



COTSWOLD
Grass Seeds
— DIRECT —

2020

SEED CATALOGUE

47TH EDITION



Hand-Picked & Mixed

Bespoke mixtures at no extra cost

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Orders placed by 2pm on the phone or online can normally be delivered next 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 prior to 2pm.

We also deliver to the outlying areas of the UK and Europe; any additional cost will be advised at the time of ordering. Customers outside the UK, Northern Ireland & Eire should order by phone, rather than online.

N.B. 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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Welcome from Ian & Paul

While Ian is still very much at the helm of Cotswold Seeds, I am delighted to have taken responsibility for the day-to-day running of the company. Having worked here with Ian for over twenty years, I have seen Cotswold Seeds change and expand, but at the same time the fundamental ethos of the company has remained the same. Founder Robin Hill, with whom I was lucky enough to work alongside for several years prior to his retirement, believed that integrity was key. Although Robin is no longer with us he would have been delighted to see that hundreds of you kindly took part in our customer survey earlier in the year. It was heartening to discover that so many of you value our friendly and helpful advice, fast delivery, and the quality of our seed mixtures, as well as our all-important catalogue. So with this in mind I bid you a very warm welcome to this latest 47th edition from myself and the rest of our dedicated team.

After another challenging year weather-wise at home and abroad, and on the back of high consumption in 2018, seed stocks across the market are still recovering. However, the good news is that although many species remain in short supply, we've secured the seed required for 2020. With this seed, you can rest assured that our technical team are primed and ready for your enquiries. Sam, Lizzie and Abbi are only a phone call away and are always happy to provide the advice and support you need, we're looking forward to speaking with you soon.

Paul Totterdell
General Manager



Reading the mixtures

As you flick through this catalogue you will notice coloured indicators alongside the mixture contents, as well as a coloured bar beneath.

■ 2.00 kg certified CANCAN perennial ryegrass.

The green block indicates that this is a grass.



This bar would indicate a mixture of 50% grass and 50% legume content - based on weight.



You will see a key on every page where there is a mixture, showing which colour represents which 'type' of plant.

I know that many of you are aware of FarmED and have been following the development of the new centre for farm and food education, which we've been creating at Honeydale Farm. The centre is due to officially open this year and kept us busy during 2019. The aims of FarmED are to accelerate the transition towards regenerative agriculture and a sustainable food system, and the response we've had so far has been overwhelmingly positive.

FarmED underpins all the work we've been doing at Cotswold Seeds over the past decades. Through publications such as our popular Sort Out Your Soil and The Herbal Ley Farming System, we've been offering information on herbal leys, cover crops and green manures which are all designed to promote soil health, livestock health and ultimately human health. Increasingly these mixtures are being seen as important for carbon sequestration and to restore biodiversity. We're regularly asked to give talks and presentations on these subjects and when our technical advisors Sam, Lizzie and Abbi talk to you on the phone, they're often asked about using our seed mixtures to reduce costly inputs and find more self-sufficient methods of farming. In such rapidly changing and uncertain times, the need for this has never been greater.

FarmED takes sustainability many steps further through inspirational education, innovative research, practitioner led knowledge exchange and personal development opportunities. We want FarmED to grow into a thriving hub and community - demonstrating regenerative farming, sustainable food production & consumption, and rural enterprise.

We'll be hosting a series of events throughout the year to introduce FarmED, from farm walks & talks to demonstrations & presentations. We really hope to welcome you to some of them and show you around.

Ian Wilkinson
Managing Director



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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 Cancan are very persistent with good ground cover. Earlier heading ryegrasses such as AberEve, 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 8).

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. However, cocksfoot is not a grass to choose for long term pasture as it tends to become clumpy, coarse and unpalatable.

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 Dogtail (*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*)

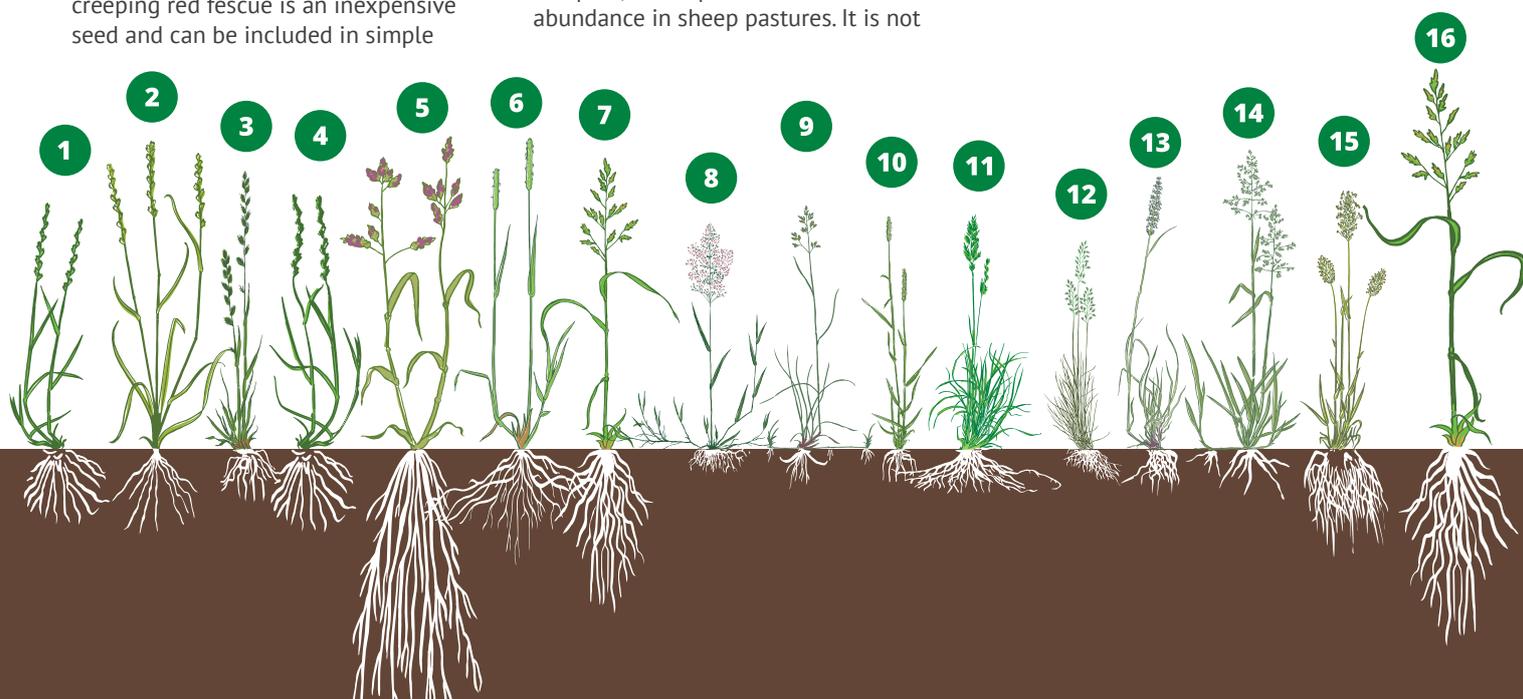
This perennial has creeping rhizomes and is very drought resistant. It is common throughout the UK, particularly on lighter soils. It should not be sown late in the autumn as it is slow to establish. Shallow sowing is also essential as the seed needs light to germinate. Early to grow in the spring, once 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, grown with grass or on their own, play an important role in providing highly 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.

Increase livestock productivity

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 AberHerald 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 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.

Herbs

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 althelmintic 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*)

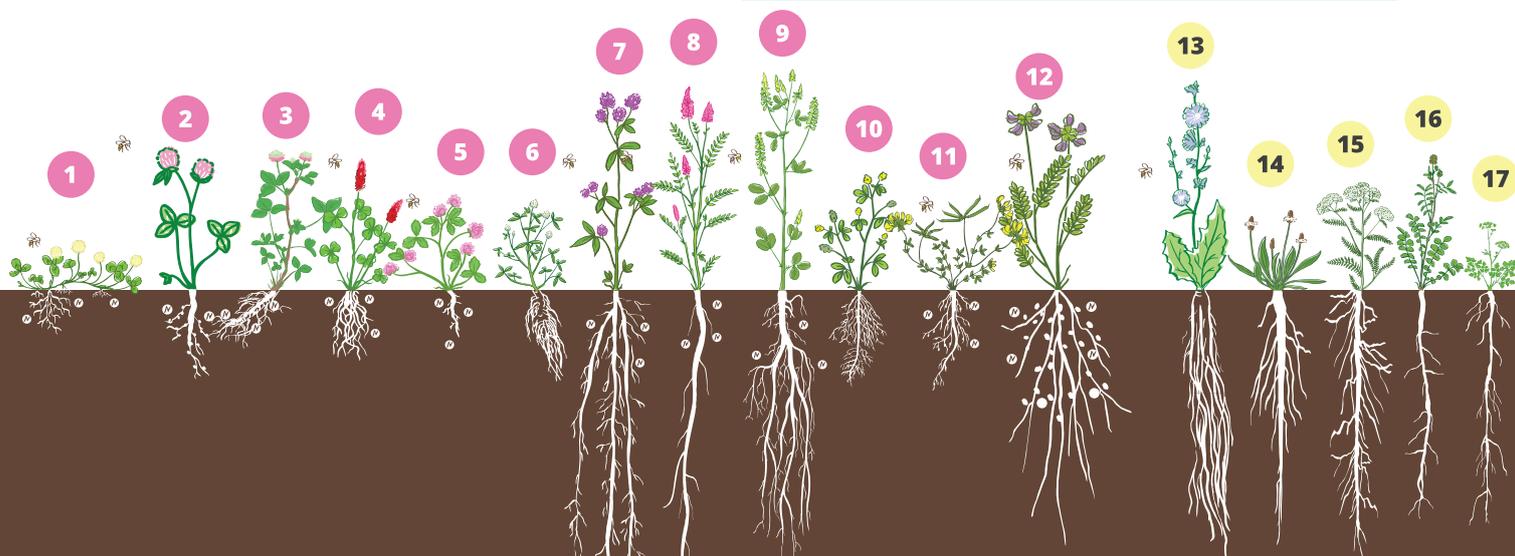
Yarrow is a deep-rooting perennial and a rich source of vitamin A.

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.

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' or 'Aitchinson' 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.

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.

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.



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 BARMULTRA II tet. Italian ryegrass
- 3.00 kg certified ASTONCRUSADER tet. hybrid ryegrass

10.00 kg/acre - £33.30 25.00 kg/ha - £83.25

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 ASTONCRUSADER 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 ASTONCRUSADER tet. hybrid ryegrass
- 4.50 kg certified CALIBRA tet. perennial ryegrass
- 0.40 kg certified ABERDAI white clover
- 0.40 kg certified ABERHERALD white clover
- 0.20 kg certified ABERACE wild white clover

10.00 kg/acre - £48.69 25.00 kg/ha - £121.73

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 **£11.00 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 ABERDAI white clover
- 0.80 kg certified ABERHERALD white clover
- 0.40 kg certified ABERACE wild white clover

2.00 kg/acre - £20.88 5.00 kg/ha - £52.20

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 ABERDAI white clover
- 1.00 kg certified ALICE white clover

2.00 kg/acre - £20.70 5.00 kg/ha - £51.75

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.

- 0.25 kg certified GLOBAL red clover
- 0.25 kg certified ABERHERALD white clover
- 0.20 kg certified ABERDAI white clover
- 0.10 kg certified ABERACE wild white clover
- 0.20 kg certified DAWN alsike clover
- 0.30 kg certified LEO birdsfoot trefoil
- 2.00 kg commercial sainfoin
- 0.20 kg commercial sweet clover
- 0.30 kg certified LACERTA chicory
- 1.25 kg burnet
- 0.25 kg yarrow
- 0.50 kg sheeps parsley
- 0.20 kg certified ENDURANCE ribgrass

6.00 kg/acre - £55.20 15.00 kg/ha - £138.00



Silage & Hay

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 4) 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.

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.

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.

First Hand

Richard & Dan Bown



Farm Type	Dairy, beef & livery yard
Location	Worcestershire
Size	420 acres
Soil Type	Clay to medium and light loam
Mixes Used	Quick Bulk Westerwold Ley, Intensive Dairy Graze, Pochon Dairy

Richard Bown is a third generation farmer, and his family are third generation Cotswold Seeds' customers. Richard farms at Northfield Farm, near Upton on Severn, with his son, Dan. They have 420 acres which are predominantly used for dairy. The 170 dairy Holstein herd, comprising 65 milking cows plus followers, is named Richaven Holsteins and there's also a pedigree herd of beef short horns.

The Bowns employ a rotation based around the three crop rule, with 60 acres of maize and around 20 acres of barley, and the rest split between one and five year leys for silage and grazing.

The Cotswold Seeds' leys used include Intensive Dairy Graze, Pochon Dairy, Quick Bulk Westerwolds and Fast & Vast. Timothy is included in mixtures sown on the heavier, wetter fields which are prone to drought in summer and flooding in winter - incidentally the farm has one of the three lowest fields on the Tewkesbury to Worcester floodplain. One of the farm's most successful crops is the Quick Bulk Westerwolds Ley, which they use for fast growing, bulky silage.

'Forage is everything,' says Richard. 'We pride ourselves on the quality, size and capacity of our stock, but you only get out what you put in. If we don't put a good product in them at the front end, we can't expect a good result from the animals. We are very particular about what we grow and how we forage it and we get a lot of people commenting on the amount of milk and the quality of the forage that we are feeding our animals. The Bown's take part in 2 to 3 national shows each year to promote their herd and secure embryo and progeny sales in the UK and Europe. 'When we show our animals people have been known to come up to us asking what we feed the animals to get them looking and milking so well,'

"We get a lot of people commenting on the amount of milk and the quality of the forage that we are feeding our animals."

So how do the Bown's make their silage?

The westerwolds ryegrass is often reseeded after maize and other fields might get reseeded in spring if quick bulk is needed. In the spring, fields receive no more than 70 units of nitrogen before the first cut, which is usually taken in mid April. This high quality, early silage goes in the pit for the milkers. By June it can be above waist height and ready for a second cut, for big bail production for livestock and equine use. 'We get 2-3 cuts off most fields and sometimes even a fourth,' says Dan.

'The cattle do really well on it,' Richard says with pride. 'Our herd averages over 11,000 litres, which includes both cows and heifers on a twice a day, very simple, fairly low input system. The cows themselves average over 12,000 litres, making us one of the highest yielding twice a day herds in the country.'

The Bowns say they use Cotswold Seeds for the excellent advice, and the consistency of the seed. 'I can honestly say we have never put a field in that hasn't germinated,' says Richard.



Intensive Silage

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

In these leys the various types of ryegrass (see page 4) 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 water logged 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.

- 6.00 kg certified LIFLORIA dip. westerwolds ryegrass
- 8.00 kg certified MELMONDO westerwolds ryegrass

14.00 kg/acre - £41.30 35.00 kg/ha - £103.25

Festulolium Silage Ley

Two Year Dry Land Ley

Code: MIXAF

This mix contains one of the festulolium species 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 ideal mixture for dryland, it showed good resilience during the dry summer 2018. Both species will head in the third week of May and can be relied on for 2 years.

- 10.00 kg certified ABERNICHE festulolium
- 4.00 kg certified BARMULTRA II tet. Italian ryegrass

14.00 kg/acre - £52.00 35.00 kg/ha - £130.00

Westerwold and Vetch

Six Month Ley

Code: MIXWWV

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.

- 8.00 kg certified LIFLORA dip. westerwolds ryegrass
- 17.00 kg certified EARLY ENGLISH vetch

25.00 kg/acre - £52.50 62.50 kg/ha - £131.25

Additions



White Clover

White clover can be added to improve nutritional value.
Add 1kg of white clover **£10.40 per acre**

Festulolium

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

Mixes

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.

- 7.00 kg certified BARMULTRA II tet. Italian ryegrass
- 3.50 kg certified HUNTER tet. Italian ryegrass
- 3.50 kg certified JAVARIO Italian ryegrass

14.00 kg/acre - £43.90 35.00 kg/ha - £109.75

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.

- 4.00 kg certified ABEREVE tet. hybrid ryegrass
- 8.00 kg certified ASTONCRUSADER tet. hybrid ryegrass
- 2.00 kg certified CANSAN perennial ryegrass

14.00 kg/acre - £59.70 35.00 kg/ha - £149.25

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 Abermagic 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 ABERCLYDE tet. perennial ryegrass
- 2.00 kg certified ABEREVE tet. hybrid ryegrass
- 2.00 kg certified ASTONCRUSADER tet. hybrid ryegrass
- 4.00 kg certified ABERMAGIC perennial ryegrass

14.00 kg/acre - £64.30 35.00 kg/ha - £160.75

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 ear emergence patterns should also coincide with the flowering pattern of the red clover. They are then at the same maturity stage and digestibility is similar.

What you need to know about oestrogen

There are questions over the effect that the oestrogen content of red clover may have on reducing animal fertility. There are relatively few confirmed cases and it is commonly accepted because a ewes diet may be made up solely of red clover, it is best to flush and tup ewes on leys that do not contain red clover, do not feed or graze ewes 6 weeks before or after tugging to be safe.

There is no known detrimental effects on fattening lambs, in fact they can fatten very well on this high protein crop.

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.

Grass

Legume

Mixes

Fast and Vast

One - Two Year Ley

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.

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

22.00 kg/acre - £65.70 55.00 kg/ha - £164.25

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
- 3.00 kg certified BARMULTRA II tet. Italian ryegrass
- 3.00 kg certified HUNTER tet. Italian ryegrass
- 3.00 kg certified JAVARIO Italian ryegrass

12.00 kg/acre - £52.20 30.00 kg/ha - £130.50

Longer Term Red Clover Ley

Three - Four 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 MILVUS red clover
- 3.00 kg certified ASTONCRUSADER tet. hybrid ryegrass
- 3.00 kg certified KIRIAL tet. hybrid ryegrass
- 3.00 kg certified CALIBRA tet. perennial ryegrass

12.00 kg/acre - £64.50 30.00 kg/ha - £161.25

Additions



Vetch

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

Add 10kg of vetch

£17.00 per acre

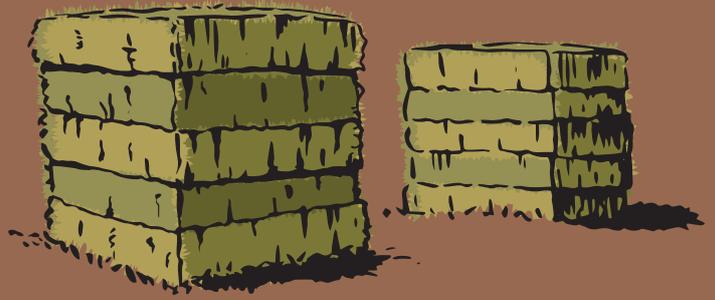


1st Cut Silage
Oxfordshire
14th May

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

The crop should be sown August-September to provide good yields the following spring. These mixtures will not put on a seedhead when sown in the spring. The only plant that will do this is westerwold ryegrass.

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 approximately 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

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.

- 4.00 kg certified BARMULTRA II tet. Italian ryegrass
- 4.00 kg certified HUNTER tet. Italian ryegrass
- 6.00 kg certified JAVARIO Italian ryegrass

14.00 kg/acre - £43.90

35.00 kg/ha - £109.75

Hay and Graze

Four Year Hay/Haylage Ley

Code: MIXHG

A longer term option for the hay & 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 & autumn grazing.

- 4.00 kg certified PIROL dip. hybrid ryegrass
- 6.00 kg certified ABERDART perennial ryegrass
- 2.00 kg certified WINNETOU timothy

12.00 kg/acre - £58.00

30.00 kg/ha - £145.00

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

13.00 kg/acre - £69.70

32.50 kg/ha - £174.25

Mixes

Westerwold 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.

- 10.50 kg certified LIFLORIA dip. westerwold ryegrass
- 3.50 kg certified MELMONDO westerwold ryegrass

14.00 kg/acre - £41.30

35.00 kg/ha - £103.25

NEW

Additions



Sweet vernal grass

We can create a softer, sweeter smelling meadow mix.

Add 0.1 kg of sweet vernal grass

£6.00 per acre

First Hand

Mark Jervis



Farm Type	Equine Haylage
Location	Warwickshire
Size	800 acres
Soil Type	Heavy clay, sand & gravel
Mixes Used	Special Maximum Yield, Hay & Graze

Mark Jervis works as part of A.M Jervis & Son, his family's business which produces high quality haylage for the horse market under the brand EquiGrass. They supply international dressage and eventing yards, as well as National Hunt and flat racing trainers, along with studs and private yards.

Winderton Farm on the South Warwickshire and Oxfordshire border totals 800 acres, with nearly two thirds (550 acres) down to grass - a range of short and medium term mixtures from Cotswold Seeds.

'We aim to spread our harvest dates as much as possible,' explains Mark. 'So we use early maturing species like westerwold ryegrass, followed by Italian ryegrass, and perennial ryegrass. We also use drought tolerant varieties like timothy or festulolium on lighter land.'

The predominant mixture is the two year Italian ryegrass ley, 'It's perfect for producing quality forage for racing yards and studs,' Mark explains. 'It has the perfect characteristics - good yield and energy with appropriate protein levels. The mix produces plants with long, stalky stems, and when cut, this stemmy material produces the ideal haylage sample demanded by the equine market.'

Quality and consistency is a key aim for Mark. Each batch of haylage is analysed and the results Mark describes as 'spot on.' A Typical analysis shows, 10.5-11.5mj/kg of energy (DM), 8-10% protein and 70-80% dry matter.

The leys are usually established through a conventional tillage system. The field is sprayed to make sure it's as clean and weed free as possible. It is then ploughed, followed by cultivations and sown with a tine drill or Vaderstad, before being well rolled to ensure a firm, flat finish. Occasionally the seed is direct drilled with a Cross Slot or Vaderstad drill if conditions allow.

It's given the nitrogen, P&K and sulphur it needs - generally 60-80 kg of nitrogen per hectare, however care is taken over the N application.

'We don't go overboard with the amount of nitrogen we use because we want to keep the protein levels balanced, generally our customers don't want too much protein in the finished product,' Mark explains.

"It's perfect for producing quality forage for racing yards and studs."

'I ring up and talk to one of the team about what I am aiming for, then they send me a mixture to suit.'

The first cut is taken between the end of May and the beginning or middle of June, depending on the weather. The second cut is taken six weeks later and a third cut is generally at the end of summer, if the weather allows.

The grass crops are rotated with arable. Generally the grass is down for two years, unless it's a perennial ryegrass based mix, followed by wheat, then rape then sometimes another crop of wheat or barley, or another break crop, before going back into grass.

Mark left Harper Adams 11 years ago, and has always used Cotswold Grass Seeds, as did his father before that.

'The service is the biggest driver. One phone call and you can have next day delivery. If we run short we can collect within the hour. The quality of the product is also second to none. The seeds establish just as we expect. We aim to provide quality service to our customers and we use suppliers who offer the same service to us. Cotswold Seeds are certainly the best.'

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 6.2pH.

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

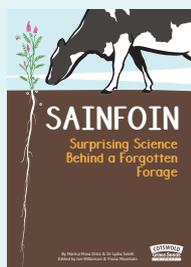
A sainfoin ley should be managed carefully to maximise performance. Sainfoin produces a cut of silage in early June or hay may be taken if preferred. Sainfoin should be cut during early flowering but this may be delayed without much loss of feed value if needed. Regrowth is less after the first cut and 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.



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

Visit cotswoldseeds.com to download your copy.



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 - £92.75

87.50 kg/ha - £231.88

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 - £16.30

7.50 kg/ha - £40.75



Sainfoin hay
Oxfordshire
18th June

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.



Lucerne

Four Year Cutting Crop

Code: MARSH

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 MARSHALL lucerne

8.00 kg/acre - £62.00

20.00 kg/ha - £155.00

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 - £16.30

7.50 kg/ha - £40.75

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 if a good seed bed can be made and there is sufficient moisture available.

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

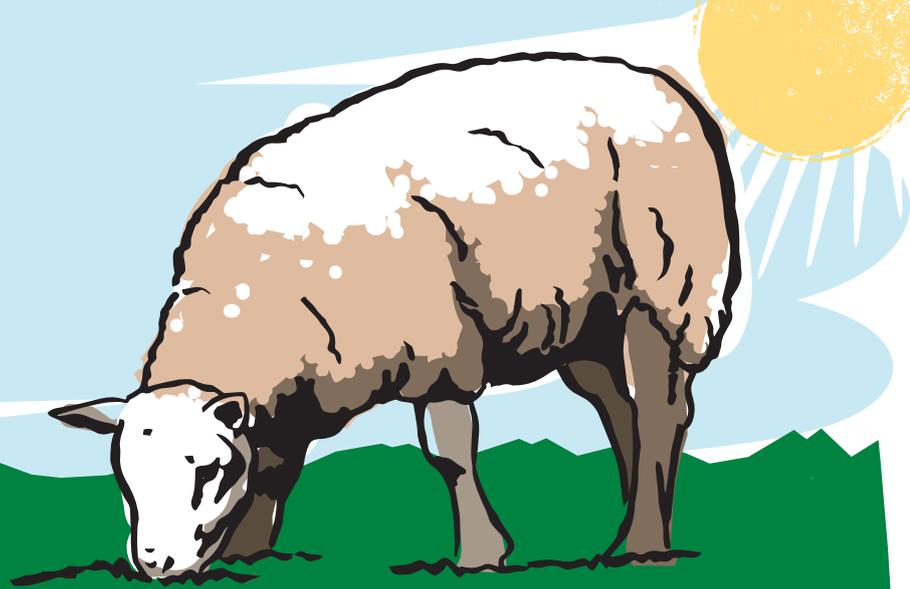


To Fix N

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

£8.00 plus VAT



Grazing

Seed mixtures to suit the UK's many grazing systems.

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 at around £200 per hectare. Now, in light of unpredictable 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 & grass.

Alternatives to ryegrass

Timothy and meadow fescue are generally considered to be the most palatable of the permanent grasses. Although they may lack some of the digestibility of ryegrass, they are consumed readily by the grazing animal. In addition, when grown with red and white clovers, the forage produced will be higher in protein, more digestible and largely self-sufficient with little demand for artificial nitrogen. They also offer impressive yields. These grasses are excellent in mixtures and a very good alternative in circumstances where ryegrass doesn't suit, such as low fertility and/or wet soils or in the uplands.

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.

Herbal Leys: feeding health

The most diverse grazing mix we offer is the herbal ley which contains a huge range of grasses, herbs and clovers. It produces well-balanced forage, not just large volumes of grass, and thrives in dry conditions. Species such as cocksfoot, red clover and chicory are deep-rooting soil improvers with the ability to unlock mineral resources from deep in the soil profile.

Herbs are richer in minerals than grasses or clovers and including them in seed mixes is an effective way of improving forage to ensure good animal health and performance.

Yield and longevity

A newly sown ley on good soil, with plenty of moisture and nitrogen will significantly out-yield older swards. Over time, deterioration of any seed mix is inevitable as unsown, less nutritious species invade. Mixes containing late heading ryegrasses (such as Cancan) have greater persistence, so reducing the need to reseed frequently. To maximise a ryegrass-based ley's productive lifespan, nitrogen levels should be maintained as a drop in fertility will reduce the competitiveness of ryegrass, so favouring unsown species.

First Hand

Martin Chatfield



Farm Type	Sheep
Location	Cheriton Bishop, Devon
Size	250 acres
Soil Type	Predominantly clay with some shillet
Mixes Used	Red Clover Cutting Ley and Special Herbal Over-seeding Mixture

Martin Chatfield, at Crossways Farm, describes himself as an accidental farmer, who started farming 'by mistake' after he bought some chickens. That was nearly forty years ago, but Martin says he's never stopped learning and experimenting. As a first generation farmer, he has nobody to pass on knowledge and skills to him, so instead he has always done lots of researching and reading, with impressive results.

He has approximately 900 ewes, producing finished lambs. There are two flocks, one organic flock and one which is farmed conventionally.

As a tenant farmer, Martin has to farm without subsidies, so needed to cut costs per head of ewe.

'We were spending too much on concentrates and not consistently getting good performance from the animals,' Martin says. When he read about red clover and herbal leys he was intrigued to discover that he could get everything he needed out of the ground rather than buying in inputs and decided to give these mixtures a go. 'The neighbours thought we were mad,' he adds.

But it worked.

'Although the initial expense was frightening, once you've got into the system, the results are great. We don't need to buy any minerals because the herbal ley provides them. The sheep love it. We halved our use of concentrates and benefited from improved growth rates too.'

Martin now usually has around 20-30 acres of red clover and 100 acres of herbal ley and makes silage from both. 'We get good silage off the red clover. Twenty bales to the acre with a bit of P&K and no fertiliser.'

The red clover is cut at the end of May, with a second cut in early August and then again at the end of September. The first cut is mainly grass. The second cut is 50/50 grass and clover and the third cut is mainly clover.

“We halved our use of concentrates and benefited from improved growth rates too.”

When it comes to managing the herbal ley, Martin's advice is to keep on top of the chicory in the second year as it 'grows like mad'. The benefit is that it has deep roots, so goes on growing in drought conditions, but 'you have to rotationally graze, otherwise it gets away and then it goes to seed'. Martin cautions not to graze it heavily in winter though. 'If you graze the crown out of it, you'll kill it.'

The rotational grazing works well, ensuring clean ground is in front of the stock and helping keep the worm burden low if the stock are not put back into a field for at least 21 days. 'We never worm the organics,' Martin says.

He plans to put more land down to red clover and herbal leys in future and is still experimenting. 'Last year we tried slot seeding some old pastures with an Aitchison. We wanted early and late grass, so we used a bespoke herbal ley, adding in cocksfoot for early growth, timothy for late growth, to extend the growing season and more clover to increase protein levels.'

Martin has been using Cotswold Seeds for 15-20 years. 'We started small, found it worked, and experimented with different mixtures. We'd ring Cotswold Seeds up and explain what results we needed, and they'd come up with suggestions. Now we tend to ask for the mixture we want and they just put it together for us.'



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 down 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 and regrowth.

Seed mixtures containing hybrid ryegrass should be relied upon for up to four years only.

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 Atlaswede 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 AberAce are extremely persistent, filling the base of the sward and can be grazed hard especially with sheep.

Medium Leaf - Medium leaved varieties such as AberHerald and AberDai 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 Alice 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.

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 ASTONCRUSADER tet. hybrid ryegrass
- 4.00 kg certified ABERMAGIC perennial ryegrass
- 2.00 kg certified CANSAN perennial ryegrass
- 1.40 kg certified WINNETOU timothy
- 0.20 kg certified ABERDAI white clover
- 0.20 kg certified ABERHERALD white clover
- 0.20 kg certified ABERACE wild white clover

12.00 kg/acre - £61.74

30.00 kg/ha - £154.35

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 30).

- 2.00 kg certified ASTONCRUSADER tet. hybrid ryegrass
- 3.00 kg certified CALIBRA tet. hybrid ryegrass
- 2.50 kg certified ABERMAGIC perennial ryegrass
- 3.00 kg certified ABERBITE tet. perennial ryegrass
- 0.60 kg certified ABERDAI white clover
- 0.60 kg certified ABERHERALD white clover
- 0.30 kg certified ALICE white clover

12.00 kg/acre - £65.52

30.00 kg/ha - £163.80

Additions

- ⊕ Red Clover: 1 kg red clover
- ⊕ Cover Crop: 3 kg westerwold
- ⊕ Heavy Land: 2 kg timothy
- ⊕ Light Land: 2 kg cocksfoot
- ⊕ Anti Bloat: 5 kg sainfoin

£8.40 per acre**£8.85 per acre****£9.80 per acre****£10.90 per acre****£13.25 per acre**

Milk-Meat Cut or Graze

Five Year Plus Ley

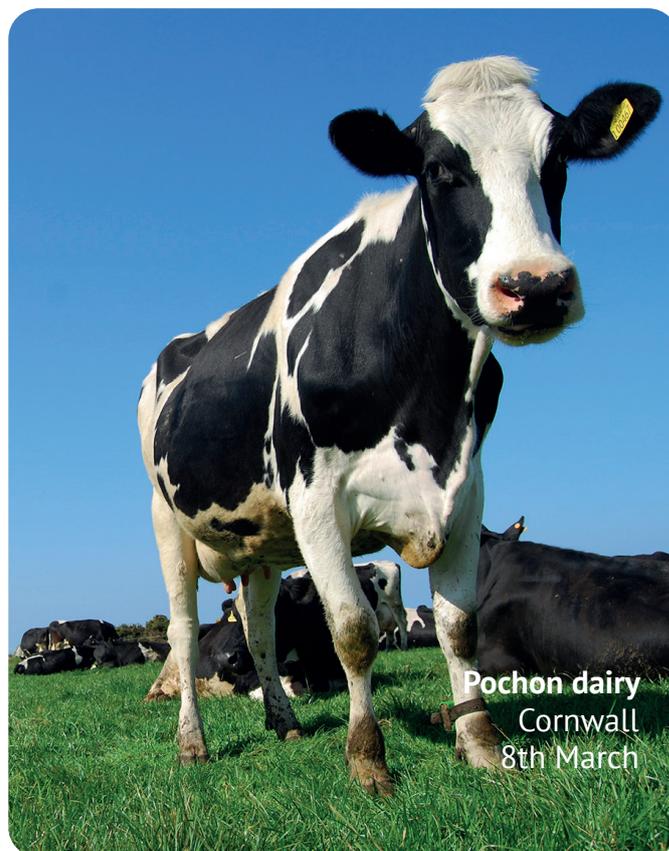
Code: MIXMM

Our best selling dual purpose ley, equally suitable for cattle or sheep. This mixture combines the benefits of high yielding intermediate ryegrass Abergreen, with Aberbite, 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.

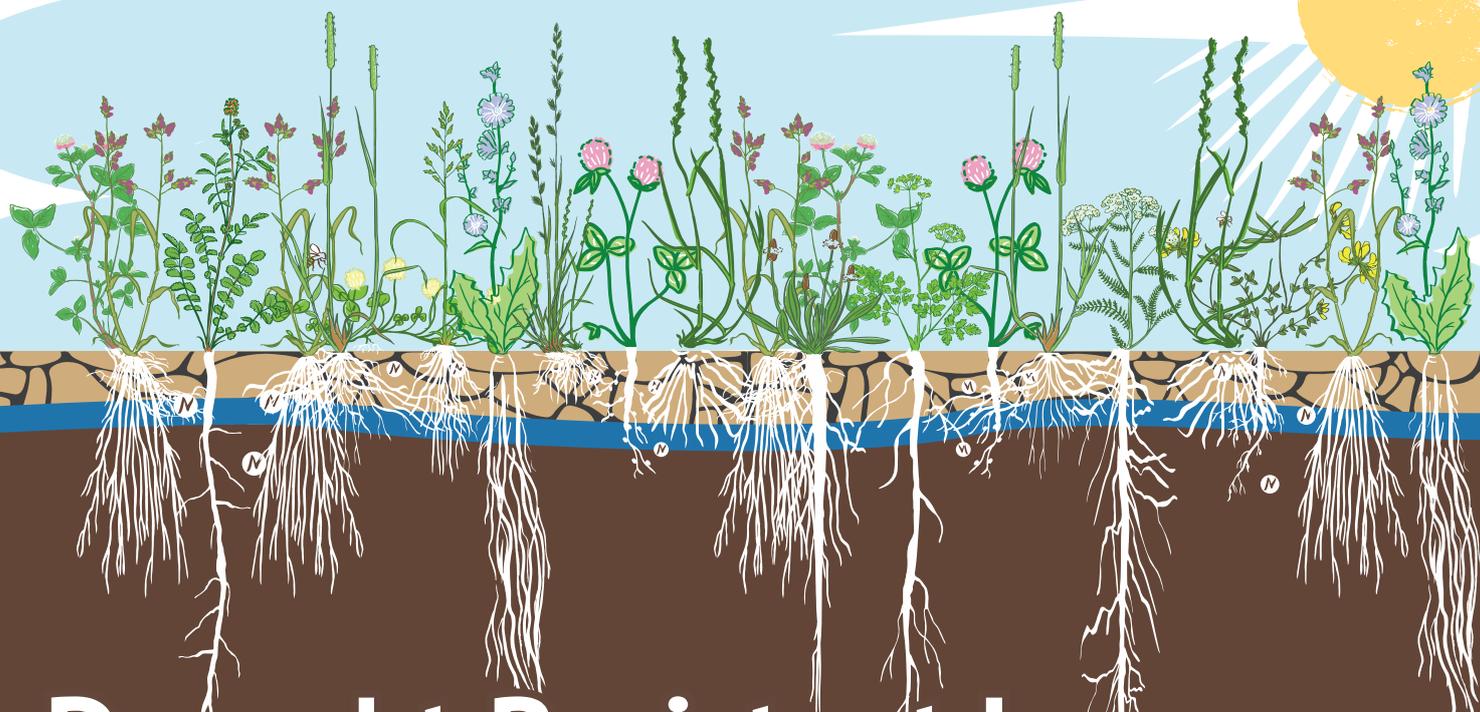
- 2.50 kg certified ABERGREEN perennial ryegrass
- 2.00 kg certified OAKPARK perennial ryegrass
- 4.00 kg certified CALIBRA tet. perennial ryegrass
- 2.00 kg certified ABERBITE tet. perennial ryegrass
- 2.00 kg certified WINNETOU timothy
- 0.20 kg certified ABERDAI white clover
- 0.10 kg certified ABERHERALD white clover
- 0.20 kg certified ALICE white clover

13.00 kg/acre - £66.92

32.50 kg/ha - £167.30



Pochon dairy
Cornwall
8th March



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 forage 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 5), 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 SPARTA cocksfoot
- 3.00 kg certified CALIBRA tet. perennial ryegrass
- 2.50 kg certified ABERGREEN perennial ryegrass
- 2.30 kg certified OAKPARK perennial ryegrass
- 1.50 kg certified WINNETOU timothy
- 0.25 kg certified ABERDAI white clover
- 0.25 kg certified ABERHERALD white clover
- 0.20 kg certified ABERACE wild white clover

13.00 kg/acre - £70.12 32.50 kg/ha - £175.30

Mixes

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 ASTONCRUSADER tet. hybrid ryegrass
- 2.20 kg certified ABERMAGIC perennial ryegrass
- 4.00 kg certified CALIBRA tet. perennial ryegrass
- 2.00 kg certified WINNETOU timothy
- 2.00 kg certified SPARTA cocksfoot
- 0.50 kg certified ABERCLARET red clover
- 0.40 kg certified ABERDAI white clover
- 0.30 kg certified ABERHERALD white clover
- 0.10 kg certified ABERACE wild white clover

13.00 kg/acre - £68.90 32.50 kg/ha - £172.25

'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.

- 5.50 kg certified SPARTA cocksfoot
- 2.70 kg certified PARDUS meadow fescue
- 1.50 kg certified WINNETOU timothy
- 1.00 kg certified ALTASWEDE red clover
- 0.30 kg certified ABERHERALD white clover
- 0.30 kg certified ABERDAI white clover
- 0.20 kg certified LEO birdsfoot trefoil
- 0.50 kg certified PUNA II chicory
- 0.10 kg certified ENDURANCE ribgrass
- 0.25 kg burnet
- 0.05 kg yarrow
- 0.10 kg sheeps parsley

12.50 kg/acre - £85.47 31.25 kg/ha - £213.68

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 II chicory
- 1.50 kg certified GLOBAL red clover
- 0.60 kg certified ABERDAI white clover
- 1.70 kg certified ABERBITE tet. perennial ryegrass
- 0.20 kg certified ENDURANCE ribgrass

6.50 kg/acre - £70.40 16.25 kg/ha - £176.00

Additions



Cover crop: 3 kg westerwolds

£8.85 per acre

Cover crop: 3 kg Italian ryegrass

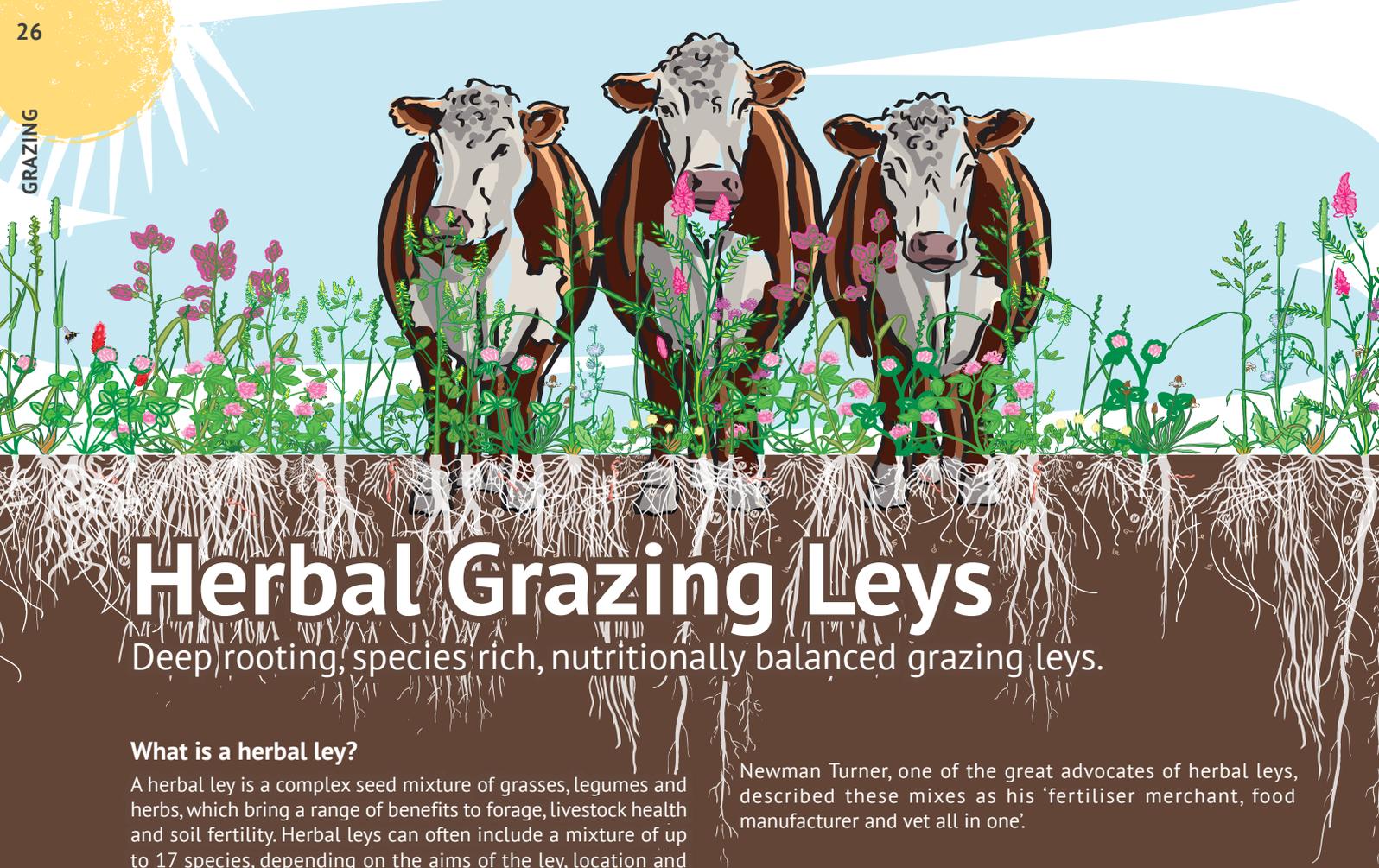
£9.00 per acre

Cover crop: 10 kg vetches

£17.00 per acre

Anti bloat: 5 kg sainfoin

£13.25 per acre



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 17 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.

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.

Newman Turner, one of the great advocates of herbal leys, described these mixes as his 'fertiliser merchant, food manufacturer and vet all in one'.

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. Once sown, roll immediately to ensure good soil-to-seed contact

Management

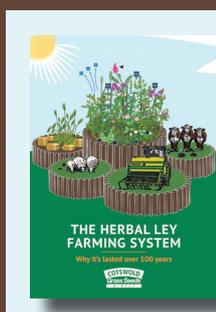
Graze lightly while the crop is establishing. Once growing well, rotationally graze allowing at least 28 days or more for recovery and regrowth. Using electric fencing, ration an area per day (e.g. about one acre for 100 cattle) but adjust this area to match growth and stock requirements. Over-grazing 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 13t DM/ha for the Herbal Ley and 10t DM/ha for the Chicory Ley (page 25) should be achieved.



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**

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

Mixes

Grass

Legume

Herb

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.

- 2.00 kg certified LOFA festulolium
- 2.40 kg certified ABERMAGIC perennial ryegrass
- 2.45 kg certified CALIBRA tet. perennial ryegrass
- 1.50 kg certified WINNETOU timothy
- 1.50 kg certified DONATA cocksfoot
- 0.80 kg certified PARDUS meadow fescue
- 0.30 kg certified ABERDAI white clover
- 0.20 kg certified ALICE white clover
- 0.25 kg certified MILVUS red clover
- 0.15 kg certified LOMIAI alsike clover
- 0.30 kg certified PUNA II chicory
- 0.15 kg certified ENDURANCE ribgrass

12.00 kg/acre - £68.28 30.00 kg/ha - £170.70

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.

- 0.25 kg certified GLOBAL red clover
- 0.25 kg certified ABERHERALD white clover
- 0.20 kg certified ABERDAI white clover
- 0.10 kg certified ABERACE wild white clover
- 0.20 kg certified DAWN alsike clover
- 0.30 kg certified LEO birdsfoot trefoil
- 2.00 kg commercial sainfoin
- 0.20 kg commercial sweet clover
- 0.30 kg certified LACERTA chicory
- 1.25 kg burnet
- 0.25 kg yarrow
- 0.50 kg sheeps parsley
- 0.20 kg certified ENDURANCE ribgrass

6.00 kg/acre - £55.20 15.00 kg/ha - £138.00

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. It can provide 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.

- 1.50 kg certified LOFA festulolium
- 1.50 kg certified DONATA cocksfoot
- 1.00 kg certified CANSAN perennial ryegrass
- 0.50 kg certified CALIBRA tet. perennial ryegrass
- 0.60 kg certified WINNETOU timothy
- 0.40 kg certified PARDUS meadow fescue
- 0.50 kg certified KORA tall fescue
- 0.70 kg certified MILVUS red clover
- 0.50 kg certified ABERHERALD white clover
- 0.20 kg certified DAWN alsike clover
- 0.20 kg certified LEO birdsfoot trefoil
- 0.30 kg certified LUZELLE lucerne
- 2.50 kg commercial sainfoin
- 0.80 kg commercial sweet clover
- 0.60 kg certified PUNA II chicory
- 0.20 kg certified ENDURANCE ribgrass
- 0.70 kg burnet
- 0.10 kg yarrow
- 0.20 kg sheeps parsley

13.00 kg/acre - £87.90 32.50 kg/ha - £219.75

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.

- 2.55 kg certified TETRAGRAZE tet. hybrid ryegrass
- 1.85 kg certified CALIBRA tet. perennial ryegrass
- 2.50 kg certified WINNETOU timothy
- 1.40 kg certified PARDUS meadow fescue
- 1.40 kg certified KORA tall fescue
- 1.00 kg certified ABERCLARET red clover
- 0.40 kg certified DAWN alsike clover
- 0.50 kg certified LUZELLE lucerne
- 0.80 kg commercial sweet clover
- 0.50 kg certified ABERDAI white clover
- 0.50 kg certified PUNA II chicory
- 0.10 kg certified ENDURANCE ribgrass
- 0.50 kg burnet

14.00 kg/acre - £89.58 35.00 kg/ha - £223.95



Mob grazing herbal ley
Oxfordshire
26th April



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.

First Hand

Stuart Hammond



Farm Type	Beef & Sheep
Location	Mid Wales
Size	950 acres
Soil Type	Heavy clay
Mixes Used	Pochon Persistent

Stuart Hammond is a third generation farmer, and his family have been using Cotswold Seeds' Pochon Persistent ley for over two decades with impressive results and significant cost savings.

This mix is suitable for taking a cut of silage, but is mainly used for rotational grazing. Including the best strains of high yielding white clovers from Aberystwyth, it gives excellent mid-summer production without artificial fertiliser.

'My grandfather started the farm in the 1950s and always had a big preference for using a lot of clover in the sward for fixing nitrogen,' says Stuart, who now farms with his brother, mother and uncle. 'I was brought up on that philosophy and we've been using Pochon for as long as I can remember.'

The farm, mid-way between Builth Wells and Llandrindod Wells, runs 1600 NZ Romney breeding ewes and 120 beef suckler cattle, finishing 400 cattle a year.

Stuart says that the sheep love the white clover in the mixture. 'Pochon is rocket fuel and gives great growth rates. All the lambs are finished on it (17.9kg average). It also produces fantastic silage.'

Pochon, like other long-lasting leys, takes 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, especially if the mixture includes clover. They are often sown in spring but autumn sowings are preferred due to more reliable rainfall, provided the seed is in by early September.

Once sown, they should be rolled immediately to ensure good soil-to-seed contact. Rolling with a flat roll is best for even consolidation, however roll twice with a Cambridge roll if a flat roll is not available.

With long term leys it is extremely important to control perennial weeds prior to sowing - aim for several stale seedbeds before 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. To create a denser sward with less bare soil for weeds, either broadcast or drill in two directions at a half rate.

“Pochon is rocket fuel and gives great growth rates.”

With five hundred acres now down to Pochon, the cost savings for Stuart Hammond have been significant. 'We used to buy 25-30 tons of lamb pellets and £18,000 of ewe feed cake but we've managed to reduce our usage to zero, bringing a reduction in the feed bill of around £25,000.'

The lambing fields are not grazed from Christmas until mid-March to get enough grass and clover cover for the ewes and lambs in the spring. A cut of silage is generally taken in mid June. 'Sometimes we take an earlier cut to get higher quality silage for finishing cattle, or you can have a bulkier, fantastic dry suckler cow silage.'

After cutting, the lambs paddock graze for maximum utilisation and to stimulate regrowth. The rest periods are also important, so the clover and ryegrass have time to recover between grazing.

Stuart also says that Pochon Persistent is well named, since it's very persistent, lasting at least ten years and sometimes longer, depending on the weather and whether or not the pH levels and phosphate have been well managed, he finds the ley flexible and easy to manage and it really suits his farming system.

Mixes - long term leys

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.

- 2.00 kg certified OAKPARK perennial ryegrass
- 3.00 kg certified CANSAN perennial ryegrass
- 3.00 kg certified CALIBRA tet. perennial ryegrass
- 2.50 kg certified ABERBITE tet. perennial ryegrass
- 0.60 kg certified ABERDAI white clover
- 0.60 kg certified ABERHERALD white clover
- 0.30 kg certified ABERACE wild white clover

12.00 kg/acre - £69.10 30.00 kg/ha - £172.75

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.

- 2.50 kg certified ABERGREEN perennial ryegrass
- 2.00 kg certified OAKPARK perennial ryegrass
- 3.00 kg certified CANSAN perennial ryegrass
- 2.50 kg certified ABERBITE tet. perennial ryegrass
- 2.00 kg certified WNNETOU timothy
- 0.40 kg certified ABERDAI white clover
- 0.40 kg certified ABERHERALD white clover
- 0.20 kg certified ABERACE wild white clover

13.00 kg/acre - £69.90 32.50 kg/ha - £174.75



Grazing permanent grass
Monmouthshire
30th June

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 red clover
- 0.40 kg certified ABERDAI white clover
- 0.40 kg certified ABERHERALD white clover
- 0.20 kg certified ABERACE wild white clover

12.50 kg/acre - £76.79 31.25 kg/ha - £191.98

Additions



Westerwolds can provide cover during establishment and increase yields in the first year.

Add 3 kg of westerwolds

£8.85 per acre



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 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.

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 ABERGREEN perennial ryegrass
- 5.00 kg certified ABERCLYDE tet. perennial ryegrass
- 2.00 kg certified ABERBITE tet. perennial ryegrass
- 2.00 kg certified OAKPARK perennial ryegrass

14.00 kg/acre - £66.35 35.00 kg/ha - £165.88

Intensive Dairy Graze - Late

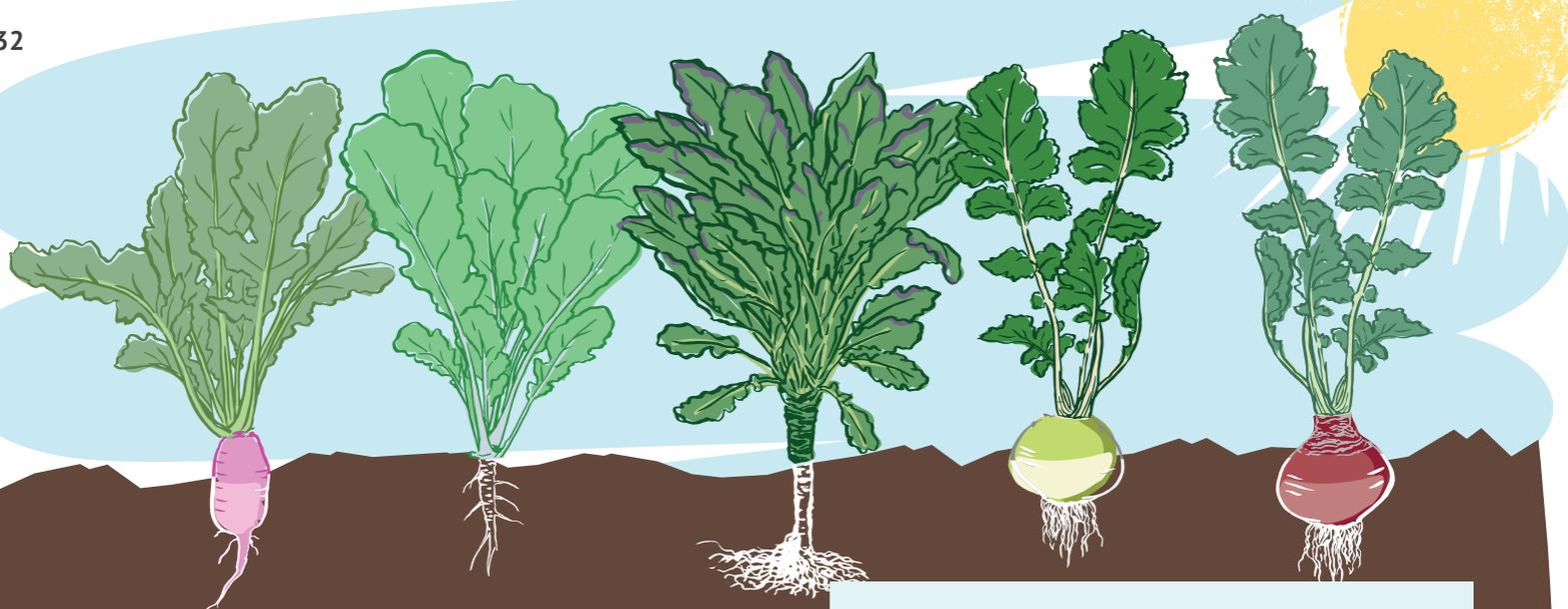
Five Year Plus Ley

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 ABERBITE tet. perennial ryegrass
- 4.00 kg certified ABERCLYDE tet. perennial ryegrass
- 2.00 kg certified ABERGREEN perennial ryegrass
- 2.00 kg certified ABERMAGIC perennial ryegrass
- 3.00 kg certified OAKPARK perennial ryegrass

15.00 kg/acre - £75.90 37.50 kg/ha - £189.75



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 make 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.

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

Species	DM/Ha	CP (%)	D-Value
Stubble turnip	4.5t	17	69
Maincrop turnip	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	65
Hybrid - Interval	5-8t	19	68
Hybrid - Redstart	6-8t	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 SAMSON stubble turnips
- 0.50 kg certified HOBSON forage rape

2.00 kg/acre - £7.55

5.00 kg/ha - £18.88

Hardy Root Mix

Longer Term

Code: MIXHR

Combining different brassicas together in a mixture is often beneficial as the crop is more reliable and higher yielding. This longer term mixture needs 20 weeks or more to produce its full yield, but will provide winter hardy keep until February or March. Three acres feeds 150 sheep (complete diet) or 75 cows (quarter of diet) for a month.

- 0.60 kg certified PINFOLD kale
- 0.70 kg certified MASSIF hardy turnip
- 0.20 kg certified GOWRIE swede

1.50 kg/acre - £22.42

3.75 kg/ha - £56.05



Grazing hybrid rape/kale
Monmouth
25th December

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 £86.00 per acre

Feldherr £88.00 per acre

Straights

Brassica

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 hobson variety is mildew resistant and front tolerant. Sowing rate 4.00 kg/acre.

Hobson (4.00 kg/acre)

£3.70 per kg

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.

Samson (Sheep grazing)

£3.80 per kg

Rondo (Cattle grazing)

£3.80 per kg

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)

£9.80 per kg

Maris Kestrel (2.00 kg/acre)

£13.50 per kg

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)

£8.00 per kg

Interval (3.00 kg/acre)

£4.45 per kg

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.

Massif (2.00 kg/acre)

£11.40 per kg

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)

£42.80 per kg

For more information on specific varieties visit
cotswoldseeds.com/knowledgehub.asp

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 roll, 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).



For over 40 years we have been supplying farmers and landowners with bespoke grass seed mixtures to serve many specific requirements, one of which is improving livestock health.

Pastures that contain a more natural diverse mix of plant species have lowered production costs through extending the grazing season and decreasing or, in some cases, eliminating the need for concentrate feed. Increasingly we are seeing similar needs within the equestrian industry. By taking a more holistic approach we can help horse owners and carers improve pasture quality and in turn improve their horse's health.

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 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.

Repair Mixtures

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.

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.

13.00 kg/acre - £69.03 32.50 kg/ha - £172.58

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.

14.00 kg/acre - £83.66 35.00 kg/ha - £209.15

Natural Pony Paddock

Long Term with Herbs & No Ryegrass

Code: MIXPP

This non-ryegrass mix contains a very wide selection of grasses & 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. Sow no later than mid September.

14.00 kg/acre - £91.87 35.00 kg/ha - £229.68

Paddock and Gateway Repair

Over-Seeding

Code: MIXPAD

A fast-establishing mix which provides a thick grass cover for poached areas and gateways.

20.00 kg/acre - £94.98 50.00 kg/ha - £237.45

Specialist Equine Seeds Catalogue

An extended product list is available by downloading our equine brochure or equine over-seeding guidelines from cotswoldseeds.com or calling us on 01608652552.



Surface & Repair Mixes

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 - 160 kg/acre 125 - 400 kg/ha **£4.94 per kg**

Polo Pitch

Permanent

Code: MIXPOP

A resilient turf that has been designed to stand up to the demands of the sport. Smooth stalked meadowgrass helps reduce slipping during tight turns and catstail quickly regenerates new shoots if damaged by wear and tear.

50 - 160 kg/acre 125 - 400 kg/ha **£5.47 per kg**

Pasture Over-Seeding

Longer Term Four to Five Years

Code: MIXOSH

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

10.00 kg/acre - £55.00 25.00 kg/ha - £137.50

Track and Arena Regeneration

Over-Seeding

Code: MIXTR

A low growing, fast establishing ryegrass repair mix to fill bare patches and damaged high traffic areas.

10.00 kg/acre - £46.50 25.00 kg/ha - £116.25



Cover Crops

Protecting and enhancing our soils.

Rising cost of fertilisers and other inputs combined with an increasingly uncertain climate means that it's becoming ever more beneficial and indeed crucial to have good soils which are fertile, well structured and tolerant to drought.

The dilemma for many arable farmers is affording the time and money to invest in soil health and improvement, but simply put, if we don't, soils will rapidly become so poor they will adversely affect yield, crop quality and ultimately profitability.

It is the small remains of plant life that ultimately produce vital fertility and structure in the soil. Though this organic matter makes up only a small percentage of the soil content it is vital, since nothing will grow on clay, silt or sand alone. Doing nothing to replace it is therefore not an option.

The best and cheapest way of adding organic matter to the soil is to grow cover crops between cash crops. The cost of the seed and having no income from a field given over to cover crops can appear prohibitive but should be seen as an investment that will produce higher and better yields in subsequent years.

Sowing and Growing

Suitable soils and optimum pH

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

How to sow

Mixes can be broadcast or drilled at a maximum of 10mm. Ideally, into warm soils when rain is imminent. If possible, roll after sowing for maximum seed to soil contact.

If sowing multi species mixes with large and small seeds drill according to the smallest seed size, sowing these too deeply will reduce establishment reliability.

Management

Catch crops must be established by 20th August and maintained for a minimum of 8 weeks and retained until at least the 14th October. Cover crops must be established by 1st October to 15th January or longer.

These mixtures can be grazed, topped or sprayed off after the above dates to terminate and either incorporated or left to break down on the surface depending on the farming system.

Cover crops grown after high yielding cereals may benefit from 25-50kgs per ha of N, especially if sowing for winter grazing (not applicable to EFA Catch/Cover Crops).



EFA cover crop
Jersey
15th October

Grass

Legume

Herb

Short term mixes

EFA Base Mix

Quick Growing

Code: MIXEFABM

A mixture designed to be compliant with Ecological Focus Area (EFA) criteria. It will establish quickly and can be adapted to specific soils or farming systems. The mix can be tailored to suit the cropping system and rotation - brassicas can be replaced with alternative species if OSR is in the rotation.

- 11.80 kg certified spring oats
- 2.00 kg certified vetch
- 1.20 kg certified mustard

15.00 kg/acre - £18.33

37.50 kg/ha - £45.83

To comply for EFA, at least 2 different crops must be sown (one cereal & one non-cereal) from this list:

Cereal

Rye
Barley
Oats

Non-Cereal

Vetch
Phacelia
Mustard
Lucerne
Fodder radish

EFA Base Mix Options

This cost-effective EFA Base mix will tick the box for the catch crop and cover crop options. Build on this mix to tailor it to your own specification.

- + Need winter hardiness?**
Swap spring oats for winter oats to ensure the mix stays green over the cold period.
- + Improving soil structure?**
Add fodder radish for deeper-rooting soil structure improvement
- Oil seed rape in rotation?**
Remove brassicas from the mixture
- + More biomass?**
Include phacelia for quick growing high biomass

Catch crops must be established by 20th August and maintained for at least 8 weeks, until 14th October.

Cover Crops must be established by 1st October and retained until 15th January.

Diverse Grazable Cover Crop

NEW

Ground Cover & Livestock Forage

Code: MIXGCC

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

- 3.00 kg certified EARLY ENGLISH vetch
- 4.82 kg certified ANTONINSKIE rye
- 2.00 kg certified MASCANI winter oats
- 0.30 kg certified INTERVAL hybrid rape/kale
- 0.15 kg certified RONDO stubble turnip
- 0.15 kg certified SAMSON stubble turnip
- 0.50 kg certified TORO fodder radish
- 0.01 kg certified STRUCTURATOR tillage radish
- 0.03 kg certified CONTEA crimson clover
- 0.04 kg certified NATRA phacelia

11.00 kg/acre - £17.48

27.50 kg/ha - £43.70

Winter Cover Crop

Late Sown Winter Cover

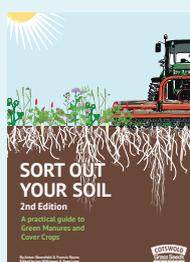
Code: MIXCCL

Sown just before or after the combine, this super quick mix covers the soil, fixes N while the weather is warm and picks up N that would otherwise be washed out of the soil. This mix will stay green and continue to grow until severe frosts.

- 1.10 kg certified LIFLORIA dip. westerwolds ryegrass
- 1.20 kg certified HEUSERS OSTSAAT crimson clover
- 1.00 kg certified ASTA mustard
- 0.95 kg certified TORO fodder radish
- 0.25 kg certified BALO phacelia
- 0.10 kg certified DIAKON tillage radish
- 0.30 kg certified GLOBAL red clover
- 0.10 kg certified DAWN alsike clover

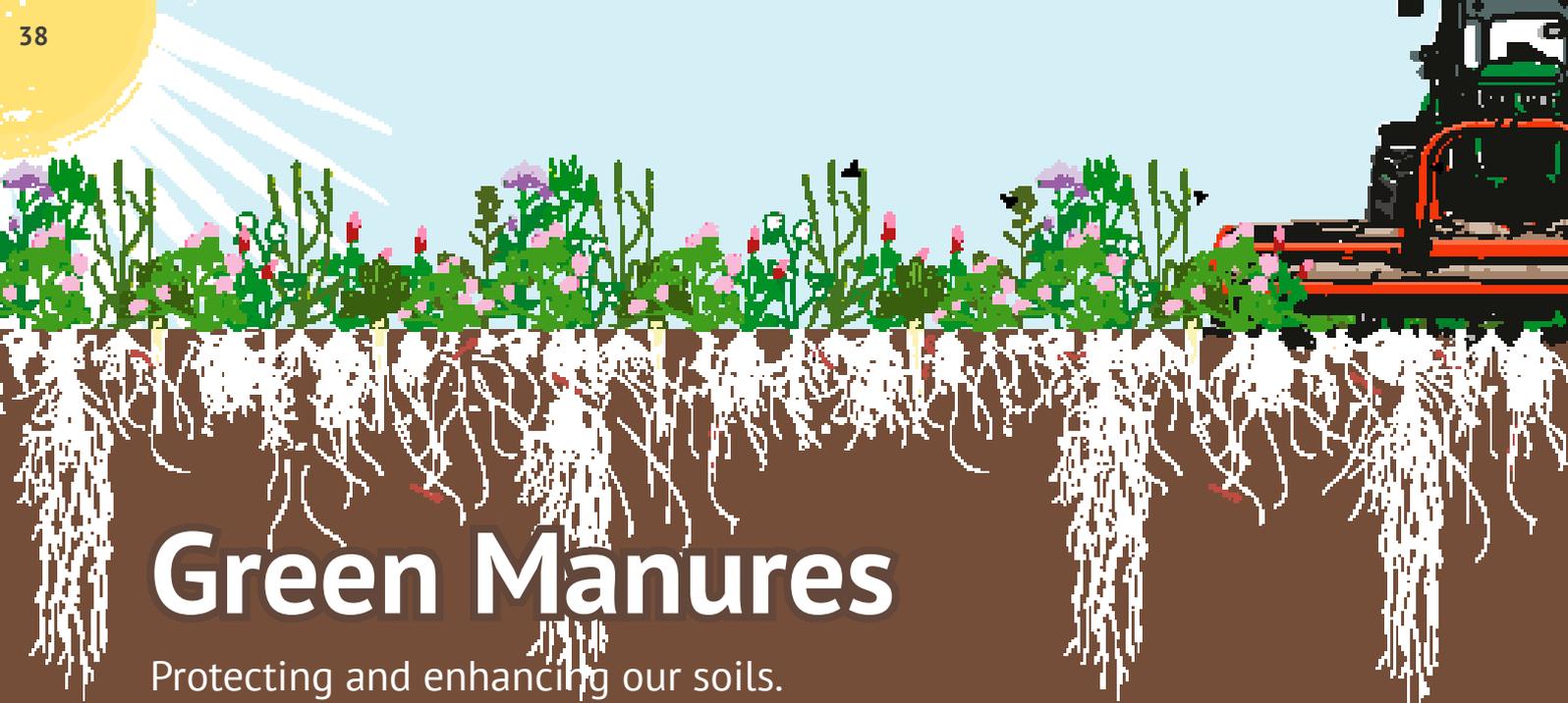
5.00 kg/acre - £20.95

12.50 kg/ha - £52.38



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.



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 understorey to a main crop and last between two and six 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 six or seven 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.



Summer green manure
Worcestershire
14th October

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.

- 1.80 kg certified ASTA mustard
- 1.50 kg certified HEUSERS OSTSAAT crimson clover
- 0.30 kg certified GLOBAL red clover
- 0.60 kg commercial sweet clover
- 0.90 kg certified LASER persian clover
- 0.90 kg certified AKENATON berseem clover

6.00 kg/acre - £28.95

15.00 kg/ha - £72.38

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.

- 1.25 kg certified CRUISE tet. Italian ryegrass
- 0.90 kg certified HEUSERS OSTSAAT crimson clover
- 0.90 kg certified ASTA mustard
- 0.50 kg certified TORO fodder radish
- 0.50 kg commercial sweet clover
- 0.25 kg certified LASER persian clover
- 0.25 kg certified AKENATON berseem clover
- 0.20 kg certified GLOBAL red clover
- 0.10 kg certified DAWN alsike clover
- 0.10 kg certified STRUCTURATOR tillage radish
- 0.05 kg certified VIRGO PAJBERG yellow trefoil

5.00 kg/acre - £22.59

12.50 kg/ha - £56.48

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 can eliminate weeds, especially if left in for a second year.

- 1.05 kg certified VIRGO PAJBERG yellow trefoil
- 1.95 kg certified ABERDAI white clover

3.00 kg/acre - £32.20

7.50 kg/ha - £80.50

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.

- 52.50 kg certified ELEGO rye
- 22.50 kg certified EARLY ENGLISH vetch

75.00 kg/acre - £89.70

187.50 kg/ha - £224.25

Ryegrass/Vetch

Overwinter Mix

Code: MIXWWW

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

- 8.00 kg certified LIFLORIA dip. westerwolds ryegrass
- 17.00 kg certified EARLY ENGLISH vetch

25.00 kg/acre - £52.50

62.50 kg/ha - £131.25

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.

- 2.65 kg certified GLOBAL red clover
- 0.50 kg certified ABERHERALD white clover
- 5.85 kg certified CALIBRA perennial ryegrass

9.00 kg/acre - £53.20

22.50 kg/ha - £133.00

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
- 0.50 kg certified LACERTA chicory
- 3.00 kg certified SPARTA cocksfoot

7.50 kg/acre - £57.83

18.75 kg/ha - £144.58



Environmental

Countryside Stewardship, Entry Level & Higher Level Seed Mixtures.

Environmental seed mixtures are one way of protecting and enhancing wildlife across farmland. Many existing entry level & higher level stewardship schemes are still providing important resources and habitats. The more recent Countryside Stewardship scheme offers a further range of options, some based on the ELS/HLS prescriptions as well as newer options like the Bumblebird mixture and Two Year Legume Fallow.

The mixtures below are common environmental stewardship prescriptions for ELS, HLS and Countryside Stewardship, all options can be tailored to better suit the location, soil type and aim of the scheme.

AB8 Flower Rich Margin

ELS/HLS Codes: AB8

Permanent Flower Margin

Code: MIXAB8

A flower-rich grass margin providing habitats and food for invertebrates, butterflies, bees and birds.

- 34% certified sheeps fescue
- 20.50% certified slender creeping red fescue
- 18% certified red chewings fescue
- 14% commercial smooth stalked meadow grass
- 5% certified smaller catstail
- 4% certified common bentgrass
- 1% ox-eye daisy
- 1% wild carrot
- 0.70% lesser knapweed
- 0.50% yarrow
- 0.50% ribwort plantain
- 0.35% self heal
- 0.35% red campion
- 0.10% ladys bedstraw

8.00 kg/acre 20.00 kg/ha **£10.62 per kg**

The Operation Pollinator

ELS/HLS/CSS Codes: EF4, AB1

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.

- 35.80% certified early flowering red clover
- 18% certified late flowering red clover
- 20% certified alsike clover
- 20% commercial sainfoin
- 3% certified birdsfoot trefoil
- 2% certified crimson clover
- 0.40% lesser knapweed
- 0.40% musk mallow
- 0.40% ox-eye daisy

5.00 kg/acre 12.50 kg/ha **£9.45 per kg**

Sowing & Growing guide for **ALL** environmental mixtures follows on page 43.

Stewardship scheme codes

CSS - Countryside Stewardship Scheme

ELS - Entry Level Scheme

HLS - Higher Level Scheme

Mixes

GS4 Legume & Herb Rich Sward

ELS/HLS Codes: GS4, EK21

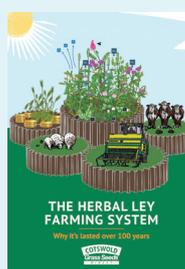
Whole Field Herbal Ley

Code: MIXGS4

This all round mixture promotes biodiversity, creates habitats, produces pollen and nectar and is also a superb soil conditioner and top quality forage. It contains deep rooting species which are drought resistant and also draws up micronutrients from deep within the soil.

- 12% certified cocksfoot
- 12% certified tet. perennial ryegrass
- 5% certified perennial ryegrass
- 10.90% certified timothy
- 5% certified meadow fescue
- 4% certified tall fescue
- 1.50% certified alsike clover
- 5% certified red clover
- 4% commercial sweet clover
- 20% commercial sainfoin
- 3% certified birdsfoot trefoil
- 7% burnet
- 4.50% chicory
- 1% yarrow
- 4% sheeps parsley
- 1% ribgrass
- 0.1% lesser knapweed

10.00 kg/acre 25.00 kg/ha **£6.83 per kg**



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**

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

Grass

Legume

Herb

Cereal

Wildflower

Others

Brassica

Farmland Birds

Reducing the hungry gap.

Farmland bird mixes

AB9 *One Year* Winter Bird Food

ELS/HLS Codes: AB9, EF2

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.

- 25% quinoa
- 20% fodder radish
- 12.5% white millet
- 12.5% red millet
- 10% triticale
- 10% linseed
- 10% mustard

5.00 kg/acre 12.50 kg/ha

£5.27 per kg

AB9 *Two Year* Wild Bird Seed

ELS/HLS Codes: AB9, EF2

Farmland Bird Feeder

Code: MIXWBSS

This mix includes cereal and quinoa for the first winter, while 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)
- 10% quinoa
- 14% kale
- 2.50% white millet
- 2% fodder radish
- 1.50% mustard

20.00 kg/acre 50.00 kg/ha

£3.98 per kg

Retrieve Mix

ELS/HLS Codes: EC24, EE1, EE2, EE3, EE9, EF1, HE10

Fast and Economical

Code: MIXRET

For a summer sowing after a failed spring crop nothing beats rape and mustard. It's quick, reliable and it works.

- 25% rape
- 50% mustard
- 15% fodder radish
- 10% hybrid rape/kale

6.00 kg/acre 15.00 kg/ha

£2.97 per kg

Mixes

AB15 Autumn Sown Two Year Legume Fallow

ELS/HLS Codes: AB15

Two Year Mixture

Code: MIXAB15

Flowering crops on fallow land. Substitute perennial ryegrass for cocksfoot on dry soils.

- 50% tet. perennial ryegrass
- 16% perennial ryegrass
- 14% red clover
- 13.5% vetch
- 6.15% birdsfoot trefoil
- 0.35% knapweed

12.00 kg/acre 30.00 kg/ha

£5.96 per kg



AB16 Autumn Sown Bumblebird

ELS/HLS Codes: AB16

Two Year Mixture

Code: MIXAB16

Food source for birds, pollinators and insects.

- 25% winter wheat
- 11% winter barley
- 15% fodder radish
- 15% crimson clover
- 8% birdsfoot trefoil
- 6% gold of pleasure
- 6.85% kale
- 5% phacelia
- 6% vetch
- 0.60% lesser knapweed
- 0.75% wild carrot
- 0.50% ox-eye daisy
- 0.30% red campion



12.00 kg/acre 30.00 kg/ha

£7.07 per kg

Pollen & Nectar

Helping bees & other beneficial insects.



Mixes: 3-5 years

Pollen & Nectar Flower

ELS/HLS Codes: EE1, EE2, EE3, EE9

Grass and Legume Margin

Code: MIXPN

The mixture below is designed for ELS Pollen & Nectar margins but can also be used for HLS. It is best on light soil and lasts for around four years. Excellent for bumblebees and butterflies.

- 5% certified common bentgrass
- 15% certified sheeps fescue
- 20% certified meadow fescue
- 19% certified red fescue
- 5% certified smaller catstail
- 15% certified smooth meadowgrass
- 1% certified crested dogstail
- 5% certified late flowering red clover
- 2% certified alsike clover
- 2% certified birdsfoot trefoil
- 5% common sainfoin
- 4% certified common vetch
- 2% certified black medic

8.00 kg/acre 20.00 kg/ha

£6.67 per kg

Field Corner

ELS/HLS Codes: EF1, EE12

Long Term

Code: MIXNEC

This straightforward, low cost mixture is ideal for awkward areas in arable fields. Relatively slow to establish, after the first year there are flowers for insects, seeds for birds and cover for mammals.

- 5% certified common bentgrass
- 1% certified crested dogstail
- 5% certified smaller catstail
- 37% certified sheeps fescue
- 27% certified red fescue
- 20% certified smooth meadowgrass
- 1.25% lesser knapweed
- 0.25% field scabious
- 1% self heal
- 1.25% ladys bedstraw
- 1% ox-eye daisy
- 0.25% small scabious

10.00 kg/acre 25.00 kg/ha

£16.81 per kg

Mixes: Permanent

Floristically Enhanced

ELS/HLS Codes: EC24, EE1, EE2, EE3, EE9, EF1, HE10

Permanent Pollen & Nectar

Code: MIXFEM

This is a longer term pollen and nectar mix for bees and butterflies. It is more expensive than legume-based mixtures but lasts for many years and is good for wildlife. It contains non-aggressive grasses and ten native wild flower species which are commonly found on most soils.

- 5% certified common bentgrass
- 1% certified crested dogstail
- 5% certified smaller catstail
- 30% certified sheeps fescue
- 25% certified red fescue
- 25% certified smooth meadowgrass
- 0.90% small scabious
- 1.25% lesser knapweed
- 1% self heal
- 1% yarrow
- 1.25% ox-eye daisy
- 1% ladys bedstraw
- 0.50% meadow buttercup
- 1% musk mallow
- 1% wild carrot
- 0.10% field scabious

8.00 kg/acre 20.00 kg/ha

£22.15 per kg

Stewardship scheme codes

CSS - Countryside Stewardship Scheme

ELS - Entry Level Scheme

HLS - Higher Level Scheme



Floristically enhanced mix
Gloucestershire
2nd June

Resource Protection

Grassy areas to shield water courses and provide wildlife habitats.

Sowing and Growing - Environmental Mixes

Suitable Soils

Heavy, wetter soils can cause a dominance of strong grasses, consider the grass free Operation Pollinator where this is an issue, to maximise flowering species.

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, fast growing patch up mixtures for failed spring sowings can be sown in August.

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 2nd 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. Once established the annual species will be left to grow through the winter, before being replanted the following year. Mixtures including Kale can be left for a 2nd year.

Stewardship agreement permitting, 50-60kgs/ha of fertiliser can boost seed yields and speed up establishment, ensuring leafy brassica crops grow through the risk of flea beetle damage. Some agreements allow herbicide control for weeds.

Mixes

Species Rich Parkland Grassland

ELS/HLS 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.

- 5% certified common bentgrass
- 1% certified crested dogstail
- 1% commercial sweet vernal grass
- 3% commercial meadow foxtail
- 10% certified smaller catstail
- 30% certified sheeps fescue
- 25% certified red fescue
- 25% certified smooth meadowgrass

16.00 kg/acre 40.00 kg/ha **£7.98 per kg**

Recreating Grassland

ELS/HLS 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
- 30% certified meadow fescue
- 15% certified red fescue
- 20% certified smooth meadowgrass
- 20% certified timothy

10.00 kg/acre 25.00 kg/ha **£5.85 per kg**

Buffer Strip Grass Margin

ELS/HLS/CSS Codes: EJ5, EJ9, EE7, EE8, EC24, EE1, EE2, EE3, EE9, AB3, SW4, SW1

Two, Four or Six Plus Metre

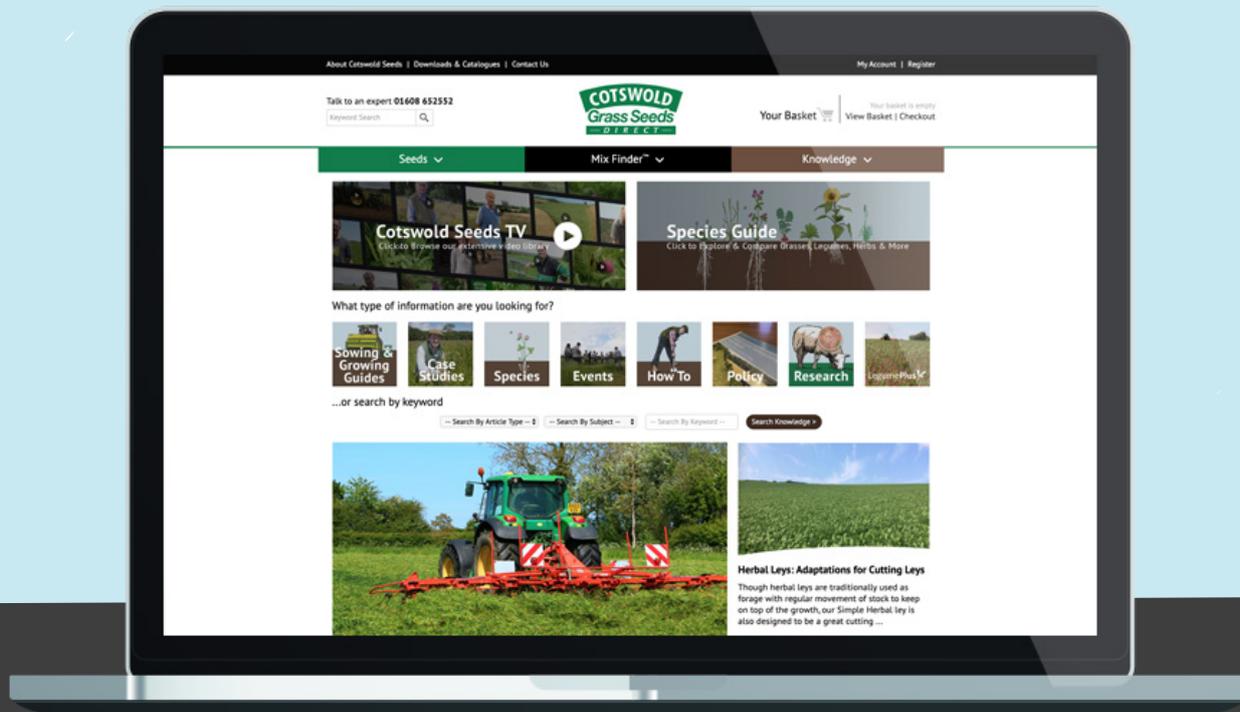
Code: MIXGM

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 bent
- 20% certified timothy
- 20% certified meadow fescue
- 25% certified red fescue
- 10% certified cocksfoot
- 20% certified smooth meadowgrass

10.00 kg/acre 25.00 kg/ha **£5.98 per kg**

Sharing our knowledge



A mixture of
information,
news & case
studies

Sowing & growing guides

First hand case studies

Species guide

'How to' articles

Research & policy

Cotswold Seeds TV

[cotswoldseeds.com/knowledge](https://www.cotswoldseeds.com/knowledge)

First Hand FarmED



Farm Type	Mixed
Location	Oxfordshire
Size	107 acres
Soil Type	Clay, Cotswold brash
Mixes Used	Bespoke Mixtures

Cotswold Seeds MD, Ian Wilkinson, is the founder of FarmED, based at 107 acre Honeydale Farm, near Shipton under Wychwood in the Evenlode Valley, which has been established to promote regenerative agriculture and sustainable farming.

'We are not just looking for sustainability but we want to regenerate the soil so we can continue to produce food in the future,' says Ian.

At the heart of this regenerative system is the 8 year crop rotation. For the first 4 years herbal leys are grown and mob-grazed with sheep, taking care not to graze too heavily but leave an armor on the soil. After 4 years of fertility building, cash crops are grown - heritage wheat, oats and a wild bird seed mix. In amongst the cash crops, inter crops are grazed and cereal crops are undersown with legumes. Rye and vetch is grown as a catch crop between the cereal crops. All around the field margins there are wildflower mixtures and hedges to increase the range of habitats.

'Soil is the natural capital and plants are solar panels using photosynthesis to capture the energy from the sun,' says Ian.



'Regenerative systems are self-sufficient and don't need much in terms of inputs. On this farm we don't spend money on fertilisers and pesticides. It's grade 3 soil but even so we can increase fertility with mob grazing, crop rotations and the diversity of the plants. The cost of production is extremely low. I don't want to spend a fortune on inputs to produce commodity crops. I want self-sufficient systems that leave money in our bank accounts rather than costly inputs and decreasing levels of return.'

"I want self-sufficient systems that leave money in our bank accounts rather than costly inputs and decreasing levels of return."

This is a farming system that has been practiced for hundreds of years in the UK, reinvented for modern times using modern science and technology.

There are 16 species in the herbal leys and since the soil at FarmED is neutral in terms of alkalinity/acidity it can grow most species, including all the grasses - cocksfoot, timothy, legumes, clovers, herbs, chicory, ribgrass, plantain and sheeps parsley. 'The complexity of the mixtures is key to success,' says Ian. 'Some grow early in spring, some late in autumn, some access minerals, some fix nitrogen, some capture carbon. The plants function as a unit making the farming system resilient.'

In the 5-6 years that this rotation has been used, the soil structure has already improved. 'We've seen first hand the benefit of having species-rich deep-rooting leys that improve the soil,' says Ian. 'Before we grew the leys it was really difficult to get the plough in the ground.'

The changes on the farm have also resulted in a massive improvement in the wildlife there, including visiting and nesting birds. There are 85 birds recorded now, compared to 44 in 2013. 'There are flowering plants for pollinators, moths which bring bats, long grasses for owls which feed off the voles. The whole ecosystem works.'

'But a key reason for all that we do is producing nutrient-dense food,' Ian concludes. 'We need regenerative produce supported by consumers.'

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. **See our website for case studies and management advice.**

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. Sow in autumn when existing plant growth is slower.

- 2% agrimony
- 5% lady's bedstraw
- 8% lesser knapweed
- 2% meadow buttercup
- 5% meadowsweet
- 6% ox-eye daisy
- 6% red campion
- 6.50% red clover
- 7% sainfoin
- 6% ribwort plantain
- 14% salad burnet
- 13.50% self heal
- 2% small scabious
- 5% white campion
- 5% wild carrot
- 5% yarrow
- 2% yellow rattle

2.00 kg/acre 5.00 kg/ha **£118.85 per kg +VAT**



Cotswold wild flora

Cheshire
12th April

Image: Julian Kronfli Photography

Mixes

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.

- 45% corn cockle
- 15% cornflower
- 15% corn marigold
- 15% field poppy
- 10% alsike clover

6.00 kg/acre 15.00 kg/ha **£44.58 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. Species included may vary occasionally.

- 5% certified common bentgrass
- 24% certified red fescue
- 20% certified sheeps fescue
- 10% certified smaller catstail
- 15% certified smooth meadowgrass
- 1% commercial sweet vernal grass
- 0.10% birdsfoot trefoil
- 1% common sorrel
- 0.05% cowslip
- 1.60% lady's bedstraw
- 1.40% lesser knapweed
- 0.50% meadow buttercup
- 0.75% meadowsweet
- 1% ox-eye daisy
- 1.65% red campion
- 1% ribwort plantain
- 2.50% sainfoin
- 1.25% self heal
- 0.50% small scabious
- 2% salad burnet
- 1.70% white campion
- 1% wild carrot
- 1% yarrow
- 2% corn cockle
- 1% corn marigold
- 1% cornflower
- 1% field poppy
- 1% yellow rattle

10.00 kg/acre 25.00 kg/ha **£39.90 per kg**

Grass

Wildflower

Legume

Mixes

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.

- 5% certified common bentgrass
- 5% commercial crested dogstail
- 2% commercial quaking grass
- 29% certified red fescue
- 30% certified slender creeping red fescue
- 2% commercial sweet vernal grass
- 1% commercial tufted hairgrass
- 11% certified wood meadowgrass
- 1% autumn hawkbit
- 0.50% betony
- 1% bluebell
- 0.25% garlic mustard
- 2% hedge bedstraw
- 0.50% meadowsweet
- 2.50% red campion
- 3% self heal
- 0.50% teasel
- 1% tufted vetch
- 1% white campion
- 1.50% wood avens
- 0.25% yarrow

10.00 kg/acre 25.00 kg/ha

£42.64 per kg

Chalk & Limestone Soil

Long Term

Code: MIXCHA

This mixture is designed for chalk and limestone soil types. Chalk and Limestone soils are known for their ability to support a large selection of wild flower species which is why we have been able to create such a diverse mixture.

- 5% certified common bentgrass
- 5% certified crested dogstail
- 19.30% certified red fescue
- 10% certified smaller catstail
- 20% certified sheeps fescue
- 15% certified smooth meadowgrass
- 1.5% certified yellow oatgrass
- 2% agrimony
- 1% birdsfoot trefoil
- 0.40% field scabious
- 2% ladys bedstraw
- 2% lesser knapweed
- 1% meadow buttercup
- 2% ox-eye daisy
- 1% ribwort plantain
- 4% sainfoin
- 3.50% salad burnet
- 1% self heal
- 1% small scabious
- 1.50% wild carrot
- 1.80% yarrow

10.00 kg/acre 25.00 kg/ha

£44.92 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.

- 20% certified common bentgrass
- 5% commercial crested dogstail
- 15% certified meadow foxtail
- 1% commercial quaking grass
- 18% certified red fescue
- 10% certified sheeps fescue
- 15% certified smaller catstail
- 2% commercial sweet vernal grass
- 0.40% betony
- 1% ladys bedstraw
- 2.60% lesser knapweed
- 1.50% meadow buttercup
- 1.50% meadow vetchling
- 1% ox-eye daisy
- 1% ribwort plantain
- 2% self heal
- 1% sheeps sorrel
- 1% yarrow
- 1% yellow rattle

10.00 kg/acre 25.00 kg/ha

£44.74 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.

- 5% certified common bentgrass
- 1% commercial crested dogstail
- 2.50% certified meadow foxtail
- 26% certified red fescue
- 5% certified smaller catstail
- 29.80% certified sheeps fescue
- 20% certified smooth meadowgrass
- 1.10% common sorrel
- 0.10% devil's-bit scabious
- 0.30% great burnet
- 1% ladys bedstraw
- 1.80% lesser knapweed
- 0.50% meadow buttercup
- 0.60% meadowsweet
- 1.50% ox-eye daisy
- 0.50% ragged robin
- 1.30% self heal
- 1% ribwort plantain
- 1% yellow rattle

10.00 kg/acre 25.00 kg/ha

£30.97 per kg

Wild Flower Directory

Perennials

Agrimony

Agrimonia

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



Flowers: June-Aug

Late

Devil's Bit Scabious

Succisa pratensis

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



Flowers: June-Sept

Late

Meadow Buttercup

Ranunculus acris

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



Flowers: Apr-Oct

Early

Betony

Stachys officinalis

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



Flowers: June-Sept

Field Scabious

Knautia arvensis

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



Flowers: June-Oct

Late

Meadowsweet

Filipendula ulmaria

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



Flowers: June-Sept

Late

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.



Flowers: Apr-June

Early

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.



Flowers: Apr-May

Early

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.

Late



Flowers: June-Nov

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 updated for 2020, 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

Cereal

Others

Brassica

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.

- 0.56 kg certified fodder rape/kale hybrid
- 0.70 kg certified forage rape
- 3.85 kg commercial grain sorghum
- 3.82 kg certified spring triticale
- 3.52 kg certified spring wheat
- 1.10 kg red millet
- 1.10 kg white millet
- 0.40 kg reed millet (Japanese)
- 0.50 kg certified fodder radish
- 0.20 kg commercial gold of pleasure
- 0.20 kg certified mustard
- 0.05 kg certified brown mustard

16.00 kg/acre - £49.97

40.00 kg/ha - £124.93

NEW

Mixes

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.

- 0.50 kg quinoa
- 1.25 kg red millet
- 1.25 kg white millet
- 0.50 kg reed millet (Japanese)
- 2.00 kg sunflower
- 2.50 kg commercial buckwheat
- 0.10 kg certified game kale
- 0.15 kg certified game kale
- 0.50 kg certified forage rape
- 0.50 kg certified mustard
- 0.50 kg certified fodder radish
- 0.25 kg certified fodder rape/kale hybrid

10.00 kg/acre - £40.56

25.00 kg/ha - £101.40

NEW

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.

- 1.40 kg certified game kale
- 0.80 kg certified game kale
- 0.15 kg certified fodder rape/kale hybrid
- 3.25 kg commercial grain sorghum
- 4.00 kg certified spring triticale
- 3.00 kg certified spring wheat
- 1.10 kg red millet
- 1.10 kg white millet
- 0.30 kg reed millet (Japanese)
- 0.40 kg fennel
- 0.40 kg certified fodder radish
- 0.10 kg commercial gold of pleasure

16.00 kg/acre - £64.69

40.00 kg/ha - £161.73

NEW

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.

- 6.60 kg certified spring triticale
- 5.00 kg certified wheat
- 2.20 kg certified spring barley
- 1.40 kg white millet
- 1.40 kg red millet
- 1.50 kg certified linseed
- 0.45 kg fennel
- 0.45 kg certified forage rape
- 0.20 kg certified hybrid rape/kale
- 0.15 kg certified leafy turnip
- 0.45 kg commercial gold of pleasure
- 0.20 kg certified crimson clover

20.00 kg/acre - £46.10

50.00 kg/ha - £115.25

Retrieve Mix

Fast and Economical

Code: MIXRET

For a summer sowing after a failed spring crop nothing beats these quick growing brassicas.

- 1.55 kg rape
- 3.00 kg mustard
- 0.85 kg fodder radish
- 0.60 kg hybrid rape/kale

6.00 kg/acre - £17.82

15.00 kg/ha - £44.55



Next Day Delivery

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cotswoldseeds.com

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.

- 1.50 kg quinoa
- 0.75 kg game kale
- 0.75 kg game kale

3.00 kg/acre - £36.08

7.50 kg/ha - £90.20

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 commercial grain sorghum
- 2.50 kg certified dwarf sunflower
- 0.50 kg white millet
- 0.30 kg reed millet (Japanese)

8.00 kg/acre - £38.30

20.00 kg/ha - £95.75

NEW

Seed & Shelter Millet Mix

Cover and Feed

Code: MIXMIL

Combining Red and White Millet for a wider window of seed production and reed millet to provide cover. Broadcast or shallow drill in maize strips for a denser cover.

- 2.80 kg red millet
- 3.20 kg white millet
- 2.00 kg reed millet (Japanese)

8.00 kg/acre - £28.00

20.00 kg/ha - £70.00

Cotswold Game Cover Kale Mix

Cover and Feed

Code: MIXKALE

The Kale mix combines the red stemmed, leafy Polycaul Kale with the medium to short variety Keeper Kale. The combination of two leafy varieties and good lodging resistance allows birds access and movement through the cover.

- 1.65 kg game kale
- 1.35 kg game kale

3.00 kg/acre - £34.40

7.50 kg/ha - £86.00

NEW

**FlexiCover one year mix**Suffolk
15th October

Straights

Game Maize

Specifically chosen for its early establishment vigour and impressive standing ability, providing robust cover late in the season. This variety will reach 2 metres and has medium to late maturity. If the priority is early cob production over holding cover please contact us for further options. **Only available in one acre packs (Treated Seed).**

Certified Game Maize £39.00 per acre

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 seed bed 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 benefit from 50-100kg N/ha in the seed bed. Farmyard manure can also be a very beneficial fertility source which will break down over several years.

Straights

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 - £55.05 7.50 kg/ha - £137.63

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 - £88.05 7.50 kg/ha - £220.13

Sunflower

Large amounts of food supplied through the winter. Please specify dwarf (1-2 metres) or standard type (2 metres+).

10.00 kg/acre - £47.50 25.00 kg/ha - £118.75

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 - £34.85 20.00 kg/ha - £87.13



Seed & shelter millet mix
Dorset
28th September



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?

- ▶ 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
 $40 \times 70\text{g (sowing rate)} = 2800 = 2.8\text{kg of seed required}$

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 - 70 g/m²

£5.71 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

50 - 70 g/m²

£6.75 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.

50 - 70 g/m²

£6.59 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.

35 g/m²

£4.36 per kg

Verge Mixture

With Ryegrass

Code: MIXRV

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

35 - 70 g/m²

£5.17 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.

35 - 70 g/m²

£4.81 per kg

Additions



White Clover

Nitrogen fixing clover.

Include at 5% of mix

Add £0.53 to kg price

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.

35 - 50 g/m²

£4.53 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.

50 g/m²

£5.64 per kg

Greens Mixture

Without Ryegrass

Code: MIXGRE

This top quality mixture uses high proportions of bentgrass to allow cutting down to 5mm in summer. Sow only on very well levelled ground and cut very frequently with a good quality cylinder mower to obtain the best results.

70 g/m²

£7.95 per kg



Hard wearing lawn
Nottinghamshire
1st June

Welcome to FarmED

FarmED is the new Centre for Farming and Food Education in the Cotswolds. Our mission is to accelerate the transition towards regenerative farming and sustainable food systems by providing space and opportunity for inspirational education, innovative research, practitioner led knowledge exchange events and personal development.

Get in touch to learn more about our events and venue including:

- The FarmED Programme in Regenerative Agriculture and Sustainable Food
 - Making Space for Nature and Equines
 - Oxford Real Farming Conference in the Field 2020
 - Open days and farm walks
- Venue hire – conferences, workshops and unique meeting space

If you'd like to keep in touch and hear more about our work and events, visit farm-ed.co.uk and subscribe to our newsletter or follow us on social media [@RealFarmED](https://twitter.com/RealFarmED).



COTSWOLD SEEDS

Cotswold Seeds was founded in 1974 and deals with over 15,000 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 the FarmED Centre at Honeydale Farm, is also involved in a wide range of research projects.

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