Although HF Seeds can trace its roots back for over a century, the actual HF brand was first introduced to Scottish farmers in the 1960’s. Originally launched as ‘Hi-Farming’ and abbreviated over the years, HF has earned its rightful place as one of the UK’s leading seed brands and is synonymous with the highest seed quality, the very best varieties and unrivalled performance in terms of productive and palatable grass swards.

Now part of DLF Trifolium, one of the world’s largest grass seed companies, HF Seeds has access to greater technical and commercial resources than ever before. Based in Denmark, where the coastal climate is particularly well suited to producing grass seed, DLF Trifolium has over 100 years experience in plant breeding and seed production and currently has Europe’s largest research and development programme to breed new and improved grass and clover varieties. This commitment to producing new genetic material to meet the challenges of modern agriculture has resulted in DLF Trifolium having significantly more grass and clover varieties on UK Recommended Lists than any of its competitors.

This strong position and technical approach transfers directly to HF Seeds and throughout its long history the HF brand has always been at the forefront of developments in grass seed technology. Whether it is the introduction of a new and improved variety, the development of a new mixture to meet a specific need or simply widening the availability of organic grass seed, HF’s reputation for turning innovation into sound agricultural practice is second to none.

The HF total quality philosophy goes much further than just varieties and mixture trials however, and extends as far as the farm gate and the end user. All HF products are backed by a country-wide network of in-house seed specialists and experienced distributors who are capable of offering technical help and advice on all aspects of mixture selection and establishment.

Modern trialling techniques and hi-tech machinery ensure that both yield and forage quality are maintained in HF mixtures.
Good grass mixture design begins with the assessment of individual variety characteristics and then uses this information to combine the mixture components in different proportions to produce the best possible mixture for the intended purpose of the final sward.

The characteristics required in a sward and the emphasis placed upon them, depend entirely on the use to which the sward will be put. For example the early bite required for an early lambing flock will be a positive disadvantage for dairy turnout in late April and the open sward the organic farmer needs for clover survival will not suit intensive grazing on wet, heavy land. Many of the different sward characteristics included in HF design are listed below

- Total annual and seasonal yield
- Maturity and heading date
- Sward purpose and management regime
- The need for early spring growth
- Overall sugar yield
- Forage quality and digestibility
- Animal intake factors including sward structure and palatability
- Clover content
- Disease resistance
- Sward density
- Persistency
- Winter hardiness

Maximising grass yields has always been and continues to be, a mainstay of HF mixture design and with modern varieties on 2014 UK Recommended Lists showing up to 15% yield increases over controls, huge yield and financial benefits can be obtained by including the very best varieties in grass seed mixtures. Independent assessment of HF swards has shown that 5 – 10% yield increases are perfectly achievable by using the best varieties and simple arithmetic at 2014 prices can convert this into a clear and substantial gain of around £10 per acre per year for each 1% of additional yield. Thus the yield benefits shown by modern HF varieties like Boyne, Solomon and Kintyre Perennial Ryegrasses, translate into financial gains of £50 to £100 per acre each year or up to £500 over the life of a five year ley.

Although yield is of crucial importance the achievement of top quality and palatable forage also makes a huge difference to animal performance. Consequently HF mixture design must also take into account the many factors which ultimately affect forage quality ranging from digestibility and growth habit right through to sugar content and disease resistance.

The benefit of high D-value forage is clearly recognised by most farmers and independent trials have shown that on average, each additional unit of D-value produces an extra 1.5% more milk, 5% extra LWG in beef cattle and up to 10% extra LWG in sheep. In financial terms these benefits translate into each additional unit of D-value being worth £15 per acre per year in terms of the additional meat or milk produced. HF’s emphasis on quality and the use of the highest D-value varieties ensures excellent digestibility of the forage in the final sward and improved animal performance as a result.

Recent research into the availability of nutrients in grass has however taken the measurement and understanding of digestibility and D-value to a new level. The feeding value in forage comes from the Neutral Detergent Fibre (NDF) contained in the cell walls. NDF is the slowly digestible part of carbohydrates and there is clear evidence that NDF and its digestibility (DNDF), has a major influence on animal performance through its beneficial effect on both rumen function and pH and on the digestion process as a whole.

Armed with this new nutritional information and improved technology in variety assessment, HF Seeds has been able to introduce DNDF as one of the key selection criteria in grass variety evaluation. DNDF and its value is explained in greater detail on Page 9 but this development is yet another example of HF Seeds using the very latest technology and research data to ensure the best possible variety selection and in turn mixture performance.

Another area which is steadily assuming greater importance is grass disease. Changing weather patterns have favoured the development of diseases like Crown Rust and Leaf Spot (Drechslera) and the incidence of both have risen sharply in recent years. Foliar disease can have a very damaging effect on both grass yields and forage quality and can even cause plant loss and sward death. HF variety evaluation includes assessment for resistance to all the major grass diseases thus ensuring healthy, palatable and high yielding swards.

“We are increasing the cow numbers by a further 20 and so the grass swards have got to perform. Ewes and lambs run over all the silage ground at lambing and I am always impressed by how the HF swards recover so quickly after this hard grazing to give us two big cuts of quality silage. Cows and calves follow the second cut and then ewes or lambs follow on through the winter. This year I sowed my HF grass seed on 19th August and it was knee high 10 weeks later. I always use HF grass seed”

Cameron MacIver, Wester Colfield, Kinloss, Morayshire (Seed supplied by Scotgrain Agriculture Ltd)

“We have used several HF mixtures in the past depending on individual fields and their use and sometimes we have added in chicory for extra grazing interest. No matter which mixture whether for cutting or grazing or a mixture of both, they always perform really well with plenty bulk of good quality forage”

Patrick Dickson Snr & Jnr, Acretrype Farm, Auchterless, Turriff, Aberdeenshire (Seed supplied by Openfield)
There are two certification standards for all species of agricultural seed within the UK.

The lowest level is EU certification which is statutory throughout the whole of the European Union and which guarantees minimum quality standards for germination and purity below which seed cannot be sold. The second standard, which is unique to the UK, is HVS or Higher Voluntary Standard: ‘Higher’ because it is higher than EU and ‘Voluntary’ as it is not compulsory and is entirely at the discretion of the seed merchant. The level at which a grass seed mixture is certified can only be ascertained by the information on the official label. If the label does not show the HVS emblem it means that the seed is only certified to the EU Minimum standard. Unfortunately for the farmer as most of the grass seed sold in the UK is produced in Europe to the EU Minimum standard, the higher quality standards of HVS are difficult to find. Even in a normal year where the seed supply is good, an estimated 70% of grass mixtures are supplied at EU Minimum standard with only 30% at the Higher Quality Standard.

Be sure to look for the HVS symbol on the official label

Germination is one of the main criteria on which the UK seed certification schemes are based but the minimum levels required are surprisingly low. The HF minimum germination standard for Perennial Ryegrass and Timothy is 10% higher than both EU and HVS and as shown in the table below, the actual germination achieved across all HF mixtures in 2013 resulted in around 13% more live seed in every bag producing better establishment and denser, more productive swards.

<table>
<thead>
<tr>
<th>SPECIES</th>
<th>EU MINIMUM GERMINATION STANDARD</th>
<th>HVS MINIMUM GERMINATION STANDARD</th>
<th>HF MINIMUM GERMINATION STANDARD</th>
<th>HF ACTUAL 2013 GERMINATION</th>
<th>BENEFIT OF HF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italian Ryegrass</td>
<td>75%</td>
<td>75%</td>
<td>90%</td>
<td>92.9%</td>
<td>17.9%</td>
</tr>
<tr>
<td>Perennial Ryegrass</td>
<td>80%</td>
<td>80%</td>
<td>90%</td>
<td>93.2%</td>
<td>13.2%</td>
</tr>
<tr>
<td>Timothy</td>
<td>80%</td>
<td>80%</td>
<td>90%</td>
<td>92.0%</td>
<td>12.0%</td>
</tr>
</tbody>
</table>

13% more live seed in every bag is equivalent to a saving of almost £12 per acre at 2014 prices

In addition to low germination standards, UK grass seed certification also allows the presence of relatively high levels of serious grass weeds including both docks and couch grass. Thus grass mixtures certified at EU and even HVS, can introduce literally thousands of new weed seeds every time a field is reseeded. Recognising these potentially damaging levels of weed contamination, HF Seeds imposes its own ‘freedom from weed’ standards which are unequalled elsewhere.

<table>
<thead>
<tr>
<th>SPECIES</th>
<th>EU</th>
<th>HVS</th>
<th>HF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Docks</td>
<td>1,250</td>
<td>1,250</td>
<td>0</td>
</tr>
<tr>
<td>Couch</td>
<td>30,000</td>
<td>2,500</td>
<td>250</td>
</tr>
<tr>
<td>Blackgrass</td>
<td>25,000</td>
<td>2,500</td>
<td>250</td>
</tr>
</tbody>
</table>

The above table shows the potential number of serious weed seeds which can be sown per acre at different levels of certification and clearly demonstrates that HF quality standards offer huge advantages even over HVS, but when compared to the EU minimum standard, which accounts for over 70% of UK grass mixture sales, the benefit of HF quality becomes even greater.
Clover, and particularly white clover, has always been an important component in UK grass mixtures and in the wake of recent fertiliser prices and a growing appreciation of the benefits that both red and white clover can bring, there is no doubt that clover and increasing clover levels in grass swards is becoming more important on livestock farms.

Although there are many clover species available including Alsike, Crimson and Yellow Blossom Clover, these tend to have niche uses and the two species in greatest use on UK farms are White Clover (Trifolium repens) and Red Clover (Trifolium pratense). Although both species share the same name, each has very different characteristics, uses and production potential. Despite these differences however, they both offer similar benefits to the farmer by providing high quality, protein rich forage and a means of reducing or even completely eliminating the need for nitrogen fertiliser through a process unique to most legumes called nitrogen fixation.

**Key Benefits of Clover**

**Nitrogen Fixation**
Both Red and White Clover form a mutually beneficial relationship with a naturally occurring soil bacterium called Rhizobium which colonises the roots of the clover plant in small growths or nodules. The Rhizobium bacteria in these nodules have the ability to take in or ‘fix’ nitrogen from the air and to convert it into a form which can then be utilised for plant growth.

As a rough guide, although the amount of nitrogen fixed is directly proportional to the level of clover in the sward, a good clover and grass sward has the ability to produce the equivalent of up to 160 units N/acre/year (200 kgs N/ha/year).

**Increased Intake**
Clover is very palatable and animals will eat more of a grass and clover sward than they will of a grass only sward.

**Better Livestock Performance**
The combination of clover’s higher feed value and increased intake ensures substantial improvements in animal performance when compared to grass only swards.

**Forage Quality**
Although the immediate attraction of clover to most farmers lies in its nitrogen fixing ability, the inclusion of clover in a sward also substantially improves forage quality and consequently animal performance.

The digestibility of clover is considerably higher than grass and its D-value declines at a much slower rate than Ryegrass as the season progresses. In addition the crude protein level in clover is approximately 50% higher than grass of equivalent digestibility and clovers generally have significantly higher contents of many of the major and minor minerals.
White Clover is less productive than Red but it is much more persistent and is therefore used in medium to long term mixtures. Its leaves and flowers originate from creeping stems called stolons which grow very close to the ground giving them protection from even hard grazing. These stolons play a vitally important part in both clover production and persistence.

The ideal grass and White Clover sward is one where the clover content is sufficiently large to optimise both its nutritional and nitrogen fixing abilities but which at the same time allows a high yield from the companion grasses. Typically clover should average at around 30% ground cover throughout the year but it may vary seasonally from as little as 5% in the spring to as much as 60% in mid and late summer.

The following table shows the typical quality characteristics of White Clover compared to Perennial Ryegrass:

<table>
<thead>
<tr>
<th></th>
<th>White Clover</th>
<th>Perennial Ryegrass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digestibility (D-value)</td>
<td>75 – 85</td>
<td>65 – 75</td>
</tr>
<tr>
<td>Crude Protein (%)</td>
<td>25 – 28</td>
<td>16 – 18</td>
</tr>
<tr>
<td>Dry Matter intake by sheep (kg DM / day)</td>
<td>1.9</td>
<td>1.4</td>
</tr>
<tr>
<td>Calcium content (%)</td>
<td>1.6</td>
<td>0.6</td>
</tr>
<tr>
<td>Phosphorous content (%)</td>
<td>0.18</td>
<td>0.16</td>
</tr>
<tr>
<td>Copper (parts per million)</td>
<td>10.0</td>
<td>6.5</td>
</tr>
<tr>
<td>Selenium (parts per 100 million)</td>
<td>0.6</td>
<td>0.2</td>
</tr>
</tbody>
</table>

The three most important factors in achieving the optimum clover content in a sward are as follows:

**Good Establishment**
Whether White Clover is being sown as part of a new reseed or overseeded into an existing pasture, the key to unlocking its full benefits begins with successful establishment. The optimum soil pH is 5.8 – 6.5 and clover has a relatively high demand for phosphate and potash. Sowing rates should be around 1.0 – 1.5 kgs/acre (7% - 10% of the mixture by weight) and it should be sown shallowly into a firm, fine seedbed. Mixtures containing White Clover can be sown throughout the year but summer reseeds should be completed in time to allow stolons to develop before the onset of winter.

**Selection of the Correct Companion Grasses**
White Clover is essentially a poor competitor with grass and as the stolons are very dependent on light for their growth and development, tall open grasses are much more suitable as companion grasses than denser varieties. Thus the Tetraploid Perennials with their tall open growth habit and high yields are the ideal companion grasses to allow White Clover to thrive. In addition the high sugar content of Tetraploid grasses provides the ideal balance to the forage analysis of clover.

**Matching Clover Types and Varieties to Sward Use**
White Clovers are classified into three groups according to their leaf size, and to ensure long term clover survival, it is essential to match leaf size with the intended sward use.

**Small Leaved**
Small leaved White Clover varieties have a prostrate growth habit and are slow to establish but very persistent. They are ideal for close sheep grazing and will tolerate the poorer climatic and fertility conditions typical of upland areas.

**Medium Leaved**
Medium leaved varieties have a taller growth habit and are best suited to dual purpose management and mixed or cattle grazing. They are extensively used in dual purpose and long term leys. Performance in terms of yield and persistency varies widely between varieties.

**Large Leaved**
Large leaved varieties exhibit a tall erect growth habit and as a result are generally less suited to grazing and more suited to cutting. Their aggressive growth helps them to compete successfully with grass in high input situations and they are ideal for medium term cutting mixtures.

There are many different White Clover varieties available within each leaf size group and their performance varies enormously in terms of yield, seasonality and persistency under different management regimes. It is important to choose a high yielding variety for the obvious benefit of increased forage production but also because the highest yielding varieties have the ability to fix the greatest amount of nitrogen. Early spring growth is also important as slow growth means lower yields and less nitrogen fixation in the early part of the season. Lastly good persistency under different management regimes is essential as the contribution from clover is dramatically reduced if the clover content is not maintained at the optimum level.

All the clover types used in HF mixtures are matched to sward use and the individual varieties are selected on the basis of these important criteria.
Red Clover is one of the highest yielding forage species available and in recent years it has undergone a massive resurgence in popularity largely due to better varieties, improved ensiling techniques and equipment, increased demand for greater protein self-sufficiency and reduced dependence on purchased nitrogen fertiliser.

Red Clover is a short-lived perennial plant with a normal lifespan of two to four years. It has a tufted, upright growth habit from the crown of the plant which lies at ground level and it has a deep tap root. Consequently, as it does not have the creeping growth habit of White Clover, Red Clover is unable to spread and fill open areas in the sward. Its upright growth habit from the central crown restricts its use for grazing and it is essentially a crop for silage production which can be cut 3 to 4 times a year over its life expectancy of 3 full production years.

Red Clover can be grown on its own or in a mixture with suitable companion grasses. The advantage of using Red Clover in a mixture with grass rather than on its own, is that the companion grasses provide protection from damage and poaching and if high sugar grasses are used, the nutritional balance and ensiling process is much improved. The ideal companion grasses are modern Tetraploid Hybrid Ryegrasses and the brand new Advanced Grasses™, both of which have a similar lifespan to Red Clover and are sufficiently aggressive to compete and survive in a sward with a high Red Clover content.

**Red Clover Silage Facts**

Although Red Clover is primarily a cutting species and lacks persistency under grazing, aftermaths can be grazed in the autumn by beef cattle or fattening lambs, however due to the high oestrogen content of some varieties, grazing with breeding animals should be avoided.

Red Clover should be sown at 6 – 7 kgs /acre on its own or at 3.5 – 4 kgs/acre when sown with Hybrid Ryegrass (25% of the mixture by weight).

<table>
<thead>
<tr>
<th>Digestibility</th>
<th>60 – 70%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry Matter Yield</td>
<td>10 – 15 t DM/ha (4 – 6 t DM/acre)</td>
</tr>
<tr>
<td>Dry Matter Content</td>
<td>25 – 30%</td>
</tr>
<tr>
<td>Energy (ME)</td>
<td>10.0 – 11.5 MJ/kg DM</td>
</tr>
<tr>
<td>Crude Protein</td>
<td>15 – 20%</td>
</tr>
</tbody>
</table>
Throughout its long history HF has been renowned for innovation in grass seed technology from the introduction of Tetraploids in the early 1970’s right through to HF’s most recent advances in the use of DNDF in variety assessment and the revolutionary iSeed® 50.

Following several years of extensive trial work in conjunction with its parent company DLF Trifolium, HF Seeds is once again leading the way with the introduction of a new range of Advanced Grasses™ which has been developed by crossing traditional Italian Ryegrasses with both Meadow Fescue and Tall Fescue. Although the idea of crossing fescues (Festuca) and ryegrass (Lolium) is not new, the crossing of improved modern varieties has produced a species (Festulolium) which combines the best characteristics of ryegrass and fescue and which has unique properties not found in any other species.

Three Advanced Grasses™ are included in the 2014 mixture range

LOFA

As an Advanced Hybrid Ryegrass™, LOFA has the most general appeal for extensive use within UK grass mixtures. Behaving like a Hybrid Ryegrass but with very fast establishment, high yields, excellent stress tolerance and disease resistance, it is an ideal component in 3 – 5 year mixtures and particularly suitable as a companion grass for Red Clover.

PERSEUS

PERSEUS is a variety of Advanced Italian Ryegrass™ with much better persistence, stress tolerance and disease resistance than conventional varieties of Italian. It is very high yielding with a high sugar content and excellent early spring growth making it an ideal component in short to medium term cutting mixtures. With its growth characteristics PERSEUS is also a suitable companion grass for Red Clover.

HYKOR

Tall Fescue is extremely drought tolerant and consequently is used in hot dry countries as a forage species. In the UK the Advanced Tall Fescue™ variety HYKOR with its improved tolerance of general stress and very dry conditions offers a unique solution for drought conditions and could be considered as an alternative to Cocksfoot offering significantly better yields and higher quality.

A summary of performance data of the three varieties is shown below

<table>
<thead>
<tr>
<th></th>
<th>Yield t DM/ha</th>
<th>% Sugar Content</th>
<th>% Protein Content</th>
<th>ME MJ/kg DM</th>
<th>D-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOFA Advanced Hybrid Ryegrass™</td>
<td>21.69</td>
<td>12.0</td>
<td>21.9</td>
<td>11.3</td>
<td>71.1</td>
</tr>
<tr>
<td>PERSEUS Advanced Italian Ryegrass™</td>
<td>19.24</td>
<td>12.2</td>
<td>22.4</td>
<td>11.4</td>
<td>71.6</td>
</tr>
<tr>
<td>Tetraploid Intermediate Perennial Ryegrass</td>
<td>17.37</td>
<td>12.1</td>
<td>24.8</td>
<td>11.4</td>
<td>71.9</td>
</tr>
<tr>
<td>HYKOR Advanced Tall Fescue™</td>
<td>17.63</td>
<td>10.4</td>
<td>22.5</td>
<td>11.4</td>
<td>71.4</td>
</tr>
<tr>
<td>Tall Fescue</td>
<td>16.37</td>
<td>12.5</td>
<td>19.8</td>
<td>11.4</td>
<td>71.6</td>
</tr>
</tbody>
</table>

Data from Hailes Farm, DLF Trifolium’s UK trial centre
Right from the very beginning of the HF brand in the 1960’s, HF Seeds recognised the importance of using the very best varieties in terms of yield, forage quality and feed value and that a variety’s overall performance depended on a combination of many different characteristics. This total quality philosophy has kept HF Seeds at the forefront of variety evaluation techniques and has led to the introduction of many new quality assessment methods over the years.

High yielding livestock need top quality forage particularly when the proportion of forage in the diet is decreasing, indeed analysis of trends in dairy cow diets has shown that milk from forage has declined from an average of 2800 litres in 2004 to only 1980 litres in 2012. Recent pioneering research into animal nutrition has shown that Cell Wall Digestibility (DNDF) is the single most important quality parameter in grass. DNDF is vital to rumen health, it stimulates the rumen function, stabilises pH and improves both the digestion process and the utilisation of nutrients. Nutritionists now recommend that dairy cows require a minimum of 27 – 30% DNDF in the ration dry matter and that 70 – 80% of this should come from forage. Consequently where cows are receiving high levels of concentrate, a high DNDF concentration in the forage component of the diet becomes even more important.

Young grass always produces forage with high digestibility but yields are low and as grass matures the converse applies. High DNDF varieties bring improved animal performance by delivering the best combination of yield and quality as grasses progress through the different growth stages.

The illustration below shows how high DNDF varieties maintain higher digestibility throughout the growth stages and the impact on animal production.

For 2014 HF has been able to include DNDF as one of its variety selection criteria and as a result has gone beyond the quality assessments used to produce UK Recommended Lists thus ensuring only the ‘best of the best’ varieties are included in the 2014 mixture range.
All the varieties used in HF mixtures have been selected on the basis of their performance in trials throughout the UK. Information is collected from both in-house trials and from the various UK Recommended Lists of Grass and Clover Varieties thus ensuring that HF mixtures benefit from detailed up-to-date information on the latest varieties.

**PERENNIAL RYEGRASS**

Perennial Ryegrass is the most widely sown species in the UK. It forms the basis of most mixtures because of its combination of useful characteristics. Perennial Ryegrasses are grouped together according to their maturity or heading date.

**Early Maturing Varieties**

Early Perennial Ryegrass will start to grow up to two weeks earlier in the spring than later varieties. They are particularly useful for early growth for sheep grazing or in specialist silage mixtures being cut in early to mid May.

**GENESIS**

Genesis is exceptionally high yielding under both cutting and grazing with very good early spring growth. It also has very good late season growth for autumn grazing.

**Intermediate Maturing Varieties**

Intermediate Perennial Ryegrass varieties will head on average 7 to 10 days later than Early Perennials. They are high yielding and with their later heading offer greater flexibility of use making them well suited to a wide range of grassland enterprises.

**SOLOMON**

A high DNDF variety with outstanding performance in all respects, Solomon is recommended throughout the UK and is very high yielding under both cutting and grazing. Solomon also has exceptionally good spring and autumn growth, excellent sward density and very good forage quality. An excellent variety in all respects.

**PREMIUM** *(only available as organic)*

Premium is a high yielding variety under both cutting and grazing with very good mid-season forage quality. Very good ground cover and excellent disease resistance.

**BOYNE** *(New for 2014)*

A brand new variety and one of the highest yielding Perennial Ryegrasses on all three UK Recommended Lists. Boyne produces very high yields under both cutting and grazing with exceptional early spring growth leading to very high first cut yields. Grazing performance is also excellent both in early spring and throughout the year with high quality forage produced from a dense growth habit.

**CALVANO I**

A high DNDF and excellent dual purpose variety producing high yields under both cutting and grazing with good forage quality and excellent resistance to the most damaging grass diseases.

**CATABI I (T)**

A high yielding variety particularly under conservation with good early spring growth producing high first cut yields of high D-value forage. Good mid and late season growth and excellent resistance to Crown Rust, Drechslera and Mildew.

**MAGICIAN (T)** *(also available as organic)*

Magician produces very high yields under both cutting and grazing. With exceptionally good early spring growth Magician produces very high grazing yields right through from spring to late summer and is high yielding for both first and second cut silage.

**SEAGEO (T)**

Another outstanding variety, Seageo is recommended throughout the UK and produces very high yields under both cutting and grazing. Very good early spring and mid-summer growth with excellent forage quality.

**GLENVAGH**

Introduced to HF mixtures in 2013, Glenveagh produces high yields of good quality forage under both managements from a very dense sward. Very good mid and late season growth.

**TYRCO NELL**

Tyrconnell is a late heading diploid Perennial Ryegrass with a high DNDF content and good conservation yields and very high yields under grazing. It has excellent sward density and very good forage quality making it a very useful variety in all types of mixture but particularly those with a bias towards grazing.

**KINTYRE (T)** *(also available as organic)*

Kintyre shows outstanding performance under both cutting and grazing with consistently high yields throughout the growing season and very good forage quality at both first and second cut.

**TWYMAX (T)** *(New for 2014)*

Twymax is recommended for use throughout the UK. It is an excellent dual purpose variety with high yields under both cutting and grazing. Good forage quality and high mid-season grazing yields from a very dense sward for a Tetraploid.

**POLIM (T)** *(also available as organic)*

Polim is a high DNDF variety and is very high yielding under grazing with very good early spring growth. It also shows high yields under conservation with a very high yield at first cut at 67D. Exceptionally good resistance to Crown Rust.

**MAURICE (T)** *(also available as organic)*

A very late heading Tetraploid Perennial with good ground cover especially suited to long term mixtures. Maurice is a high DNDF variety producing good yields under both cutting and grazing which improve over the first three years.

**ITALIAN RYEGRASS**

Italian Ryegrass is relatively short lived and is therefore only used in one to three year ley. It has a long growing season and produces heavy crops of hay or silage. It has very good early spring growth and combined with its relatively late heading date, it will produce a leafy silage cut after early grazing.

**ALAMO**

Alamo is one of the highest yielding Italian on UK Recommended Lists and has good forage quality relative to other Italian Ryegrass varieties.

**FOX** *(New for 2014)*

Fox is a new and very high yielding Italian Ryegrass with good forage quality and good resistance to all the main diseases affecting grass.

**GEMINI (T)**

An excellent tetraploid variety with very high yields, good seasonal growth distribution and high D-values at both main silage cuts. Good mildew resistance.
HYBRID RYEGRASS

Hybrid Ryegrasses are bred from a cross between Italian and Perennial Ryegrass parents. The objective is to combine the production of Italian Ryegrass with the persistency and forage quality of Perennial Ryegrass and recent breeding advances have produced new varieties with early growth characteristics making them an ideal component in leys of up to five years duration.

TETRAGRAZE (T)

A new high yielding tetraploid variety, Tetrageze grass matures. Behaving like a Hybrid Ryegrass but with very fast establishment, high yields, excellent stress tolerance and disease resistance it is an ideal component in 3–5 year mixtures and as a companion grass for Red Clover.

SOLID (T)

(Also available as organic)

Solid is a true Perennial type Hybrid producing high yields with exceptionally good mid-season digestibility and forage quality. Its Perennial characteristics ensure outstanding persistence and sward density. Solid also has excellent general disease resistance with excellent resistance to Crown Rust.

FESTULOLUM

The Festuloliums or Advanced Grasses™ result from a cross between Fescue and Italian Ryegrass and offer all the benefits of Ryegrass combined with the stress tolerance of Fescues.

HYKOR

An Advanced Tall Fescue™, Hykor is extremely drought tolerant and although its potential for use in the UK is limited it offers a unique solution for drought conditions and could be considered as an alternative to Cocksfoot offering significantly better yields and higher quality.

LOFA

As an Advanced Hybrid Ryegrass™, Lofa has the most general appeal for extensive use within the UK. It is very early to establish, high yielding but with very fast establishment, high yields, excellent stress tolerance and disease resistance it is an ideal component in 3–5 year mixtures and as a companion grass for Red Clover.

PERSEUS

Perseus is a variety of Advanced Italian Ryegrass™ but with much better persistence and combines high yields with good quality and high sugar levels. It has exceptional early spring growth and good disease resistance and with its unique set of characteristics it is also an ideal companion grass for Red Clover.

TIMOTHY

Timothy is an under-rated species as it brings many desirable features to a grass mixture. It has excellent early spring growth and is late heading producing a large bulk of forage at first cut. It is very palatable, extremely winter hardy and thrives under cool wet conditions. Timothy is generally better suited to cutting, however its early spring growth can be very useful for early bite.

DOLINA

(Also available as organic)

Recommended by all three testing authorities. Dolina is one of the highest yielding Timotheys on UK Recommended Lists. It performs particularly well under grazing and has excellent early spring growth and very good yield distribution throughout the growing season.

PROMESSE

An excellent Timothy variety with high yields, good sward density and very good summer and autumn growth.

COCKSFoot

Cocksfoot is very persistent and deep-rooting and is therefore suited to light gravelly soils where mid-summer drought may reduce yields. It is extremely winter hardy with good early spring growth and it also yields well in late summer and autumn. Cocksfoot needs to be managed tightly in mid-season as it can become stemmy and unpalatable.

SPARTA

A later heading Cocksfoot. Sparta has good ground cover and produces high yields under grazing. It has good early spring growth and has the highest mid-season digestibility of all the Cocksfoot varieties.

WHITE CLOVER

White Clover varieties are classified by leaf size. The smaller leaved varieties have a prostrate creeping growth habit and persist well under grazing whereas the larger leaved varieties are more erect and better suited to cutting.

RIESLING

A high yielding large leaved variety with good persistence and good ground cover for a large leaved variety.

CHIEFTAIN

On the borderline between large and medium leaf size, Chieftain is recommended throughout the UK and produces very high yields with excellent late season growth with good ground cover for its leaf size.

AVOCA

Avoca is an outstanding medium leaved variety recommended by all three testing authorities. It is extremely high yielding with excellent seasonal yield distribution and particularly good early spring growth compared to many other clover varieties. It is also very persistent under both cutting and grazing.

RIVENDEL

A small leaved variety with good yields and excellent persistency under hard grazing.

RED CLOVER

Red Clover is an aggressive and very high yielding but relatively short-lived species with a maximum life expectancy of around 3 years. It is primarily used in short term conservation mixtures. Resistance to Sclerotinia and Stem Eelworm both of which are very damaging to the persistency of Red Clover and is an important factor to consider in the evaluation of varieties.

RAJAH

(Only available as organic)

An intermediate to late flowering variety, Rajah is a Diploid variety with high yields, good persistency and general disease resistance. Rajah also shows good resistance to both Sclerotinia and Stem Eelworm.

AMOS

A very high yielding Tetraploid variety with intermediate earliness. Amos has good general disease resistance relative to other varieties but has much better persistency and maintains high yields over a longer period.

MARO

A Tetraploid variety which maintains consistently high yields over three years with particularly good production in the third year compared to other varieties.

CORVUS

High annual yields with good ground cover and persistency over three harvest years.
HF mixtures are designed and formulated to meet specific sward uses. Significant differences between mixtures are not always obvious but even small differences can change the way in which the final sward behaves. Selection of the wrong mixture will inevitably mean that the sward will not perform up to expectations simply because it is the wrong mix for the job.

The HF mixture selector is designed to help answer many of the common questions in mixture selection, however it is not possible to cater for every situation and if in doubt contact HF Seeds for further advice.

For specialist mixtures such as Horse Paddock and Dry Land see pages 18 - 20.
Although a high proportion of the grass in arable and mixed farming areas is still sown in the spring often under cereals, in true grassland areas there is an increasing trend towards replacing grass in the traditional summer reseed months of August and September.

The practice of summer reseeding is popular as it allows one or perhaps two cuts of silage to be taken before the field is ploughed and then effectively lost to production while the new grass is establishing and provided the new grass has time to fully establish before the onset of winter, the field can be brought into full production, invariably for silage, in the following year. There can also be a significant benefit in terms of the weed burden and control when reseeding in summer as opposed to the spring.

However whilst there is no doubting the potential benefits of a summer reseed, these benefits are completely cancelled out if circumstances or weather conditions prevent or delay the reseed taking place. A missed reseed can mean a poor field of grass is carried forward for another year and a delay can result in insufficient time for establishment before the onset of winter and an increased risk of failure. In both cases one of the key objectives of a fully established and highly productive sward for the following year is lost.

Reseeding in the spring with a full mix containing Westerwolds Ryegrass can represent an alternative to a summer reseed and can produce substantial bulk for cutting or grazing in the year of sowing. Westerwolds Ryegrass is a fast growing, short lived species which is added to a full mixture with the specific purpose of providing bulk at the same time as the full mix is establishing. It is cheap, highly effective in terms of bulk production and as it comes ready mixed, sowing can be completed in a single operation. It is included in the mixture purely for short term production and is designed to die out in the year of sowing after an initial flush of growth. Westerwolds Ryegrass can be added to any HF mixture and is included at 20% by weight taking the total sowing rate to 17 – 18 kgs/acre.

The advantages of adding Westerwolds Ryegrass to a full grass seed mixture are as follows:

- It will provide production for cutting or grazing in the year of sowing and can be grazed in 6 – 8 weeks or cut 10 – 12 weeks after sowing
- It will provide rapid regrowth for grazing or subsequent cuts
- A spring reseed with Westerwolds will produce an estimated 20 – 25 tonnes of forage per acre in the year of sowing
- It is delivered ready mixed and sowing is completed in a single operation
- It provides a nurse crop to the establishing full mix protecting against adverse conditions and helping to compete against weeds

As Westerwolds Ryegrass is an aggressive fast growing species it is essential that it dies out in the year of sowing. Plants surviving into the second year will compete with and ultimately damage the final sward. Consequently mixtures containing Westerwolds should always be sown before the end of June and their autumn management should include hard grazing to ensure the Westerwolds component is completely eradicated before the following spring.

**As a regular HF user and following missed reseeds last year, we needed extra forage so we sowed an HF silage mix with Westerwolds in the spring and were amazed at how much bulk it produced with a massive first cut only 12 weeks after sowing. So much so that forage stocks for the coming winter are no longer a problem. I have no doubt however that mixtures with Westerwolds need to be sown early to get the full benefit. I also like the way HF produce different mixtures for different situations and this year we also sowed a permanent mix plus Westerwolds on the higher ground**

Melvin Duncan, Carrigans, Co Donegal
(Seed supplied by Clonleigh Co-op Society Ltd)

**I sowed a specialist HF grazing mix in April and it produced an unbelievable crop of grass with so much bulk that we were able to silage it three times this year. Not only that it kept on growing right into the back-end producing tremendous autumn grazing. There is no doubt that Westerwolds is a great way of getting production in the same year from a spring sow-out**

Edward Chalmers, Threipland Farm, Portsoy, Aberdeenshire (Seed supplied by Agrin)

![Cutting an HF mix with Westerwolds at Roger and Sam Steel, Dubbs Farm, Eaglesfield, Cockermouth, Cumbria (Seed supplied by Carrs Billington Agriculture Ltd)]
ONE TO TWO YEAR MIXTURE

HF YIELDER

A highly productive one to two year mixture for intensive cutting or grazing. Suitable for undersowing or direct seeding although due to the vigorous growth of Italian Ryegrass nitrogen levels should be reduced where this mixture is to be undersown. HF YIELDER is formulated to produce bulky crops of highly digestible and palatable herbage with excellent early and late season growth but should not be relied on for full production beyond two years.

RECOMMENDED SOWING RATE
12 - 14 KG/ACRE (30 - 32 KG/HECTARE)

- Optimum cutting date based on NIAB heading dates in central England - late in May
- Balanced proportions of Diploid and Tetraploid varieties to produce highly digestible and palatable forage for cutting or grazing
- Improved for 2014 with the inclusion of the new Italian Ryegrass variety Fox bringing high yields, good forage quality and excellent disease resistance
- Contains the Advanced Italian Ryegrass™ variety Perseus, included for its very high yields, stress tolerance and excellent spring growth
- Excellent early spring growth
- Very high first cut yields
- High sugar content aids rapid silage fermentation
- Better yield and herbage quality due to very good Mildew resistance
- Rapid recovery for second and subsequent silage cuts
- Responds well to fertiliser input

TWO TO FOUR YEAR MIXTURE

HF DIVIDEND

A mixture designed for intensive use and maximum yield over two to four full production years. Suitable for intensive cutting and/or grazing and the standard mix can be undersown or direct seeded. An option of replacing the White Clover with Red Clover is available if required but this option is not suitable for undersowing.

RECOMMENDED SOWING RATE
12 - 14 KG/ACRE (30 - 35 KG/HECTARE)

- Optimum cutting date based on NIAB heading dates in central England - mid May
- Specially formulated with the correct proportions of the highest yielding varieties for maximum yield and persistency over four full production years
- Includes the new Advanced Italian and Hybrid Ryegrass™ varieties Persus and Lofa combining high yields with good forage quality, persistency and excellent stress tolerance
- Specially formulated for high yields under both cutting and grazing
- Consistently the highest yielding mixture in all HF trials
- Includes a high proportion of Hybrid Ryegrass which combines the yield of Italian Ryegrass with the quality and persistency of Perennial
- Exceptional early spring growth
- Suitable for early bite followed by first cut silage as relatively late heading and good D-values allow delayed cutting and high silage yields at 67D
- High Tetraploid content for improved palatability and high sugar levels for rapid silage fermentation
- Blend of varieties to ensure good overall disease resistance
- Contains HF’s Cutting Clover blend consisting of highly productive clover varieties for maximum performance in competitive, high yielding swards
- Red Clover option available

‘We use short term mixtures like HF YIELDER to produce quality cuts of silage or hay depending on the season and grass availability. We add white clover to further improve forage quality and because it is ideal for finishing the lambs. We plan to increase our sheep numbers and reseeding with different HF mixtures to suit the purpose will be part of the plan.’
Alwyn Jones, Tanygraig, Clynnog, Pwllheli
(Seed supplied by D J Edwards)
Grass and Fodder Crops

DELAMERE, BROMYARD, HEREFORDSHIRE

ROGER BENBOW, CHERRY FIELDS FARM, TEDSTONE

(SEED SUPPLIED BY ROBIN BEMAND)

GRASS AND FODDER CROPS

‘I have been really impressed with my first purchase of an HF mixture. HF Grassmaker was drilled in the very testing spring of 2013 but despite the difficult conditions it established beautifully and has produced two exceptional cuts of silage in the year of sowing followed by aftermath grazing. It just kept on growing and was grazed several times before winter. It is still looking great and I am really looking forward to seeing how it performs next year and beyond.’

Matthew House with Mervyn Smith of B & W Feeds Ltd (left), Lower Stockley Farm, Bere Regis, Dorset (Seed supplied by B & W Feeds Ltd)

DUAL PURPOSE MIXTURES

HF REWARD

A medium term, dual purpose rotational mixture lasting from four to eight years and suitable for grazing and/or cutting. HF Reward is formulated to provide excellent spring growth for early bite for ewes and lambs or for high silage yields at relatively early cutting dates.

GENES

Early Perennial Ryegrass

Tetraploid Intermediate Perennial Ryegrass

BOYNE

Intermediate Perennial Ryegrass

SOLOMON

Intermediate Perennial Ryegrass

CATANIA I

Tetraploid Intermediate Perennial Ryegrass

ROMARK

Late Perennial Ryegrass

PASTOUR

Late Perennial Ryegrass

POLIM

Tetraploid Late Perennial Ryegrass

TWYMAYX

Tetraploid Late Perennial Ryegrass

HF DUAL PURPOSE CLOVER BLEND

White Clover

RECOMMENDED SOWING RATE

13 - 14 KG/ACRE (32 - 35 KG/HECTARE)

A very dense sward able to withstand poaching and hard grazing

A good early spring growth without early heading for high first cut yields of quality forage

Good early spring growth that will perform in a sward which is likely to be grazed in early spring and late summer in addition to being cut for silage

SOLOMON

Intermediate Perennial Ryegrass

BOYNE

Intermediate Perennial Ryegrass

MAGICIAN

Tetraploid Intermediate Perennial Ryegrass

CATANIA I

Tetraploid Intermediate Perennial Ryegrass

DOLINA

Timothy

HF DUAL PURPOSE CLOVER BLEND

White Clover

RECOMMENDED SOWING RATE

13 - 14 KG/ACRE (32 - 35 KG/HECTARE)

OVERSEED WITH

GrassMax DUAL PURPOSE

GrassMax

‘We have a lengthy rotation with cereals so our grass leys need to perform for a long time. HF Grassmaker does this exceptionally well. We make hay and haylage for our equestrian business so both quality and quantity are very important. Outside of the cutting period we graze sheep on the Grassmaker swards and are able to finish lambs off good autumn grass and clover’

Roger Benbow, Cherry Fields Farm, Tedstone Delamere, Bromyard, Herefordshire (Seed supplied by Robin Bemand)
INTENSIVE SILAGE MIXTURES

**HF MASTER SILAGE**
A medium term silage mixture specially designed for intensive three or four cut silage systems.

- **LOFA**
  - Advanced Hybrid Ryegrass™
- **SOLOMON**
  - Intermediate Perennial Ryegrass
- **GLENATAL**
  - Tetraploid Intermediate Perennial Ryegrass
- **TODDINGTON**
  - Late Perennial Ryegrass
- **PASTOUR**
  - Late Perennial Ryegrass
- **TWYMAX**
  - Tetraploid Late Perennial Ryegrass
- **POLIM**
  - Tetraploid Late Perennial Ryegrass

**RECOMMENDED SOWING RATE**
13 - 14 KG/ACRE (32 - 35 KG/HECTARE)

- Optimum cutting date based on NIAB heading dates in central England - mid May
- Specially formulated for a high DNDF content and top quality forage
- Contains a high proportion of Solom on which is very high yielding under cutting with exceptionally good spring growth and high first cut yields from a very dense stand
- Specially formulated to maximise silage yields with the highest yielding varieties under cutting on the 2014 Recommended List of grass varieties for England and Wales
- High sugar yield per acre ensures maximum feeding value, excellent palatability and rapid silage fermentation
- Excellent spring growth for high silage yields at early first cut dates
- Superb forage quality and D-value
- Holds digestibility well after heading and in mid season giving flexibility of cutting date
- Varieties chosen for yield and persistency under conservation and rapid regrowth after cutting
- Very good general disease resistance and particularly good resistance to Crown Rust from Toddington and Polim which have the highest resistance rating on the 2014 Recommended List for England and Wales

**OVERSEED WITH**
GrassMax

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**HF Supersward**
A more traditional silage mixture of medium term duration for two cut systems where the first cut is taken in late May or early June.

- **SOLOMON**
  - Intermediate Perennial Ryegrass
- **CALVANO 1**
  - Intermediate Perennial Ryegrass
- **CATAB 1**
  - Tetraploid Intermediate Perennial Ryegrass
- **TODDINGTON**
  - Late Perennial Ryegrass
- **PASTOUR**
  - Late Perennial Ryegrass
- **TWYMAX**
  - Tetraploid Late Perennial Ryegrass
- **POLIM**
  - Tetraploid Late Perennial Ryegrass
- **DOLINA**
  - Timothy
- **TIMOTHY**
  - HF Cutting Clover Blend
  - White Clover

**RECOMMENDED SOWING RATE**
13 - 14 KG/ACRE (32 - 35 KG/HECTARE)

- Optimum cutting date based on NIAB heading dates in central England - last week in May
- Specially formulated for a high DNDF content and top quality forage with high proportions of the top DNDF varieties Solom on, Calvano 1, Pastour and Polim
- High sugar yield per acre ensures maximum feeding value, excellent palatability and rapid silage fermentation
- Varieties specially selected for high yields under conservation and later cutting dates
- Very good spring growth without early heading for high yields of quality silage at later cutting dates
- Entire Timothy content from Dolina, one of the best Timothies for both yield and forage quality on the 2014 Recommended List of grass varieties for England and Wales
- Timothy content and later heading makes the mixture an ideal choice for colder and more exposed sites
- Excellent forage quality and mid season D-value
- Very good resistance to all the major diseases affecting grass including Crown Rust and Drechslera
- Clover content based entirely on highly productive large leaved varieties suited to conservation management to ensure clover production and survival in a two cut silage system

**OVERSEED WITH**
GrassMax

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“We are increasing the cow numbers by a further 10 and so the grass sw ards have got to perform. Ew es and lambs run over all the silage ground at lambing and I am always impressed by how the HF sw ards recover so quickly after this hard grazing to give us two big cuts of quality silage. Cows and calves follow the second cut and then ew es or lambs follow on through the winter. This year I sowed my HF grass seed on 19th August and it was knee high 10 weeks later. I always use HF grass seed”

Cameron MacIver, Wester Coltfield, Kinloss, Morayshire
(Seed supplied by Scotgrain Agriculture Ltd)
Grass and Fodder Crops

INTENSIVE GRAZING

HF MASTER GRAZE

Specially designed for intensive cattle grazing. Based on short growing, high tillering and long-lived grasses and producing a very dense, highly productive sward of great persistence. Suitable for medium to long term use.

PERMANENT MIXTURE

HF Evergreen

A versatile permanent mixture with extreme sward density consisting of a blend of grasses and clovers that will produce a well balanced sward giving even growth of quality herbage for many years.

THE MIXTURES

Grass and Fodder Crops

‘We farm in a high rainfall area so we need grass that will carry stock. HF Evergreen does this well. We graze into May then close up for silage towards the end of June taking in total around 120 acres into the clamp for our beef and sheep enterprises. Evergreen has good clover content so we can usually finish lambs on forage alone. We have started to overseed to maintain quality and yield and we plan to do more’

Graham Robinson, Lower Lees Farm, Cow-Ark, Clitheroe, Lancashire
(Seed supplied by Dugdale Nutrition)

‘We have used HF Evergreen for several years. We like the versatility of the mixture, it doesn’t matter if we need the fields for cutting or grazing Evergreen never lets us down. The quality of grass ensures our beef and sheep stock perform extremely well and importantly it also provides the early spring bite for our ewes and lambs. We usually add some Forage Rape with the mid summer reseeds which provides useful feed for the fattening lambs’

Ian Armstrong, Terrace Farm, Lorton, Cockermouth, Cumbria
(Seed supplied by Jim Peet Agriculture)
Grass and Fodder Crops  
THE MIXTURES

SPECIALIST MIXTURES

**HF**

**High-hill**

A long term hill mixture specially designed for sheep grazing and to suit the harsher conditions of upland pastures. Ideal for reseeding hills or reclaiming marginal land. Contains grasses suited to the poorer soils and shorter growing season typical of hill ground.

- **KORA**
  - Tall Fescue
- **HYKOR**
- **LOFA**
  - Advanced Hybrid Ryegrass™
- **Sparta**
- **Maurice**
  - Tetraploid Late Perennial Ryegrass

**RECOMMENDED SOWING RATE**
15 KG/ACRE (37 KG/HECTARE)

- A unique solution to fodder production in very dry conditions
- Contains species specially selected for their drought and stress tolerance in particular Hykor Advanced Tall Fescue™ and Late Advanced Hybrid Ryegrass™
- Also includes Tall Fescue a species used for forage production in hot dry countries
- High sugar varieties with good forage quality used to balance the poorer quality of the Tall Fescue and Cocksfoot
- Suitable for cutting or grazing
- Contains the unique Late Tetraploid Perennial Ryegrass variety Maurice, included to improve palatability and for its drought tolerance, sward density and persistency
- Excellent disease resistance particularly to Crown Rust which can be a major problem in hot, dry conditions and which can seriously affect both yield and palatability

**OVERSEED WITH**

GrassMax

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**HF**

**Dry LAND**

A specialist mixture for very dry conditions using deep rooted grasses with excellent resistance to drought. Formulated using species not commonly found in UK agricultural mixtures, HF Dry Land is designed to produce fodder in extremely dry situations where conventional mixtures are likely to fail.

- **KORA**
  - Tall Fescue
- **HYKOR**
- **LOFA**
  - Advanced Hybrid Ryegrass™
- **Sparta**
- **Maurice**
  - Tetraploid Late Perennial Ryegrass

**RECOMMENDED SOWING RATE**
14 - 16 KG/ACRE (35 - 40 KG/HECTARE)

- Based on later heading varieties to ensure good growth in later areas before the production of seed heads
- Early bite provided by a high Timothy content and a high proportion of grazing tolerant Perennial Ryegrass varieties
- Very good winter hardiness for longevity under harsher upland conditions
- Varieties selected for sward density to resist poaching
- A high proportion of persistent Late Perennials ensures good production over many years
- The unique combination of grazing Perennial Ryegrasses produces a short dense growth ideal for grazing
- Will also provide a cut of hay or silage if required
- Creeping Red Fescue with its creeping growth habit binds the sward together and aids recovery after poaching or over-grazing
- All ingredients selected for cold and snow tolerance
- High moisture levels of HF’s unique Grazing Clover blend specially designed for production and persistency in an upland situation

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*On a beef and sheep farm in the far north of Scotland we need mixtures that consistently perform and last in what can often be challenging conditions. We have used HF mixtures for a long time and they suit both the area and our farming system giving us a spring graze followed by a big cut of silage and excellent back-end grazing*

Ken Greenland, Cambusmore Estate, Dornoch, Sutherland (Seed supplied by W & A Geddes Ltd)
Grass and Fodder Crops

THE MIXTURES

SPECIALIST MIXTURES

HF

HAYMAKER

A modern mixture for traditional hay making specially designed to produce a large bulk of the type of forage typically required for hay.

CALVANO 1
Intermediate Perennial Ryegrass
SOLOMON
Intermediate Perennial Ryegrass
PASTOUR
Late Perennial Ryegrass
TODDINGTON
Late Perennial Ryegrass
PROMESSE
Timothy
DOLINA
Timothy
LAURA
Meadow Fescue

HF DUAL PURPOSE CLOVER BLEND

RECOMMENDED SOWING RATE
13 – 14 KG/ACRE (32 – 35 KG/HECTARE)

- Specially designed to produce top yields of easily made hay
- Contains the high DNDF varieties Calvano 1, Solomon and Pastour included for their forage quality and high conservation yield
- Varieties selected on the basis of their growth pattern and maturity to provide the right sward characteristics for quality hay production
- High Timothy content and no Tetraploids for ease of hay-making
- Based on Intermediate and Late Perennial Ryegrass with no Early Perennial Ryegrass which heads too early for hay production
- Good sward density for a mixture with a high Timothy content
- Varieties selected to provide good summer and late season grazing
- Good winter hardiness and persistency ensures consistent bulk over many years

HF

HORSE

Paddock

A custom built mix using species and varieties specially selected to produce a very dense and hard wearing sward suitable for horses and ponies. Designed to provide palatable grazing throughout the growing season but also suitable for hay production.

SOLOMON
Intermediate Perennial Ryegrass
TYRCONNELL
Late Perennial Ryegrass
GLENVEAGH
Late Perennial Ryegrass
PROMESSE
Timothy
MAXIMA

Creeping Red Fescue

RECOMMENDED SOWING RATE
15 KG/ACRE (37 KG/HECTARE)

- Based on the densest Perennial Ryegrass and Timothy varieties for an exceptionally dense damage resistant sward
- High Timothy content ideal for horses and ponies
- Formulated to provide attractive but low sugar forage to help minimise the risk of laminitis
- Designed to produce palatable grazing throughout the entire season
- Creeping Red Fescue with its creeping growth habit binds the sward together and quickly repairs sward damage caused by hooves
- Offers the option of horse hay production if required

‘New reseeds are sown after barley into well prepared fertile seedbeds. Attention to detail pays off and that includes selecting the right mixture. I have tried many others over the years but always come back to HF. Fields are routinely soil sampled as you can’t expect grass to perform if you don’t look after it. We are grazing sheep and taking a silage / haylage round bale crop so we expect results. With a bit of care in preparation we have experienced amazing autumn establishment even after the very dry time this summer’

Glyn Dallow, Park Horn Farm, Tedstone, Wafre, Bromyard, Herefordshire

(Seed supplied by Robin Bemard)
**Grass and Fodder Crops**

**THE MIXTURES**

**LANDSCAPING**

**HF Multi Purpose LANDSCAPER**

A mixture specially designed for all situations where a relatively hard wearing, low maintenance grass sward with an attractive appearance is required. This mix is ideal for river banks, roadside verges, orchards, caravan sites, headlands round fruit fields, paths etc and any other situations where low maintenance cover is required.

**REMARK**

Late Perennial Ryegrass

**MAXIMA**

Creeping Red Fescue

**RECOMMENDED SOWING RATE**

25 KG/ACRE (62 KG/HECTARE)

- Suitable for all low maintenance situations where an attractive appearance is required
- Although the sowing rate is higher than standard agricultural mixtures it is considerably less than the rate required by a true amenity mix to achieve the same effect
- Produces a hard wearing and attractive sward with a good dark green colour
- Designed for situations where an attractive appearance is required but where the circumstances do not justify the expense of a true amenity mix
- Specially formulated with a high proportion of Creeping Red Fescue for extreme sward density and wear tolerance

**SHEEP FEED MIXTURES**

**HF CC**

A highly productive catch cropping mix including white turnips designed to produce autumn grazing for sheep and fattening lambs.

- **ALAMO**
  - Italian Ryegrass
  - HOBSON
  - Forage Rape
  - GREEN GLOBE
  - White Turnip

**RECOMMENDED SOWING RATE**

9 KG/ACRE (22 KG/HECTARE)

**HF CD**

A highly productive catch cropping mix similar to HF CC but without white turnips.

- **ALAMO**
  - Italian Ryegrass
  - HOBSON
  - Forage Rape

**RECOMMENDED SOWING RATE**

9 KG/ACRE (22 KG/HECTARE)

HF CC and CD are balanced mixtures designed to produce an Italian Ryegrass sward with a brassica cover crop thereby providing both autumn grazing from the combination of species and winter and early spring grazing from the Italian Ryegrass. Inevitably this compromise will not produce the short term bulk of a single brassica but will provide a lower level of keep for a longer period of time. In the management of these mixtures it should be remembered that both rape and turnips are aggressive species and if allowed to grow too tall they can smother the Italian Ryegrass. These mixtures should therefore be grazed early to allow the Italian to thrive.
Every grassland farmer is well aware of the vigour and high level of production that can be achieved from a new reseed and also that inevitably through time, the sown grasses begin to disappear and the sward thins out and production suffers. The decline of sown species is influenced by many different factors but on average by the time grass reaches 7 or 8 years old, only around 60% of the sown species remain and 40% of the sward is either bare ground or occupied by weed grasses. This deterioration not only affects yield but also has a significant effect on palatability, forage quality, spring growth and the overall response to fertiliser inputs. When these are added together, the effect on both animal performance and the overall financial return is substantial and a sward with 40 – 50% bare ground or weed grass content can mean a loss of up to £300 per acre per year in feed value.

Recognising the need to maintain a high proportion of sown species in older grass and that a full reseed is not always practical, HF Seeds has developed the GrassMax system of overseeding which presents a real opportunity to restore production in tired or damaged swards to newly sown levels without the expense or disruption of a full reseed. The GrassMax system of overseeding can also be used to introduce or increase clover levels in existing swards.

The key to successful overseeding lies in ensuring that the newly sown plants are capable of competing with the existing grass and that the germinating seedlings have sufficient vigour to establish successfully in what can be a very competitive environment. Increasing the competitiveness of the establishing plants can be achieved in three ways each of which has a cumulative effect in ensuring success.

**Minimise Competition from the Existing Sward**
When the existing sward is growing strongly there is obviously more competition for the establishing seedlings. Consequently the timing of the actual overseeding operation and the subsequent fertiliser treatment are important factors to consider. The objective should be to find a window during the season when the existing sward is short and is not growing strongly. Ideal conditions are provided after a hard graze or immediately after the last silage cut of the season. No fertiliser should be applied for at least 15 days after the overseeding operation.

**Use a Mixture Designed for Overseeding**
Large seeded grasses are more competitive in their establishment and all the HF GrassMax mixtures are comprised of Tetraploid Hybrid and Perennial Ryegrasses specially selected for their establishment vigour. The use of these large seeded, aggressively establishing grasses significantly increases their ability to compete with the existing sward.

**Use Mixtures Treated with iSeed® 50**
Although conventional fertiliser application will increase the establishment vigour of the new seedlings, its growth promotion effect on the existing sward is greater and competition is increased to a level which often overwhelms the establishing plants. For 2014, all HF GrassMax mixtures are available with the unique and revolutionary iSeed® 50 treatment where every individual seed is coated with both nitrogen and phosphate. This unique targeted fertiliser concept feeds the sown seeds and not the surrounding sward and dramatically improves establishment vigour at the most crucial stage in the overseeding process. Extensive trials have shown that the uptake of iSeed® 50 fertiliser is four times more effective than conventional applications and have demonstrated establishment gains of up to 50% and substantial gains to both root and shoot development.

The benefit of iSeed® 50 30 days after sowing is clear to see
**OVERSEEDING MIXTURES**

**HF**

**GrassMax Dual Purpose**

A mixture specially designed for overseeding fields which will be
mainly cut for silage.

- **SOLID**
  - Tetraploid Hybrid Ryegrass
  - Lofa
  - Advanced Hybrid Ryegrass™
  - MAGICIAN
  - Tetraploid Intermediate Perennial Ryegrass
  - HF CUTTING CLOVER BLEND
  - White Clover
  - **RECOMMENDED SOWING RATE**
    - 10 KG/ACRE (25 KG/HECTARE)
  - Only contains large seeded aggressively establishing grasses for their establishment vigour and ability to compete in an existing sward.
  - Contains Lofa Advanced Hybrid Ryegrass™ included for its high conservation yields, forage quality and fast regrowth.
  - Very good forage quality from Solid in particular.
  - Varieties chosen for good spring growth to ensure high yields at first cut.
  - Contains a high proportion of HF’s unique Cutting Clover blend to ensure good clover production and survival under intensive silage management.
  - Grasses specially selected for their high sugar content to balance the relatively low sugar levels in White Clover.

**GrassMax Dual Purpose with Red Clover**

A specialist overseeding mixture containing a high level of Red Clover designed to introduce both new grass and Red Clover into silage swards. This mix can also be used to prolong the life of existing Red Clover swards provided Eelworm is not a problem.

- **SOLID**
  - Tetraploid Hybrid Ryegrass
  - Lofa
  - Advanced Hybrid Ryegrass™
  - MAGICIAN
  - Tetraploid Intermediate Perennial Ryegrass
  - HF CUTTING CLOVER BLEND
  - White Clover
  - **RECOMMENDED SOWING RATE**
    - 10 KG/ACRE (25 KG/HECTARE)
  - Only contains large seeded aggressively establishing grasses for their establishment vigour and ability to compete in an existing sward.
  - Contains a high proportion of Lofa Advanced Hybrid Ryegrass™ an ideal companion grass for Red Clover, included for its high conservation yields, forage quality and fast regrowth.
  - 30% Red Clover content to ensure a good plant population in the overseeded sward.
  - Very good forage quality from Solid in particular.
  - The high sugar content of the Hybrid Ryegrasses is the perfect match to balance the relatively low sugar levels in Red Clover.

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"We started using HF GrassMax Dual Purpose some years ago, mainly on land that was heavily poached and we were delighted with the results. We were surprised at how quickly the new seeds established and how it improves sward density. The HF GrassMax system is great for our beef and sheep enterprise as it enables us to repair damaged swards as well as to rejuvenate some unproductive areas without having to use the plough. It also means we don’t lose a season’s production by doing a normal reseed."

Robert Patton, 110 Lame Road, Ballycarry, Carrickfergus, Co Antrim (Seed supplied by CR Supplies)
OVERSEEDING MIXTURES

HF GrassMax™

A mixture specially designed for overseeding fields which will be both cut and grazed.

LOFA
Advanced Hybrid Ryegrass™
MAGICIAN
Tetraploid Intermediate Perennial Ryegrass
KIN TYRE
Tetraploid Late Perennial Ryegrass
TWYM A X
Tetraploid Late Perennial Ryegrass

HF DUAL PURPOSE CLOVER BLEND
White Clover

RECOMMENDED SOWING RATE
10 KG/ACRE (25 KG/HECTARE)

- Specially formulated with high sugar varieties to improve the sugar content of existing swards
- Only contains large seeded aggressively establishing grasses for their establishment vigour and ability to compete in an existing sward
- Contains Lofa Advanced Hybrid Ryegrass™ included for its high conservation yields, forage quality and fast regrowth
- Based on grass varieties with high yields under both cutting and grazing
- Very good resistance to all the main grass diseases
- Contains a high proportion of HF’s unique Dual Purpose Clover Blend which is based on the most productive varieties and designed to achieve the maximum clover content and persistence under both cutting and grazing
- No Clover option available on request

HF GrassMax™

A mixture specially designed for overseeding fields which will be predominantly grazed.

MAGICIAN
Tetraploid Intermediate Perennial Ryegrass
SEAGOE
Tetraploid Intermediate Perennial Ryegrass
TWYM A X
Tetraploid Late Perennial Ryegrass
POLIM
Tetraploid Late Perennial Ryegrass

HF GRAZING CLOVER BLEND
White Clover

RECOMMENDED SOWING RATE
10 KG/ACRE (25 KG/HECTARE)

- Specially formulated with high sugar varieties to improve the sugar content of existing swards
- Varieties specially selected for their grazing yields including Seagoe one of the highest yielding Tetraploid Perennial Ryegrasses on all three UK Recommended Lists
- High sugar yields ensure excellent palatability and improved animal performance
- 100% Tetraploid grasses which are ideal for overseeding as they have large seeds and are aggressive establishers
- Based entirely on Perennial Ryegrass varieties with the highest grazing yields on UK Recommended Lists
- Very good Crown Rust resistance
- Contains a high proportion of HF Grazing Clover blend containing varieties specially selected for their production and persistence under grazing
- No Clover option available on request

Timing
- With untreated seed, to ensure that competition from the existing sward is minimised, the optimum overseeding window is immediately after the last silage cut of the season or after a hard graze in the spring or autumn
- Although the benefit of minimising competition from the existing sward also applies to iSeed®50, the increased competitiveness of iSeed®50 reduces the dependence on timing and may offer the opportunity of a much wider sowing window

Fertiliser
- When clover is included wait until at least 30 days after sowing before applying any nitrogen fertiliser to minimise competition from the existing sward. If clover is not included this period can be reduced to 15 days

Livestock Re-introduction
- After cutting wait until aftermats have fully recovered
- After grazing leave stock on for 10 days then remove and allow sward to recover

All HF GrassMax mixtures are available with iSeed® 50 by Yara

I have used HF mixtures for many years and HF 11 in particular which does really well for our bull beef and store lamb enterprises. I have always been impressed with HF’s standards for germination and purity and I find that HF 11 gives me a very long season production which I put down to the number of varieties in the mix rather than the three or four that we get from other seed merchants. This year’s establishment of HF 11 was outstanding with a dense sward full of clover. I am going to try overseeding with HF GrassMax Graze next year on my grazing paddocks to see if I can increase the perennial ryegrass content in the sward”

Robin Stevenson, Liscooley, Co Donegal
(Seed supplied by Clonleigh Co-op Society Ltd)
In recent years interest in clover has increased dramatically partly due to volatile fertiliser prices but also due to an increasing awareness of the huge benefits that clover can bring.

Whilst many of the benefits of clover can be achieved by simply increasing the clover level in standard mixtures, the key to unlocking the full benefits that clover can bring lies in the mixture design and the production of a sward that will produce a high yield and allow clover to thrive at the same time.

For many years HF Seeds has pioneered the development of mixtures for the organic farmer and the experience gained can now be transferred to the conventional farmer who is interested in unlocking the full package of benefits that clover can bring.

The key elements of mixture design to create a productive high clover sward are:

• Variety selection to ensure the production of an open but high yielding sward that allows clover to thrive
• The correct proportion of clover in the mix to ensure that the right balance of grass and clover in the final sward is achieved

The new HF High Clover range has been developed to meet three distinct farm uses namely short term intensive cutting, dual purpose use and grazing, with recipes designed to allow clover to thrive but at the same time maintain high yields of quality forage at reduced fertiliser rates.

**HF HIGH CLOVER SHORT TERM**

A highly productive two to three year cutting mixture containing high yielding Hybrid Ryegrasses and Red Clover.

**SOLID**
- Tetraploid Hybrid Ryegrass
- LOFA
- Advanced Hybrid Ryegrass™
- PERSEUS
- Advanced Italian Ryegrass™
- HF RED CLOVER BLEND

Red Clover

RECOMMENDED SOWING RATE
12 - 14 KG/ACRE (30 - 34 KG/HECTARE)

- Optimum cutting date — first week in June
- Contains only aggressive, fast growing grasses for both their yield potential and their ability to compete and survive in a sward with a high Red Clover content
- Contains a high proportion of Lofa Advanced Hybrid Ryegrass™ an ideal companion grass for Red Clover bringing huge benefits in terms of yield, forage quality and stress tolerance
- High sugar content to complement the lower sugar of Red Clover and to ensure good fermentation in the clamp
- Capable of at least three silage cuts and aftermath grazing
- Rapid regrowth for second and subsequent cuts
- Designed to last for three full production years after the year of sowing
Grass and Fodder Crops  

**HF**  

**HIGH CLOVER DUAL PURPOSE**  

A medium term high sugar mixture designed for dual purpose use where fields are both cut and grazed.

- **SOLOMON**  
  Intermediate Perennial Ryegrass
- **MAGISLO**  
  Tetraploid Intermediate Perennial Ryegrass
- **TODDINGTON**  
  Late Perennial Ryegrass
- **PASTOUR**  
  Late Perennial Ryegrass
- **ROMARK**  
  Late Perennial Ryegrass
- **TWYMAX**  
  Tetraploid Late Perennial Ryegrass
- **KINTYRE**  
  Tetraploid Late Perennial Ryegrass
- **DOLINA**  
  Timothy
- **AMOS**  
  Red Clover

**HF DUAL PURPOSE CLOVER BLEND**

**White Clover**

**RECOMMENDED SOWING RATE**  
**13 - 15 KG/ACRE (30 - 34 KG/HECTARE)**

- Optimum cutting date – first week in June
- Specially formulated for high DNDF forage containing high proportions of Solom on, Romark and Pastour included for their yield under both cutting and grazing and their excellent forage quality
- High sugar yield per acre ensures maximum feeding value, excellent palatability and rapid silage fermentation
- Formulated with high yielding but open varieties to ensure the correct balance between grass and clover is achieved
- Small Red Clover inclusion for high clover yields and nitrogen fixation in the early stages of establishment
- High white clover content of HF’s unique Dual Purpose Clover Blend to ensure the optimum clover content in the final sward
- Clover blend based on the most productive clover varieties with high yields under both cutting and grazing management

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**HF**  

**HIGH CLOVER GRAZE**  

A medium to long term grazing mixture using persistent grazing varieties of both grass and clover and specially formulated to ensure the maximum contribution from clover.

- **SOLOMON**  
  Intermediate Perennial Ryegrass
- **TYRCONNELL**  
  Late Perennial Ryegrass
- **ROMARK**  
  Late Perennial Ryegrass
- **PASTOUR**  
  Late Perennial Ryegrass
- **CANCAN**  
  Late Perennial Ryegrass
- **KINTYRE**  
  Tetraploid Late Perennial Ryegrass
- **TWYMAX**  
  Tetraploid Late Perennial Ryegrass
- **HF GRAZING CLOVER BLEND**

**White Clover**

**RECOMMENDED SOWING RATE**  
**13 - 15 KG/ACRE (32 - 37KG/HECTARE)**

- Specially formulated for high DNDF forage containing high proportions of four top DNDF varieties included for their high yields under grazing and their excellent forage quality and digestibility
- Contains a high proportion of Kintyre which has very high grazing yields on UK Recommended Lists combined with excellent forage quality and seasonality of growth. The open growth habit of Kintyre also makes it an ideal companion grass for white clover
- Specially formulated with the top grazing varieties on UK Recommended Lists which will also allow clover to thrive
- High sugar yield per acre to ensure the maximum feeding value and excellent grazing palatability
- Contains Tyrconnell a superb grazing variety recommended throughout the UK
- Formulated with later varieties to have grass at the right stage for grazing at turnout
- Contains very persistent varieties of both grass and clover capable of withstanding heavy grazing pressure
- High White Clover content of varieties specially selected for their yield and persistency under grazing management
HF 70% ORGANIC SHORT TERM

A highly productive two to three year mixture based primarily on high yielding Hybrid Ryegrasses and containing a high proportion of Red Clover designed for two cuts per year followed by aftermath grazing.

- **LIFA**
  - Advanced Hybrid Ryegrass™
  - SOLID
  - Tetraploid Hybrid Ryegrass
  - MAGICIAN
  - Tetraploid Intermediate Ryegrass
  - CALIBRA
  - Tetraploid Intermediate Perennial Ryegrass
  - HF RED CLOVER BLEND
  - Red Clover

**RECOMMENDED SOWING RATE**
12 - 14 KG/ACRE (30 - 34 KG/HECTARE)

- Contains 70% organically produced seed to meet 2014 organic certification regulations
- Optimum cutting date - first week in June
- Specially formulated for high sugar forage
- Includes the Advanced Hybrid Ryegrass™ variety, Lofa, which is an ideal companion grass with Red Clover combining exceptionally high yields with good forage quality and excellent stress tolerance
- Very good spring growth and late heading ensures high yields of quality forage at first cut
- Companion grasses chosen for their open growth habit allowing clover to thrive
- Organic content from three different varieties
- 25% Red Clover content established as the optimum level in extensive HF trials
- Strong vigorous regrowth for second cut and aftermath grazing
- Excellent disease resistance

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HF 70% ORGANIC DUAL PURPOSE

A high sugar mixture specially designed for a dual purpose medium term cutting and/or grazing ley for organic management.

- **PREMIUM**
  - Intermediate Perennial Ryegrass
  - CALIBRA
  - Tetraploid Intermediate Perennial Ryegrass
  - PASTOUR
  - Late Perennial Ryegrass
  - FOXTROT
  - Late Perennial Ryegrass
  - TWYMAX
  - Tetraploid Late Perennial Ryegrass
  - POLIM
  - Tetraploid Late Perennial Ryegrass
  - DOLINA
  - Timothy
  - AMOS
  - Red Clover

**RECOMMENDED SOWING RATE**
13 - 15 KG/ACRE (32 - 37 KG/HECTARE)

- Contains 70% organically produced seed to meet 2014 organic certification regulations
- Optimum cutting date - first week in June
- High sugar yield per acre ensures maximum feeding value, excellent palatability and rapid silage fermentation
- Formulated with Tetraploid and Diploid Perennials and Timothy to ensure the correct balance between grass and clover
- Very good resistance to all the main grass diseases
- Red Clover inclusion for high clover yields and nitrogen fixation in the early stages of establishment
- High White Clover content of HF’s unique Dual Purpose Clover blend to ensure the optimum clover content in the final sward
- Clover varieties selected for both yield and early spring growth to ensure early season nitrogen fixation and grass growth

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“When we had our organic dairy, we used HF organic mixtures for several years and were delighted with their performance with the high levels of clover helping to produce plenty of good quality forage for both cutting and grazing. Our latest enterprise is a digestor and although no longer organic, we are continuing to use an HF mixture which has been specially designed for us as we know it will produce the bulk and quality that we need for our new venture.”

James Stanley, Ponsonby Old Hall, Calderbridge, Cumbria (Seed supplied by Reg Thornthwaite)
Grass and Fodder Crops

For 2014 all 70% HF organic mixtures have been designed on the basis of their technical performance under organic conditions to meet the following key criteria:

• The optimum clover content of varieties best suited for organic production
• Companion grasses which allow clover to thrive but at the same time maintain total forage yields
• The achievement of high sugar yields and maximum feeding value from the inclusion of high sugar varieties
• The production of top quality high D-value and palatable forage
• Seasonal growth patterns suited to organic management, particularly good early spring growth with late heading
• Appropriate disease resistance, in particular against Crown Rust which can be a major problem in organically managed swards affecting production, palatability and forage quality

HF 70% ORGANIC GRAZE

A medium to long term grazing mixture produced from persistent grazing varieties of both grass and clover and specially formulated to ensure good clover development and survival under organic grazing management.

- CALIBRA: Tetraploid Intermediate Perennial Ryegrass
- CANCAN: Late Perennial Ryegrass
- PASTOUR: Late Perennial Ryegrass
- POXTROT: Late Perennial Ryegrass
- POLIM: Tetraploid Late Perennial Ryegrass
- MAURICE: Tetraploid Late Perennial Ryegrass
- HF GRAZING CLOVER BLEND: White Clover

RECOMMENDED SOWING RATE 13 - 15 KG/ACRE (32 - 37 KG/HECTARE)

- Contains 70% organically produced seed to meet 2014 organic certification regulations
- Specially formulated for high sugar and high DNF forage with high proportions of the top SNDF varieties
- Canch, Pasture, Polim and Maurice included for their forage quality and outstanding grazing performance
- High sugar yield per acre ensures maximum feeding value and excellent grazing palatability
- Based on late heading Pasture Perennial Ryegrass varieties which are ideal for grazing
- Very good resistance to all the main grass diseases
- Formulated with Diploid and Tetraploid varieties to ensure the correct balance between grass and clover in a grazing situation
- Very persistent varieties capable of withstanding heavy grazing pressure
- Clover varieties chosen for maximum spring growth to ensure early Nitrogen fixation and grass growth
- High content of HF’s unique Grazing Clover Blend containing varieties specially selected for their yield and persistence under grazing management

HF 70% ORGANIC REJUVENATOR

Specially formulated to meet demand for a mixture to rejuvenate grass and establish clover in pastures intended for organic production. This practice is no substitute for a full reseed but with the right mix and attention to detail, it can increase clover levels and breathe new life into tired swards. The key to success lies in the correct sward preparation before over-sowing and selecting a mixture containing varieties with the best possible establishment vigour.

- MAGICIAN: Tetraploid Intermediate Perennial Ryegrass
- CALIBRA: Tetraploid Intermediate Perennial Ryegrass
- TWYMAX: Tetraploid Late Perennial Ryegrass
- POLIM: Tetraploid Late Perennial Ryegrass
- RAJA: Red Clover
- HF DUAL PURPOSE CLOVER BLEND: White Clover

RECOMMENDED SOWING RATE 10 - 12 KG/ACRE (25 - 30KG/HECTARE)

- Contains 70% organically produced seed to meet 2014 organic certification regulations
- Specially formulated with high sugar varieties to improve the sugar content of existing swards
- The most effective way to introduce both new grass and high sugar into existing pastures
- Grasses based entirely on Tetraploids which have the largest seeds and greatest establishment vigour
- Spread of varieties for early, mid and late season growth
- Varieties chosen for their excellent disease resistance
- Small inclusion of Red Clover for rapid clover establishment
- Clover varieties chosen for maximum spring growth to ensure early spring nitrogen fixation and grass growth
- Contains a high proportion of persistent and flexible White Clover varieties

On an organic dairy farm maximising milk from forage is crucial and HF mixtures seem to be able to deliver what we are looking for both in terms of bulk and forage quality. We use several different mixtures concentrating on red clover for conservation and specialist grazing mixtures for the cow’s grass. We also overseed to help extend the life of the sward when necessary. We are very happy with HF mixtures and the technical support we get to back them up.”

William Wills, Glasgoforest Farm, Kinellar, Aberdeenshire (Seed supplied by Agri)
FOOD BEET

Fodder Beet is grown as a main root crop, which requires similar husbandry to sugar beet. It can produce substantial yields of high quality fodder and is an excellent supplement to grass silage. The roots are very palatable to stock and have superb feed quality. Specialist harvesting equipment is required to lift the roots and storage is required unless they are strip grazed in situ.

Medium dry matter varieties tend to have a higher percentage of root above ground and can be lifted with a top lifter and therefore have a relatively low dirt tare. These highly palatable roots can be fed whole to stock. High dry matter varieties tend to sit further in the ground and require a sugar beet harvester to lift them. Due to the higher dirt tare and hardness of the root, these varieties may need to be chopped and washed before feeding. After wilting, the tops may be fed to stock and can contribute a further yield of 3-4 tonnes of protein-rich dry matter per hectare.

Grass and Fodder Crops

### SOWING RATES, RELATIVE YIELD AND ENERGY LEVELS OF FODDER CROPS

<table>
<thead>
<tr>
<th>Crop</th>
<th>Sowing Rate per acre</th>
<th>Sowing period</th>
<th>Utilisation period</th>
<th>Fresh Yield tonnes/acre</th>
<th>Dry Matter content %</th>
<th>DM Yield tonnes/acre</th>
<th>DM Energy content MJ/kg</th>
<th>Energy Yield per acre '000MJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fodder Beet</td>
<td>50,000 seeds</td>
<td>March - April</td>
<td>Harvested and clamped October onwards</td>
<td>25 - 35</td>
<td>17</td>
<td>4.2 - 6.0</td>
<td>12.5</td>
<td>52 - 75</td>
</tr>
<tr>
<td>Swedes</td>
<td>Graded seed Approx 250 gms</td>
<td>May</td>
<td>October - March see varieties</td>
<td>28 - 35</td>
<td>11</td>
<td>3.0 - 3.8</td>
<td>12.9</td>
<td>35 - 49</td>
</tr>
<tr>
<td>Turnips</td>
<td>Graded seed Approx 250 gms</td>
<td>May - June</td>
<td>October - January</td>
<td>24 - 30</td>
<td>9</td>
<td>2.2 - 2.7</td>
<td>11.2</td>
<td>25 - 30</td>
</tr>
<tr>
<td>Kale</td>
<td>3 kg broadcast 2 kg drilled</td>
<td>May - June</td>
<td>October - February</td>
<td>20 - 30</td>
<td>14</td>
<td>2.8 - 4.2</td>
<td>11.0</td>
<td>31 - 46</td>
</tr>
<tr>
<td>Forage Rape</td>
<td>4 - 5 kg broadcast 3 - 4 kg drilled</td>
<td>June - August</td>
<td>Sept - December</td>
<td>12 - 15</td>
<td>12</td>
<td>1.5 - 1.8</td>
<td>10.5</td>
<td>16 - 19</td>
</tr>
<tr>
<td>Stubble Turnips</td>
<td>3 kg broadcast 2 kg drilled</td>
<td>May - August</td>
<td>12 weeks after sowing</td>
<td>15 - 18</td>
<td>9.5</td>
<td>1.5 - 1.8</td>
<td>11.6</td>
<td>17 - 21</td>
</tr>
</tbody>
</table>

**FODDER BEET**

Fodder Beet is grown as a main root crop, which requires similar husbandry to sugar beet. It can produce substantial yields of high quality fodder and is an excellent supplement to grass silage. The roots are very palatable to stock and have superb feed quality. Specialist harvesting equipment is required to lift the roots and storage is required unless they are strip grazed in situ.

Medium dry matter varieties tend to have a higher percentage of root above ground and can be lifted with a top lifter and therefore have a relatively low dirt tare. These highly palatable roots can be fed whole to stock. High dry matter varieties tend to sit further in the ground and require a sugar beet harvester to lift them. Due to the higher dirt tare and hardness of the root, these varieties may need to be chopped and washed before feeding. After wilting, the tops may be fed to stock and can contribute a further yield of 3-4 tonnes of protein-rich dry matter per hectare.

### ALPES

Alpes has exceptional all round characteristics and is one of the highest yielding and cleanest fodder beets available. It benefits from a large top size and has 33% of its yellow root above the ground allowing for easy lifting. Good resistance to bolting.

### MAGNUM

Magnum has a consistent root size and reliable dry matter yields from white roots. It is very palatable with a high proportion of its roots in the ground and due to its high dry matter content it is more frost resistant than other varieties.

### KYROS

Kyros is a very consistent, high yielding variety producing a clean, very palatable and digestible yellow root.

### TROYA

Troya produces high yield of medium dry matter. It has very good establishment and bolting resistance and has a high proportion of its yellow root in the ground.
**Grass and Fodder Crops**

**ROOT AND FODDER CROPS**

**SWEDES**

Swedes grow on a wide range of soil types and can be grazed in situ or lifted for stockfeed or as a cash crop. Whatever the intended use, the dry matter content is one of the most important characters to consider. Low dry matter types are softer and are more suitable for early use whereas the high dry matter types are more winter hardy and therefore better suited to later utilisation. For cash cropping fresh yield, shape and colour are important considerations with purple skinned, globe shaped roots generally considered the most marketable type.

**AILIE**

For early to intermediate use Airlie produces high fresh yields of uniform globe shaped roots with purple skin and creamy white flesh. Good general disease resistance.

**RUTA OTOFTE**

A very popular purple skinned variety with cream coloured flesh suitable for both fodder and culinary use. A medium dry matter variety with good winter hardiness and Mildew resistance.

**MARIAN**

A good culinary use variety with an attractive purple globe and cream coloured flesh. With its medium dry matter content Marian is suitable for intermediate use but has slightly lower yield potential than other varieties.

**LOMOND**

A new and extremely high yielding variety bred by SCRI, Lomond has purple skin and yellow flesh and has good Club Root and Powdery Mildew resistance. Lomond is slightly less uniform than Gowrie and consequently is the better stock feed variety.

**GOVRIE**

A new high yielding variety bred by SCRI, Gowrie produces very uniform roots with purple skin and yellow flesh making it ideal for the culinary market. Good Club Root and Powdery Mildew resistance.

**KENMORE**

A bronze skinned, white fleshed variety with very high fresh yields best suited as stock feed. Kenmore is early maturing and with its medium dry matter content and very good winter hardiness, it allows for a very wide window of utilisation.

**INVITATION**

A high yielding purple/bronze skinned variety with a high dry matter content and very good winter hardiness making it suitable for late use. Invitation has excellent resistance to both Club Root and Mildew and it also produces large leaves for extra grazing potential.

**SOVEREIGN**

Sovereign is a high yielding, medium tall forage kale with good club root tolerance. In SAC trials Sovereign demonstrated good dry matter yields and an excellent leaf to stem ratio thereby improving palatability, stock utilisation and animal performance. With good winter hardiness and keeping ability it has potential for a long usage period.

**MARIS KESTREL**

A short, leafy, hybrid variety that is high in digestible dry matter particularly in the stem. Maris Kestrel has good frost resistance, excellent leaf retention and is not susceptible to lodging.

**GRÜNER ANGELITER**

Grüner Angeliter is a marrowstem type producing very high fresh yields. With its high yield, good winter hardiness and excellent feeding quality, Grüner Angeliter is well suited for stock feed use, but with its tall growth and high leaf canopy it is also ideal for game cover.

**KALE**

Kale is the highest yielding of all the leafy forage brassicas and has excellent feeding value and a high crude protein content. It can provide a long and flexible period of utilisation and can be grazed in situ, cut and carted to housed livestock or ensiled as big bale kaleage. There are however big differences in terms of winter hardiness and varieties should be chosen to suit the utilisation period. For maximum yields kale requires good fertility and a pH of at least 6.0.
FORAGE RAPE

Rape is fast growing and will tolerate poorer fertility conditions than Kale. When sown as a catch crop between June and August it will provide valuable autumn and winter grazing. It has a wide sowing window and utilisation period and produces a digestible and high energy crop, ideal for finishing lambs.

HOBSON

A very leafy and high yielding variety with good digestibility. Hobson has excellent resistance to mildew which can often seriously reduce yield and affect palatability.

SPARTA

Sparta is a high yielding late flowering rape with the huge advantage of having Club Root tolerance enabling it to be sown where Club Root is a potential problem. Sparta’s late flowering habit allows for sowing flexibility offering an extension to the feeding period. As with other forage rapes Sparta matures ten to twelve weeks after sowing.

EMERALD

A rapidly establishing medium to tall palatable variety with above average dry matter yields and good general disease resistance.

ZOOM BRASSICA MIXTURE

A blend of Winfred Hybrid Brassica and Forage Rape, Zoom is a very vigorous and quick growing mixture which is ideal for replacing failed crops or for patching earlier sown crops which are struggling. High seedling vigour ensures a reliable establishment of a high leaf to stem ratio crop with good disease and bolting resistance.

STUBBLE TURNIPS

Stubble Turnips provide palatable and digestible fodder for grazing 10 – 12 weeks after sowing. They can be sown at any time with the required utilisation period determining the sowing date. Stubble Turnips are less winter hardy than other brassicas and should be used before Christmas. Varieties differ in their leaf to root ratio with leafy types providing better anchorage and winter hardiness than bulb types which produce larger but relatively low dry matter roots.

TYFON

A fast growing leafy type with some regrowth potential but it can be susceptible to bolting when sown too early. Tyfon has small bulbs and produces approximately 80% of its yield from leaf. Good root anchorage and reasonable frost tolerance.

SAMSON

Samson is a high yielding, bulbing variety with a high proportion of its total yield produced by large, purple topped, palatable roots which grow well out of the ground for better utilisation.

VOLLENDA

A highly digestible, late tetraploid variety noted for its speed of growth, overall yield and resistance to bolting. Vollenda is a bulbing type with a leaf to bulb ratio in the region 30 : 70.

BARKANT

Producing slightly smaller roots than Vollenda, Barkant is a bulbing variety producing very high yields of digestible dry matter. Reasonably winter hardy for a stubble turnip.

Please note that with all Brassica crops, stock should be introduced gradually over a two week period and an area of grassland should be available for animals to return to. Water and hay or straw should also be freely available.
In addition to quality grass seed mixtures and root and fodder crop seeds for autumn and winter grazing, HF Seeds offers a comprehensive range of both straight varieties and seed mixtures covering all aspects of game cover and food crops for a wide variety of shoots, locations and climate. In addition mixtures are supplied for specialist markets like Biogas and green manuring and for Stewardship and other environmental uses.

The area of alternative crops and new farm enterprises like Biogas, in conjunction with increasing interest and emphasis on wildlife and the environment, has created a vast array of seed mixtures and single crops for different uses on farm containing a wide and complex spectrum of plant species. The 2014 44 page HF Countryside brochure is a comprehensive guide to crop selection for different uses and provides clear advice on both species and mixture selection to meet both stewardship and other specific objectives. The brochure also contains detailed husbandry guidelines to ensure as far as possible that the investment in quality seed products is rewarded.
HF Grass Mixtures have been developed following many years of trials and on-farm experience to ensure top quality highly productive swards capable of exceptional performance and offer the best complete package and real value for money to farmers throughout the length and breadth of the UK and Ireland.

THE BEST ADVICE

The HF package goes much further than just product quality and extends as far as the farm gate and the end user. All HF products are backed by a country-wide network of in-house seed specialists and experienced distributors who are capable of offering technical help and advice on all aspects of mixture selection and establishment. Their knowledge can help balance the issues of yield, seasonal growth, forage quality, sward density, disease resistance and winter hardiness to ensure that you select the mixture best suited to your individual farm, enterprise and location.

THE BEST PRODUCTS

- Mixtures are formulated using only the best varieties selected from a wide range of breeders for their overall performance
- Unique mixture design with all grasses and clovers selected on the basis of their performance in UK trials
- The highest standards of purity and germination ensure the fast establishment of dense, weed free swards
- On-going trials and research ensure that HF Mixtures lead the field with unique advances in grass mixture technology

THE BEST VALUE

The combination of the best advice and the best products from experienced distributors who understand the pressures of livestock farming at a local level ensures that HF Mixtures always deliver real value from top performance swards.

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