diploids which means that they do not cover so much ground, leaving more soil showing. They are also less persistent. For these reasons, tetraploids should be used at low levels in long term grazing leys but can be used at higher levels in silage leys.

5 Cocksfoot (*Dactylis glomerata*)

Of all the grasses, cocksfoot has the deepest roots and, when grown on dry or free-draining soil, offers continued growth in dry weather while adding plenty of organic matter to hungry, thin soils. Cocksfoot provides 'early bite' in spring and quick recovery after grazing or cutting. It is very good for up to four years provided it is grazed hard as it will then remain leafy. There are some newer varieties which are leafier, with less stem, remaining palatable and therefore better for grazing.

6 Timothy (*Phleum pratense*)

Possibly the most important long term agricultural grass, timothy is commonly found in pasture throughout the UK. It will grow abundantly on heavy ground and, although it only has a shallow root structure, persists well on lighter land in dry years. It is very persistent and disease free. The forage it produces is acceptable to most stock and it can be made into silage and hay or grazed. Another form of timothy, smaller catstail (*Phleum bertolonii*), is shorter, less dominant and lower yielding but is a useful component of mixtures for environmental purposes.

7 Meadow Fescue (*Festuca pratensis*)

A long duration grass that is often sown with timothy to provide hay or grazing. For longer term leys it is an alternative to perennial ryegrass, especially in upland areas. It will grow on nearly all soils ranging from light, brashy types to stiff clays. It has the same growth habit as perennial ryegrass and, although more persistent and drought tolerant, is slower to establish.

Festulolium

A recent development in plant breeding has produced this natural hybridisation of ryegrass and fescue, combining the stress resistant genes of fescue with the bulky yield of ryegrass, improving drought resistance with high yield.

8 Common Bent (*Agrostis capillaris*)

This delicately flowered grass is included in the majority of agri-environmental mixes. As it has a tiny seed it is added to mixes at low levels. It is a creeping grass and, although of little agricultural value, is very common in old grasslands. It is adaptable to most soils and is drought tolerant.

9 Creeping Red Fescue (*Festuca rubra rubra*)

This common grass has creeping roots which enable it to remain green in dry times and give pasture a good bottom. Sometimes this can also be a disadvantage as it stifles some of the more delicate species and should therefore be used with caution. An alternative fescue, such as sheeps, red or slender creeping red will allow the development of finer species. However,

creeping red fescue is an inexpensive seed and can be included in simple mixtures, particularly those for low grade amenity use.

10 Meadow Foxtail (*Alopecurus pratensis*)

A tufted perennial which is widespread throughout the British Isles. It is commonly found in low-lying areas, particularly river meadows. Nutritious and palatable to stock, it is one of the first grasses to flower in the spring. When making hay, it makes a useful contribution to yields.

11 Red Fescue (*Festuca rubra commutata*)

Also known as chewings fescue, this is a fine leaved, tufted grass. It is distinguished from creeping red fescue by an absence of creeping rhizomes. It tolerates drought well and is common on well-drained, gravelly, chalky and sandy soils in the south. It forms a dense turf and is one of the main species used with bent to form lawns.

12 Sheeps Fescue (*Festuca ovina*)

The finest leaved and least aggressive fescue which allows other delicate species room to establish. It only grows to 15 – 25cm, is very hardy and can be found in all areas of the UK. Although it provides only low levels of production, the forage it produces is of reasonable quality. It will grow on most soils and tolerates low fertility situations.

13 Crested Dogstail (*Cynosurus cristatus*)

Traditionally a grazing grass, this compact, tufted perennial is found in abundance in sheep pastures. It is not aggressive and grows well late into the season when other grasses are giving up. It grows in most areas, even on clay soils, but is found naturally in dry areas. It has good winter greenness but is inclined to produce wiry stems if not cut or grazed.

14 Smooth Stalked Meadowgrass (*Poa pratensis*)

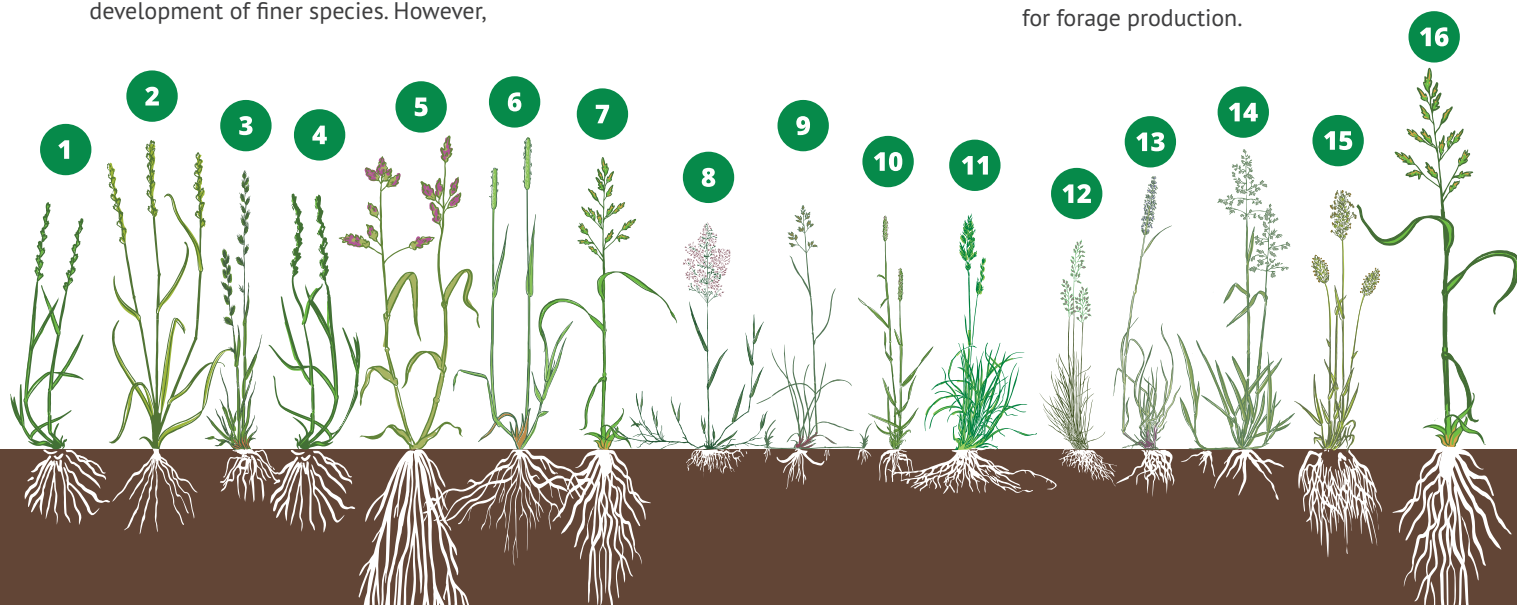
This perennial has creeping rhizomes and is very drought resistant. It is common throughout the UK, particularly on lighter soils. It should not be sown late in the autumn as it is slow to establish. Shallow sowing is also essential as the seed needs light to germinate. Early to grow in the spring, once topped or cut it tends not to re-flower so regrowth is leafy.

15 Sweet Vernal Grass (*Anthoxanthum odoratum*)

An early flowering grass, strongly scented with coumarin, often found in old pastures and meadows and sometimes included in seed mixtures to give scent to hay. It has a high proportion of stem to leaf and so is unpalatable to stock. It is an attractive grass but seed is expensive so is usually included at a low levels in seed mixtures.

16 Tall Fescue (*Festuca arundinacea*)

The largest fescue which forms sizable, dense tussocks. It can grow to six feet tall, particularly on damp or wet soils. On light soils it is drought resistant but it is less palatable than meadow fescue and so is less attractive to farmers for forage production.



Legumes



Legumes provide healthy, nutritious forage and free nitrogen.

All legumes share the ability to collect nitrogen from the air and make it available in the soil for plant growth.

Legume-rich forage is therefore low cost as it requires little or no nitrogen fertiliser. Legumes are also high in protein and, because they are particularly relished by livestock, improve animal performance.

There are twelve legumes commonly used including the true clovers, the medics, sainfoin, birdsfoot trefoil and vetches.

True Clovers

1 White Clover (*Trifolium repens*)

White clover is probably one of the most valuable plants in existence and is the most popular forage legume. It differs from other clovers in having a stolon (or stem) that runs along the ground. This produces edible leaves and flower heads at low levels, making it ideal for grazing. It is long lasting and drought resistant and grows on nearly all soils. White clover has received more research funding than any other legume and so is well understood. In common with most fodder legumes, it is best grown with grasses which increase total forage yield and produce a flexible sward which can be cut or grazed.

White clover has a high protein content at around 20-25%. Perennial ryegrass contains about 16%. Combining these two together in the field increases the overall protein content of forage by 2-3% to around 20%.

The extra protein available from clover leys has a direct impact on live weight gains. At the same time, grazing animals consume more as they find clover very palatable. This all results in animals fattening faster compared to those on non-clover leys.

A leaf size for every purpose

There is a large range of white clovers available, classified by leaf size, with the tolerance for close grazing increasing as leaf size decreases. Medium-leaved varieties, such as AberSwan and AberDai, are good for grazing, silage or hay. Large-leaved strains, such as Alice, give slightly higher yields but are less persistent when grazed and are therefore for cutting only.

2 Red Clover (*Trifolium pratense*)

Red clover produces a third more yield than white clover but is less persistent, only lasting for between two and four years. It is normally used to produce silage, although it can be grazed occasionally.

It is an erect and dominant plant that is best sown with aggressive ryegrasses. However, it may be included in more complex seed mixes but its inclusion rate must be low to counter its aggression. It grows on nearly all soils except acidic ones where alsike clover should be used.

Oestrogen and livestock fertility

Red clover contains oestrogen which can cause concern to livestock breeders. Freshly grazed forage causes most concern but the problem can be avoided by moving breeding animals off red clover around conception. Cattle are not normally affected but ewes should be taken off red clover at least a month either side of tupping.

Varieties

Modern plant breeding programmes have increased disease and pest resistance and improved persistence with varieties such as Milvus and Global.

There are two distinct types of red clover: early and late flowering. The former starts spring growth earlier in May followed by another growth flush. The latter flowers 10-14 days later after its one main growth period.

3 Alsike Clover (*Trifolium hybridum*)

A perennial which is slower to grow in the spring than red clover and is slightly lower yielding but otherwise has similar characteristics. Good for heavy and acidic soils.

4 Crimson Clover (*Trifolium incarnatum*)

An annual which can be sown after an early harvested cereal to provide winter sheep keep. It can also be used to give soil a fertility boost in a short period of time.

5 Persian Clover (*Trifolium resupinatum*)

An annual used to provide a quick boost to soil fertility on most soil types. It provides a good forage which may be grazed or conserved.

6 Berseem Clover (*Trifolium alexandrinum*)

Also known as Egyptian Clover, this is a short term, fast growing annual clover, which quickly provides large amounts of biomass and improves soil fertility. The least winter hardy of the true clovers.

Other Key Legumes

7 Lucerne (*Medicago sativa*)

No one can really understand why so little lucerne (or alfalfa) is grown in the UK, when worldwide there are 13 million hectares cropped for forage. There are however a small number of UK farms now retrying this capable legume. Cut three times a year, it produces a protein-rich 14t DM per hectare without nitrogen fertiliser and on dry land.

Lucerne is a large plant with a similar erect growth habit to red clover. It is deep rooting, very drought resistant and has a yield high enough to be grown on its own. However it is usually sown with a companion grass such as meadow fescue or timothy which fill in the bottom of the crop.

Lucerne is useful to dairy farmers wanting to produce a high protein silage that is complementary to maize. It can be quite slow to establish and is only suitable for free-draining land that is not acidic.

8 Sainfoin (*Onobrychis viciifolia*)

Along with other forage legumes, sainfoin offers free nitrogen and extra protein content. But it has other benefits that mark it out as unique.

Sainfoin is capable of growing on the thinnest of alkaline soils, particularly the dry chalk and limestone land in the south of

Herbs



Drought resistant and mineral rich.

England. It is extremely drought-resistant and never stops growing, even in prolonged dry spells. Its root structure leaves soil in excellent condition and sainfoin can be considered an invaluable part of a light land rotation. It penetrates soil and rock to a great depth where it seems able to extract nutrients better than any other species.

Boosting livestock production and health

Sainfoin contains tannins which aid protein absorption resulting in faster liveweight gains when compared to any other forage. This may also help reduce the amount of methane produced by ruminants, very useful from an environmental perspective. These tannins have another benefit: they mean sainfoin never causes bloat. Trials have shown that as little as 20% of sainfoin in the diet can offset the risk of bloat to near zero.

Sainfoin has a remarkable effect on wormy lambs, being a natural anthelmintic. EU projects 'Healthy Hay' and 'LegumePlus' have confirmed that feeding sainfoin disrupts the lifecycle of parasitic worms, so improving livestock performance yet further.

9 Sweet Clover (*Melilotus* spp.)

Also known as yellow blossom, this biennial which has a feed value similar to lucerne can produce huge quantities of green material in July if sown in May. It is also a very good green manure, fixing a great deal of nitrogen and adding huge amounts of organic matter to the soil.

10 Yellow Trefoil (*Medicago lupulina*)

This is a low growing, short-lived plant which sheds seeds freely and so regenerates itself. It is sometimes included in seed mixtures to give early spring growth which is unusual as most legumes are quite late to start growing.

11 Birdsfoot Trefoil (*Lotus corniculatus*)

Like sainfoin, this legume contains tannins and is best suited to poorer soils where it outperforms other legumes. Including birdsfoot trefoil in seed mixes may offer other medicinal benefits, something that is currently being researched.

12 Vetches (*Vicia sativa*)

This legume, also known as tares, when sown in the autumn or spring can provide one large crop for silage, and is excellent at out-competing weeds, fixing large amounts of nitrogen and improving soil structure.

Deep-rooting herbal leys are becoming popular on many farms as they offer huge benefits to livestock and soil structure. Using deep-penetrating roots instead of diesel-consuming tractors, herbal leys are an alternative way to aerate soil.

Agricultural herbs also provide minerals, essential for normal, healthy animal growth. Single species grass swards are often found to be lacking in these micro-nutrients. Deep-rooting herbs are a rich source of these and are currently being researched by agricultural scientists. Many expert farmers consider that adding these valuable plants to seed mixtures is a logical step.

13 Chicory (*Chicorium intybus*)

A true 'ground breaking' plant with deep roots that can penetrate plough pans and grow well on the driest soil. This high-yielding perennial is a rich source of minerals and has anthelmintic effects. It is therefore excellent for sheep or cattle threatened by intestinal parasites.

14 Ribgrass (*Plantago lanceolata*)

This reliable perennial herb, also known as ribwort plantain, is relatively low yielding but has deep roots and is grown for its vitamin and mineral content (especially copper, calcium and selenium).

15 Yarrow (*Achillea millefolium*)

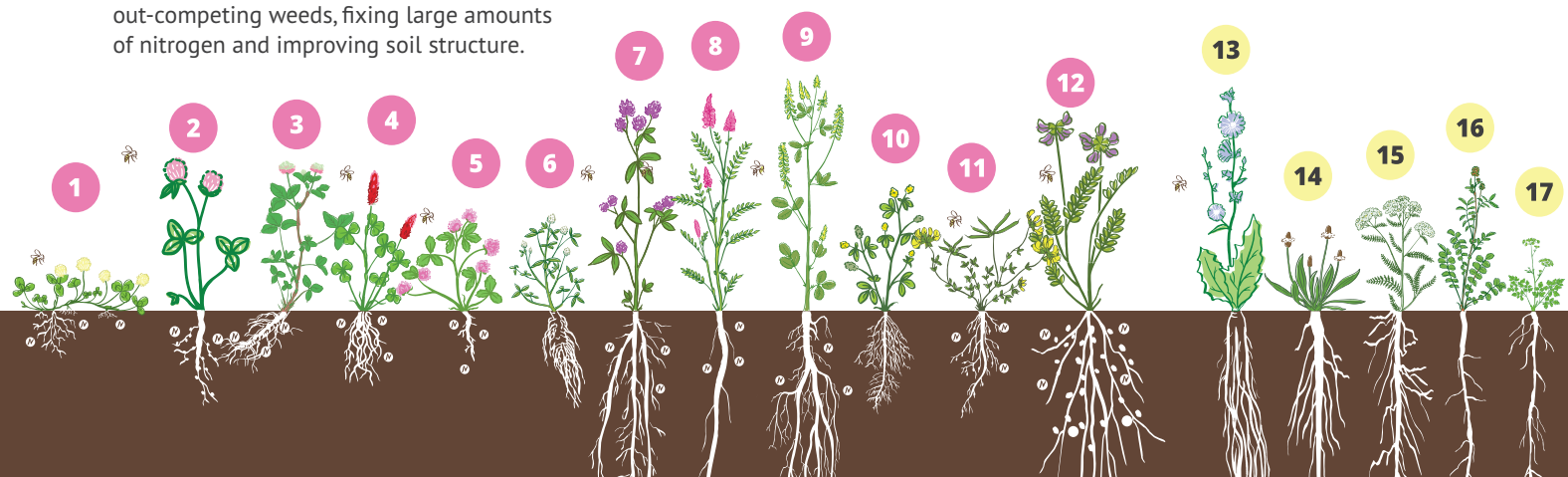
Yarrow is a deep-rooting perennial and a rich source of vitamin A.

16 Burnet (*Sanguisorba minor*)

On light, alkaline soils this is a long lived perennial forage. All parts of the plant are palatable and it is extremely drought resistant.

17 Sheeps Parsley (*Petroselinium crispum*)

A short lived but useful herb, suits lighter soil types.





Over-Seeding

Over-seeding is a simple, effective and low cost way to improve worn leys or old pasture without ploughing or reseeding.

Around a quarter of the grass seed sold in the UK is used for over-seeding. This seed is sown to improve worn or damaged leys and for patching up recent sowings which have not taken well.

To many farmers, over-seeding has advantages over the plough. It's cheap, quick and low risk, with existing grass being retained and improved without loss of forage or time.

Not all grasses and clovers are suitable for over-seeding. The best results come from the large seeded and vigorous strains of tetraploid ryegrass.

Of these, the Italian and hybrid forms are the quickest and best for cutting, with perennials being ideal for grazing leys.

White clovers usually give good results when sown into warm, moist soils especially where careful post-sowing grazing management is practiced.

Sowing and Growing

Suitable soils and optimum pH

Over-seeding can be beneficial on most soil types. Routine monitoring of pH levels will allow for any necessary corrections to be made.

When to sow

When soil temperatures are above 7°C, usually between March and September. Sufficient soil moisture is vital. Avoid seeding into competitive swards during May and June when excessive grass growth will smother new seedlings.

How to sow

Broadcast or shallow drill into recently grazed or cut leys. Before sowing, create a tilth using a chain or comb harrow. After sowing, roll thoroughly using a ring or flat roller, or tread in with sheep. Grass drills such as the 'Moores Unidrill', 'Simtech or Aitchison' can be used. Cereal drills should be avoided as they can sow the grass seed too deep. Clover should never be sown deeper than 1cm. Spinners such as the 'Stocks' are good for applying small quantities of clover.

Management

Gentle grazing should be resumed around five weeks after sowing. Cattle or sheep may be employed, but sheep should not be left on for long as they will graze too close, damaging new seedlings. Although cattle exert more pressure on the ground, they do not bite so accurately or as close and are the preferred choice provided that dry ground conditions prevail.

Nutrient requirements

N fertiliser applications should be delayed until the new grass or clover seedlings are well established and able to tolerate the competitive growth that fertiliser brings. P and K levels should be maintained at ADAS Index 2.

The best results come from the large seeded and vigorous strains of tetraploid ryegrass.



T. Carrick
HighCrossgill, Cumbria

Grass

Legume

Herb

Mixes: Ryegrass

Ryegrass Over-Seeding

Short Term 2-3 Years

Code: MIXOS

Ideal for the short term improvement of silage leys. The mixture is very competitive and provides good early spring growth. First cut is usually taken between the second and third weeks of May.

- 7.00 kg certified FABIO tet. Italian ryegrass
- 3.00 kg certified ABEREVE tet. hybrid ryegrass

10.00 kg/acre - £33.90

25.00 kg/ha - £84.75

Ryegrass Over-Seeding

Longer Term 4-5 Years

Code: MIXOSL

A flexible mixture for grazing or cutting fields which require longer term improvement. The grasses will provide growth from spring through the summer.

- 5.00 kg certified ABEREVE tet. hybrid ryegrass
- 5.00 kg certified CALIBRA tet. perennial ryegrass

10.00 kg/acre - £42.50

25.00 kg/ha - £106.25

Ryegrass & Clover Over-Seeding

Longer Term 4-5 Years

Code: MIXOSLC

A combination of ryegrasses and a half-rate of persistent clovers, this mixture can be grazed by sheep or cattle and can also be cut for silage.

- 4.50 kg certified ABEREVE tet. hybrid ryegrass
- 4.50 kg certified CALIBRA tet. perennial ryegrass
- 0.80 kg certified IONA white clover
- 0.20 kg certified ABERACE wild white clover

10.00 kg/acre - £56.84

25.00 kg/ha - £142.10

Additions

**Bottom grass**

The addition of a bottom or grazing-type ryegrass can help to fill in the sward in open leys.

Add 2kg of grazing ryegrass

£11.10 per acre

Mixes: Clover and herbs

White Clover Over-Seeding

Long Term Grazing

Code: MIXOSC

This persistent mixture combines medium and small leaved clovers which provide grazing for sheep or cattle. It may also be used for silage making.

- 0.80 kg certified IONA white clover
- 0.80 kg certified ABERHERALD white clover
- 0.40 kg certified ABERACE wild white clover

2.00 kg/acre - £37.16

5.00 kg/ha - £92.90

White Clover Over-Seeding

Dairy Graze or Silage

Code: MIXOSCD

Using highly productive medium and large leaved white clovers this mixture is ideal for dairy grazing or silage making. It can also be grazed by sheep occasionally if required.

- 1.00 kg certified ABERSWAN white clover
- 1.00 kg certified VIOLIN white clover

2.00 kg/acre - £37.00

5.00 kg/ha - £92.50

Herbal Over-Seeding

Deep-Rooting Herbal ley

Code: MIXHOS

Deep rooting herbal leys are becoming more and more popular. Grass-only swards lack protein rich clovers and mineral rich herbs. Ideally, herb-rich swards are best established by reseeding but where this is not possible this mixture can be oversown into a grass-only sward.

- 0.65 kg certified AVISTO red clover
- 0.45 kg certified AURORA alsike clover
- 0.40 kg certified IONA white clover
- 0.31 kg certified LEO birdsfoot trefoil
- 0.15 kg certified RIVENDEL wild white clover
- 1.57 kg commercial Sainfoin
- 0.65 kg burnet
- 0.40 kg certified PUNA / ENDURE chicory blend
- 0.30 kg certified ENDURANCE ribgrass
- 0.07 kg yarrow
- 0.05 kg sheeps parsley

5.00 kg/acre - £59.74

12.50 kg/ha - £149.35

Hay Leys

Grass only hay leys that offer high quality and bulk.

Grass



Sowing and Growing

Suitable soils and optimum pH

The ryegrass based leys are best suited to fertile and moisture retentive soils. Ryegrass can suffer on drought prone soils, so an option on dry land could be to add a deeper rooting, inexpensive festulolium plant to the mixture - please enquire when ordering.

When to sow

These mixes should be sown in autumn, to provide full cutting yields the following year. The Westerwolds Hay mix allows a spring sowing and still produces a seed head. The other mixes will not head if spring sown.

How to sow

A non-selective herbicide should be used before seedbed preparation. Drill into a fine firm seedbed and try to avoid drying the soils out with excessive cultivations in dry autumns. Rolling to retain moisture and break down clods before and after sowing with a Cambridge or flat roller is essential. Broadcast seed should be harrowed lightly after sowing and before rolling.

Management

Annual weeds should disappear as the new seeds begin to take over, or they can be grazed out with stock. Cutting usually begins in late June and takes place before and during flowering. Graze excess growth after the required cut has been taken by November to avoid winter kill.

Nutrient requirements

These leys should receive 70kg ha of nitrogen. Excessive applications of nitrogen can cause the plant to become sappy and difficult to dry. As cutting and removing depletes P and K levels, they should be maintained around ADAS index 2.

Mixes

Westerwolds Hay Mix

One Year Ley

Code: MIXWWH

This flexible cutting option, produces a short term, clean, high quality hay, due to its rapid growth and high biomass it can be difficult to dry properly. This mix has been designed to include high levels of diploid westerwold which contains less moisture and dries evenly, speeding up the hay making process.

- 9.80 kg certified LIFLORIA dip. westerwolds ryegrass
- 4.20 kg certified LIBONUS westerwolds ryegrass

14.00 kg/acre - £41.30

35.00 kg/ha - £103.25

Mixes

Hard Horse Hay

Two Year Ley

Code: MIX9

Devised specifically for the production of hay or haylage. With good disease resistance it produces a consistent sample of hard hay. Although grazable, it's principally a cutting ley. Sow in autumn to provide stemmy hay the following spring.

- 8.00 kg certified BARMULTRA II tet. Italian ryegrass
- 6.00 kg certified SHAKIRA Italian ryegrass

14.00 kg/acre - £44.10

35.00 kg/ha - £110.25

Hay and Graze

Four Year Hay/Haylage Ley

Code: MIXHG

A longer term option for the hay and haylage producer with upright hybrid ryegrass and longer lasting perennial ryegrass. Diploid varieties are included for faster drying. Sow in autumn to provide a crop the following spring, or cut earlier in the year for haylage. Also provides high quality summer and autumn grazing.

- 5.50 kg certified BARCLAMP dip. hybrid ryegrass
- 5.50 kg certified BOYNE perennial ryegrass
- 2.00 kg certified WINNETOU timothy

13.00 kg/acre - £65.77

32.50 kg/ha - £164.43

Traditional Hay Maker

Long Term Hay Ley

Code: MIXHM

Slower to establish than a straight ryegrass ley but will provide good quality, bulky hay crops with low disease levels for many years. Once cut it can be used for aftermath grazing.

- 5.00 kg certified BOYNE perennial ryegrass
- 5.00 kg certified PARDUS meadow fescue
- 3.00 kg certified WINNETOU timothy

13.00 kg/acre - £81.40

32.50 kg/ha - £203.50

Additions



Sweet vernal grass

To create a softer, sweeter smelling meadow hay.

Add 0.1 kg of sweet vernal grass

£6.85 per acre



Silage

Good silage comes from a good ley.

Good silage depends on many factors. These include appropriate fertiliser applications, growth stage when cut and how the crop is wilted and stored. But the most important factor is to select the right crop species and varieties to suit the soil type from the start.

Ryegrass leys

Ryegrass in all its forms (see page 2) has been the building block of short term silage leys for the last 60 years. With the various high yielding types such as westerwolds, Italian, hybrid and perennial lasting between one and five years, there is a ryegrass variety to suit every system. Highly responsive to nitrogen, ryegrass-based swards produce palatable silage that increases milk and meat production.

Red clover leys

With its high yields, forage quality and suitability for silage, red clover swards are playing an increasingly important role in sustainable systems of grassland farming, especially now nitrogen prices are so high.

At 19% crude protein, red clover's nutritional value is higher than grass' and its high voluntary intake leads to enhanced animal performance. Thriving on most

soils, its ability to 'fix' atmospheric nitrogen in the root nodules (an average of 200kg N/ha), offers a saving on manufactured nitrogen fertiliser.

Red clover is tolerant to winter cold and, due to its deep rooting characteristic, is drought resistant. Used as a break crop it will improve soil structure and fertility while also giving excellent forage yields.

Lucerne

At 20% protein lucerne is an attractive feed. It is a good complement to maize and is leafy and low in fibre, breaking down rapidly in the rumen and passing out quickly, allowing a greater intake of forage than many other species. Lucerne has significant benefits but few people grow it believing, incorrectly, that it is a difficult crop to maintain.

Sainfoin

Sainfoin performs better than any other crop on thin, dry, calcareous and brashy soils. This remarkable plant is extremely drought resistant with its deep-penetrating roots. In addition, it needs no nitrogen fertiliser and very little phosphate. It offers a protein-rich forage with medicinal qualities that will appeal to all types of livestock farmer.

Great Silage, Great Soil

Short term leys are beneficial in arable rotations and are a solution on the many farms with deteriorating soil structure.

Ryegrass leys produce a large amount of root mass in a short time which improves soil structure when it decays at the end of the ley's term. Deep-rooting legume-based leys are also excellent at improving soil, and have the additional benefit of fixing nitrogen, invaluable at a time of rising fertiliser prices.

These leys are also effective in the battle against blackgrass as a one, two or three year ley breaks the lifecycle of this weed, so benefiting subsequent crops.

Vetch

This is a short term annual with a high protein and mineral content. Vetch is fast to grow and can be sown alone for silage or grazing and is also suitable for mixing with cereals such as oats for whole-crop silage. Quick to establish, it can also be sown with grass and clover mixes to produce extra yield.



Hybrid Silage Ley
15th May, Cheshire



Intensive Silage

Short and medium term leys that provide the highest yields for silage.

In these leys the various types of ryegrass (see page 2) have been combined to produce high-yielding quality silage crops lasting between one and five years. The characteristics of individual varieties have an impact on the timing of the first cut and the potential number of cuts per year. There is also the potential to graze the aftermath with many of these mixtures.

One year bulk

There has been a sharp increase in the use of Westerwolds. Rapid in establishment and quick to produce bulk, these leys are very useful for producing early grazing and silage from autumn sowings. They can also be sown in the spring on moisture-retentive soils to provide heavy summer silage crops.

Unlike other ryegrasses, westerwolds will produce a stem and seed head from a spring sowing. This is useful, especially for the production of high quality horse hay.

High yield, high quality

Our two to five year seed mixtures are formulated for the focused and intensive farmer who requires silage and grazing leys to have a direct impact on milk or meat production.

In these economic times, the need to maximise milk and meat from efficient forage production is clear. Our mixes are therefore designed to combine exceptionally good yields with the highest nutritive value.

Emphasis is placed on achieving optimum D-value at the time of utilisation, as well as high soluble carbohydrate content. Grass varieties in these mixtures give ultimate performance and are highly rated for overall disease resistance which will improve both yield of grass and palatability of forage.

What is festulolium?

Festulolium is a natural hybridisation of ryegrass and fescue species, combining the stress resistant genes of fescue with the bulky yield of ryegrass. It provides a more resilient species, with a better tolerance of drought or waterlogged soils, while still providing high yielding, very palatable forage. Festulolium is generally an upright grass, suitable for cutting.

Sowing and Growing

Suitable soils and optimum pH

Ryegrass is best suited to fertile and moisture-retentive soils and will tolerate slightly acidic pHs (6.2-6.5).

When to sow

Highest yields come from autumn sowings (August-September). Spring sown crops (March – May) are dependent on sufficient moisture and should be avoided in drought-prone areas.

How to sow

Drill in two directions into a fine, firm seedbed at 10-20mm. Rolling with either a Cambridge or flat roller before and after sowing is recommended. Broadcast seed should be harrowed lightly after sowing and before rolling.

Management

When spring sown these leys can be ready for cutting after only 12 weeks. A further two cuts can follow on soils that have adequate moisture and N. Early cuts just prior to heading will give high D-values and good regrowth. Cut frequently to encourage high D-value leafy growth. Graze excess growth by November to avoid winter kill.

Nutrient requirements

100kg N/ha for the first cut with 60-80 kg of N applied per subsequent cut. As cutting depletes P and K levels, these should be maintained at ADAS Index 2.

Yield potential

| | |
|---------------------|-----------|
| Westerwolds: | 18t DM/ha |
| Italian ryegrass: | 18t DM/ha |
| Hybrid ryegrass: | 14t DM/ha |
| Perennial ryegrass: | 13t DM/ha |

Typical silage analysis has a dry matter of 30%, a crude protein of 16%, a D-value of 70 and an ME of 11MJ.

Grass

Legume

Mixes

Quick Bulk Westerwolds

Intensive One Year Ley

Code: MIXQB

A very fast growing ley which can be sown in the spring or autumn and is primarily grown to produce silage. However, it can be grazed and the crop can provide 'early bite' when sown in the autumn. It is therefore a cheap alternative to cereal rye which was formally grown for this purpose.

- 7.00 kg certified LIBONUS westerwolds ryegrass
- 7.00 kg certified PELETON westerwolds ryegrass

14.00 kg/acre - £41.30

35.00 kg/ha - £103.25

Maximum-Yield

Two Year Silage Ley

Code: MIXA

Optimum balance between the highest quality and yield for silage, Maximum-Yield produces the all-important first cut between the second and third week of May. At this time the grasses will have high D-values and soluble carbohydrate content which ensures good silage fermentation.

- 10.50 kg certified BARMULTRA II tet. Italian ryegrass
- 3.50 kg certified SHAKIRA Italian ryegrass

14.00 kg/acre - £44.10

35.00 kg/ha - £110.25

Festulolium Silage Ley

Two Year Dry Land Ley

Code: MIXAF

This mix contains one of the festulolium varieties on the UK recommended list. It is a hybridisation of Italian ryegrass and meadow fescue, combining the bulky yield of Italian ryegrass with the stress resistant genes of fescue. An improved mixture for dryland, showing better resilience during the dry summers. Both species will head in the third week of May and can be relied on for 2 years.

- 8.00 kg certified ABERNICHE festulolium
- 6.00 kg certified BARMULTRA II tet. Italian ryegrass

14.00 kg/acre - £56.10

35.00 kg/ha - £140.25

Hybrid Silage Ley

Three - Four Year Ley

Code: MIXB

Early growth, high yields and good persistence make hybrid ryegrasses worth considering when the ley is expected to remain down for more than two years. Utilising excellent hybrid varieties, this ley is comparable, in terms of output, with Italian ryegrass. It should also be noted that the grazing potential of this ley is superior.

- 6.00 kg certified ABEREVE tet. hybrid ryegrass
- 6.00 kg certified ABEREDGE tet. hybrid ryegrass
- 2.00 kg certified TODDINGTON perennial ryegrass

14.00 kg/acre - £58.50

35.00 kg/ha - £146.25

Westerwolds and Vetch

Six Month Ley

Code: MIXWWW

A good balance between a vigorous grass and a fast growing short term legume, this mixture can be used to provide a very large cut or early spring grazing. As westerwolds will regrow after cutting this ley can be left for a further cut or grazed if required. To minimise the risk of ryegrass seed being shed, it is advisable to cut before the seed heads are visible.

- 10.00 kg certified LIBONUS westerwolds ryegrass
- 15.00 kg certified CARAVELLE vetch

25.00 kg/acre - £81.25

62.50 kg/ha - £203.13

Maximum D-Value

Four - Five Year Silage Ley

Code: MIXC

Maximum feed value can only be obtained from well made high D value silage. This ley will provide optimum digestibility and yield during the third week of May. Yields are boosted by utilising hybrid ryegrass with high quality aberwolf perennial ryegrass, noted for its very good D-value on the recommended list and providing good summer and late season grazing.

- 6.00 kg certified ABERSPEY tet. perennial ryegrass
- 4.00 kg certified ABERWOLF perennial ryegrass
- 2.00 kg certified ABEREDGE tet. hybrid ryegrass
- 2.00 kg certified ABEREVE tet. hybrid ryegrass

14.00 kg/acre - £71.52

35.00 kg/ha - £178.80

Additions

**White Clover**

White clover can be added to improve nutritional value.
Add 1kg of white clover **£18.50 per acre**

Festulolium

Swap ryegrass for festulolium for improved drought tolerance. **Please call for advice**

Red Clover Leys

Red clover leys produce a protein rich 15t DM per hectare without nitrogen fertiliser.

Red clover produces silage with a 2-3% higher protein content than a grass-only equivalent. This, combined with its high intake characteristics, leads to improved milk and meat production.

Red clover is drought tolerant and like many fast-growing legumes it's able to 'fix' up to 250 kg N/ha. To provide enough free nitrogen for a successful crop, legumes need to be included at high proportions in a mixed sward.

Legumes do not fix nitrogen all year round. For this natural chemistry to occur, the soil needs to be warm and, in the UK, this usually means that nitrogen fixation occurs between April and September.

With or without grass?

Red clover can be sown as a monoculture at 5-6 kg/acre for silage, but a mixture with grasses is preferable since this gives higher total forage yield and makes better silage. Mixtures of 9 kg/acre grasses and 3 kg/acre red clover are commonly sown to provide the correct balance. A pure stand of red clover generally yields lower than the grass and clover mixture at about 5-6t DM/ha.

For a one or two year ley Italian ryegrass is an excellent component, but for a duration of three years or more a mixture of hybrid and perennial ryegrass is a better option.

To allow full expression of the red clover, it is best to use tetraploid varieties of ryegrass since they tiller less densely than diploids. Their early-season growth also coincides with the flowering pattern of the red clover. They are then at the same maturity stage and digestibility is similar.

Short Term Red Clover Ley

Flowering 23rd May, Cheshire



What you need to know about oestrogen

When it comes to sheep grazing red clover leys there is one question that keeps coming up. Will the oestrogen in red clover affect ewe fertility? Red clovers contain varying amounts of this compound and some sheep farmers are concerned that it may lower conception rates. This is possible, but with the right management it is unlikely that red clover will be of much concern to breeders. To be clear, oestrogen in red clover has no known detrimental effects on fattening lambs. It is when it is fed to breeding ewes caution should be exercised.

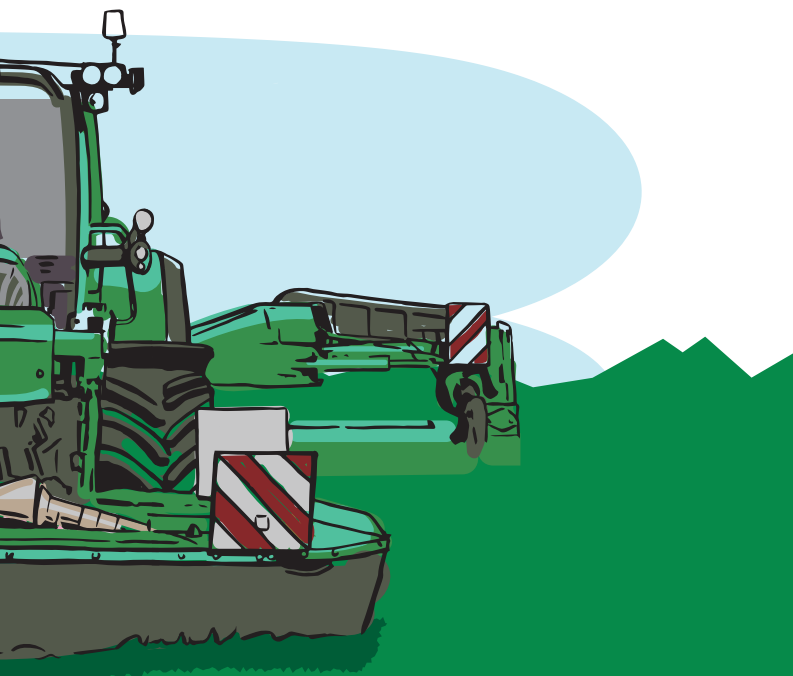
If leys contained only red clover then it is possible that ewe fertility could be reduced. But there are relatively few confirmed cases and it is common practice to avoid flushing ewes on leys that contain low levels or no red clover. This is safe.

Oestrogen from red clover leys is very mobile and does not remain long or accumulate in the blood. Also once ewes are in lamb it may be considered safe to graze or feed red clover silage. It is worth noting that red clover in silage also contains oestrogen.

Plant breeders are possibly able to offer a solution. Back to the variation in plants. Just as there is variation in yield and persistence there is also variation in oestrogen content. Some varieties have been identified as containing low levels of oestrogen. Now this might sound like a great solution to a potential problem but whilst some do contain less, they can be significantly lower yielding than top rated varieties.

This presents a problem when choosing a variety. However there will be instances where yield is less important. For example low input and organic farmers often have more acreage under red clover. They rely on them more than conventional farmers and there may be a case to use low oestrogen red clovers so that ewes can be tugged on red clover leys on these farms. Plant breeders including those at Aberystwyth are currently working in this area and so it is possible that given time, seed of higher yielding, low oestrogen red clover varieties may become more widely used.

The considerable benefits of high protein, drought tolerance and free nitrogen fixation should more than make up for any concerns about oestrogen.



Sowing and Growing

Suitable soils and optimum pH

Grows on most soils, including the drought prone. The optimum pH is 6.0-6.5 for N fixation, but red clover will tolerate 5.6.

When to sow

Sow from March until September. Red clover mixtures can be undersown in an arable crop, or after harvest provided there is enough time for the plants to develop sufficiently prior to winter cold. On light soils in dry districts autumn sowings perform better as these will have well established roots capable of better growth in dry seasons.

How to sow

For sound establishment, a well cultivated, firm, level seedbed is needed to ensure that the small clover seeds are drilled uniformly at a shallow depth of 10-15 mm. The use of a roller prior to and after sowing is essential.

Management

The competitiveness of red clover against weeds is low at the early establishment phase particularly if sown alone.

Topping is of value and 'clover-safe' herbicides are available, though they can check red clover development to some degree. To avoid clover sickness (a combination of soil-borne sclerotinia and stem eelworm) a five year gap should be allowed between leys containing red clover.

Nutrient requirements

Red clover will fix its own N, but P and K levels must be maintained at an ADAS Index 2. A small quantity of N can be applied in the autumn or early spring to enhance initial growth. This should not exceed 25kg N/ha.

Yield potential

Forage yield in the establishment year of a spring-sown sward is circa 60% of that possible in the first harvest year which should be around 15t DM/ha.

The yield is spread over 2-3 cuts per year. Typical silage analysis has a dry matter of 30%, a crude protein of 19%, a D-value of 72 and an ME of 12MJ.

Mixes

Grass Legume

Fast and Vast

One - Two Year Mixture

Code: MIXFV

This short term ley is for those wishing to produce a large amount of forage with little or no nitrogen fertiliser. Yields are high, especially on rich, moist soils and the majority of crops are made into silage. In addition to red clover, the mixture also contains crimson clover and vetch which increase yield over a short period of time. It can be relied upon for one full year of production or left down for a second.

- 10.00 kg certified CARAVELLE vetch
- 2.00 kg certified GLOBAL red clover
- 1.00 kg certified HEUSERS OSTSAAT crimson clover
- 4.50 kg certified BARMULTRA II tet. Italian ryegrass
- 4.50 kg certified SHAKIRA Italian ryegrass

22.00 kg/acre - £89.90

55.00 kg/ha - £224.75

Short Term Red Clover Ley

One - Two Year Mixture

Code: MIXCG03

An intensive silage ley lasting for up to two years which requires little or no nitrogen fertiliser. First cut is to be expected during the third week of May.

- 3.00 kg certified GLOBAL red clover
- 6.00 kg certified BARMULTRA II tet. Italian ryegrass
- 3.00 kg certified SHAKIRA Italian ryegrass

12.00 kg/acre - £61.05

30.00 kg/ha - £152.63

Longer Term Red Clover Ley

Three Year Mixture

Code: MIXCG06

Persistent and high yielding, this ley is tried, tested and highly successful. It is usually cut in the third or fourth week of May and incorporates the best red clover with hybrid and perennial ryegrasses, giving yields nearly as high as our two year red clover ley.

- 3.00 kg certified AVISTO red clover
- 3.50 kg certified ABEREDGE tet. hybrid ryegrass
- 3.50 kg certified ABEREVE tet. hybrid ryegrass
- 2.00 kg certified CALIBRA tet. perennial ryegrass

12.00 kg/acre - £69.46

30.00 kg/ha - £173.65

Additions



Vetch

Vetch may be added to red clover and ryegrass mixes to increase yield in the first growing season.

Add 10kg of vetch

£34.50 per acre

Limited availability of 4 year 'Milvus' red clover.

Call for advice.

Sainfoin

High yielding silage or hay crop with occasional grazing for dry, alkaline soils. Bloat free and a natural anthelmintic.

Sowing and Growing

Suitable soils and optimum pH

Performs best on free-draining alkaline soils. Do not sow on land below pH 6.2.

When to sow

Always sow sainfoin into warm soils in the spring.

How to sow

Sainfoin seed can be undersown to spring cereals or direct drilled in April or May at around 30mm. If undersown, the cereal sowing rate should be reduced to 40 kg/acre.

Management

A sainfoin ley should be managed carefully to maximise performance. Sainfoin produces a cut of silage in early June or hay may be taken if preferred. Sainfoin should be cut during early flowering but this may be delayed without much loss of feed value if needed. Regrowth is less after the first cut and may be cut again or grazed. Grazing should be light and quick to avoid damage to the plant. Never set stock it or it will become thin.

Nutrient requirements

Sainfoin requires no N or P but K levels must be maintained at ADAS Index 2 to safeguard yields.

Yield potential

14t DM/ha annually. Typical silage analysis has a dry matter of 14%, a crude protein of 18%, a D-value of 62 and an ME of 9.5 MJ. However, sainfoin produces better results than this analysis indicates as its high tannin content protects the protein in the rumen so increasing absorption and producing higher liveweight gains.



There are few crops quite like sainfoin. It is a high-yielding, drought-resistant plant which needs no nitrogen fertiliser and little phosphate. It won't cause bloat, is a natural anthelmintic and, with rumen-protected protein, produces top quality meat and milk.

Sainfoin has deep-penetrating roots making it highly suitable for the dry, alkaline soils of England. In these times of fluctuating fertiliser, feed and veterinary drug prices, alongside increased demands for sustainability, there are few crops that tick as many boxes.

It grows best on stony brash or chalks, but does not like wet soils where red clover should be chosen in preference.

Sainfoin

Four Year Cutting or Grazing

Code: SAI

On the right ground this is a superb crop. Lasting for four years or more, it is extremely valuable for finishing lambs.

■ 35.00 kg commercial sainfoin

35.00 kg/acre - £129.50

87.50 kg/ha - £323.75

Companion Grass Option

Four Year Mixture

Code: MIXLUC

We recommend the use of a non-competitive grass mixture to be sown with sainfoin. The grass fills the base of the crop, increasing yield and soluble sugars to improve silage fermentation. The grass seed element should be surface sown and rolled in.

■ 2.00 kg certified PARDUS meadow fescue

■ 1.00 kg certified WINNETOU timothy

3.00 kg/acre - £20.30

7.50 kg/ha - £50.75



Sainfoin and Grasses
15th June, Oxfordshire



For more information on sainfoin, please download our growers guide - **Sainfoin - Surprising science behind a forgotten forage.**

Visit cotswoldseeds.com to download your copy.

Grass

Legume

Lucerne

Reliable yields for silage on dry gravels.

Lucerne is highly productive and reliably provides three to four cuts of protein-rich silage annually, even through drought, and lasts for around five years. Lucerne must be grown on naturally alkaline and free draining soils or gravel. It is slower to establish than ryegrass and does require careful management but, if agronomic guidelines are followed, there is nothing complicated about it.



Pure Lucerne crop
3rd June, Oxfordshire

Lucerne

Four Year Cutting Crop

Code: MILKY

Lucerne should be sown as a four or five year temporary ley. For specialist use it may be made into hay for the equine market where it is known as alfalfa.

- 8.00 kg certified MILKY MAX lucerne

8.00 kg/acre - £87.20

20.00 kg/ha - £218.00

Companion Grass Option

Four Year Mixture

Code: MIXLUC

We recommend the use of a non-competitive grass mixture to be sown with lucerne. The grass fills the base of the crop, increasing yield and soluble sugars to improve silage fermentation. The grass seed element should be surface sown and rolled in.

- 2.00 kg certified PARDUS meadow fescue
- 1.00 kg certified WINNETOU timothy

3.00 kg/acre - £20.30

7.50 kg/ha - £50.75

Sowing and Growing

Suitable soils and optimum pH

Gravels and free-draining soils with a pH 6.5-8.

When to sow

Lucerne must be sown into warm soils and is often undersown to a spring cereal crop as it is slow to establish. Reducing the cereal seed rate by a third and cutting it as arable or wholecrop silage will give lucerne the best start. Alternatively, sow in the summer following an early-harvested cereal such as winter barley. The middle of August is the latest date for sowing.

How to sow

The seed of lucerne is small and needs to be sown to a maximum depth of 15mm otherwise a patchy, thin crop will result. Roll before and after sowing to help achieve fast germination and weed competitiveness. Sowing with a companion grass mix helps out-compete weeds enabling lucerne leys to be left down for longer. Herbicides exist but are limited and you should obtain a clean seedbed prior to sowing.

Management

Following a direct spring sowing a light cut may be taken in mid August. From a summer sowing or an undersowing there will be little to cut in the first year. Leave until the following spring when it should be cut for the first time in early June at almost full flowering. Thereafter cut at the bud stage as this provides the ideal balance between yield and quality. Two or three further cuts follow at six week intervals. After cutting, the crop needs wilting so that it contains less than 70% moisture when made into baled silage. Hard or frequent grazing should be avoided especially during its first year as the crop will not tolerate it. Lucerne can also cause bloat when grazed.

Nutrient requirements

Although lucerne requires no N once established it can be beneficial to apply 25kg N/ha to an autumn sowing to promote rapid plant development. P and K requirements are higher than for grass and should be maintained at ADAS Index 2 to maintain yields.

Yield and nutrient data

14t DM/ha annually. A well fermented lucerne/grass silage has a dry matter of 30%, a crude protein of 20%, a D-value of 60 and an ME of 9.7MJ.

Culture



To Fix N

The use of culture to provide the correct type of bacteria to initiate nodulation is considered essential. Mix with seed on the day of sowing.

Sachet for 25 kg of seed

£10.00 plus VAT



Grazing

The cheapest forage

Whether you want grass to grow in the uplands or the lowlands, on dry or wet soil, on acidic, neutral or alkaline soils, we can provide a seed mix to suit.

The number of species in our grazing mixtures varies from one to eighteen, providing a huge range of choices to meet the requirements of the diverse grazing systems on farms across the country.

Pioneers of grassland management such as Andre Pochon, Robert H Elliot and William Lamin developed complex mixtures of grasses and legumes for grazing and cutting. In recent times however, intensively bred strains of ryegrass in temporary leys have been very popular as they respond well to nitrogen fertiliser and give the high yields required by intensive farmers.

Clover versus N fertiliser

Nitrogen fertiliser is one of the largest costs to livestock farmers. In light of volatile fertiliser prices, many farmers are sowing high-clover leys to lower the cost of forage production as white clover and other nitrogen fixing legumes can reduce or replace the need for artificial nitrogen.

Single species versus diversity

While some have good reason to grow single species swards, sowing mixtures of grasses and clovers offers real benefits. A single grass alone will often be lower yielding and more vulnerable to failure or poor performance due to pests, disease or the effects of unusual weather. A diverse mixture is therefore more reliable and preferable to sowing a single species. This is especially important for leys which are expected to last for more than one year. Higher yields from mixtures of grasses and clovers are due to better seasonal distribution of growth: grasses give high yields during May and June, clovers produce theirs in July and August. Critically, it's the contribution of both grass and clover that provides the optimum balance between bulk yield and feed value. Grasses tend to have higher annual yields, but are lower in protein than clovers. Animals grow faster and do better on a mix of clover and grass.

Drought resistant swards

In recent summers extended dry periods have put a real strain on livestock farmers battling to ensure they have sufficient forage year round. Grass species such as cocksfoot and clover continue to produce even when there has been no rain for weeks, and many of our mixes are designed with these conditions in mind.



Light land grazing mix
10th May, Gloucestershire

First Hand

Jeremy Davis



Farm Type Mixed Smallholding

Location East Sussex

Size 40 acres

Soil Type Sandy Loam

Mixes Used Bespoke Chicory Mix

After taking over Lynne's Organic Farm, a forty acre smallholding in East Sussex, Jeremy Davis was looking for a bespoke green manure that would be of nutritional benefit to his pigs and laying chickens as well as adding nutrition for horticulture and he worked with Cotswold Seeds to develop a special chicory mix which has consistently produced fantastic results.

Historically the farm was part of the Abergavenny Estate and had been tenanted as pasture for grazing sheep and cattle. Jeremy purchased the farm about 20 years ago and put the whole farm down to green manures for organic conversion.

'In the early days I was seeking advice about what we should plant and I got to know Ian at Cotswold Seeds quite well,' says Jeremy.

After introducing Saddleback pigs and chickens ten years ago he began working with Sam at Cotswold Seeds to refine a mix to give nutritional benefits to the pigs but also the chickens. The special chicory mixture is made up predominantly of chicory with some red clover and cocksfoot and plantain. The results have been very impressive.

'Breeding sows show massively increased fertility when they have been in the green manure prior to going to the boar,' says Jeremy. 'The litter size is substantially bigger. We have had breeding stock on this ley for ten years so that's pretty conclusive. The ley also helps with boar fertility. Since our breeding stock have been moved elsewhere and are not grazing on this ley, their fertility has certainly decreased. We don't get any trouble with worms or other sickness when they are on the ley either.'

'Breeding sows show massively increased fertility when they have been in the green manure prior to going to the boar.'

So how is the ley established and managed?

'We have always done traditional drilling after working down the seed bed and rolling before sowing,' says Jeremy. 'Because we are organic we have quite a lot of weed. We tend to flail mow a couple of times as it gets established, to knock out any annual weeds like Fat Hen and encourage the plants to tiller out and the sward to thicken up and then we just let it grow. Depending on how long we are going to keep the ley, we will probably mow once or twice a season, depending on the weather. We prefer bulk but don't really want it going to seed.'

The ley is treated differently depending on whether veg crops are grown after it, or the area is used for hens and pigs. 'In the veg field we are turning over and terminating the ley quite frequently. Generally we will try and leave the ley in for at least two years in the veg plot, but longer in the other plots. With the pigs and chickens we try to keep the ley in for three or four years before we terminate and resow. Laying chickens don't destroy the root structure so we will leave the mix to come back and regrow. The chicory will come through first, because the tap roots are so much stronger. We will wait for it to grow a foot and then top it. And then you start to get the rest of the mix coming through. We let it grow to another foot, top it again, then you'll likely get the same mix as you had originally. We will incorporate it eventually, but we don't resow immediately. With pigs we have to cultivate once they have been through the green manure and then resow or plant veg depending on what's happening in that rotation.'

Jeremy has been a customer of Cotswold Seeds for twenty years, ever since he needed advice about growing green manures on the farm. 'I like dealing with them because they are so knowledgeable. They are prompt and delivery is great. Never had a problem.'



Dual Purpose Swards

Self-sufficient leys that provide high protein grazing with little or no nitrogen fertiliser.

Sowing and Growing

Suitable soils and optimum pH

These ryegrass-based leys grow on all but the most waterlogged soils. They are best suited to pH6 or above but will grow to pH5.6.

When to sow

Seed can be sown between March and mid September when soils are warm and sufficient moisture is available.

How to sow

A very firm seed bed is required as white clover and timothy seeds are small and benefit from shallow sowing at around 10mm. Rolling at least once after sowing is strongly recommended. If under-sowing, do not choose a thick crop as this will result in failure; a thinly sown spring cereal is ideal. A clover seed mix is best sown by broadcasting with a spinner but can also be sown with a proper grass seed drill.

Management

As the main period of grass growth is during May and June, it makes sense to take a cut of silage or hay during this time. Additionally, where grass growth exceeds grazing demand more can be cut and round-baled as silage. Ideally, these leys should be rotationally grazed with an interval of 3-5 weeks for recovery.

Nutrient requirements

These leys should receive no more than 100kg N/ha with the biggest demand (60kg N/ha) in March and April if a silage cut is to be obtained. Pochon Dairy requires very little or no N as the high clover content (30-50%) will fix N in the soil.

Yield potential

12t DM/ha should be achieved.

These mixtures are ideal for those looking to graze and/or cut a medium to long term ley. With white clover included in all three, they are largely self-sufficient in nitrogen. Of course the benefits derived from clover are proportional to the amount in the sward, both in terms of animal nutrition and nitrogen fixing.

If using the mix for silage or hay, the ley should be shut up at least six weeks before cutting, with the best combination of yield and quality coming from grasses that are just beginning

to produce a seed head and clovers in bud or early flower. A first cut of silage is ready during late May. These leys will provide a second cut but are usually grazed.

These three mixes are among our most popular. The 'Milk-Meat' combination has been in use since the Second World War and sown on, we estimate, over a quarter of a million acres.

The case for clover

Red clovers can be broken down into two distinct types: early and late flowering with a difference between flowering periods of 10 - 14 days.

Early or double cut red clover – These are most popular and are commonly used for silage as they re-grow well to provide a second cut later in the year.

The late varieties such as Altaswede can be used on late, wet ground to provide one large single cut later in June.

White clover

White clover is classified according to leaf size, which break down to small, medium and large, the size of the leaf dictates what type of use it is most suited to.

Small Leaf Clover - The very small, low yielding but extremely persistent type is known as 'wild white'. Little clovers like S184 are extremely persistent, filling the base of the sward and can be grazed hard especially with sheep.

Medium Leaf - Medium leaved varieties such as AberSwan and Merwi offer yields well in excess of the wild whites. They are also more competitive, persistent and offer good early spring growth.

Large Leaf - The large leaf types such as Barblanca are the highest yielding. However, large leaved varieties do not survive well when grazed hard with sheep. Therefore these are best sown in silage or cattle grazing leys. For most situations it is best to sow a mixture of types to allow for grazing or silage.

Grass

Legume

Mixes

Early Bite

Sheep and Hay Ley

Code: MIX1

Ideal for producing early grass on light land, this ley will provide good growth throughout the year and is especially good for lamb production. It is also suitable for hay or silage and can be expected to last for at least three years. Contains white clovers, making grazing more palatable and increasing live weight gains.

- 4.00 kg certified ABEREVE tet. hybrid ryegrass
- 4.00 kg certified BOYNE perennial ryegrass
- 2.00 kg certified TODDINGTON perennial ryegrass
- 1.40 kg certified WINNETOU timothy
- 0.20 kg certified ABERSWAN white clover
- 0.20 kg certified ABERHERALD white clover
- 0.20 kg certified ABERACE wild white clover

12.00 kg/acre - £69.98

30.00 kg/ha - £174.95

Milk-Meat Cut or Graze

Five Year Plus Ley

Code: MIXMM

Our best selling dual purpose ley, equally suitable for cattle or sheep. This mixture combines the benefits of high yielding Boyne, with Twymax, which consistently holds its quality late into the season, along with highly palatable timothy and white clover. It can be sown for silage and hay or intensively grazed. This versatile high D-value ley will yield well on all soil types.

- 2.30 kg certified BOYNE perennial ryegrass
- 2.15 kg certified TWYMAX tet. perennial ryegrass
- 4.30 kg certified CALIBRA tet. perennial ryegrass
- 2.00 kg certified TODDINGTON perennial ryegrass
- 1.75 kg certified WINNETOU timothy
- 0.20 kg certified IONA white clover
- 0.20 kg certified ABERSWAN white clover
- 0.10 kg certified VIOLIN white clover

13.00 kg/acre - £75.74

32.50 kg/ha - £189.35

Pochon Dairy

Two-Four Year Silage/Grazing Ley

Code: MIXCG02

Designed specifically for the dairy farmer wishing to produce silage and high quality grazing. This ley has an open growth habit allowing the white clover plenty of space to exploit. Including Aberystwyth ryegrass and white clovers, this mixture is principally intended to be grazed by the dairy cow. For sheep grazing use 'Pochon' Persistent (see page 29).

- 3.00 kg certified ABEREVE tet. hybrid ryegrass
- 2.00 kg certified ABEREDGE tet. hybrid ryegrass
- 2.50 kg certified BOYNE perennial ryegrass
- 3.00 kg certified TWYMAX tet. perennial ryegrass
- 0.50 kg certified IONA white clover
- 0.50 kg certified ABERSWAN white clover
- 0.50 kg certified VIOLIN white clover

12.00 kg/acre - £75.35

30.00 kg/ha - £188.38

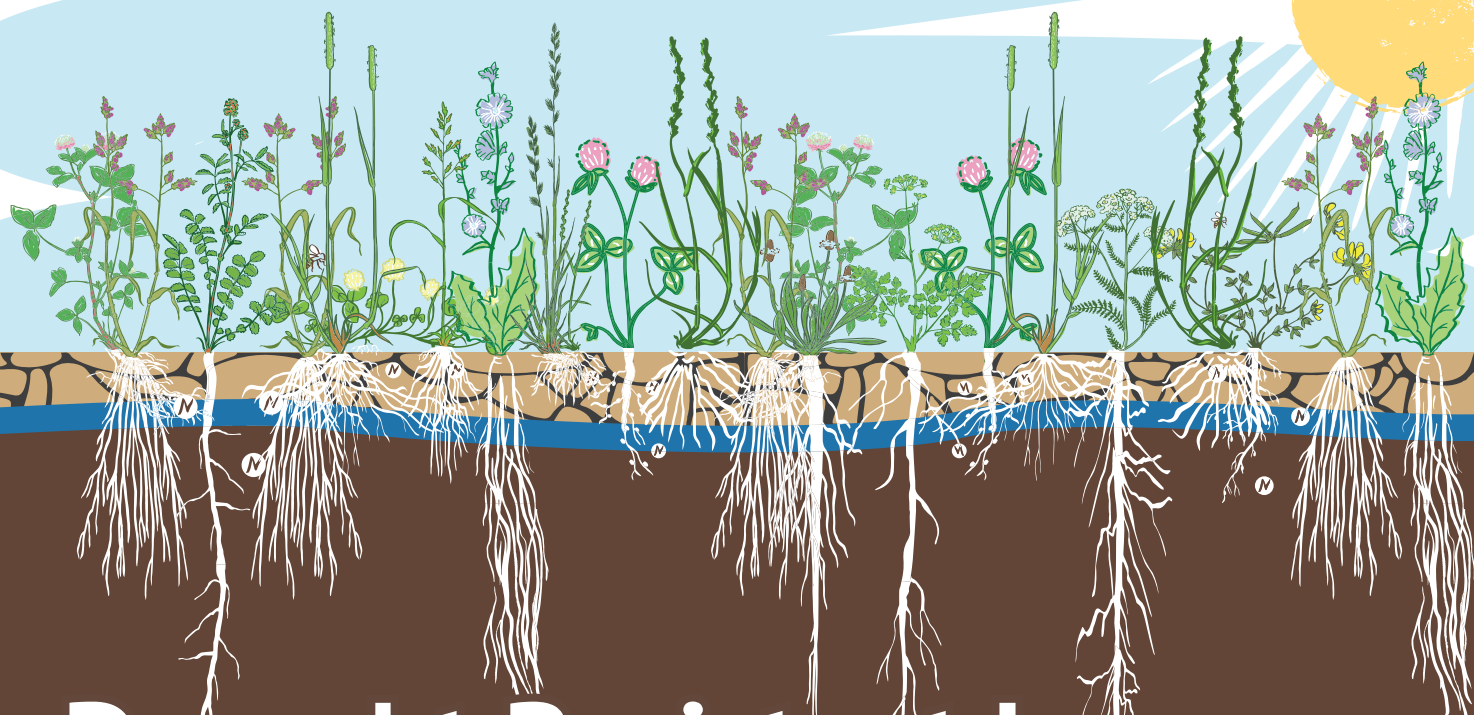
Additions



| | |
|-----------------------------|------------------------|
| Red Clover: 1 kg red clover | £10.90 per acre |
| Cover Crop: 3 kg westerwold | £8.85 per acre |
| Heavy Land: 2 kg timothy | £15.00 per acre |
| Light Land: 2 kg cocksfoot | £11.90 per acre |
| Anti Bloat: 5 kg sainfoin | £18.50 per acre |



Bespoke Hay & Haylage Mixture
2nd June, Chilterns



Drought Resistant Leys

Drought can devastate forage crop yield. Avoid the severe consequences by choosing deep-rooting mixtures.

Sowing and Growing

Suitable soils and optimum pH

These mixes are designed for light, free-draining land with a pH of 5.6-7.

When to sow

Sow between March and early September. Avoid late autumn sowing when mixtures contain clovers.

How to sow

Sow into a fine, firm seedbed at around 10mm. Seed can be broadcast on a windless day, harrowed lightly and rolled. Alternatively, seed may be drilled in two directions into a well consolidated (rolled) seedbed.

Management

These leys depend upon developing a large number of deep roots. To achieve this these leys should be allowed to accumulate a lot of leaf and should then be heavily grazed (rotationally) before being allowed to repeat the cycle. Set stocking is less effective. Leys containing cocksfoot should be grazed frequently and cut young to ensure that growth remains leafy.

Nutrient requirements

N fertiliser (40kg N/ha) can increase early spring growth but high applications will impede clover growth and content which needs to be high for summer grazing production. P and K levels should be maintained at ADAS Index 2.

Yield potential

Cocksfoot-based leys: 12t DM/ha
Ryegrass-based leys on dry, light land: 7t DM/ha
Ryegrass-based leys with rainfall: 12t DM/ha

The dry conditions suffered by many in recent years demonstrates the need for grass mixtures which continue to yield even during prolonged spells of drought. By combining deep-rooting grasses and clovers with differing growth habits, it is possible to provide summer grazing from dry soils.

Recent weather has shown that ryegrass does not thrive in dry conditions. However there are other grasses, such as meadow fescue, timothy and cocksfoot, which can be relied upon. These species can offer great benefits over ryegrass to those in challenging conditions. If you farm on dry land then these leys are well worth considering.

Growing grass on droughty land

Pioneers of grassland farming, Robert H Elliot and William Lamin, developed complex ley mixtures comprising deep-rooting species such as cocksfoot, chicory and red clover.

Then, as now, some farmers were reluctant to use too much cocksfoot (see page 2), as it was inclined to grow coarse and clumpy. However, this is only a problem when seed is sown too thinly, allowing the cocksfoot too much freedom, or when it is allowed to become too mature when making hay.

Elliot observed first hand at Clifton Park that his deep-rooting four year ley provided good quality forage and improved soil so much that he was able to grow subsequent cash crops for four years with little fertiliser input. Lamin, who used a simplified version of Elliot's mix, observed "...it's like throwing money away to put ryegrass on dry land."

It's worth noting that although ryegrass is vulnerable to drought and is one of the first grasses to stop growing, it does recover very quickly when rain comes and can make a valuable contribution after prolonged dry periods.

Grass

Legume

Herb

Mixes

Light Land Beef/Sheep

Long Term Ley

Code: MIX5

A long term ley that combines perennial ryegrass with drought-resistant cocksfoot. Good year-round production can be achieved which can be used for grazing or silage. Cocksfoot needs frequent grazing but recovers quickly after defoliation. The blend of persistent white clovers and timothy makes the sward extremely palatable. It is also very productive late into the summer.

- 3.00 kg certified DONATA cocksfoot
- 3.00 kg certified CALIBRA tet. perennial ryegrass
- 2.50 kg certified BOYNE perennial ryegrass
- 2.30 kg certified TODDINGTON perennial ryegrass
- 1.50 kg certified WINNETOU timothy
- 0.25 kg certified ABERSWAN white clover
- 0.25 kg certified ABERHERALD white clover
- 0.20 kg certified ABERACE wild white clover

13.00 kg/acre - £81.95

32.50 kg/ha - £204.88

Cholderton

Four Year Plus Grazing/Cutting Ley

Code: MIXCM

A ley developed on the thin, chalk soils of Wiltshire which provides good growth for early grazing or cutting. It regrows powerfully through the spring and into the summer, giving an outstanding second cut yield. The ley tolerates dry conditions due to the deep roots of cocksfoot and red clover.

- 1.50 kg certified ABEREVE tet. hybrid ryegrass
- 4.00 kg certified CALIBRA tet. perennial ryegrass
- 2.20 kg certified BOYNE perennial ryegrass
- 2.00 kg certified DONATA cocksfoot
- 1.00 kg certified WINNETOU timothy
- 1.00 kg certified LOFA festulolium
- 0.50 kg certified ROZETA red clover
- 0.40 kg certified ABERSWAN white clover
- 0.30 kg certified IONA white clover
- 0.10 kg certified ABERACE wild white clover

13.00 kg/acre - £79.90

32.50 kg/ha - £199.75

'Lamins' Drought Resistant

Four Year Grazing for Dry Land

Code: MIXCG04

This is a traditional humus building, drought resistant ley which is ideal for continuous grazing. This 'Clifton Park' type mixture will provide good quality forage which is high in protein. It starts early in the spring and will grow well through the summer and into the autumn. Birdsfoot trefoil has been added to this mixture after witnessing its ability to stay green throughout the dry summer of 2018.

- 5.00 kg certified DONATA cocksfoot
- 1.70 kg certified BARDOUX tall fescue
- 1.50 kg certified PARDUS meadow fescue
- 1.50 kg certified WINNETOU timothy
- 1.00 kg certified ALTASWEDE late flowering red clover
- 0.60 kg certified IONA white clover
- 0.15 kg certified LEO birdsfoot trefoil
- 0.40 kg certified PUNA / ENDURE chicory blend
- 0.30 kg burnet
- 0.25 kg certified ENDURANCE ribgrass
- 0.05 kg yarrow
- 0.05 kg sheeps parsley

12.50 kg/acre - £105.89

31.25 kg/ha - £264.73

Chicory Grazing Ley

Three - Four Years

Code: MIXCL

This high-protein, mineral-rich, drought resistant mixture combines one of the most well-known varieties of chicory with clover and a small quantity of ryegrass. It will last for three to four years.

- 2.50 kg certified PUNA / ENDURE chicory blend
- 0.20 kg certified ENDURANCE ribgrass
- 1.50 kg certified ROZETA red clover
- 0.60 kg certified ABERHERALD white clover
- 1.70 kg certified TWYMAX tet. perennial ryegrass

6.50 kg/acre - £82.69

16.25 kg/ha - £206.73

Additions



| | |
|-----------------------------------|------------------------|
| Cover crop: 3 kg westerwolds | £8.85 per acre |
| Cover crop: 3 kg Italian ryegrass | £9.45 per acre |
| Cover crop: 10 kg vetches | £34.50 per acre |
| Anti bloat: 5 kg sainfoin | £18.50 per acre |



Lamins Mix
15th July, Hampshire

Half a Century of Advice:

A History of Cotswold Seeds



Robin Hill (b.1928) founded Cotswold Seeds in 1974. Unlike many of Cotswold Seeds' customers, Robin didn't come from a farming family. His father served in the Colonial Service, but Robin did spend the first 20 years of his life on a 15 acre smallholding in Northern Ireland and cited this as the roots of his love of agriculture. After finishing school, he made the decision to head to Cambridge, where he obtained a degree in agriculture. 'Which wasn't very helpful,' remembered Robin. 'It was based on pre-war agriculture, so we learned how the reaper and binder are pulled by a horse and were sent on a trip to study carthorses.'



Robin Hill, Founder of Cotswold Seeds.

But Robin's passion for farming directed his career. Choosing to learn 'from the bottom up,' he became an under cowman on a dairy farm in Wiltshire, milking seven days a week, and progressing to jobs as farm manager. But when Robin was nearing the age of 30, he decided to go into business and joined a local merchant as a buyer of malting barley. He remained there for just two years before he decided to set out on his own. 'We planned out the new business on the back of an envelope,' Robin remembered, but he had a clear vision and was determined right from the start to do things very differently, which has been the ethos of Cotswold Seeds ever since.

What set Cotswold Seeds apart in the early days was Robin's insistence on doing away with salesmen, having observed that some of his competitors employed a sales team of up to a hundred, resulting in high costs which could cripple a business. Robin's first employee was the irascible Mr Francis, who had previously been a tea-planter in India. He had strict ethics which Robin respected, but he had his own way with customers, when they asked when they could expect to receive their order. 'You'll be lucky to get that in a fortnight,' he would reply.

It couldn't be further away from the Cotswold Seeds of today, distinguished by high levels of service and popular promise of next day dispatch.

When Mr Francis left the business he was replaced by Elaine Hall. Though Elaine was employed as a book-keeper she did a bit of everything, from sales, to debt-collecting, keeping the customer

file card index up to date - and shovelling the seed mixtures with an aluminium shovel. At this point the business was being run from a little office in Robin's garden in Fifield in West Oxfordshire, and the warehouse was eleven miles away in the village of Aldsworth, later moving to tin sheds in Milton-Under-Wychwood, which was slightly closer. The orders for grass seed were collected during the week and processed over the weekend. The accountants kept questioning Robin's determination to have a warehouse but he was as adamant as ever that Cotswold Seeds would do things differently and the warehouse was one of the company's major USPs. 'Other companies were just agents but we were selling direct to farmers,' Robin said.

He was also buying direct too. Cotswold Seeds obtained its seeds from farmers with growing contracts and the severe drought of 1976 proved a testing time. Many farms dried up altogether and crops were devastated.

The complex seed mixtures in which Cotswold Seeds was increasingly specialising, were made even more complex by the fact that every one of the many ingredients had to be typed out for each invoice. The labels were all done by hand too, with a stamp which took a while to dry, so the orders had to be strung up like washing around the office.

The now iconic Cotswold Seeds catalogue was also starting to take shape, and Robin placed such an emphasis on its quality even in the early days, that he hired an electric typewriter, with built-in memory, for the annual task of catalogue compilation. After all the pages had been painstakingly typed by hand, and a solitary colour photo chosen for the cover, it was photocopied and collated, put into envelopes, addressed, stamped and posted - all by hand. The next difference was to improve the equipment. After five years the trusty aluminium shovel was replaced by a bespoke mixer. Robin had been asking around for a suitable one and eventually found that there was one going begging, in Yorkshire!

Robin and his wife drove up to fetch it and had it modified for grass seed. Filling the 50kg hessian sacks was still a dusty business, and hard work. And this was one of the tasks that fell to the current MD, Ian Wilkinson, when he came to Cotswold Seeds as a rookie, asking Robin for a summer job while he was a student studying farm and grassland management. Robin's wife Susan was roped in to help with deliveries, loading seeds into the back of her Peugeot 504 estate, which conveniently held half a ton of seeds.

It was all well worth the effort, because nobody else was mixing their own seed and 'we liked to know exactly what was going in,'



'None of this would have been possible without the team who have built on Robin and Ian's hard work and vision.'

Robin said. The warehouse and hand-mixed seeds meant that Cotswold Seeds' quality control has always been second to none.

In 1984 Ian finished his studies and joined Cotswold Seeds full time. He persuaded Robin to make the business more robust by dropping the less profitable cereals to concentrate on grass seeds. Then came the next revolutionary change. The company started using carriers and the delivery process became much more efficient thanks to computerisation, which enabled deliveries to be tracked and dispatched all over the country. This enabled the expansion of the business, building on the important base of local customers, to reach farmers further afield. With the introduction of a massively popular overnight delivery service the company was soon turning over £100k. The company started publishing prices and mixture contents as well as advertising straights in Farmers Weekly, which shook up the industry a bit as it had never been done before.



Ian Wilkinson

Cotswold Seeds was now using the mixer for marketing and advertising, symbolising the bespoke mixtures that have always set Cotswold Seeds apart.

The organic movement began just after Ian joined Cotswold Seeds. The use of legumes had long been part of Robin's vision and key to what Cotswold Seeds has always been about, but this interest grew after he was taken to meet Andre Pochon in Brittany, following a suggestion by an agricultural researcher. It helped to shape the future of the company. Monsieur Pochon had persuaded 2000 farmers to give up using nitrogen. 'He believed in low input farming and he changed my attitude,' said Robin. 'He showed us 20 farms and the grass was waist high in May. Very impressive.'

'Would you put petrol in a car if it ran perfectly well on water,' Robin said, by way of demonstrating the benefits of low input biological farming. He was very keen on slogans and believed 'The Best in the Land' was always the best way to describe Cotswold Seeds. Another might be, 'No salesmen and no nitrates!'

The key to success, according to Robin, is 'integrity, and a sense of humour'. Robin also acknowledged how chance can play its part in

a company's success. 'Finding Ian was a key moment,' remembered Robin. 'Nothing short of a miracle. I rang up Berkshire Agricultural College to see if they had any students needing work, and they gave me Ian, their star pupil, who shared the same vision as me.'

'I'm forever indebted to Robin Hill,' says Ian. 'He was my mentor, and taught me so much about farming, business and life. His belief in the use of legumes and a diverse, mixed farming defines what Cotswold Seeds stands for today. Robin's byword was integrity, and he always stressed to me how important it is to be reliable and to believe in what you are doing. Until the end he still had great passion and vision, and was very supportive of the decision to purchase Honeydale Farm and set up the demo farm and the FarmED Centre. Even though he is no longer with us, it's our intention here at Cotswold Seeds to stay true to his dreams and continue his legacy.'

The last quarter century has produced many challenges in the agricultural sector and the wider world, including the Foot & Mouth crisis in 2001 and the COVID pandemic more recently, but Cotswold Seeds has maintained the quality of its advice and service throughout, employing systems and people to enable the company to operate incredibly efficiently with an industry leading website and a purpose built order processing system, reaching more customers than ever. Not only that but the company underwent significant expansion, doubling capacity with a new and improved warehouse and a larger team - on the mixers, in the delivery vans and offering technical advice on the phone.

Close relationships have been forged with local organisations and businesses and the company is consistently involved with international scientific research projects, working with leading scientists and academics on projects such as Healthy Hay, LegumePlus, and lately Legume Legacy and CHC3. Cotswold Seeds has remained at the forefront of industry developments, leading the way in what is now known as regenerative agriculture - the company was promoting the benefits of soil health and herbal leys long before they became mainstream, and is regularly consulted on legislation and policy.

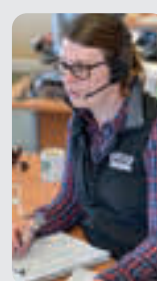
None of this would have been possible without the team who have built on Robin and Ian's hard work and vision. Paul Totterdell took on the daily running of the business in 2015, and alongside Lisa Lane, Sam Lane and Lizzie Arnold in the office and Mike Dearman, Mark Boydell, Rob Moulder and Mark Scarrot in the warehouse who have all been with us for many years. It's thanks to their hard work and dedication that we're able to offer the best mixtures and the best advice in the country, while maintaining true independence and impartiality.



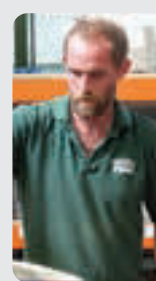
Paul Totterdell



Sam Lane



Lizzie Arnold



Mike Dearman

Robin Hill passed away in 2017 but was very much behind the decision to purchase Honeydale Farm (now FarmED) to demonstrate regenerative farming and open a new chapter for Cotswold Seeds. Robin watched the growth of the company, from a team of two to 42 including the expansion into the new warehouse at Moreton-in-Marsh and developments at FarmED, with delight. 'I have seen all my dreams come true,' he said.



Herbal Grazing Leys

Deep rooting, species rich, nutritionally balanced grazing leys.

What is a herbal ley?

A herbal ley is a complex seed mixture of grasses, legumes and herbs, which bring a range of benefits to forage, livestock health and soil fertility. Herbal leys can often include a mixture of up to 18 species, depending on the aims of the ley, location and soil type.

They have traditionally been used to build soil fertility and structure in an arable rotation, acting as a minimal input, four year break crop, but they bring significant benefits not only to the soil health, but also to the health and diet of livestock and the wider environment.

The deep rooting species in the mixture add drought tolerance when grown on thin soils or during dry summers, remaining green and palatable for much longer than other forage mixtures. They work especially well on dry, light land where ryegrass leys prone to burning up in mid summer.

The mixture of species also ensures a longer growing season and certain species included in the mixtures such as sainfoin, chicory and birdsfoot trefoil, have anthelmintic properties, which helps to reduce the worm burden in livestock, creating less reliance on artificial wormers and your vet.

The deep rooting herbs, notably chicory, mine the soil for important nutrients and minerals, making them available to the grazing livestock and lowering the need for bought in concentrates. The high legume content of these leys reduces the need for expensive artificial nitrogen, since they fix their own N, feeding the other grasses and herbs in the mixture, and again helping to reduce costs.

Sowing and Growing

Suitable soils and optimum pH

Ideally suited to medium and light soil types with a pH of 6.0-8.0.

When to sow

Sow from March until early September.

How to sow

Sow into a fine, firm seedbed after an application of FYM. These leys contain many small-seeded species and are best broadcast as this leads to more even plant distribution. Roll twice after sowing for maximum seed to soil contact and consolidation.

Management

Graze lightly while the crop is establishing. Once growing well, rotationally graze allowing at least 28 days or more for recovery and regrowth. Using electric fencing, ration an area per day (e.g. about one acre for 100 cattle) but adjust this area to match growth and stock requirements. Over-grazing will damage chicory crowns. Surplus production from Herbal Leys can be made into silage.

Nutrient requirements

No N is required, P and K should be maintained at ADAS Index 2.

Yield potential

Yields of up to 13t DM/ha for the Herbal Ley can be achieved.



Herbal Grazing Ley
24th July, Gloucestershire

Grass

Legume

Herb

Mixes

Simple Herbal Ley

Four Year Grazing/Cutting/AD Ley

Code: MIX23

Our Simple Herbal Ley is designed for farmers who may be considering experimenting with a diverse seed mixture that's more complex than ryegrass and clover mixes. Our Simple Herbal Ley contains ryegrass, cocksfoot, timothy, meadow fescue and legumes, red clover, white clover, and mineral rich forage herbs including chicory and ribgrass.

- 2.50 kg certified LOFA festulolium
- 2.65 kg certified CALIBRA tet. perennial ryegrass
- 2.20 kg certified BOYNE perennial ryegrass
- 1.50 kg certified DONATA cocksfoot
- 1.00 kg certified WINNETOU timothy
- 0.70 kg certified PARDUS meadow fescue
- 0.35 kg certified ABERSWAN white clover
- 0.15 kg certified VIOLIN white clover
- 0.35 kg certified AVISTO red clover
- 0.15 kg certified AURORA alsike clover
- 0.25 kg certified PUNA / ENDURE chicory blend
- 0.20 kg certified ENDURANCE ribgrass

12.00 kg/acre - £79.08

30.00 kg/ha - £197.70

Herbal Heavy Land Ley

For Medium and Clay Soils

Code: MIX22

Still deep rooting but without cocksfoot this grazing mix suits heavier soils and lasts up to five years.

- 2.00 kg certified LOFA festulolium
- 1.60 kg certified CALIBRA tet. perennial ryegrass
- 1.60 kg certified TWYMAX tet. perennial ryegrass
- 1.60 kg certified WINNETOU timothy
- 1.60 kg certified PARDUS meadow fescue
- 1.50 kg certified BARDOUX tall fescue
- 1.00 kg certified AVISTO red clover
- 0.50 kg certified IONA white clover
- 0.40 kg certified AURORA alsike clover
- 0.15 kg certified ETINCELLE lucerne (rhizobium inoc.)
- 0.15 kg certified LUZELLE lucerne (rhizobium inoc.)
- 0.25 kg commercial sweet clover
- 0.50 kg burnet
- 0.40 kg certified PUNA / ENDURE chicory blend
- 0.25 kg certified ENDURANCE ribgrass

13.50 kg/acre - £105.30

33.75 kg/ha - £263.25

Herbal Grazing Ley

Four Year Drought Resistant Ley

Code: MIX20

Based on Newman Turner's original recommendations, this all round mixture provides wholesome and substantial forage for grazing and occasional cutting. This 18 way mixture provides grazing for early turnout and continues to produce forage right through the summer and autumn. Containing deep-rooting ingredients, this ley not only improves soil structure but also draws up essential vitamins and minerals for the ruminant animal.

- 1.60 kg certified DONATA cocksfoot
- 1.00 kg certified LOFA festulolium
- 1.00 kg certified TODDINGTON perennial ryegrass
- 1.00 kg certified CALIBRA tet. perennial ryegrass
- 1.35 kg certified BARDOUX tall fescue
- 0.50 kg certified WINNETOU timothy
- 0.40 kg certified PARDUS meadow fescue
- 2.50 kg commercial sainfoin
- 0.55 kg certified IONA white clover
- 0.50 kg certified AVISTO red clover
- 0.20 kg certified ETINCELLE lucerne (rhizobium inoc.)
- 0.15 kg certified LUZELLE lucerne (rhizobium inoc.)
- 0.30 kg certified AURORA alsike clover
- 0.25 kg commercial sweet clover
- 0.20 kg certified LEO birdsfoot trefoil
- 0.60 kg burnet
- 0.55 kg certified PUNA / ENDURE chicory blend
- 0.25 kg certified ENDURANCE ribgrass
- 0.05 kg sheeps parsley
- 0.05 kg yarrow

13.00 kg/acre - £103.95

32.50 kg/ha - £259.88



Heavy Land Herbal Ley
10th July, Berkshire



Interested in herbal leys? Learn more about their benefits and how they've stood the test of time in our 32 page farmers guide - **The Herbal Ley Farming System**

Visit cotswoldseeds.com to download your copy.

First Hand

Jonathan Chapman



| | |
|-------------------|---|
| Farm Type | Pastoral |
| Location | Chiltern Hills |
| Size | 700 Acres |
| Soil Type | Sandy clay loam, clay and flint, chalk |
| Mixes Used | Herbal Leys / GS4 Legume & Herb Rich Sward |

Jonathan Chapman started using herbal leys five years ago in an arable conversion and says the results have surpassed his expectations.

Bailey Hill Farm, in the Chiltern Hills in South Buckinghamshire, totals 700 acres divided into seven areas of land, all of which are in Countryside Stewardship Schemes. One area is in arable conversion and the rest is GS2 long term, low-input permanent grassland. The farm is pastoral, with meat from the mob-grazed sheep and Red Devons and pedigree Murray Grey cattle sold direct to the on-farm butchery.

Jonathan describes the soil type as sandy clay loam, over a clay and flint, over chalk. 'It's quite a mixture and it's quite difficult ground to farm. In many ways it's the worst of both worlds. It tends to dry out in the summer very rapidly because we are on a south-facing hill and it's always breezy but in winter it tends to lie wet because of the clay layer under the topsoil.'

The first herbal ley went in five years ago on a tenanted area of the farm which had been in a continuous short arable rotation of oilseed rape, barley and wheat for nearly thirty years. As part

of the mid-tier stewardship requirements, a soil test was carried out prior to drilling the herbal ley. The results were poor, with carbon content of the soil below 2%. The aim of planting the herbal ley was to regenerate the soil, improve the biodiversity on the farm and produce forage for the cattle.

Jonathan asked Cotswold Seeds to create a bespoke mixture with some late perennial ryegrasses and creeping red fescues to provide 'a bit of infill between the plants and give added soil protection' and he experimented with various methods of establishment - sowing in the spring as well as the autumn. He's used a conventional drill as well as a cross slot direct drill and all the establishments were successful, with the help of some well-timed rain! After direct drilling in August a lot of grass came through in the mix but after taking a silage cut in the following spring, the legumes all came through really well.

'To say it has surpassed my expectations would be an understatement, especially in the dry years like last year,' enthuses Jonathan. 'Species like the deep rooting legumes, chicory, other herbs, sainfoin and plantain will keep going when the rainfall drops off and commercial ryegrass varieties go dormant and burn off. The chalk loving sainfoin has been a sensation. It's lasted a lot longer than I thought it would. We have just tested the soils on the arable conversion herbal ley and recorded 3.8% organic matter, meaning it's nearly doubled in 5 years!'

'We have just tested the soils on the arable conversion herbal ley and it's nearly doubled in 5 years.'

Jonathan has found so many benefits from the herbal leys.

'It's not just about protein and energy. When you are feeding cattle it's also about the mineral content which enables body systems to function correctly. The herbal ley provides a good balanced ration. It's like a salad leaf bowl in terms of variety. Instead of boring old ryegrass the cattle can go and nibble on some white clover, red clover, sainfoin, or whatever takes their fancy. By mob grazing we encourage them to eat the whole lot and it avoids the problems you'd get of certain varieties prospering and other things dying out.'

The herbal leys have improved the animals' condition and growth rates which has been particularly beneficial with young animals. 'We graze the yearlings on the herbal ley because they need protein to grow a frame with and regularly achieve average growth rates of 950 grams per day over a whole 8 month grazing season,' says Jonathan.

There's also been a surprising welfare benefit. 'Because the animal puts his head down into the tall herbal it keeps the flies off them. We don't fly treat any of the cattle like we used to.' Jonathan is also recording 'very low faecal egg counts when they are on the herbal leys,' thanks to the anthelmintic properties of species like sainfoin, birdsfoot trefoil and chicory.

'It's a win win,' says Jonathan.

Intensive Dairy

The latest ryegrass swards to maximise milk from grazed grass.

Sowing and Growing

Suitable soils

Ryegrass is a shallow-rooted grass and should be grown on moisture-retentive soils that do not dry out. The target soil pH for ryegrass grass leys is slightly acidic at around 6.

When to sow

Ryegrass will germinate quickly from seed and sowings can be made from late February until early October in southern areas. However, most seed is sown in March and April and from late July until mid September when soil temperatures are above 7°C.

How to sow

Drill in two directions into a fine, firm seedbed at 10-20mm. Rolling with either a Cambridge or flat roller before and after sowing is recommended. Broadcast seed should be harrowed lightly after sowing and before rolling.

Management

Optimum sward height for grazing is 7-10cm. Early bite can be obtained on light, sheltered land from Intensive Dairy Graze - Early. Around 20 acres (8 ha) is advisable to provide early bite for 100 cows. Mid summer grazing is increased by grazing ryegrass hard early in the season as this stimulates tiller production and results in more leaves and less stem. Under-grazing should be avoided as this leads to stem production and loss of forage

Mixes

Intensive Dairy Graze - Early

Four - Five Year Ley

Code: MIX3

To provide quality grazing throughout the season this mixture includes tetraploid ryegrasses which will increase palatability and voluntary intake. Containing early, mid and late season grasses, this ley is suited to light land, requires early grazing and can help to extend the grazing season. The inclusion of the 'Aber' strains ensures D-values remain high.

- 3.00 kg certified ABEREVE tet. hybrid ryegrass
- 2.00 kg certified ABERWOLF perennial ryegrass
- 2.50 kg certified CALIBRA tet. perennial ryegrass
- 2.50 kg certified ABERSPEY tet. perennial ryegrass
- 2.00 kg certified TWYMAX tet. perennial ryegrass
- 2.00 kg certified ABERBANN perennial ryegrass

14.00 kg/acre - £68.94

35.00 kg/ha - £172.35

Intensive Dairy Graze - Late

Five Year Plus Ley

Code: MIX4

A proper late, thick-bottomed sward for summer grazing or late silage making on heavier soils. A high sowing rate of palatable grasses including high sugar 'Aber' varieties with consistent D values and late diploid DLF varieties with very good crown rust and drechslera scores, to ensure grazing remains palatable late into the autumn. This mix costs more than other ryegrass mixes but provides an ideal grazing sward for at least five years.

- 4.00 kg certified ABERWOLF perennial ryegrass
- 4.00 kg certified ABERSPEY tet. perennial ryegrass
- 4.00 kg certified TWYMAX tet. perennial ryegrass
- 3.00 kg certified TODDINGTON perennial ryegrass

15.00 kg/acre - £79.98

37.50 kg/ha - £199.95

quality. To avoid winter damage, ryegrass should be grazed down to 4cm at the end of the season.

Nutrient requirements

N fertiliser (70kg N/ha) will be required in mid February in mild areas to mid April for northern or upland districts. Provided soil moisture is available, a mid season N fertiliser application (60kg N/ha) will produce more grass. On land where late season grass can be utilised a further dressing of N (40kg N/ha) can be applied in late August. P and K should be maintained at ADAS index 2

Yield potential

Yields of around 13t DM/ha are achievable if N levels are maintained and grazing is actively managed.

Grazed grass is by far the most important and economical feed and can provide around two thirds of forage on dairy farms.

Ryegrass mixtures provide very high annual yields when managed intensively in a high-input system. Ryegrasses allow for higher stocking rates than alternative grasses, such as meadow fescue or cocksfoot, because they are significantly more responsive to nitrogen fertiliser.

These mixtures include the latest varieties and grow very well on moisture-retentive 'ryegrass soils', providing grass from spring through summer and well into the autumn.



Long Term Leys

Good traditional leys that will produce grass for years to come.

Long term leys are ideal for self-sufficient beef and sheep farmers wanting to produce profitable stock with the emphasis on seasonal production, live weight gain and finishing healthy animals.

The long term ley mixtures contain perennial ryegrass or meadow fescue along with timothy and clover for good year-round production. Clover is an excellent protein source which increases production, reduces inputs and maintains profit margins.

All grasses have a lifespan. Some such as timothy and meadow fescue are very long lived and so can be considered permanent. Most ryegrasses are suited to short or medium term leys, but some varieties of late perennial ryegrass are persistent and suited to long term leys.

Under Sowing a Spring Cereal

Since the advent of the *Norfolk Four Course* rotation, by Coke of Holkham, leys have often been sown underneath a spring sown cereal. This when done correctly protects the vulnerable new ley from hot weather and leaves a new ley well established after the cereal has been harvested. Any cereal can be under sown but barley and oats are most popular.

The competition factor should be reduced to a minimum by sowing the cereal, at two thirds the normal rate, and the ley seeds mix at the same time. The cereal should be drilled in and the grass seed mix broadcast on the surface, then harrowed and rolled. Some farmers wait until the cereal is up with 3 or 4 leaves before sowing as there is less risk of having a lot of green material going through the combine at harvest. This is really only advisable in high rainfall areas and not usually necessary in drier districts.

Sometimes, if the weather is bad, it is not possible to sow before the cereal has germinated. In this case sowing of the ley mix should be delayed until the cereal is through and well established with 3 or 4 leaves.

Sowing and Growing

Suitable soils and optimum pH

These leys are suitable for all soils apart from light ones. Ideally pH6-7.

When to sow

These long-lasting leys take time to germinate and become established. It is therefore essential to sow when growing conditions are good and not too early in the spring before the soil is warm. They are often sown in spring but autumn sowings can be contemplated provided the seed is in by early September. These leys contain many small-seeded species and are best broadcast as this leads to more even plant distribution. Once sown, roll immediately to ensure good soil-to-seed contact.

How to sow

With long term leys it is extremely important to control perennial weeds prior to sowing. As these mixes contain small seeded species such as timothy or clover it is best to sow at no more than 10mm into a fine seed bed. A cover crop of westerwolds ryegrass can provide additional bulk in the year of sowing but is not advisable on heavy ground as they may out-compete the other species in the mix. These mixes can alternatively be undersown to a spring cereal which has been drilled at a reduced rate.

Management

Light grazing with sheep or young cattle will consolidate new plants, encourage grass to tiller and control annual weeds (known as the 'golden hoof'). Cutting for silage or hay is best left until the ley is well established in its second season.

Nutrient requirements

These leys should receive no more than 100kg N/ha with the biggest demand (60kg N/ha) in March and April if a silage cut is to be obtained. Pochon Persistent requires very little or no N as the high clover content (30-50%) will fix N in the soil.

Yield potential

Yields of 12t DM/ha should be achieved.

Mixes

Pochon Persistent

High Clover Long Term Grazing Ley Code: MIXCG01

For over thirty years Pochon has proven very successful on a wide range of conventional and organic farms. This mix is suitable for taking a cut of silage, but is mainly for rotational grazing. Including the best strains of high yielding white clovers from Aberystwyth, it gives excellent mid-summer production without artificial N.

- 3.00 kg certified TODDINGTON perennial ryegrass
- 2.00 kg certified ABERBANN perennial ryegrass
- 3.00 kg certified CALIBRA tet. perennial ryegrass
- 2.50 kg certified TWYMAX tet. perennial ryegrass
- 0.60 kg certified ABERPEARL white clover
- 0.60 kg certified ABERHERALD white clover
- 0.30 kg certified ABERACE wild white clover

12.00 kg/acre - £81.27 30.00 kg/ha - £203.18



Permanent Grass
10th June, Northamptonshire

Permanent Grass

Long Term Grazing or Cutting Code: MIX6

This versatile mixture contains persistent varieties ensuring good yields for cutting and grazing over many years. Timothy is extremely resistant to cold temperatures and provides good late-season growth. The thick-bottomed sward structure is obtained by using late perennial ryegrasses and highly nutritious white clover. This mixture is very hardy and can be grown in upland or lowland areas.

- 3.00 kg certified TODDINGTON perennial ryegrass
- 2.00 kg certified ABERBANN perennial ryegrass
- 2.80 kg certified TWYMAX tet. perennial ryegrass
- 2.50 kg certified BOYNE perennial ryegrass
- 1.70 kg certified WINNETOU timothy
- 0.40 kg certified IONA white clover
- 0.40 kg certified ABERHERALD white clover
- 0.20 kg certified ABERACE wild white clover

13.00 kg/acre - £85.97 32.50 kg/ha - £214.93

Long Lasting Upland

Dual Purpose Mix Code: MIXCG05

This ryegrass-free mix is very long lasting and will tolerate harsh upland conditions. It is very palatable and is best when rotationally grazed to allow a period of recovery and regrowth. It can also be cut for silage or hay with the best quality forage coming from swards which are cut before heading.

- 7.50 kg certified PARDUS meadow fescue
- 3.00 kg certified WINNETOU timothy
- 1.00 kg certified ALTASWEDE late flowering red clover
- 0.80 kg certified ABERHERALD white clover
- 0.20 kg certified ABERACE wild white clover

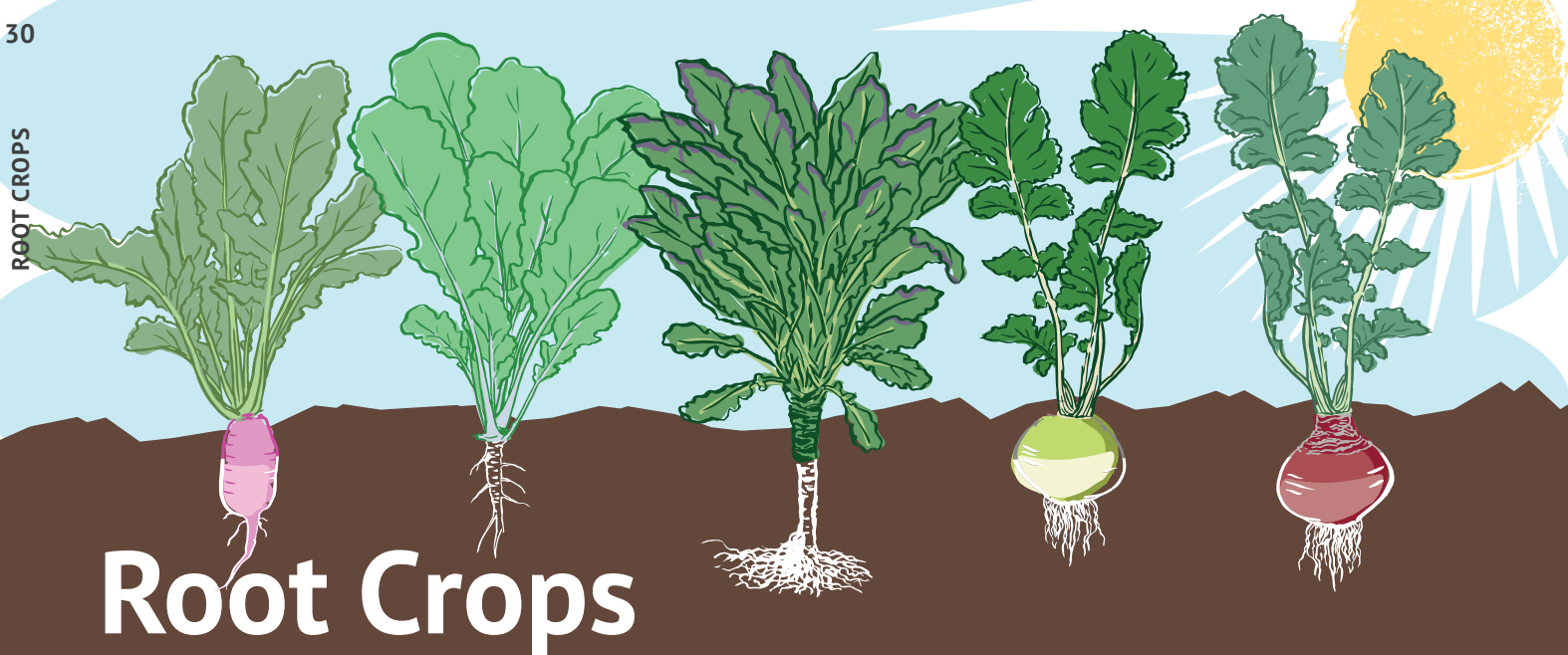
12.50 kg/acre - £99.98 31.25 kg/ha - £249.95

Additions



Westerwolds can provide cover during establishment and increase yields in the first year. A small amount of forage rape can be added to offer early grazing and cover.

Add 3 kg of westerwolds **£8.85 per acre**
Add 0.25 kg forage rape **£1.22 per acre**



Root Crops

Fodder crops provide essential forage when grass is restricted. They are also a vital break crop.

Once sown, brassicas quickly produce a fodder crop. Adding muck or fertiliser to the crop makes it as productive as possible. This then feeds a larger number of livestock, so returning more dung to the soil, making the most of a very beneficial cycle. Once the decision has been made to break up a ley or pasture, many farmers sow a brassica fodder crop. These are not troubled by grass pests or diseases and thrive on the nitrates released by the decaying sward.

Reduce feed costs

These short-term catch crops are sown in late spring or summer to provide valuable home-grown fodder for buffer feeding dairy cows or finishing lambs in autumn or winter, when other sources of forage are limited. Turnips and rape grow quickly, needing just 10 weeks. Kale, swede and hardy turnip take a bit longer but are much more winter hardy and excellent for late-winter grazing. All are highly beneficial break crops which reduce grassland weeds and pest attacks.

Summer feed for dairy cows

Stubble turnips are palatable, energy-rich and offer dairy farmers the opportunity to prevent a feed shortage over the summer. To allow the rumen to adjust, cows should be introduced gradually to the crop for the first few days.

Lamb finishing

Lambs can be successfully fattened on fodder brassicas, gaining around 100-150 grams per day. The addition of a small quantity of hay, barley or concentrates is beneficial. Root crops, especially when grown on free-draining soils, are excellent for late autumn and winter use.



Pinfold Kale
11th November, Worcestershire

Sowing and Growing

Suitable soils and optimum pH

These crops will grow on most soil types provided they are well-textured and can give a fine tilth when cultivated. However, it's important to sow on well-drained ground for winter grazing. Optimum pH6.2.

When to sow

Fast growing root crops can be sown anytime from spring through till early autumn providing soil moisture is sufficient. The slower growing crops such as the Hardy Root Mix, maincrop turnip, swede, fodder beet and kale should be sown in late spring (April – June).

How to sow

Root crops (except fodder beet) can be direct drilled with a Moore Uni-Drill (or similar). If a root crop is to follow a grass ley, glyphosate can be applied to the grass prior to mowing. Once the grass is removed, seed can be direct drilled into its stubble and can establish quickly unhindered by weeds. A good dose of slurry or FYM should be applied before sowing if possible.

Management

Electric fencing allows the crop to be fed at a controlled rate and should be long enough to give all stock access to the crop face. By doing this there is also less wastage through trampling. Ideally, a grass 'runback' should be provided for animals to lie on.

Nutrient requirements

These crops need 70kg N, 50kg P and 50kg K per hectare.

Yield potential

| | DM/Ha | CP (%) | D-Value |
|------------------|-------|--------|---------|
| Leafy Turnip | 4.0t | 18 | 68 |
| Stubble Turnips | 4.5t | 17 | 69 |
| Maincrop Turnips | 6.0t | 9 | 80 |
| Swede | 8.5t | 11 | 82 |
| Fodder Beet | 14.0t | 12 | 78 |
| Kale | 9.0t | 17 | 68 |
| Forage Rape | 4.5t | 19 | 68 |
| Hybrid Rape/Kale | 6.0t | 19 | 68 |

Mixes

Early Fold Root Mix

Fast Growing and Cheap Seed

Code: MIXEF

This is a fast growing mixture capable of producing up to 45 tonnes per hectare with a dry matter content of 10% in approximately 10-12 weeks. Three acres feeds 100 sheep (complete diet) or 50 cows (quarter of diet) for a month.

- 1.50 kg certified VOLLEND A stubble turnips
- 0.50 kg certified AKELA forage rape

2.00 kg/acre - £10.70

5.00 kg/ha - £26.75

Summer Early Graze Forage Mix

Fast Growing and Cheap Seed

Code: MIXSEG

An alternative to the Early Fold Root Mix above. Good for sowing in May & June and grazing during autumn.

- 1.00 kg certified AVALON leafy turnips
- 1.00 kg certified AKELA forage rape

2.00 kg/acre - £13.40

5.00 kg/ha - £33.50

Straights

Fodder Beet

This root crop provides a huge yield which is highly digestible and has a high energy content. It should be sown in April and, because the seed is pelleted, can only be sown with a precision drill. **Seed is only available in one acre packs (50,000 seed units).** Robbos variety is suitable for leaf lifting harvester and Feldherr for hand harvesting or grazing in situ.

Robbos

£115.00 per acre

Feldherr

£115.00 per acre

Forage Rape

This protein rich green forage can be ready to graze in as little as 12 weeks and is ideal for fattening lambs. the Akela variety exhibits very good frost tolerance and is extremely late flowering. Sowing rate 4.00 kg/acre.

Akela

4.00 kg/acre - £19.60

10.00 kg/ha - £49.00

Straights

Stubble Turnip

Turnips are grown in most areas of the UK as a highly digestible catch crop, ready within 10-12 weeks from sowing. Sowing rate 2.00 kg/acre.

Vollenda

2.00 kg/acre - £11.00

5.00 kg/ha - £27.50

Kale

Kale is high yielding, protein rich and winter hardy. Usually grazed between September and March, depending on sowing time. Full crop ready in 20 weeks. Sowing rate 2.00 kg/acre.

Pinfold

2.00 kg/acre - £36.40

5.00 kg/ha - £91.00

Maris Kestrel

2.00 kg/acre - £40.00

5.00 kg/ha - £100.00

Hybrid Rape/Kale

Introduced to capitalise on the benefits of both rape and kale, this fodder crop is ready in 12 weeks from drilling. Many farmers favour this crop as it can offer good regrowth. Choose Redstart for winter hardiness and strong regrowth or Interval for good yields and high palatability. Sowing rate 3.00 kg/acre.

Redstart

3.00 kg/acre - £26.19

7.50 kg/ha - £65.48

Interval

3.00 kg/acre - £17.25

7.50 kg/ha - £43.13

Maincrop Turnip

This is the hardier type of turnip which requires 20 weeks growth and is suitable for grazing late into the winter. Hardy turnips yield around a third more than stubble turnips. Sowing rate 2.00 kg/acre.

Green Globe

2.00 kg/acre - £23.20

5.00 kg/ha - £58.00

Swede

This crop is ideally suited to cooler, wetter parts of the north and west of Britain. For stock or pot. Sowing rate 1.50 kg/acre.

Gowrie

1.50 kg/acre - £97.50

3.75 kg/ha - £243.75

Equine

Horses' requirements are sometimes different to that of sheep and cattle. These mixes have been created specifically with equine needs in mind.

Sowing and Growing

Suitable soils and optimum pH

These mixes are suitable for most soil types, mixes containing forage herbs prefer lighter soils which are less grass dominant.

When to sow

Sow from April to September when soil temperature is above 7°C. Ryegrass based mixes or surface mixes with high sowing rates can be sown later than non ryegrass grazing mixes.

How to sow

Mixes can be broadcast or drilled but sown no deeper than 1cm. Always roll after sowing, if using a Cambridge roller, roll the field twice for maximum consolidation and soil contact.

Surface mix sowing rates vary. High rates are used on areas that receive lots of use and need fast establishment, low use areas or areas that are being patched up have scope to reduce the sowing rate.

Management

New swards can be lightly grazed around five or six weeks after establishment. Overgrazing should be avoided, swards should be given regular rest periods of a few weeks throughout the growing season to recover.

Surface mixes can be topped 4-5 weeks after sowing and again 4 weeks later to encourage the sward to thicken and plants to tiller, creating a denser surface.

Annual weeds will disappear when grazed. Perennial weeds should be controlled prior to seeding. Selective herbicides can be used on docks, thistles & nettles.

Nutrient requirements

Soil nutrient levels should be checked every 2 years and deficiencies corrected. If fertilising, take horses off for 2 weeks after application to allow the nutrients to be absorbed properly. Slow release N fertiliser products are available to reduce a strong flush of grass directly after application e.g. 'Paddock Royale' (approx 2x 25kg bags per acre, Yara Guidelines).

Why is it so important to get your pasture right?

It is generally believed that wild horses had the ability to self-medicate, roaming freely to forage for different plant species that would naturally provide them with the macro and micro nutrients, minerals and vitamins that they need. Due to a number of factors such as herbicide use and popularity of



aggressive species such as ryegrasses the diversity of species and consequently the nutritive value in swards has declined. It has become increasingly popular to address the shortfalls in the pasture by feeding concentrates and supplements, but this is not the healthiest option for the horse or for the environment.

There are a number of health issues that can be directly related to pasture management, nutritional content of the pasture and time spent eating grass or conserved grass (hay or haylage). These include laminitis, developmental orthopaedic disease, gastric ulcers, colic, respiratory diseases, mud fever, and wormer resistance. By getting the right mix of grass, legume and herb species for your land and your horse's needs the aim is for your horse to gain the majority, if not all, of its nutritional requirements from forage, relying less on concentrates and spending more time out in the field whatever the weather.

Surface & Repair Mixtures

Good grass surfaces are key for exercising horses safely and effectively. High sowing rates create dense turfs which withstand heavy equine usage. The species chosen ensure a uniform surface and maximum cushioning for the horses without affecting performance, if managed correctly.

Over-seeding can be a useful, low cost way of regenerating existing pasture which has become thin and tired with age or damaged through over-grazing or use. The existing grass sward is a very competitive environment for any new seeds to establish so ryegrass is usually used for over-seeding because it is the quickest to germinate and suitably aggressive.

Surface Mix

Racecourse, Gallop and Cross Country

Permanent

Code: MIX8

This mixture is very dense and resilient and contains spreading grasses with the ability to fill bare patches.

- 50% certified MAXIMA creeping red fescue
- 25% certified ESQUIRE dwarf perennial ryegrass
- 25% certified EVORA smooth stalked meadowgrass

50-160 kg/acre

125-400 kg/ha - £5.84 per kg

Grass

Herb

Equine Grazing Mixes

Standard Horse Pasture

Long-Term Grazing and Hay

Code: MIX7

This is our standard mix which provides a fast establishing dense turf for grazing or the occasional cut of hay. It does contain ryegrass so would not be suitable for horses or ponies that are prone to laminitis or Equine Metabolic Syndrome.

- 2.00 kg certified BOYNE perennial ryegrass
- 4.00 kg certified TODDINGTON perennial ryegrass
- 2.20 kg certified MAXIMA creeping red fescue
- 1.40 kg certified WINNETOU timothy
- 1.20 kg certified CHARACTER red/chewings fescue
- 1.20 kg certified PARDUS meadow fescue
- 1.00 kg certified EVORA smooth stalked meadowgrass

13.00 kg/acre - £76.23

32.50 kg/ha - £190.58

Equine Pasture Mix

Long Term and No Ryegrass

Code: MIX13

This is a persistent, non-ryegrass mix providing good quality forage with a low sugar content. Although this mix will take a little longer to establish than a ryegrass based mix, it will provide a dense, resilient turf with balanced forage for grazing and hay.

- 3.55 kg certified PARDUS meadow fescue
- 2.50 kg certified EVORA smooth stalked meadowgrass
- 2.50 kg certified MAXIMA creeping red fescue
- 2.35 kg certified CHARACTER red/chewings fescue
- 1.60 kg certified WINNETOU timothy
- 1.50 kg certified BARDOUX tall fescue

14.00 kg/acre - £89.84

35.00 kg/ha - £224.60

Natural Pony Paddock

Long Term with Herbs & No Ryegrass

Code: MIXPP

This non-ryegrass mix contains a very wide selection of grasses and herbs, improving drought tolerance, forage value and fibre content, providing a healthy, balanced diet. The absence of ryegrass species lowers the risk of laminitis due to a lower sugar and higher fibre content. This mix is slower to establish than those with ryegrass.

- 3.00 kg certified PARDUS meadow fescue
- 2.50 kg certified MAXIMA creeping red fescue
- 1.85 kg certified EVORA smooth stalked meadowgrass
- 1.70 kg certified DONATA cocksfoot
- 1.50 kg certified BARDOUX tall fescue
- 1.40 kg certified WINNETOU timothy
- 1.25 kg certified CHARACTER red/chewings fescue
- 0.25 kg certified HIGHLAND common bentgrass
- 0.10 kg certified TENO smaller catstail
- 0.25 kg burnet
- 0.10 kg certified ENDURANCE ribgrass
- 0.05 kg yarrow
- 0.05 kg sheeps parsley

14.00 kg/acre - £97.79

35.00 kg/ha - £244.48

Equine Over-Seeding

Longer Term Four to Five Years

Code: MIXEQOS

A long duration non-ryegrass mixture for over-seeding grazing pastures where more forage is required.

- 2.75 kg certified PARDUS meadow fescue
- 1.50 kg certified EVORA smooth stalked meadowgrass
- 1.40 kg certified WINNETOU timothy
- 1.00 kg certified MAXIMA creeping red fescue
- 0.75 kg certified SPARTA cocksfoot
- 0.60 kg certified CHARACTER red/chewings fescue

8.00 kg/acre - £52.90

20.00 kg/ha - £132.25

Paddock and Gateway Repair

Over-Seeding

Code: MIXPAD

A high sowing rate of fast-establishing mixture which provides a thick grass cover for use on poached areas or to improve pasture quality.

- 4.00 kg certified LIBONUS westerwolds ryegrass
- 4.40 kg certified TODDINGTON perennial ryegrass
- 4.30 kg certified ESQUIRE dwarf perennial ryegrass
- 4.30 kg certified MAXIMA creeping red fescue
- 3.00 kg certified EVORA smooth stalked meadowgrass

20.00 kg/acre - £105.43

50.00 kg/ha - £263.58

Pasture Over-Seeding

Longer Term Four to Five Years

Code: MIXOSH

A long duration ryegrass mixture for over-seeding grazing pastures where more forage is required.

- 5.00 kg certified TODDINGTON perennial ryegrass
- 5.00 kg certified ABERBANN perennial ryegrass

10.00 kg/acre - £55.50

25.00 kg/ha - £138.75





Green Manures

Protecting and enhancing our soils.

Summer Sown Mixes

Summer green manures are planted from late spring onwards on bare ground and are incorporated before the sowing of a winter cash crop. A good summer green manure will be ready for turning-in after only 8-10 weeks. These crops give good leaf canopy cover to block out light, suppressing weed growth.

These green manures can be sown on their own or as an understory to a main crop and last between 2 and 6 months. As legumes will only fix nitrogen when the soil is above 8°C they are effective between April and August.

Overwinter Mixes

Winter green manures such as rye or westerwolds scavenge excess nitrogen from previous crops which prevents it leaching over the winter. The nitrogen held within the green manure crop is then released when it is incorporated.

Legumes like vetch can be used for winter cover and, provided that these are sown by September, can fix up to 200kg N/ha for use by the following cash crop. The canopies of these plants also protect against soil erosion.

Longer Term Leys

Slower growing perennial legumes such as red and white clover are used to add nitrogen to the soil over a long period.

Red clover fixes upwards of 200kg N/ha which is released rapidly after incorporation. To delay the release of nitrogen, clover is mixed with grass which is higher in carbon and acts like a sponge, holding the nitrogen for longer. This is especially important for subsequent autumn-sown crops where the nitrogen demand is highest 6 or 7 months after the green manure crop.

Sowing and Growing

Suitable soils and optimum pH

These will grow on most soil types with a pH above 5.6.

When to sow

Sow summer mixes in warm soil between May and July. If undersowing, seed should be broadcast from mid March in damp conditions before the host crop canopy closes in. Cover for the winter should be sown by late September although rye and vetch can be sown into October.

How to sow

Rye and vetch seeds can be drilled at up to 25mm. All other mixes should be drilled or broadcast at no more than 10mm.

Management

Summer green manures will be ready for incorporation after 8-10 weeks normally at the onset of flowering. Winter green manures can be incorporated in April or May. Westerwolds ryegrass will regrow after cutting so can be left through the summer for further cutting or mulching. To minimise the risk of ryegrass seed being shed, cut before the seed heads are visible.

Yield potential

The amount of N fixed by legumes depends on the success of the green manure. Generally, a reasonable crop can fix over of 100kg N/ha from a spring or summer sowing. Rye can scavenge and hold 90% of soil N, westerwolds about 70% and vetch and red clover can fix upwards of 200kg N/ha if left to grow.



Mustard & Phacelia Green Manure mix
20th July, Lincolnshire

Brassica

Legume

Herb

Grass

Short term mixes

Summer Quick Fix

Nitrogen Boost

Code: MIXSQF

The purpose of this mixture is to build soil N in a short time. It is a fast-growing, annual mixture that is at its best when sown into warm soils.

- 1.00 kg certified ZLATA mustard
- 0.30 kg certified IRIS fodder radish
- 1.50 kg certified HEUSERS OSTSAAT crimson clover
- 1.20 kg certified AKENATON egyptian/Berseem clover
- 1.00 kg commercial sweet clover
- 0.50 kg certified LASER persian clover

5.50 kg/acre - £38.61

13.75 kg/ha - £96.53

Summer Green Manure

Early Sown N-Fixer

Code: MIXCCE

In warm soils, this mix can provide 150kg of N per hectare from a summer sowing. Very rapid growth with the potential to leave in over winter.

- 1.35 kg certified SHAKIRA Italian ryegrass
- 0.90 kg certified ZLATA mustard
- 0.60 kg certified IRIS fodder radish
- 0.20 kg certified DIAKON tillage radish
- 0.85 kg certified HEUSERS OSTSAAT crimson clover
- 0.55 kg commercial sweet clover
- 0.45 kg certified AKENATON egyptian/berseem clover
- 0.10 kg certified GLOBAL red clover

5.00 kg/acre - £26.16

12.50 kg/ha - £65.40

Yellow Trefoil/White Clover

Intercrop Mixture

Code: MIXINT

This mixture will fill the base of a main crop brassica or cereal without affecting its yield. It reduces weed competition, adds organic matter and fixes nitrogen. Trefoil rarely interferes with harvest as it is low growing. This strong growth suppresses weeds, especially if left in for a second year.

- 1.90 kg certified ABERHERALD white clover
- 1.10 kg certified VIRGO PAJBJERG yellow trefoil

3.00 kg/acre - £51.87

7.50 kg/ha - £129.68

Over winter mixes

Rye/Vetch

Overwinter Mix

Code: MIXRYEV

Growing a N lifter and fixer together is a reliable way of improving soils over the winter. An excellent weed suppressor. Available from September.

- 80% certified ELIAS forage rye
- 20% certified CARAVELLE vetch

25.00-75.00 kg/acre

£1.75 per kg

Ryegrass/Vetch

Overwinter Mix

Code: MIXWWV

An economical, effective option for overwinter soil management. Adds large amounts of N and organic matter.

- 10.00 kg certified LIBONUS westerwolds ryegrass
- 15.00 kg certified CARAVELLE vetch

25.00 kg/acre - £81.25

62.50 kg/ha - £203.13

Longer term mixes

Fertility Builder

One-Two Year Mixture

Code: MIXFB

A grass and clover mix is the most effective green manure of all for improving soil fertility and structure. To realise its full potential it should be grown for at least one full year before incorporation.

- 5.85 kg certified CALIBRA tet. perennial ryegrass
- 2.65 kg certified GLOBAL red clover
- 0.50 kg certified IONA white clover

9.00 kg/acre - £64.76

22.50 kg/ha - £161.90

Humus Builder

2-4 Year Soil Structure Improver

Code: MIXHB

This mix utilises species with very strong tap roots for huge improvements to soil structure and organic matter levels, ideal on light or dry land.

- 4.00 kg certified GLOBAL red clover
- 3.00 kg certified SPARTA cocksfoot
- 0.50 kg certified PUNA / ENDURE chicory blend

7.50 kg/acre - £70.13

18.75 kg/ha - £175.33

First Hand

Stuart Johnson: Soil Farmer of the Year



| | |
|-------------------|--------------------------------------|
| Farm Type | Mixed |
| Location | Northumberland |
| Size | Approx 1000 acres |
| Soil Type | Mixed |
| Mixes Used | Legume & Herb Rich Swards |

Changing an intensive system to regenerative livestock with legume and herb rich swards won Stuart Johnson the title of Soil Farmer of the Year in 2023, an award organised by Farm Carbon Toolkit which Cotswold Seeds has proudly helped champion for many years.

'We made the changes purely for financial reasons, to make the business more resilient and I had little interest in the benefits to the environment to begin with,' says Stuart. 'We were just trying to save on input costs but then you realise, financial benefits only really come with a functioning ecosystem.'

'We experimented with strip tillage and shallow plough for a few years and found that healthier soils could manage reduced inputs better, so we went full no till with the arable in 2017, inspired by Gabe Brown and Dr Alan Williams and Shane New of Understanding Ag.'

'The legume and herb rich sward is key. We mob-graze, moving cattle and sheep every day. The cattle graze half and trample down the other half and then we shift them off, followed by a rest period to let the plants bounce back. We are currently using a 5/2 system, with five years of mob-grazed legume and herb

rich swards to increase the biological activity, which we can then utilise with a two year arable crop with little to no inputs.

'I tell people it's like building up a bank account for five years, then we cash a little bit out, we spend the interest but then go back to building that bank account back up again straight after.'

It's certainly paid off in terms of inputs saved.

'The results are staggering,' says Stuart. 'We have reduced arable crops synthetic fertiliser use by sixty per cent and aim to go further, alongside eradicating all synthetic fertilisers on grassland. We used to use seventy to ninety tons of bagged fertiliser; the last two years we have used less than ten, purely on the arable. We haven't applied any bagged P and K for six seasons now and yet the soil sample indices have stabilised rather than decreasing. We have cut out all the fungicides and insecticides for the last four seasons, just using a bit of herbicides as the cash crop establishes. We used to grow 150-250 acres of arable but since we've changed the system we are not keeping livestock in as long, so we don't need the straw.' Stuart has 190 head of calving cattle, including a flying herd of heifers which are calved and sold on with calves at foot and says they are feeding a lot less grain so have cut down the home use of cereals to seventy acres. 'We can now outwinter the cattle. We used to bring them in in November but they stayed out until mid January last year. We bring them in to calf in February and turn out again in March. The 600 strong flock of mob-grazed sheep have also now gone two years without the need to buy any supplementary feed, utilising mob-grazed legume and herb rich swards through the winter months and in the lead up to lambing which has replaced all extra inputs.'

'The results are staggering. We have reduced fertiliser use by sixty per cent.'

'In a conventional system you are very reliant on inputs which makes you reliant on price fluctuations or prices for stock. Take away that reliance on external companies and you place it all back in our hands. Resilience comes with a functioning ecosystem and healthy biodiversity. If someone told me ten years ago I'd be excited about looking in cow pats for dung beetles, I'd have laughed at them but if we have dung beetles, we know we have a functioning ecosystem and we can ride out those challenging dry or wet weather periods and come through the other side with resilient soils, a robust farming system and a strong business.'

Stuart was pleased to win Soil Farmer of the Year. 'It's great for stimulating discussion and it's nice to get a pat on the back for something in which I have a real passion.'



Chewing it Over

Sam Lane, our Technical Manager explains some of the options available through SFI and the need to carefully consider which seed mixtures will best suit the farming system.

Looking towards 2024, the SFI scheme seems firmly on the horizon. The outline of SFI is becoming clearer, we now have accessible and flexible options for arable and grassland farms, although some concerns have been raised about the suitability for upland areas.

As we head into the season, we hope to see further options rolled out, including an eagerly awaited summer cover crop option, specific organic choices and the ability to make more use of stacking certain actions.

While the flexibility of the scheme has been broadly welcomed, it has led to some grey areas within some options, we have seen confusion about how rigorously the guidance for each criteria in terms of seed mix contents should be followed, especially for those who may have been in previous Countryside Stewardship schemes, which were generally more prescriptive.

In my view the flexibility should help make them easier to integrate into a range of farming systems, and is a response to calls for less constrictive criteria in older environmental schemes.

However it should be remembered that in order to fully harness the benefits of these options and ensure the criteria is fully met, a pragmatic approach should be taken. I fear merely ticking boxes could lead to a tightening of rules and less flexibility in the next 3 year tranche.

‘It should be remembered that in order to fully harness the benefits of these options and ensure the criteria is fully met, a pragmatic approach should be taken.’

For example, options which aim to introduce legumes to fix ‘free’ nitrogen will only contribute substantially to soil fertility and reduce input costs if sown at a reasonable rate to ensure a sufficient legume population. A sward requires around 30-35% legume inclusion to fix approximately 150-200kgs of N per ha. Introducing or sowing a very low legume percentage, with low plant populations is unlikely to ensure the pasture is self-sufficient in terms of N fixation, which may not bring down the Nitrogen bill.

Thought should also be given to which plant species are being included in seed mixes.

As an example farmers looking to utilise the NUM3 Legume Fallow option as a short term, spring sown fertility builder, may wish to include a higher proportion of the fast establishing, cost effective annual legumes like berseem and crimson clover, which would suit this narrow gap in the rotation. Those wishing to use a Legume Fallow option for several years which will go through a number of winters, will need to utilise more perennial, winter hardy species like red clover, birdsfoot trefoil, alsike clover and white clover.

The subtle differences of these species may seem minor, but they will certainly help ensure the mixture does the job it needs to do for the best value and lasts in the ground for as long as the option requires.

Over the next few pages you will see a range of mixtures that have been tailored to suit certain time frames and gaps in the rotation, as well as trying to match the correct plant species depending on the ground type and soil pH.

We have ensured these mixes do the best job they can, specifying for example a ‘Light Land SAM3 Herbal Ley’ for those on thin, drought prone soil, or a ‘Stockless Arable’ mix, packed with fertility building red clover. These hardy, perennial clovers, will last several years and can be mulched multiple times throughout the season.

While we have lots to consider when making the decision to apply for the SFI scheme and which options to choose, once accepted, the next important step is giving plenty of thought to sowing timings and what machinery to use. As a rule of thumb the mixtures in the next few pages are generally classed as ‘small seeds’, which should not be sown too deep, aim to either broadcast or very shallow drill to a depth of around 10-15mm max.

We have plenty of structured mixture suggestions in our catalogue and website, if these don’t suit, we also look forward to talking through each scenario and tailoring our mixes to get the best results.

The Sustainable Farming Incentive (SFI)

“The Sustainable Farming Incentive (SFI) rewards farmers for farming practices that help produce food sustainably and protect the environment.” - GOV.UK

There are 23 options now available to farmers, the options have been grouped together into different actions, these range from actions for soils to actions for nutrient management. Each action will provide benefits for soil health and the environment.

The mixtures listed meet the requirements under the relative schemes and the box below provides a helpful check sheet to compare mixtures and SFI codes. If you are entering a scheme that is not listed or have any questions on SFI we can offer further advice and help to formulate bespoke mixtures that will suit your needs.

| CODE | SFI ACTION | SUGGESTED MIXTURE | PAGE |
|------|--|--|------------|
| SAM2 | Multi-species Winter Cover Crop | Quick Growth Cover Crop (SAM2) Multi Species 8 Way Cover Crop (SAM2) Diverse Grazeable Cover Crop (SAM2) | Page 42 |
| SAM3 | Herbal Leys | Light Land Legume & Herb Rich Sward (GS4/SAM3) Heavy Land Legume & Herb Rich Sward (GS4/SAM3) Herbal Cutting/ Silage Ley (SAM3) Stockless Arable Fertility Builder Ley (SAM3) | Page 40-41 |
| SAM3 | Over-seeding options | Herbal Over-seeding (SAM3) Diverse Over-seeding Heavy Land or Cutting (SAM3) | Page 40-41 |
| IPM2 | Flower-rich grass margins, blocks or in-field strips | Floristically Enhanced Field Margin (IPM2/AB8) Nectar Stewardship Mix (IPM2/AB8) | Page 44 |
| IPM3 | Companion crop on arable and horticultural land | Call for advice | |
| NUM2 | Legumes on improved grassland | Clover Over-seeding Mixtures | Page 2 |
| NUM3 | Legume Fallow | Legume Only Short-term (NUM3 Spring-Autumn Mix) 'Legume only' Fallow Mixture (NUM3/AB15) Autumn Sown 2 Year Grass/Legume Fallow (NUM3/AB15) | Page 43 |
| AHL1 | Pollen and nectar flower mix | The Operation Pollinator (AHL1/AB1) | Page 44 |
| AHL2 | Winter bird food on arable and horticultural land | One Year Winter Bird Food Survival Mixture (AHL2/AB9) Two Year Wild Bird Food - Cereal Separate (AHL2/AB9) Three Year Wild Bird Mix (AHL2) | Page 45 |
| AHL4 | 4m to 12m buffer strip on arable and horticultural land | Buffer Strip Grass Margin (AHL4) | Page 46 |

First Hand

David Illsley



| | |
|-------------------|---|
| Farm Type | Beef |
| Location | Berkshire |
| Size | 400 Acres |
| Soil Type | Sand and Chalk |
| Mixes Used | GS4 Legume & Herb Rich Sward |

David Illsley's four hundred acre farm near Newbury in Berkshire lies on soil which is difficult to farm; it's light and sandy overlaying chalk which is very dry and prone to drought. This means David's priority is adding resilience into his farming system by growing deep rooted forage mixes, combined with breeding low maintenance, low input, hardy cattle.

The farm is predominantly grassland, grazed by about 100 suckler animals run by David with the help of a part-time student from a nearby college. 'The cattle come out around the middle of April and will stay out during winter so it's a low cost, low input farming system,' David says. 'By far our biggest problem is providing enough grazing throughout the year because the soil type needs such a lot of rain, which is not guaranteed these days.'

Part of the farm is rotational, with an occasional crop of spring barley but the predominant crop is the leys as well as whole crop for silage, which is used as a nurse crop during the establishment of the GS4 mixes. The farm has been in countryside stewardship since 2019 with thirty acres per year given over to GS4 legume and herb rich swards. This option combines deep rooted grass, legumes and forage herbs. Other areas of the farm are traditional permanent pasture in lowland grassland options.

The GS4 legume and herb rich sward is an all round grazing or cutting mixture which promotes biodiversity, creates habitats, produces pollen and nectar and is also a superb soil conditioner as well as top quality forage. David found that planting these mixes across whole fields as an option under Countryside Stewardship was an ideal solution for him.

'I've used tailored rotational two year mixtures for a number of years, but I often leave them down for three years,' says David. 'Last year the establishment was slow because it was too dry in the summer and autumn but I just left them down an extra year and that worked just fine.'

The establishment and management fits in with his low input methodology. 'The ley is usually planted in the spring, undersown with a whole crop mix which is then taken for silage in the middle of June. The GS4 ley then grows away strongly once it has some space and light, taking over as the main crop for the following year.'

David doesn't need to use any fertiliser so the inclusion of robust levels of legumes like Red Clover, Sainfoin and Birdsfoot Trefoil are key to the system.

'Red Clover, Cocksfoot and Plantain have proved especially resilient on my dry land.'

'The challenge of using a mixed sward is that certain species can dominate depending on weather patterns and amount of rainfall and this year it was the cocksfoot that has dominated' says David, putting it down to the fact that it was especially dry the previous year and the lack of rainfall in spring earlier this year.

'Cocksfoot, Red Clover and Plantain have all proved very resilient which is what we want,' he says. 'We have quite a lot of Red Clover in fact, but the advantage of having so many mixed species is that the cows seem to graze it with no problems at all. There is lots of chicory as well and they seem to graze that happily, as long as it doesn't get too tall and mature. It's cut for silage, during the season which keeps it nice and fresh, encouraging leafy regrowth after the cut is taken.'

The ley is terminated by being ploughed up in the spring. 'We don't use any sprays and it's just put back into arable cropping or back into an undersown grass ley,' David explains.

David said he chose to use Cotswold Seeds because, 'nobody else does the range of multispecies mixes I wanted. It's the wide variety of deep rooting species available to put in these mixes that makes them much more resilient on challenging soil. I just need things to grow reliably,' states David. 'It's no good to me if plants die away when conditions go dry!'

SFI Herbal Leys

Reseed and over-seeding mixtures to satisfy SFI and Countryside Stewardship options

Light Land Legume & Herb Rich Sward (GS4/SAM3)

Perfect for Light, Thin Land Prone to Drought

Code: MIXLIGHT

A deep rooting herbal ley, designed to stay green on land that burns up in the summer, softer leaved cocksfoot and tall fescue varieties boosts palatability.

- 1.25 kg certified DONATA cocksfoot
- 1.10 kg certified BARDOUX tall fescue
- 1.00 kg certified CALIBRA tet. perennial ryegrass
- 0.73 kg certified LOFA festulolium
- 0.60 kg certified TODDINGTON perennial ryegrass
- 0.50 kg certified WINNETOU timothy
- 2.20 kg commercial sainfoin
- 0.45 kg certified AVISTO red clover
- 0.30 kg certified LEO birdsfoot trefoil
- 0.23 kg certified AURORA alsike clover
- 0.15 kg certified IONA white clover
- 0.15 kg certified ETINCELLE lucerne - (rhizobium inoc.)
- 0.10 kg certified LUZELLE lucerne - (rhizobium inoc.)
- 0.50 kg burnet
- 0.40 kg certified PUNA / ENDURE chicory blend
- 0.25 kg certified ENDURANCE ribgrass
- 0.04 kg sheeps parsley
- 0.04 kg yarrow
- 0.01 kg lesser knapweed

10.00 kg/acre - £79.94

25.00 kg/ha - £199.85

Heavy Land Legume & Herb Rich Sward (GS4/SAM3)

A Mix of Species Suiting Heavier, Clay Ground

Code: MIXHEAVY

A mix specifically designed to include species that suit heavier, wetter land such as timothy, meadow fescue, ryegrass and alsike clover.

- 2.00 kg certified CALIBRA tet. perennial ryegrass
- 1.47 kg certified PARDUS meadow fescue
- 1.20 kg certified WINNETOU timothy
- 1.00 kg certified LOFA festulolium
- 1.00 kg certified TODDINGTON perennial ryegrass
- 0.50 kg certified DONATA cocksfoot
- 0.55 kg certified AVISTO red clover
- 0.40 kg certified AURORA alsike clover
- 0.35 kg certified IONA white clover
- 0.20 kg certified LEO birdsfoot trefoil
- 0.20 kg commercial sweet clover
- 0.50 kg burnet
- 0.35 kg certified PUNA / ENDURE chicory blend
- 0.25 kg certified ENDURANCE ribgrass
- 0.02 kg yarrow
- 0.01 kg lesser knapweed

10.00 kg/acre - £83.53

25.00 kg/ha - £208.83



Herbal Ley
15th July, Gloucestershire

Herbal Over-Seeding Mixture Deep-Rooting Herbal ley

Code: MIXHOS

A deep rooted over-seeding mix to add diversity to existing swards, this mix suits drier, light land (use MIXSHOS p.41 for heavy land or silage ground).

- 0.65 kg certified AVISTO red clover
- 0.45 kg certified AURORA alsike clover
- 0.40 kg certified IONA white clover
- 0.31 kg certified LEO birdsfoot trefoil
- 0.15 kg certified RIVENDEL wild white clover
- 1.57 kg commercial sainfoin
- 0.65 kg burnet
- 0.40 kg certified PUNA / ENDURE chicory blend
- 0.30 kg certified ENDURANCE ribgrass
- 0.07 kg yarrow
- 0.05 kg sheeps parsley

5.00 kg/acre - £59.74

12.50 kg/ha - £149.35

Grass

Legume

Herb

Wildflower

Herbal Cutting/Silage Ley (SAM3)

Three Year Cutting Mixture For All Soils

Code: MIXCUT

A useful option when high quality silage or AD feedstock is required. The high legume content will boost protein, difficult to manage species like chicory have been left out for cutting flexibility.

- 1.84 kg certified CALIBRA tet. perennial ryegrass
- 1.60 kg certified LOFA festulolium
- 1.20 kg certified BOYNE perennial ryegrass
- 1.20 kg certified WINNETOU timothy
- 1.00 kg certified DONATA cocksfoot
- 0.75 kg certified PARDUS meadow fescue
- 1.00 kg certified AVISTO red clover
- 0.40 kg certified AURORA alsike clover
- 0.40 kg certified VIOLIN white clover
- 0.30 kg burnet
- 0.30 kg certified ENDURANCE ribgrass
- 0.01 kg self heal

10.00 kg/acre - £76.22

25.00 kg/ha - £190.55

Diverse Over-Seeding Heavy Land or Cutting Mix (SAM3)

Over-seeding Mix For Cutting Regimes and Med/Heavy Land

Code: MIXSHOS

This is an over-seeding mix aimed for cutting and grazing swards, chicory has been left out because it can become woody and stemmy. It will suit medium to heavy soils. For light land consider MIXHOS.

- 0.74 kg certified AVISTO red clover
- 0.30 kg certified ABERSWAN white clover
- 0.21 kg certified DUBLIN white clover
- 0.35 kg certified LEO birdsfoot trefoil
- 0.56 kg certified AURORA alsike clover
- 0.50 kg burnet
- 0.30 kg certified ENDURANCE ribgrass
- 0.03 kg yarrow
- 0.01 kg self heal

3.00 kg/acre - £46.53

7.50 kg/ha - £116.33

Stockless Arable 'High Clover' Fertility Builder (SAM3)

Fixing Free Nitrogen On Arable Land

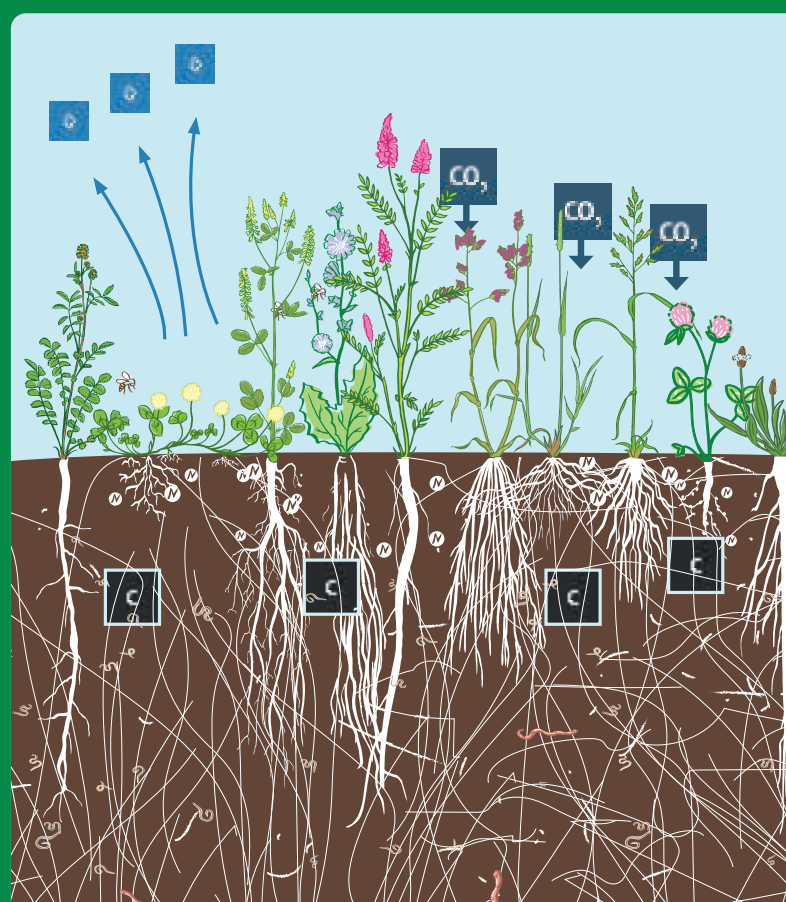
Code: MIXARABLE

A legume heavy mix that will last 3 years if required, this mixture can be flailed and mulched several times of year encouraging more N fixation.

- 2.00 kg certified CALIBRA tet. perennial ryegrass
- 1.75 kg certified LOFA festulolium
- 1.25 kg certified SPARTA cocksfoot
- 0.50 kg certified BARDOUX tall fescue
- 1.00 kg certified AVISTO red clover
- 1.00 kg certified GLOBAL red clover
- 1.00 kg certified AURORA alsike clover
- 0.25 kg certified DUBLIN white clover
- 0.25 kg certified ENDURANCE ribgrass

9.00 kg/acre - £69.14

22.50 kg/ha - £172.85





Cover Crops

Protecting and enhancing our soils.

Quick Growth Cover Crop (SAM2)

Flexible, Fast Establishment

Code: MIXQCC

A mixture designed to establish rapidly, providing a flexible option to sow between an early harvested crop but before autumn planting, or as an autumn cover crop for rapid green winter cover.

- 2.50 kg certified mustard
- 2.15 kg certified fodder radish
- 0.35 kg certified phacelia

5.00 kg/acre - £15.98

12.50 kg/ha - £39.95

Diverse Grazable Cover Crop (SAM2)

Ground Cover & Livestock Forage

Code: MIXGCC

A great mix for a joint arable and livestock venture, the mix contains soil conditioning phacelia, fodder & tillage radish, combined with high protein vetch, forage rape and turnips improving palatability and liveweight gain for stock. N.B. Rye will be replaced with winter cereal if unavailable early in the season.

- 3.50 kg certified winter oats
- 3.00 kg certified rye
- 3.00 kg certified vetch
- 0.30 kg certified crimson clover
- 0.55 kg certified fodder radish
- 0.40 kg certified forage rape
- 0.20 kg certified stubble turnips
- 0.05 kg certified phacelia

11.00 kg/acre - £23.90

27.50 kg/ha - £59.75

Multi Species 8 Way Cover Crop (SAM2)

Surface Armour & Boosting Soil Health

Code: MIXMULTICC

Multi species mixture to reliably produce more biomass than a monoculture. This is a low cost mixture with highly diverse 8 way multi species content to maximise the benefits. Use to improve soil structure, nutrient availability, water holding capacity and to enhance and improve soil micro biology.

- 3.70 kg certified rye
- 2.00 kg certified vetch
- 1.30 kg certified black oats
- 0.60 kg certified mustard
- 0.55 kg certified fodder radish
- 0.50 kg certified winter linseed
- 0.30 kg certified phacelia
- 0.05 kg certified tillage radish

9.00kg/acre - £22.21

22.50 kg/ha - £55.52



Multi Species cover crop
1st August, West Berkshire

Legume Fallows

Flexible fallow mixtures to suit any rotations

Short-term Fallow Mix (NUM3) Short Term Fertility Building Boost

Code: MIXSTFALL

A short term fallow mix to be sown in warming mid/late spring soils and terminated before an autumn cereal. Sow no deeper than 10mm. **This mix can be used as multi species spring sown cover option.**

- 1.70 kg buckwheat
- 1.20 kg alsike clover
- 1.00 kg crimson clover
- 0.70 kg egyptian/berseem clover
- 0.50 kg red clover
- 0.40 kg phacelia

5.50 kg/acre - £31.65

13.75 kg/ha - £79.13

Autumn Sown Two Year Legume/ Grass Fallow (NUM3/AB15)

Two-Three Year Mixture Including Legumes & Grass

Code: MIXAB15

Flowering crops on fallow land, lasting 2-3 years, grass species inclusion improves ground cover during the winter and holds N fixed by the legumes. Call for advice if tailoring the grass species inclusion.

- 6.00 kg tet. perennial ryegrass
- 3.00 kg common vetch
- 0.80 kg alsike clover
- 0.50 kg crimson clover
- 0.80 kg red clover
- 0.30 kg birdsfoot trefoil
- 0.30 kg pre inoculated lucerne
- 0.15 kg white clover
- 0.15 kg yellow trefoil

12.00 kg/acre - £71.64

20.00 kg/ha - £179.10

Autumn Sown Fallow 'Legume Only' Mix (NUM3/AB15)

Legume Only Two-Three Year Mix

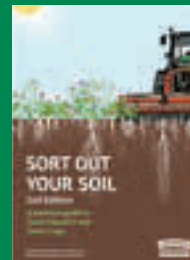
Code: MIXAB15LEG

A legume only fallow mix lasting 2-3 years, helping to boost soil fertility, topping will kill off the annual species like vetch and crimson clover. Must sow at shallow depth.

- 4.00 kg common vetch
- 1.40 kg alsike clover
- 1.20 kg red clover
- 0.50 kg pre inoculated lucerne
- 0.30 kg crimson clover
- 0.20 kg birdsfoot trefoil
- 0.20 kg white clover
- 0.20 kg yellow trefoil

8.00 kg/acre - £58.94

20.00 kg/ha - £147.35



Discover a whole lot more on cover crops and green manures in our updated practical guide - **Sort Out Your Soil 2nd Edition**

Call us on 01608 652552 or visit cotswoldseeds.com to get your copy.



Legume Only Fallow Mix
28th June, Nottinghamshire

Pollen & Nectar



Legume and flower margins.

Flowering mixtures to protect and enhance the landscape for pollinators

Nectar Stewardship Mix (AB8/IPM2)

ELS/HLS/CSS/SFI Codes: EF1, HE10, AB8, IPM2

Long Term Pollen & Nectar

Code: MIXECOAB8

An economical pollen & nectar source satisfying the AB8 stewardship criteria of 90% grasses and 10% flowering species. These mixes are relatively slow to establish, after the first year there are flowers for insects, seeds for birds and cover for mammals.

- 5% certified crested dogstail
- 10% certified slender creeping red fescue
- 15% certified smooth stalked meadowgrass
- 30% certified red/chewings fescue
- 30% certified sheeps fescue
- 3% native sainfoin
- 2% certified birdsfoot trefoil
- 0.60% native red clover
- 0.60% wild carrot
- 0.60% salad burnet
- 0.60% ox-eye daisy
- 0.60% certified late flowering red clover
- 0.50% lesser knapweed
- 0.50% yarrow
- 0.20% cornflower
- 0.20% ladys bedstraw
- 0.20% musk mallow
- 0.10% self heal
- 0.10% red campion
- 0.10% ribwort plantain
- 0.10% white campion

8.00 kg/acre 20.00 kg/ha

£11.92 per kg

Floristically Enhanced Field Margin (AB8/IPM2)

ELS/HLS/CSS/SFI Codes: EF1, HE10, AB8, IPM2

Long Term Pollen & Nectar

Code: MIXAB820

Containing 7 grass species and over 10 true wildflower species. This mix will provide a long-term, diverse pollen and nectar source, with the inclusion of the suggested 2kgs per hectare wildflower component.

- 5% certified common bentgrass
- 5% certified smaller catstail
- 10% certified crested dogstail
- 10% certified slender creeping red fescue
- 15% certified smooth stalked meadowgrass
- 20% certified sheeps fescue
- 25% certified red/chewings fescue
- 1.9% native sainfoin
- 1% wild carrot
- 1% salad burnet
- 1% ox-eye daisy
- 1% lesser knapweed
- 1% native red clover
- 0.60% self heal
- 0.60% musk mallow
- 0.60% white campion
- 0.50% ribwort plantain
- 0.25% hedge bedstraw
- 0.25% ladys bedstraw
- 0.20% red campion
- 0.10% yarrow

8.00 kg/acre 20.00 kg/ha

£19.97 per kg

The Operation Pollinator Mix

ELS/HLS/CSS/SFI Codes: EF4, AB1, AHL1

Just Legumes

Code: MIXOP

Operation Pollinator is a mixture of legumes without grasses to provide a flower-rich area. This mix works well on heavy soil types where sown grasses can become dominant.

- 20% commercial sainfoin
- 30% certified alsike clover
- 16.6% certified red clover
- 16% certified late flowering red clover
- 7% certified birdsfoot trefoil
- 4% commercial sweet clover
- 5% certified crimson clover
- 0.4% lesser knapweed
- 0.4% wild carrot
- 0.4% ox-eye daisy
- 0.2% musk mallow

5.00 kg/acre 12.50 kg/ha

£11.75 per kg



Operation Pollinator Mix
15th July, Cambridge

Grass Legume Herb Cereal Wildflower C4 Plants Others Brassica

Farmland Birds

Reducing the hungry gap.

Farmland bird mixes

One Year Winter Bird Seed (AHL2/AB9)

ELS/HLS/CSS/SFI Codes: EF2, AB9, AHL2

Survival Mixture

Code: MIXSM

This mixture should be sited on field margins or next to hedges or woodland. It contains a range of species which provides food for birds, including finches and sparrows, over one winter while also feeding small mammals.

- 16% linseed
- 14% spring triticale
- 13% red millet
- 13% white millet
- 10% fodder radish
- 10% mustard
- 10% brown mustard
- 10% gold of pleasure
- 4% quinoa

5.00 kg/acre 12.50 kg/ha

£4.42 per kg

AB16 Enhanced Autumn Sown Bumblebird

ELS/HLS/CSS Codes: AB16

Two Year Mixture

Code: AB162021

Food source for birds, pollinators and insects.

- 28% winter rye
- 20% winter oats
- 17% winter barley
- 7% winter linseed
- 6% kale
- 1.5% gold of pleasure
- 8% common vetch
- 2.7% crimson clover
- 2.2% pre inoculated lucerne
- 1.7% fodder radish
- 1.2% birdsfoot trefoil
- 1% alsike clover
- 1% late flowering red clover
- 1.2% fennel
- 1.5% phacelia

18.00 kg/acre 45.00 kg/ha

£3.83 per kg

Two Year Wild Bird Seed (AHL2/AB9)

ELS/HLS/CSS/SFI Codes: EF2, AB9, AHL2

Farmland Bird Feeder

Code: MIXWBSS

This mix includes annuals for the first winter, while the biennial kale provides late seed in the second winter. It is a good food source for wild birds and is reliable if managed properly, as well as being more economical.

- 70% spring triticale (supplied separately)
- 14.25% kale
- 2% fodder radish
- 2% mustard
- 5% red millet
- 5% white millet
- 1.75% fennel

20.00 kg/acre 50.00 kg/ha

£4.21 per kg

Three Year Wild Bird Mix (AHL2)

ELS/HLS/CSS/SFI Codes: AHL2

A Spring Sown Three Year Wild Bird Mixture

Code: MIXWBT

A mixture which aims to provide seeding species over 3 years. Cereals, sunflowers and millets provide seed in year one, kale and rye seeds in year two, chicory and fennel will last into year 3. Autumn sown options are available on request.

- 45% rye
- 25% spring triticale
- 10% grain sorghum
- 4% white millet
- 5% kale
- 1% fodder radish
- 1% leafy turnips
- 0.75% hybrid rape/kale
- 0.75% mustard
- 5% sunflower
- 1.25% chicory blend
- 1.25% fennel

20.00 kg/acre 50.00 kg/ha

£3.44 per kg

Additions



Add 2 kg of Cheerful Sunflowers

£11.80 per acre



Fast Delivery

01608 652552

cotswoldseeds.com

Resource Protection

Grassy areas to shield water courses and provide wildlife habitats.



Sowing & Growing Environmental Mixes

When to sow

For grass only or pollen & nectar mixes sow between late March and early May, or August and early September. Legume based mixtures should be sown into warm soils. Generally mixes containing wild flowers are sown in the autumn, especially if they contain Yellow Rattle. Sow Wild Bird seed mixtures when the risk of frost has passed in the spring.

How to sow

Species included in pollen and nectar or grass mixtures are small in size and should be shallow sown into a fine but firm seedbed. They can be broadcast and harrowed or shallow drilled at 10mm. Both options should be well rolled after sowing for maximum seed to soil contact.

Wild Bird seed mixtures containing a range of annual species can be shallow drilled or broadcast and well rolled in to a fine but firm seedbed. Two year Wild Bird mixtures containing high levels of cereals can be supplied separately, the cereals can be drilled in rows to a depth of 25mm, and the smaller seeds broadcast in a second pass.

Management

Pollen & nectar and grass only mixtures can be lightly topped several times during establishment, normally 6-8 weeks after sowing, to control annual weeds and encourage tillering. They are also cut back as growth slows in the autumn.

Weed control in Wild Bird mixtures is difficult, its important to create a clean, weed free seedbed before sowing.

Grass

Mixes

Species Rich Parkland Grassland

ELS/HLS/CSS/SFI Codes: HK7, GS7

Low Maintenance Long Term

Code: MIXPGLM

A slow growing and manageable seed mix for those with low requirements from permanent grassland. This mixture can be grazed periodically or topped to keep a tidy appearance.

- 1% commercial sweet vernal grass
- 3% certified meadow foxtail
- 5% certified common dogstail
- 6% certified crested dogstail
- 10% certified smaller catstail
- 25% certified smooth stalked meadowgrass
- 25% certified red/chewings fescue
- 25% certified sheeps fescue

16.00 kg/acre 40.00 kg/ha

£9.35 per kg

Recreating Grassland

ELS/HLS/CSS/SFI Codes: HK7, ED2

Long Term

Code: MIXRG

The mixture below is suitable for sowing on most soil types ranging from clays to calcareous. Provides grass for grazing or hay production (if no forage is required use the mix above).

- 5% certified common bentgrass
- 10% certified sheeps fescue
- 15% certified red/chewings fescue
- 20% certified timothy
- 20% certified smooth stalked meadowgrass
- 30% certified meadow fescue

10.00 kg/acre 25.00 kg/ha

£7.28 per kg

Buffer Strip Grass Margin (AHL3 & AHL4)

EELS/HLS/CSS/SFI Codes: AB3, SW4, SW1, AHL3, AHL4

Two, Four or Six Plus Metre

Code: MIXGM

An ideal mixture for buffer strips on cultivated land. This mixture is suitable for ELS and can also be used in HLS.

- 5% certified common bentgrass
- 10% certified cocksfoot
- 20% certified timothy
- 20% certified meadow fescue
- 20% certified smooth stalked meadowgrass
- 25% certified red/chewings fescue

10.00 kg/acre 25.00 kg/ha

£7.22 per kg



First Hand

Anne Miller

| | |
|-------------------|---|
| Farm Type | Solar Farm and Wildflower Meadow |
| Location | Charlbury, Oxfordshire |
| Size | 40 acres |
| Soil Type | Cotswold Brash |
| Mixes Used | Bespoke Limestone Grassland mix, Tussocky grass margin and Cotswold Wild Flora meadow mix. |

Southill Solar Farm is an innovative community project designed to make a small town carbon zero in terms of energy consumption and creating a wildflower meadow with a bespoke limestone grassland mix is a vital part of the environmentally-focused project.

Southill Solar Farm is a community owned solar farm on the Cornbury Estate on the outskirts of Charlbury, in Oxfordshire. In 2013, a group of passionate locals approached the Cornbury Estate who farm the area.

They were very supportive of their idea of creating the town's own solar farm. After two years of negotiations with the planners and Cotswold Living Landscapes, plans were approved to create a landscaped 4.5mw solar farm, enough to provide energy for the whole town.

Construction on the panels began in September 2016 and by November that same year they were generating power. The energy is sold to the grid to power the town. Anyone in Charlbury could own shares and it also supports a community fund which enables various projects under the banner, Sustainable Charlbury.

‘You get waves of colours as the different flowers come out, meaning different pollinators are being supported throughout the season.’

One term of the planning permission was that a 25 acre field adjacent to the site, which had previously been sown each year with arable crops, had to be planted to enhance biodiversity. The first priority was maintaining the habitat for the six pairs of resident nesting Skylarks, while also improving the habitat for rare Roman Snails along with a variety of butterflies and other insects found within the site.

‘We worked with Ian Wilkinson and Sam Lane from Cotswold Seeds, who offered guidance, expertise and suggestions of various seed mixes to enhance the habitat for pollinators, reptiles and amphibians’ says Anne Miller, an ecologist who oversees the site. ‘We’re not farmers, so we relied on support from local contractors, farmers and volunteers. Initially, we experimented with sowing plots and mixes of annual plant species like Sunflowers and Millet to produce seed for farmland birds over the winter. However, the wild bird mix did not prove practical because we had to reside each year and we wanted a longer term sustainable solution.’

The classic Cotswold Wild Flora mix features a variety of wildflower species and traditional grasses that suit the soil type, including Field Scabious, Knapweed, Birdsfoot Trefoil, Oxeye Daisy, Wild Carrot, Ladys Bedstraw and Yellow Rattle. It also included adding some brush harvested seeds from an existing nearby old meadow in order to add some local provenance flora to the mix.

‘The first year it was full of beautiful Cornflowers and Corn Cockle,’ remembers Anne. ‘We’ve lost most of the annuals now but perennials like Wild Carrot and Birdsfoot Trefoil, Knapweed and the Scabious have done really well. You get waves of colours as the different flowers come out, meaning different pollinators are being supported throughout the season. It’s awash with butterflies - Meadow Browns, Marbled Whites and Peacocks. The meadow became a feast of Yellow Rattle in late spring and we are able to share these seeds with people to use in gardens and along the local roadside verges.’

Wildlife enhancement around the solar panels was a challenge. ‘The land had obviously been very disturbed during the construction of the panels, leading to some weeds germinating which had laid dormant, deep in the soil for many years. It was difficult to get in and around the panels to sow the grass seed compared to the open field site’ says Anne.

Ideally the panels would have been higher, spaced wider and angled to encourage more wildflowers and grass growth but planning consent constrained this. So Cotswold Seeds developed a special low growing, species rich, grass only mix to grow around and under the panels, to establish a dense sward on the brash. This included traditional grasses like Smaller Catstail, Dogstail and Creeping Red Fescue.

‘It took a while to get established and plants like Creeping Thistle and Ragwort took hold and brambles interfere with the solar panels in some areas,’ says Anne.

After a while the grass became well established and there are plans to introduce grazing sheep around the panels to manage it in the future.

Meanwhile, the wildflower meadow is left to flower each year for insects and nesting Skylarks until the end of August, when a hay crop is taken. Six metre margins of a tussocky grassland mix have also been allowed to spread. This mix includes more upright species like Cocksfoot and Tall Fescue. More structural grass species allows a place to overwinter and resources for the local wildlife.



Wild Flowers

During the last decade, we've seen an increasing demand for wild flower seeds which are being sown to recreate traditional meadows which have been in decline.

Wild flower meadows are either managed under an agri-environmental agreement, where a list of species and management prescription will be provided by Natural England, or often for aesthetic purposes alone. They take many years to evolve naturally and can't be instantly created just by sowing seeds.

Nevertheless, with proper preparation and management, excellent results can be achieved in a relatively short time. **Visit our website for case studies and management advice.**

Mixes

Meadow Over-Seeding

Just Wild Flowers

Code: MIXWFOS

This wild flower-only mixture can be sown into open swards that are free of aggressive grasses and weeds. *Due to some shortages of wild flower seeds the contents of this mixture may vary depending on stock availability. Please call or check our website for the latest information.*

2.00 kg/acre 5.00 kg/ha **£161.98 per kg + VAT**

Cotswold Wild Flora

Long Term

Code: MIXFLO

Our most popular mix combines annuals, for an exceptional display in the first year, with perennials which get better and better from year two onwards.

- 5% certified common bentgrass
- 12% certified smaller catstail
- 13% commercial crested dogstail
- 15% certified sheeps fescue
- 15% certified smooth stalked meadowgrass
- 20% certified red/chewings fescue
- 1.5% salad burnet
- 1.5% native sainfoin
- 1.2% self heal
- 1.2% lesser knapweed
- 1% ribwort plantain
- 1% red campion
- 1% ladys bedstraw
- 1% field scabious
- 1% white campion
- 0.8% musk mallow
- 0.75% wild carrot
- 0.75% meadow buttercup
- 0.5% yarrow
- 0.5% ox-eye daisy
- 0.25% betony
- 0.25% kidney vetch
- 0.25% hedge bedstraw
- 0.05% cowslip
- 1.5% corn cockle
- 1% corn marigold
- 1% cornflower
- 1% field poppy
- 1% yellow rattle

10.00 kg/acre 25.00 kg/ha **£46.58 per kg**

Cornfield Annuals

For One Summer

Code: MIXANN

This is a one year mix to provide a colourful display between June and August. Must be planted by April.

- 42% corn cockle
- 18% cornflower
- 16% field poppy
- 12% corn marigold
- 6% birdsfoot trefoil
- 3% crimson clover
- 3% persian clover

6.00 kg/acre 15.00 kg/ha **£54.16 per kg + VAT**



FarmED Courtyard
22nd July

Mixes

Grass

Wildflower

Legume

Woodland Edge and Shady Area

Long Term

Code: MIXWOOD

In open and semi-shaded areas a number of grasses and wild flowers will thrive many of which are in this mix.

- 2% commercial tufted hairgrass
- 10% certified common bentgrass
- 10% commercial crested dogstail
- 15% certified wood meadowgrass
- 24% certified slender creeping red fescue
- 24% certified red/chewings fescue
- 2% red campion
- 2% white campion
- 2% self heal
- 1.5% hedge bedstraw
- 1.1% betony
- 1% meadow vetchling
- 1% wood avens
- 0.75% yarrow
- 0.65% common sorrel
- 0.6% meadow buttercup
- 0.6% greater knapweed
- 0.4% garlic mustard
- 0.35% perforate st john's wort
- 0.3% teasel
- 0.25% tufted vetch
- 0.2% bluebell
- 0.15% upright hedge parsley
- 0.15% autumn hawkbit

10.00 kg/acre 25.00 kg/ha

£70.65 per kg

Chalk & Limestone Soil

Long Term

Code: MIXCHA

This mixture is designed for chalk and limestone soil. Known to support a large selection of wild flower species which is why we have been able to create such a diverse mix.

- 2% quaking grass
- 2% crested hair-grass
- 5% commercial sweet vernal grass
- 10% commercial crested dogstail
- 10% certified smaller catstail
- 16% certified smooth stalked meadowgrass
- 20% certified sheeps fescue
- 20% certified red/chewings fescue
- 2.6% native sainfoin
- 2% field scabious
- 1.6% ladys bedstraw
- 1.5% salad burnet
- 1.2% small scabious
- 1% kidney vetch
- 1% meadow buttercup
- 1% wild carrot
- 1% self heal
- 1% agrimony
- 0.5% ox-eye daisy
- 0.5% yarrow
- 0.05% birdsfoot trefoil
- 0.05% rough hawkbit

10.00 kg/acre 25.00 kg/ha

£66.88 per kg

Acid & Clay Soil

Long Term

Code: MIXACID

A suitable mixture for both acidic and heavy clay soil types. Prepare a well worked, weed-free seedbed and spread seeds at no more than 10mm deep.

- 3% wavy hairgrass
- 5% certified meadow foxtail
- 5% certified rough stalked meadowgrass
- 12% certified crested dogstail
- 20% certified common bentgrass
- 20% certified red/chewings fescue
- 20% certified sheeps fescue
- 2% self heal
- 2% ladys bedstraw
- 1.3% lesser knapweed
- 1% ox-eye daisy
- 1% betony
- 1% sheeps sorrel
- 1% yarrow
- 1% yellow rattle
- 1% hedge bedstraw
- 0.9% meadowsweet
- 0.8% meadow buttercup
- 0.8% meadow vetchling
- 0.5% native red clover
- 0.5% common sorrel
- 0.2% ribwort plantain

10.00 kg/acre 25.00 kg/ha

£64.84 per kg

Damp Meadow

Long Term

Code: MIXDAM

Wetter soils require a slightly different seed mixture. This one should give reliable results on most damp soils and may also be used around water courses or ponds.

- 2% certified meadow foxtail
- 5% certified common bentgrass
- 10% certified crested dogstail
- 10% certified rough stalked meadowgrass
- 18% certified smooth stalked meadowgrass
- 20% certified red/chewings fescue
- 20% certified sheeps fescue
- 2% great burnet
- 1.8% self heal
- 1.75% yellow rattle
- 1.7% ladys bedstraw
- 1.5% lesser knapweed
- 1.3% common sorrel
- 1% ribwort plantain
- 0.75% ragged robin
- 0.6% meadowsweet
- 0.5% ox-eye daisy
- 0.5% betony
- 0.5% meadow vetchling
- 0.5% devil's-bit scabious
- 0.5% greater birdsfoot trefoil
- 0.1% native red clover

10.00 kg/acre 25.00 kg/ha

£66.41 per kg

Wild Flower Directory

Agrimony

Agrimonia

Upright plant found in hedges and field edges. Late seeding.

Late



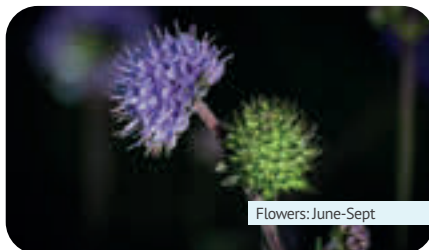
Flowers: June-Aug

Devil's Bit Scabious

Succisa pratensis

Found in damp meadows and wetter (but not waterlogged) areas.

Late



Flowers: June-Sept

Meadow Buttercup

Ranunculus acris

Found in older grasslands and damp grassy places with a long flowering period.

Early



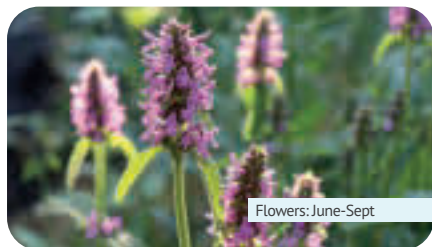
Flowers: Apr-Oct

Betony

Stachys officinalis

Found in shady areas, woodland fringes & hedge rows. Likes damp sites.

Late



Flowers: June-Sept

Field Scabious

Knautia arvensis

Frequent in cornfields, grassland and roadsides on calcareous dry soils.

Late



Flowers: June-Oct

Meadowsweet

Filipendula ulmaria

Found in and alongside meadows. Prefers wet ground. Strongly scented flowers.

Late

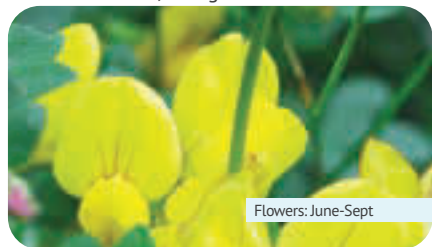


Flowers: June-Sept

Birdsfoot Trefoil

Lotus corniculatus

Found in downlands and old pasture, esp. on calcareous soils, drought resistant.



Flowers: June-Sept

Great Burnet

Sanguisorba officinalis

Oblong burgundy flower heads, found on wetter meadow ground.

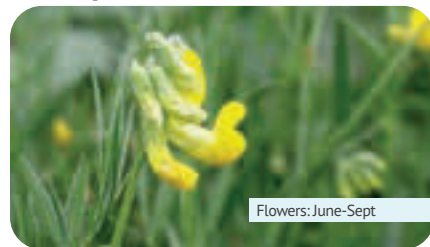


Flowers: June-Sept

Meadow Vetchling

Lathyrus pratensis

Yellow pea-like flower, grows in grassy fields and hedgerows.



Flowers: June-Sept

Bluebell

Hyacinthoides non-scripta

Found in hedge-banks and woodland where they can form a distinctive blue carpet.

Early

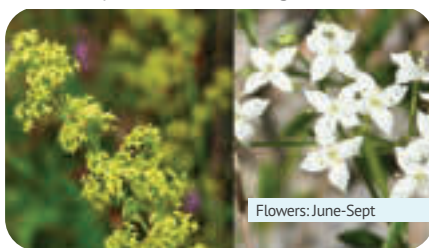


Flowers: Apr-June

Ladys/Hedge Bedstraw

Galium verum/Galium mollugo

Ladys bedstraw suits most soils. Hedge bedstraw prefers free-draining.



Flowers: June-Sept

Musk Mallow

Malva moschata

Prolific on soils rich in nitrogen. Grows in hedgerows and grassland.



Flowers: June-Sept

Cowslip

Primula veris

Found on chalky grassland and open calcareous woodland.

Early



Flowers: Apr-May

Lesser Knapweed

Centaurea nigra

Also known as common or black knapweed. Good nectar source



Flowers: June-Sept

Ox-Eye Daisy

Leucanthemum vulgare

Robust, reliable plant for alkaline soils. Found in meadows, pastures and banks.



Flowers: May-Sept

Perennials continued

Ragged Robin*Lychnis flos-cuculi*

Delicate ragged flowers usually found in damp meadows.

Early

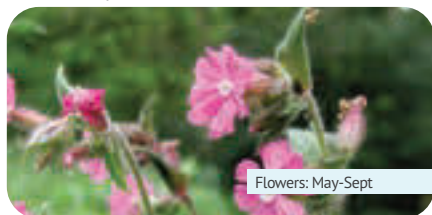


Flowers: May-Aug

Red Campion*Silene dioica*

Often found in woodland and shady areas. Likes damp soils.

Early



Flowers: May-Sept

Ribwort Plantain*Plantago lanceolata*

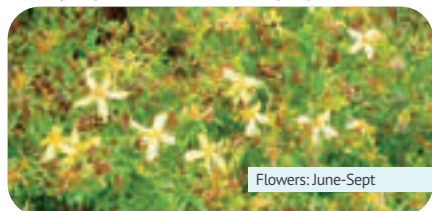
Established in most older grassland. Source of vitamins and minerals for grazing animals.



Flowers: Apr-Oct

St Johns Wort*Hypericum perforatum*

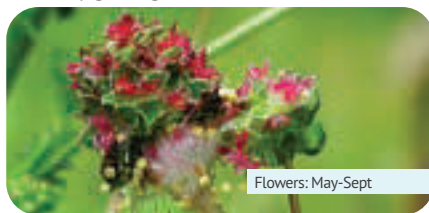
Likes free-draining calcareous soils with a sunny aspect. Has medicinal properties.



Flowers: June-Sept

Salad Burnet*Sanguisorba minor*

Found on dry, lime rich, calcareous soils. Liked by grazing animals.



Flowers: May-Sept

Self Heal*Prunella vulgaris*

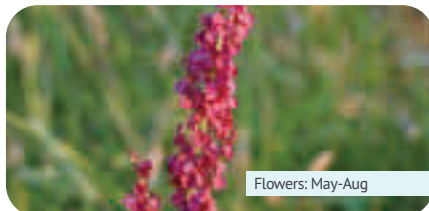
A low growing, creeping plant which is common in most grassland.



Flowers: June-Oct

Sorrel*Rumex acetosa*

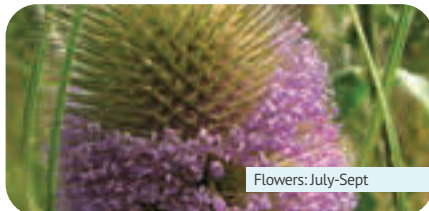
Grows well in loamy soils rich in nutrients.



Flowers: May-Aug

Teasel*Dipsacus fullonum*

A tall plant found in field margins, particularly in the south of Britain.



Flowers: July-Sept

Tufted Vetch*Vicia cracca*

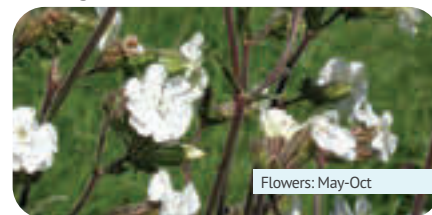
Creeping, sprawling growth habit. Found in hedgerows and climbing up vegetation.



Flowers: June-Aug

White Campion*Silene latifolia*

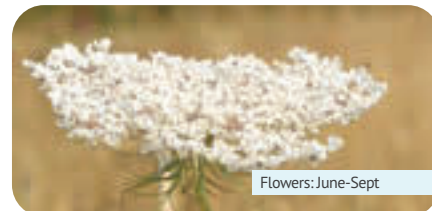
Frequent in roadside verges, hedgerows and waste ground.



Flowers: May-Oct

Wild Carrot*Daucus carota*

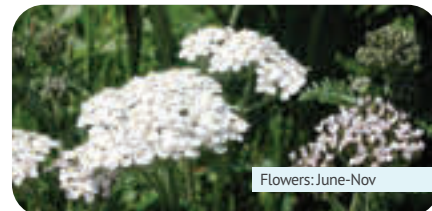
Found in grassy places, field margins and roadsides. Prefers calcareous soils.



Flowers: June-Sept

Yarrow*Achillea millefolium*

Found in grassland and grass margins, hedgerows and open spaces.



Flowers: June-Nov

Late

Annuals

Corn Chamomile*Anthemis arvensis*

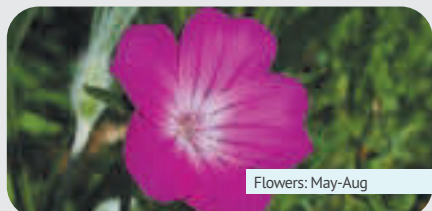
Corn field annual which thrives in loamy soils rich in nutrients.



Flowers: June-July

Corn Cockle*Agrostemma githago*

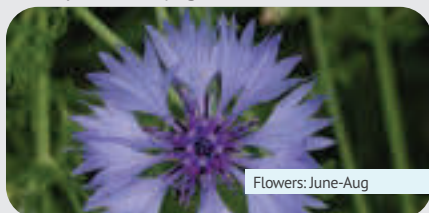
A tall annual with an attractive vivid purple flower.



Flowers: May-Aug

Cornflower*Centaurea cyanus*

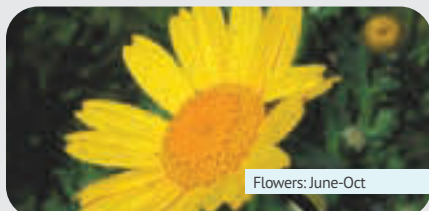
A pretty bright blue solitary flower. Was used as a dye in champagne wine.



Flowers: June-Aug

Corn Marigold*Crysanthemum segetum*

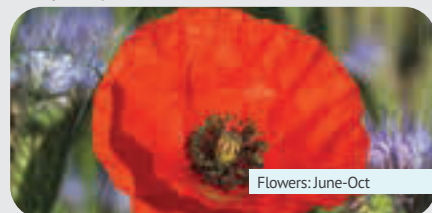
A former weed in spring-sown corn. Now rare on farmed land. Bold yellow flowers.



Flowers: June-Oct

Field Poppy*Papaver rhoeas*

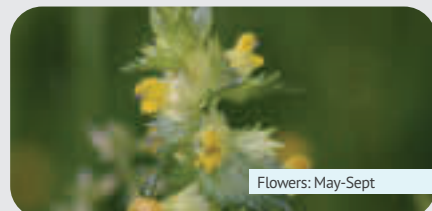
Found in arable fields and disturbed ground. Silky, deep scarlet flowers.



Flowers: June-Oct

Yellow Rattle*Rhinanthus minor*

Parasitic plant which restricts grass growth allowing delicate wildflowers to establish.



Flowers: May-Sept

*Please note wild flower seed sold as straights attracts VAT at the current rate of 20%



Game

Reliable game cover and food for any shoot.

The game cover section has been recently updated, it provides a wider choice of mixtures that have been in development for the last 3 years. The FlexiCover mixtures provide both 1 and 2 year options and can be used for both flushing and holding cover. The combination of grain sorghum and brassica species provides reliable cover all the way through the winter.

The new Cotswold Partridge mix combines species attractive to partridge and a broken canopy to protect against predators from above.

While our range is more comprehensive than ever before, no one mixture will fit all shoots and sites, so we are more than happy to talk through different species and options and tailor bespoke mixtures to fit.

Game and Bird Food Crop Overview

| Species | Duration | Sowing Time | Sowing Depth | Full Growth Height (cm) | Comments | Sowing Rate (kg/ac) | Feed | Cover |
|------------------|----------|-------------------|--------------|-------------------------|-------------------------------------|---------------------|------|-------|
| Maize | 1 Yr | Late April-May | 7.5 - 10 | 180 - 200 | Cobless varieties available | 11 - 14 | ✓ | ✓ |
| R. Millet | 1 Yr | April-June | 2.5 | 100 - 120 | Later seeding than W.Millet | 5 - 10 | ✓ | |
| W. Millet | 1 Yr | April-June | 2.5 | 100 - 120 | Produces more seed than R. Millet | 5 - 10 | ✓ | |
| Reed Millet | 1 Yr | April-June | 2.5 | 100 - 120 | Strong standing ability | 5 - 10 | | ✓ |
| D. Sorghum | 1 Yr | May-June | 3 - 5 | 100 | Sow in wide rows | 8 | | ✓ |
| Giant Sorghum | 1 Yr | May-June | 3 - 5 | 180 | Prone to brackling | 12 | | ✓ |
| Grain Sorghum | 1 Yr | May-June | 3 - 5 | 100 - 120 | Produces seed | 8 | ✓ | ✓ |
| Sunflower | 1 Yr | Mid April onwards | 5 | 90 - 175 | Dwarf varieties reach 3ft | 10 | ✓ | |
| Buckwheat | 1 Yr | May-June | 3.5 | 90 | Not frost hardy | 20 - 30 | ✓ | ✓ |
| Linseed | 1 Yr | March-June | 2 | 50 - 60 | Good for Partridge | 20 | ✓ | ✓ |
| S. Cereals | 1 Yr | March-May | 2 - 3 | 70 - 80 | Sow in spring for winter grain | 50 - 75 | ✓ | ✓ |
| W. Cereals | 1 Yr | March-Sept | 2 - 4 | 70 - 90 | Sow in autumn for grain in Yr 2 | 50 - 75 | ✓ | ✓ |
| Quinoa | 1 Yr | May-June | 0.5 - 1 | 90 - 140 | Produces high protein seed | 5 | ✓ | |
| F. Rape/OSR | 1 Yr | May-August | 1 | 80 - 90 | Flea beetle risk | 4 | | ✓ |
| Mustard | 1 Yr | May-August | 1 | 80 - 120 | Sow in august for late cover | 6 - 10 | ✓ | ✓ |
| Brown Mustard | 1 Yr | May-August | 1 | 80 - 100 | More winter hardy than Mustard | 2 | ✓ | ✓ |
| Fodder Radish | 1 Yr | May-August | 1 | 80 - 120 | Holds seeds late in season | 6 | ✓ | ✓ |
| Hybrid Brassica | 1 Yr | April-August | 1 | 90 - 120 | Sow by mid Aug | 3 | | ✓ |
| Gold of Pleasure | 1 Yr | April-May | 1 | 50 - 70 | High seed shed | 5 | ✓ | ✓ |
| Kale | 2+ Yr | April-June | 1 | 70 - 110 | 2 year cover | 3 | | ✓ |
| Sweet Clover | 2+ Yr | April-June | 0.5 - 1 | 120 | Significant growth in Yr 2 | 6 | | ✓ |
| Chicory | 2+ Yr | April-Sept | 0.5 - 1 | 90 - 150 | Lasts 3-4 Years | 6 | ✓ | ✓ |
| Canary Grass | 2+ Yr | May-June | 1 | 180 | Main growth in Yr 2 onwards | 3 | ✓ | |
| Reed C. Grass | 2+ Yr | May-June | 1 | 200 | More winter hardy than Canary Grass | 3 | ✓ | |

Grass

Legume

Cereal

C4 Plants

Others

Brassica

Herb

Mixes

FlexiCover One Year Game Mix

Cover and Feed

Code: MIXFLEXI

This flexible mixture combines brassicas, sorghums and cereals. Sowing in wide rows allows game birds easier movement if pushing them into a flushing point or sow in narrow rows to create a denser holding cover, or windbreak alongside maize.

- 4.25 kg spring triticale
- 4.00 kg spring barley
- 3.50 kg grain sorghum
- 1.00 kg red millet
- 1.00 kg white millet
- 0.50 kg reed millet (Japanese)
- 0.50 kg forage rape
- 0.50 kg hybrid rape/kale
- 0.30 kg fodder radish
- 0.25 kg gold of pleasure
- 0.20 kg mustard

16.00 kg/acre - £49.98

40.00 kg/ha - £124.95

General Purpose Game Mix

Cover and Feed

Code: MIXGAME

This is our most popular game cover mix, combining a wide range of species providing feed and cover for pheasants, partridge and farmland birds.

- 2.00 kg dwarf sunflower
- 1.40 kg buckwheat
- 2.20 kg grain sorghum
- 1.30 kg red millet
- 1.30 kg white millet
- 0.40 kg forage rape
- 0.20 kg brown mustard
- 0.40 kg fodder radish
- 0.50 kg game kale
- 0.30 kg hybrid rape/kale

10.00 kg/acre - £52.10

25.00 kg/ha - £130.25

FlexiCover Two Year Game Mix

Cover and Feed

Code: MIXFLEX2

The inclusion of kale can ensure this mixture lasts for two full years. During establishment protect against flea beetle and consider fertiliser to push the brassicas past the most susceptible stage of pest damage.

- 7.00 kg spring triticale
- 2.60 kg grain sorghum
- 1.00 kg red millet
- 1.00 kg white millet
- 2.25 kg game kale
- 0.40 kg fodder radish
- 0.25 kg gold of pleasure
- 0.20 kg hybrid rape/kale
- 0.30 kg fennel

15.00 kg/acre - £79.36

37.50 kg/ha - £198.40

Cotswold Partridge Mix

Cover and Feed

Code: MIXPART

The mix is designed to include species which attract partridge, as well as creating a broken canopy with room for birds to move through the cover.

- 5.00 kg spring triticale
- 5.00 kg spring barley
- 1.40 kg grain sorghum
- 1.00 kg white millet
- 1.80 kg linseed
- 0.40 kg forage rape
- 0.40 kg gold of pleasure
- 0.20 kg hybrid rape/kale
- 0.20 kg leafy turnips
- 0.20 kg crimson clover
- 0.20 kg persian clover
- 0.20 kg fennel

16.00 kg/acre - £46.07

40.00 kg/ha - £115.18

Retrieve Mixture

Fast and Economical

Code: MIXRET

For a summer sowing after a failed spring crop nothing beats these fast growing brassica species. It's quick, reliable and it works.

- 1.25 kg mustard
- 1.00 kg forage rape
- 0.50 kg fodder radish
- 0.50 kg hybrid rape/kale
- 0.50 kg leafy turnips
- 0.25 kg brown mustard

4.00 kg/acre - £20.25

10.00 kg/ha - £50.63



Retrieve Mixture
15th September, Shropshire

Game Mixes

Quinoa/Kale Mix

Cover and Feed

Code: MIXQUI

This simple combination supplies the two key requirements of birds: cover and feed. The kale provides excellent winter cover and supports the quinoa plants. Quinoa can provide 1-2t per acre of high protein feed from late autumn.

- 1.00 kg quinoa
- 1.80 kg game kale
- 0.20 kg hybrid rape/kale

3.00 kg/acre - £49.57

7.50 kg/ha - £123.93

Short & Sturdy Game Cover Mix

Cover and Feed

Code: MIXSHORT

This mix is ideal for growing with maize to act as a windbreak on exposed sites or to create a flushing point in front of the gun line. The seed bearing grain sorghum, sunflower and millet also provide for farmland birds.

- 4.70 kg grain sorghum
- 2.50 kg dwarf sunflower
- 0.40 kg red millet
- 0.40 kg white millet

8.00 kg/acre - £43.56

20.00 kg/ha - £108.90

Seed & Shelter Millet Mix

Cover and Feed

Code: MIXMIL

Combining red and white millet for a wider window of seed production and grain sorghum to provide cover. Broadcast or shallow drill in maize strips for a denser cover.

- 3.00 kg white millet
- 3.00 kg red millet
- 2.00 kg grain sorghum

8.00 kg/acre - £31.22

20.00 kg/ha - £78.05

Sowing and Growing

Whether you run a small local syndicate or a large estate shoot it is important to produce good, reliable crops that provide plenty of shelter, cover and seed.

When to sow

Most game crops are spring sown after frost risk has passed to provide cover and feed from late summer. Start planting the mixes of brassicas, millet, maize, sunflowers and canary grass in mid April, with dwarf sorghum better if drilled in May or June. The only exception is the quick-growing Retrieve Mixture which can be drilled anytime from April to early September if there is sufficient soil moisture.

How to sow

A well worked weed-free seedbed is required, try to achieve a stale seedbed with several cultivation passes to stimulate weed germination before sowing. Seeds such as maize, sunflower and sorghum are usually drilled but small seeded species such as kale and mustard may be broadcast and well rolled after sowing.

If sowing a mix with a range of seed sizes, prioritise the smaller seeds, try to ensure the smaller seeds are not sown too deeply, as this can reduce the reliability of establishment, most larger seeds will cope with being sown slightly shallower.

Bespoke Autumn sown mixtures are available for cover in the following year.

Management

For sites with a known weed burden of later germinating annuals like fat hen consider herbicide tolerant mixtures (Speak to an adviser). Grass weeds can also be controlled by sowing broadleaf only mixtures tolerant to graminicides.

Nutrient requirements

Game crops require P & K levels to be ADAS Index 2 and can benefit from 50kg N/ha in the seed bed. Farmyard manure is a very beneficial source of fertility, with its effects showing for several years.



Bespoke game cover mixes available

Straights

Dwarf Sunflower

A sturdy, multi headed type of sunflower, reaching between 1-1.5 metres in height.

10.00 kg/acre - £59.00 25.00 kg/ha - £147.50

Tall Sunflower

Large amounts of food supplied through the winter, this tall type can reach 2 metres in height.

10.00 kg/acre - £59.00 25.00 kg/ha - £147.50

Cheerful Sunflower
 10th August, Norfolk
**Canary Grass**

This perennial grass is drilled in wide rows (60-90cm) and takes a year or so to become established. From the second year the seed heads will reach two metres and the crop can usually be relied upon for 10 years. Good for pheasants and partridges as well as linnets and wrens.

3.00 kg/acre - £85.50 7.50 kg/ha - £213.75

Reed Canary Grass

Grows taller than Canary grass and is more suitable to northern climates because it tolerates extreme cold weather. Reed canary grass can be slow to establish, sometimes taking up to two years but it will tolerate a wide range of soil types.

3.00 kg/acre - £72.00 7.50 kg/ha - £180.00

Cotswold Game Kale Blend

Code: MIXKALE

The kale mix combines tall, sturdy and leafy varieties for good access and cover.

3.00 kg/acre - £52.24 7.50 kg/ha - £130.60

Dwarf Sorghum

An excellent windbreak around other crops, it is an annual crop with similar properties to maize.
Only available in one acre packs.

8.00 kg/acre - £44.50 20.00 kg/ha - £111.25

Game Maize

A Game Maize blend of early and medium varieties to strike a balance between reliable establishment, winter longstanding and cob production.
Limited availability, supplied in one acre packs (Korit treated seed).

£95.00 per acre



Lawn & Landscape

Seed mixtures that establish quickly to provide attractive, tough and low maintenance turf.

Great lawns are a distinctive feature of British gardens. Our mixtures contain the best modern varieties that require minimal maintenance so you can enjoy more time looking and less time mowing.

The right mix is just as important for other key grassy areas such as sports pitches and roadside verges. Creating the right species mix for these uses is vital to ensure the surface is correct for purpose and can be effectively managed.

How much seed do I need?

- ▶ Measure the area of your lawn in square metres (multiplying the width by the length will give the area).
- ▶ Multiply the area by the sowing rate given for each mix (in grams per square metre), always using the highest sowing rate if you are creating a lawn on bare earth
- ▶ Divide the results by 1000 to give the number of kilograms required

Example:

Length of lawn = 10m, width = 4m, area of lawn = 40m²
 40 x 70g (sowing rate) = 2800 = 2.8kg of seed required

Please note: One acre = 4000m²

| | 70 grams/m ² High rate | 50 grams/m ² Medium rate | 35 grams/m ² Low rate |
|--------------------|--------------------------------------|--|-------------------------------------|
| 15 m ² | 1 kg | 0.75 kg | 0.5 kg |
| 30 m ² | 2 kg | 1.5 kg | 1 kg |
| 100 m ² | 7 kg | 5 kg | 3.5 kg |
| 250 m ² | 17.5kg | 12.5 kg | 8.75 kg |
| 500 m ² | 35 kg | 25 kg | 17.5 kg |

Mixes: Lawn

Hard Wearing Lawn With Ryegrass

Code: MIXHAR

Designed to produce a tough and durable lawn which is easy to grow and live with. The grasses used produce a knitted turf and offer unbeatable toughness. We have supplied this mixture for 30 years and frequently hear positive reports from our customers. As well as being used as a lawn, this mixture will produce a suitable turf for caravan parks and airfields. Turf growers also like the blend as it establishes quickly.

- 50% certified dwarf perennial ryegrass
- 40% certified slender creeping red fescue
- 10% certified common bentgrass

50 - 70 g/m²

£6.67 per kg

Ornamental Lawn Without Ryegrass

Code: MIXORN

A superb fine-leaved mixture with a superior finish. It is suitable for sites where a 'bowling green' finish is required. The mixture is slow growing and tolerates light shade but will require regular feeding and mowing, ideally with a cylinder mower, to keep its appearance.

- 80% certified slender creeping red fescue
- 20% certified common bentgrass

50 - 70 g/m²

£7.83 per kg

Shady Lawn Without Ryegrass

Code: MIXSHA

A slow-growing mixture for low-light areas. A good turf can be produced from this mix, especially when the mowing height is increased to 2-3 inches.

- 30% certified slender creeping red fescue
- 30% certified red/chewings fescue
- 30% certified smooth stalked meadowgrass
- 10% certified common bentgrass

50 - 70 g/m²

£7.48 per kg

Mixes: Landscape

Economy Landscape

With Ryegrass

Code: MIXECO

A low cost, fast establishing mixture, designed to cover large areas quickly. Suitable for banks and other non-prestigious areas.

- 50% certified dwarf perennial ryegrass
- 50% certified creeping red fescue

35 g/m²

£5.10 per kg

Verge Mixture

With Ryegrass

Code: MIXRV

An all-round mixture which is used for verges, pipelines and other reinstatement projects.

- 35% certified dwarf perennial ryegrass
- 30% certified creeping red fescue
- 20% certified red/chewings fescue
- 10% certified smooth stalked meadowgrass
- 5% certified common bentgrass

35 - 70 g/m²

£6.08 per kg

Low Maintenance

Without Ryegrass

Code: MIXLM

A seed mixture which requires very little mowing or maintenance. It will tolerate shade and grows on all soils including infertile types.

- 70% certified sheeps fescue
- 20% certified red/chewings fescue
- 10% certified common bentgrass

35 - 70 g/m²

£6.51 per kg

Additions



White Clover

Nitrogen fixing clover.

White clover can be included on request.

Please call for advice.

Mixes: Sport

Rugby & Football

Re-Seed and Renovate

Code: MIXSPO

This is a fast establishing mixture which can be used for all winter sports. It is also suitable for school playing fields and for over-seeding pitches at the end of the season.

- 80% certified dwarf perennial ryegrass
- 20% certified creeping red fescue

35 - 50 g/m²

£5.34 per kg

Tennis Court & Cricket Wicket

With Ryegrass

Code: MIXTEN

Ball bounce and speed are improved on dense and compact turf. Formulated to provide a firm and fast surface and give a true, sufficiently high bounce. Frequent mowing and rolling recommended for best results.

- 45% certified dwarf perennial ryegrass
- 30% certified red/chewings fescue
- 15% certified slender creeping red fescue
- 10% certified bentgrass (Brown Top)

50 g/m²

£8.40 per kg



Hardwearing Lawn Mix
20th May, Surrey

COTSWOLD SEEDS

Cotswold Seeds was founded in 1974 and deals with over 18,000 farmers throughout the UK. The company has a specialist interest in grass and legumes, offering advice on growing and managing these crops to farmers and growers in the livestock, arable and horticultural sectors. The company, in conjunction with FarmED at Honeydale Farm, is also involved in a wide range of research projects.

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