Forage Seed 2020
Award winning forage options
Contents

Introduction 01
Farmers Weekly Grassland Manager of the Year 02 – 03
Aber High Sugar Grass cutting and grazing mixtures 04 – 17
Reseeding 18 – 19
Summerhill 20
Marathon 21
Sheepmount 22
Equestrian 23
Overseeding 24 – 25
Multi Species swards 26 – 27
Lucerne 28
Aber clover blends 29
Forage brassicas 30 – 37
Anaerobic digestion 38 – 39
Leisure Amenity 40
In times of such uncertainty around agricultural support, market access and foreign competition, livestock farmers should look first at the potential for greater homegrown feed production to build sustainability and long-term business resilience.

Forage, in its many forms, offers the opportunity for greater self-reliance by minimising the need for bought-in feeds and making a valuable contribution to cropping rotations. With a focus on nutritional value and growing more protein at home, there is much that can be done to improve livestock farming profitability.

Our Aber High Sugar Grasses are proven performers in terms of dry matter production, D-value and ME yield, boosting not only your performance from forage but your environmental credentials too. They are also now a valuable feedstock for anaerobic digesters, not only for their energy yield but for their value in rotations.

These industry leading ryegrasses are complemented by our range of nitrogen-fixing Aber white clovers, whilst we continue to lead the way with alternative grazing species such as Puna II perennial chicory and Tonic plantain. These proven varieties underpin our progressive approach to multi-species leys, which provide valuable diversity and contribute to soil health.

**Homegrown protein**

We offer the first 4 – 5-year duration nitrogen-fixing red clovers with AberClaret and AberChianti, whilst modern lucerne varieties equipped to perform in our northern European conditions offer another viable alternative.

Forage brassicas are another valuable source of homegrown protein, with modern hybrids like Redstart and Swift having the versatility to bridge summer shortfalls, extend autumn grazing, or provide the basis for out-wintering.

Through collaborations with our breeding partners and ongoing work at the Germinal Research Station, we are continually improving our forage seed range. Our latest Forage Seed catalogue reflects this progression and we hope you will find the tools you need to invest in forage and build a more sustainable business.

**Make forage your 2020 priority**

David Little
Sales Manager, Germinal NI
We’re Sponsoring Success

Germinal are proud to support home grown farming talent, highlighting best practice, expertise and dedication in grassland management.
Forage at the heart of sustainable red meat production

Growing quality forage and utilising it effectively are central to Charley and Andrea Walker’s drive towards sustainable and environmentally responsible red meat production.

Farming in the Scottish Borders, and inspired by their experiences in New Zealand, the couple have developed a profitable low cost approach that eliminates the need for winter housing and minimises bought-in feeds in their organic beef and sheep enterprises.

The tenanted 254ha unit supports 640 Easycare ewes and 110 Welsh Black x Angus suckler cows. The introduction of rotational grazing five years ago has boosted profitability by increasing livestock production to 405kg liveweight/ha – a 50% uplift - and routine reseeding of silage leys helps maintain forage quality. Out-wintering on deferred grazing has been another important factor in increasing overall farming efficiency and sustainability, whilst the inclusion of herbal leys in the grazing platform and a tentative introduction of holistic grazing are indicative of a strong commitment to improving soil health.

Charley and Andrea are passionate about the environment and care deeply about the image of modern agriculture with the wider public. So, whilst a profitable farming enterprise is their primary goal, they are committed to the promotion of wildlife and conservation and engage wholeheartedly in public outreach and education.

Charley and Andrea Walker, Beef and Sheep Farmers, Burnside Farm, Duns, Scottish Borders

Farmers Weekly Grassland Manager of the Year 2019
Forage breeding for a sustainable future

Germinal has funded the breeding of grass and clover varieties at the Institute of Biological, Environmental and Rural Sciences (IBERS), Aberystwyth University, for 30 years and markets the Aber varieties worldwide.

The forage breeding and genetics team have an unrivalled track record of developing new genetic material with novel properties relating to quality and persistency. Through the strategic alliance with Germinal, the impact of this progressive scientific research has been translated into the commercially successful grass and clover varieties that feature strongly on UK Recommended Lists and the Irish Pasture Profit Index.

Importantly, the IBERS animal nutrition team works in close collaboration with the forage plant breeding team, particularly informing and influencing the direction of forage crop breeding. With an emphasis on quality forage and livestock performance, this collaborative approach has led to the Aber High Sugar Grass varieties.

Aber HSG varieties have elevated levels of sugar, or water soluble carbohydrate (WSC). These high sugar varieties have been scientifically proven to reduce emissions of nitrous oxide and methane and increase production of meat and milk, when fed to ruminant livestock.

Similar innovation is seen in clovers, with the first long lasting red clovers being developed and the first hybrid white clover now included in commercial mixtures.

The impact of this breeding programme on sustainable agriculture and the environment has been recognised with numerous prestigious awards from inside and outside the agricultural arena:

- Queen's Anniversary Prize in 2009
- NIAB Cup for Improvement in Quality 2003 and again in 2015
- The Times Higher Education Award (THE Award) Outstanding Contribution to Innovation and Technology
- British Grassland Society Innovation Award 2011
- Biotechnology and Biological Sciences Research Council (BBSRC) Innovation with Excellence Award

The breeding programme is ongoing, continually seeking more productive varieties to underpin sustainable agriculture into the future.
Aber HSG 1 Milk and Meat Production is a long term, general purpose mixture for milk and meat production.

Ideal for grazing, the mixture also offers the potential for a heavy silage cut in late May. Ideally suited for set stocking, it can be grazed with cattle, ewes or used to finish lambs. Aber HSG 1 Milk and Meat Production produces a dense sward which will resist poaching and with good management will maintain its quality for 5 – 7 years. Puna II perennial chicory can be included for added drought tolerance and sward variety.

### Key benefits in summary
- Combines an outstanding grazing yield for the mixture of 104.9% and a grazing D-value of 75.6
- 100% Aber HSG grasses
- Correct balance of diploid and tetraploid varieties
- High palatability and increased dry matter intakes
- Reduced nitrogen losses to the environment

### Heading dates

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<thead>
<tr>
<th>Variety</th>
<th>Type</th>
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<td>AberMagic HSG</td>
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<td>AberGain HSG</td>
<td>Perennial Ryegrass (T)</td>
<td>03 Jun</td>
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<tr>
<td>AberPasture</td>
<td>White Clover Blend</td>
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Heading date average for Aber HSG 1 Milk and Meat Production is 29 May for Northern Ireland. When cutting for silage, aim to cut 5 - 10 days before average heading date for optimum quality. Optimum spread of heading dates within mixtures for grazing and cutting results in better performance of the leys.
Aber HSG 2 Medium Term Cutting is a specialist silage mixture for those aiming to cut a very high quality crop in mid May.

Combining the outstanding hybrid Aber High Sugar Grass AberEcho with compatible Aber perennial ryegrasses, this mixture delivers quality and yield and can persist for 3 - 4 years – twice as long as Italian ryegrass based swards. Aber HSG 2 Medium Term Cutting is a straight grass mixture that will perform under medium and high levels of nitrogen. AberClaret red clover can be included, whilst for those seeking longer lasting specialist silage mixtures we recommend Aber Red 5 HSG Quality Silage.

The addition of red clover at 3kg/acre within the Aber HSG 2 mixtures will increase the yield and quality of your silage.

More farmers are choosing to include red clover in their cutting mixture to:

- Increase overall forage production potential
- Improve the protein content of silage
- Reduce protein losses in the clamp
- Benefit from red clover’s ability to contribute over 150kgN/ha of nitrogen through fixation
- Improve soil structure and drought tolerance

### Key benefits in summary

- Hybrid Aber High Sugar Grass content
- Compatible heading date varieties
- Over twice the persistency of Italian ryegrass leys
- Suitable for combination with red clover
- Aber High Sugar Grasses enhance fermentation, especially when red clover is included
- Very high ME yield
Aber High Sugar Grass cutting and grazing mixtures

Maximising output per hectare

Producing 1,400kg of beef liveweight per hectare means Sam Chesney is achieving more than double the national average for beef production per hectare in Northern Ireland.

His approach to forage management lies at the heart of his success, with disciplines including regular soil testing and reseeding with quality grasses being key to a trend of year-on-year improvement.

Situated on the Ards Peninsula, Sam runs 140 Limousin spring-calving cows and 30 bulling heifers, aiming to produce a finished animal as cost effectively as possible using grazed grass and homegrown, quality silage.

Most of the grazing platform has been reseeded with an Aber High Sugar Grass mixture including AberEve, AberGain, AberMagic and the white clover, AberDai. He has also been including the long-lasting red clover, AberClaret, which has helped reduce protein in meal by 2 - 3%.

The benefits of reseeding are clear to see, with one 10-year ley this year producing around 7.3t/ha following an application of 126kgN/ha, whilst the neighbouring grass reseed produced 13.75tDM/ha.

Sam Chesney, Beef Farmer, Ards Peninsula, County Down
Aber HSG 3 Long Term Grazing

The biggest selling mixture in the Aber HSG range, Aber HSG 3 Long Term Grazing is for cattle or sheep systems aiming to maximise returns from grazing, whether rotational or set stocked.

Aber HSG 3 Long Term Grazing is made up exclusively of Aber High Sugar Grass diploid perennial ryegrasses which have the highest ratings for grazing quality and yield on the Recommended List. This mixture is unrivalled for persistency under grazing; managed well it can continue to perform for 7 to 10 years, giving you maximum yields of the highest quality grazing. AberWolf HSG, one of the outstanding perennial ryegrasses on the AFBI Recommended List is included this year.

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Heading date average for Aber HSG 3 Long Term Grazing is 30 May for Northern Ireland. When cutting for silage, aim to cut 5 - 10 days before average heading date for optimum quality. Optimum spread of heading dates within mixtures for grazing and cutting results in better performance of the leys.

Key benefits in summary

- Combines a very good grazing yield for the mixture of 102.2% and an outstanding grazing D-value of 75.2
- Outstanding autumn production for the mixture
- 100% Aber HSG diploid perennial ryegrasses
- Very persistent sward with good ‘bottom’
- High palatability and dry matter intakes
- Reduced nitrogen losses to the environment
- Persists for up to 10 years
Aber HSG 3 Long Term Grazing is the most popular mixture in the Aber HSG range, being ideally suited to cattle or sheep grazing where the aim is to maximise returns using either a rotational or set stocked system.

With all the attributes of Aber HSG 3, this mixture has the addition of Timothy, a grass that will add ‘bottom’ to the sward and provide greater tolerance to wet conditions. Comer is chosen for its excellent spring growth and palatability.

Heading date average for Aber HSG 3 + Timothy is 30 May for Northern Ireland. When cutting for silage, aim to cut 5 - 10 days before average heading date for optimum quality.

Optimum spread of heading dates within mixtures for grazing and cutting results in better performance of the leys.

Key benefits in summary
• Combines a very good grazing yield and an outstanding grazing D-value
• Outstanding autumn production ensures strong extended grazing potential
• Very persistent sward with good ‘bottom’
• High palatability and dry matter intakes
• Reduced nitrogen losses to the environment
• Persists for up to 10 years

Benefits of Timothy
• Good tolerance of wet conditions
• Excellent spring growth
• High palatability
• Adds extra ‘bottom’ to swards to reduce the impact of poaching

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Fig 09. Aber HSG 3 + Timothy: Spread of heading dates

MAY | JUNE
7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9
Aber HSG 4 Dairy System is a mixture for milk producers who are aiming for one or two high quality silage cuts followed by the best possible rotational grazing.

First cut will be mid-to-late May, with the option of a second cut approximately 4 – 5 weeks later, or alternatively commence rotational grazing. The Aber HSG varieties selected for this mixture significantly outperform other grasses for grazing quality and grazing yields. This year Aber HSG 4 Dairy System is further improved by the introduction of AberGain HSG, the stand-out grass on the latest Recommended Lists.

Fig 10.
AberHSG 4 Dairy System: Spread of heading dates
T = Tetraploid

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<tr>
<td>1.0</td>
<td>AberDai</td>
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Heading date average for Aber HSG 4 Dairy System is 1 June for Northern Ireland. When cutting for silage, aim to cut 5 - 10 days before average heading date for optimum quality. Optimum spread of heading dates within mixtures for grazing and cutting results in better performance of the leys.

Key benefits in summary
- Long-lasting ley with outstanding quality
- Top yields of high ME silage at first cut
- For cutting and rotational grazing
- 100% Aber HSG perennial ryegrasses
- Balance of diploid and tetraploid varieties
- High palatability and dry matter intakes
- Extended spring and autumn grazing
All about the grass

In the last five years, collecting weekly grass growth measurements has provided Hugh Harbison valuable management data to increase milk from forage yields by 1,000 litres per cow per year.

The 100ha (247 acres) farm, located in Aghadowey, Coleraine, is home to 170 Friesians, and currently averages 3,000 litres from forage from total yields of 7,830 litres a cow a year.

“I’ve found it really useful to know how each field is doing so we can reap the benefits by adjusting our management to match growth,” explains Hugh.

To maximise grass utilisation, Hugh implemented an intensive rotational grazing plan to give cows access to new grass every 12 hours. Grass quality also gained importance, leading the farm to grow a mixture containing AberChoice and AberGain with fields reseeded at least every six years.

During 2018’s summer drought, the farm went three weeks without rain – which is a long stretch for a region acclimated to rain several times a week. However, while some older leys were slowing down and dying off, reseeded leys continued to perform.

Hugh Harbison, Dairy Farmer, Aghadowey, County Londonderry
Aber Red 5 HSG Quality Silage offers a significant breakthrough in silage production, providing for the first time a mixture including 4 - 5 year persistency red clover.

Aber Red 5 HSG Quality Silage overcomes the normal restriction of red clover leys, extending the life of the red clover component beyond the normal 2 - 3 years up to 5 years with the inclusion of AberClaret.

It is also now time to rethink the grasses that are paired with red clover. AberClaret can last five years, so the grasses must too. Aber Red 5 HSG Quality Silage therefore includes intermediate and late perennial ryegrass, including the latest Aber HSG varieties AberGreen HSG and AberGain HSG perennial ryegrasses which will also improve silage quality especially in the second cut.

### Key benefits in summary
- Red clover with potential for five years persistency
- 100% Aber HSG perennial grasses
- Balance of diploid and tetraploid varieties compatible with long-lasting red clover
- 150kgN/ha nitrogen fixed from red clover
- Reduced nitrogen losses to the environment
- Aber High Sugar Grasses enhance fermentation, especially when red clover is included
New generation long term red clovers

One of red clover’s traditional shortcomings is its relatively short persistence, typically remaining in the sward for just two to three years when a longer productive life would make it more compatible with medium-term leys.

Now, a new generation of red clovers is being bred at IBERS Aberystwyth University, with the first varieties, AberClaret and AberChianti, now on UK Descriptive Lists and commercially available in Germinal’s Aber HSG mixtures.

AberClaret and AberChianti are the first of a new generation of red clovers bred and selected by plant breeders at IBERS to last 4 years and longer in a cutting sward, and to be significantly more tolerant of grazing by dairy animals. Dry matter yields in IBERS longterm trials were in excess of 14,500kg of dry matter in the fourth year and averaged over 13,500kg in each year of the trial. Over the four years, AberClaret totalled around 60tDM/ha compared with 40 - 45tDM/ha from the controls.

With greater persistency of red clover remaining a key objective, the latest breeding work at IBERS is focused in particular on resistance to the soil borne pathogens Sclerotinia and stem nematode.
Focus on high energy silage

Understanding the financial value of silage has made Northern Irish milk producer David Kenwell completely re-evaluate how he views grass.

This came about through his participation in the Yara Grass Prix competition, where his farm’s grass silage was attributed a value of £1,559/ha, well above the UK average.

However, having seen even better results from other Grass Prix farms, he has been convinced of the merits of further investing in grass management and, in particular, improving grass quality.

In order to achieve greater ME value, David is working with Germinal to select the most appropriate Aber High Sugar Grass varieties to suit his farm’s requirements. He has also worked with Yara to draw up a nutrient management plan based on soil analysis results.

Grass silage forms the main forage component of the diet for his 300-cow Holstein Gulladoo herd at Kenwell Farms. With the herd yielding 9,000 litres and housed for most of the year, improving the ME yield of his grass through regular reseeding with the right varieties, and attention to detail in all aspects of silage making is imperative.

David Kenwell, Dairy Farmer, Kenwell Farms, County Tyrone
Maximising output per hectare

John Martin’s strategy to maximise output per hectare at his 83ha unit in County Down has been built on a combination of improved animal and plant genetics. He’s focused on his 680 ewe lambing flock and now routinely produces 500kg of lamb carcase per hectare.

He’s achieving these outputs by breeding more efficient ewes, with a mature liveweight down from 110kg to 80kg, and by boosting the productivity of his grassland by including the best available varieties.

Quality grazing and grass silage comes from leys predominantly reseeded with Aber High Sugar Grasses and Aber white clovers, with grass silage typically analysing at over 12MJ/kg ME with good protein content.

John’s expertise in silage making has been recognised this year with first place in the Ulster Farmers’ Union Beef & Lamb Silage Competition and he has received the prestigious BGS Grassland Farmer of the Year award for his overall achievements.

John Martin, Sheep and Beef Farmer, Gordonall, Greyabbey, Co Down
Extend your grazing season without compromising persistence, grazing yield and grazing quality.

AberXtend HSG is the Aber HSG mixture for livestock farmers aiming to increase yields and lengthen the grazing season. The Recommended Lists in both the UK and Ireland show how varieties such as AberWolf HSG, AberGreen HSG and AberGain HSG top the lists for spring and autumn performance, but there is absolutely no compromise on the other main performance criteria, with top scores for grazing D-value, ME yield and overall dry matter yields. With the appropriate management, AberXtend HSG can perform to a high standard for 5 – 7 years.

### Key benefits in summary
- Mixture averages an outstanding 106.7% of control varieties on the Recommended List for early grazing yield and 101.3% for autumn production
- The best Aber HSG perennial grasses selected for spring and autumn yield
- Outstanding season-long yield and quality
- High palatability and dry matter intakes
- Reduced nitrogen losses to the environment

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**Fig 14.** AberXtend HSG Extended Grazing:

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<tr>
<th>Variety</th>
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<th>Heading Date</th>
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<td>4.0 AberGain HSG</td>
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<td>1.0 AberPasture</td>
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Heading date average for AberXtend HSG is 29 May for Northern Ireland.

When cutting for silage, aim to cut 5 - 10 days before average heading date for optimum quality.

Optimum spread of heading dates within mixtures for grazing and cutting results in better performance of the leys.

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**Fig 15.** AberXtend HSG Extended Grazing:

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MEDIUM / LONG TERM

Aber High Sugar Grass cutting and grazing mixtures
Forage focus helps cut feed costs

Father and son business partners Paul and Frank Turley have, over the last four years, seen savings in feed costs of £90 per head per year across their beef enterprise near Downpatrick, Co Down.

Their 162ha (400 acre) farm runs 150 head of Aberdeen Angus x British Friesian suckler cows and 100 head of bucket reared Holstein cross Aberdeen Angus beef calves.

105ha (260 acres) of the farm is in Aber High Sugar Grass leys. Recently, the farm started growing AberGain perennial ryegrass as a monoculture for its 78.6 D-value. In the last two years, AberGain has been used in mixtures with AberWolf and AberClyde perennial ryegrasses.

Grass utilisation at grazing is maintained above 80% by ensuing paddock sizes are the right size and daily allocations of grass are controlled. This is aided by weekly grass measurements and a discipline of moving cattle on at 1,500kgDM/ha covers.

Each June, an additional 16ha (40 acres) of grass is taken out and sown to brassicas for out-wintering cattle as part of the reseeding rotation. Traditionally, the farm has used Swift or Redstart hybrid brassica for late season sowing, and Maris Kestrel kale for main crop sowing for out-wintering.

Paul and Frank Turley, Beef Farmers, Downpatrick, Co Down
Reseeding

Follow our 10-point plan when reseeding.

1. Soil test. Target pH is 6.3, target P and K index is 3. Apply lime and P and K as necessary. If ploughing, wait until after ploughing to soil sample.

2. Spray off the old sward with glyphosate.

3. Cultivate to ensure a fine, firm seedbed is achieved. Ploughing will help level any rough fields.

4. Select Recommended List varieties suited to intended field use e.g. grazing or silage.

5. Sow 14 kg seed/acre in good conditions (warm with rain forecast), no deeper than 10 to 15 mm.

6. Roll well to ensure good soil/seed contact.

7. Apply N, P and K as per guidelines.

8. Monitor reseed for pest attack e.g. slugs, frit fly, leatherjacket, rabbits etc., take immediate action where necessary.

9. Post emergence weed spray is essential, apply approx. 5-6 weeks after establishment, prior to 1st grazing. Where clover was sown, use a clover safe spray.

10. Graze the new reseeds, frequently and at light covers to assist in tillering and to help create a dense sward.

Timing

Autumn reseeding may suit from a feed budget perspective, but there are some risks:

• Lower soil temperature can decrease seed germination – aim to sow seed by early September.

• Poor weather may make it more difficult to graze a new reseed or apply a herbicide for weed control – grazing helps tiller the grass plants and creates a dense sward.

Spring reseeding

• Improving temperatures aid germination and establishment of new sward.

• Opportunity to take several grazings to help tiller the new sward.

• Improved soil conditions will make it easier to apply a post emergence spray.

• The sward will be well “settled” in the following spring.

• Easier to establish clover.
Reseeding advice

Generally there is little difference between sowing method, assuming everything is completed correctly.

**Liming**

Liming at sowing is important to help counteract any acidity as the old sward decays. Therefore, even if the field was limed in the previous 2 years, applying 1 - 2 t lime at sowing will help with the establishment of the new sward.

**Seed-bed**

A fine firm seedbed is critical – you should be easily able to ride a bike across the field before seed is sown. Direct drilling is less successful in dry conditions so ensure rain is forecast if using this method.

**Roll**

Post-sowing rolling is a necessity. Rolling will help compact the soil and therefore maintain more moisture in the seedbed. Rolling also increases soil/seed contact which is necessary for the seed to germinate successfully.

**Pests**

Pest attacks are more prevalent with an autumn reseed. Applying best practice can minimise the risk of a pest attack. Ensuring good kill of the old sward and sufficient time between spraying and cultivation, preparing a fine, firm seedbed, sowing at appropriate time to ensure good growing conditions for the new reseed and rolling afterwards will all help reduce the risk of a pest attack.

- **Frit-fly** – can result in a patchy, poorly established reseed. The frit-fly larvae burrow into the base of the newly emerging grasses and cut off the plant at the growing point. Autumn reseeds and min-till presents the greatest risk.

- **Leatherjacket** – can result in bare patches or missing rows. Leatherjackets are the larvae of the crane fly (daddy-long-legs). Large crow populations feeding can indicate a leatherjacket problem. The leatherjacket cuts the new plant off just below the soil surface, destroying the seedling.

- **Slugs** – more prevalent during wet weather or in damp sections of a field, e.g. headlands. High levels of surface trash or inadequate/no rolling will increase the likelihood of a problem. Shredded leaves indicate a problem. Greater risk in direct drilled reseeds as the slit in the ground allows the slug shelter. Reduce the risk by creating a fine, firm seedbed with adequate rolling. Use slug pellets when direct drilling or if a problem is identified.

**Weed control**

Post-emergence weed spray is essential, and provides the best opportunity you will have for weed control in the sward. Apply 5 - 6 weeks after sowing and ensure you use a spray which targets the weeds present in the field. If clover was sown, spray should be applied at the trifoliate stage and you must use a clover-safe spray.
Quality cutting and grazing mixture

Summerhill is a mixture for producers who are aiming for one or two high quality silage cuts followed by the best possible aftermath grazing. First cut will be late May, with the option of a second cut approximately 4 – 6 weeks later, or alternatively commence rotational grazing.

<table>
<thead>
<tr>
<th>Kg/acre</th>
<th>Variety</th>
<th>Type</th>
<th>Heading Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0</td>
<td>AberClyde HSG</td>
<td>Perennial Ryegrass (T)</td>
<td>23 May</td>
</tr>
<tr>
<td>4.0</td>
<td>AberMagic HSG</td>
<td>Perennial Ryegrass</td>
<td>27 May</td>
</tr>
<tr>
<td>2.0</td>
<td>AberAvon HSG</td>
<td>Perennial Ryegrass</td>
<td>01 June</td>
</tr>
<tr>
<td>2.0</td>
<td>AberBite HSG</td>
<td>Perennial Ryegrass (T)</td>
<td>04 June</td>
</tr>
<tr>
<td>3.0</td>
<td>AberLee HSG</td>
<td>Perennial Ryegrass</td>
<td>07 June</td>
</tr>
<tr>
<td>1.0</td>
<td>AberPasture</td>
<td>White Clover Blend</td>
<td></td>
</tr>
<tr>
<td>14.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

T = Tetraploid

Heading date average for Summerhill is 31 May for Northern Ireland.
When cutting for silage, aim to cut 5 - 10 days before average heading date for optimum quality.

Key benefits in summary

- Long-lasting ley with outstanding quality
- Good yield credentials for grazing and cutting
- Balance of diploid and tetraploid varieties
- High palatability and dry matter intakes
- Reduced nitrogen losses to the environment
- Excellent mixture of intermediate and late varieties
Marathon is a mixture for producers who are aiming for one or two high quality silage cuts followed by the best possible aftermath grazing. First cut will be late May, with the option of a second cut approximately 4 – 6 weeks later, or alternatively commence rotational grazing. Marathon will also be suited to heavier ground conditions.

<table>
<thead>
<tr>
<th>Kg/acre</th>
<th>Variety</th>
<th>Type</th>
<th>Heading Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0</td>
<td>AberClyde HSG</td>
<td>Perennial Ryegrass (T)</td>
<td>23 May</td>
</tr>
<tr>
<td>4.0</td>
<td>AberGreen HSG</td>
<td>Perennial Ryegrass</td>
<td>28 May</td>
</tr>
<tr>
<td>2.0</td>
<td>AberAvon HSG</td>
<td>Perennial Ryegrass</td>
<td>01 June</td>
</tr>
<tr>
<td>3.0</td>
<td>AberLee HSG</td>
<td>Perennial Ryegrass</td>
<td>07 June</td>
</tr>
<tr>
<td>1.0</td>
<td>Comer</td>
<td>Timothy</td>
<td></td>
</tr>
<tr>
<td>1.0</td>
<td>AberPasture</td>
<td>White Clover Blend</td>
<td></td>
</tr>
<tr>
<td>14.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fig 17.
Marathon: Heading date average is 30 May for Northern Ireland.
When cutting for silage, aim to cut 5 - 10 days before average heading date for optimum quality.

Key benefits in summary
- Traditional general purpose mixture
- Contains intermediate and late varieties
- Balance of diploid and tetraploid
- Excellent persistence and density
- Reduced nitrogen losses to the environment
- Suitable for all areas
### Sheepmount

**Specialist sheep mixture**

<table>
<thead>
<tr>
<th>Kg/acre</th>
<th>Variety</th>
<th>Type</th>
<th>Heading Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0</td>
<td>AberClyde HSG</td>
<td>Perennial Ryegrass (T)</td>
<td>23 May</td>
</tr>
<tr>
<td>2.0</td>
<td>AberGreen HSG</td>
<td>Perennial Ryegrass</td>
<td>28 May</td>
</tr>
<tr>
<td>2.0</td>
<td>AberAvon HSG</td>
<td>Perennial Ryegrass</td>
<td>01 June</td>
</tr>
<tr>
<td>4.0</td>
<td>AberLee HSG</td>
<td>Perennial Ryegrass</td>
<td>07 June</td>
</tr>
<tr>
<td>1.0</td>
<td>Presto</td>
<td>Timothy</td>
<td></td>
</tr>
<tr>
<td>2.0</td>
<td>Maxima</td>
<td>Creeping Red Fescue</td>
<td></td>
</tr>
<tr>
<td>1.0</td>
<td>AberSheep</td>
<td>White Clover Blend</td>
<td></td>
</tr>
<tr>
<td>14.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Fig. 18. Sheepmount:

T = Tetraploid

Heading date average for Sheepmount is 1 June for Northern Ireland.

When cutting for silage, aim to cut 5 - 10 days before average heading date for optimum quality.

**Key benefits in summary**

- Intensive sheep grazing
- High carrying capacity
- Palatable forage
- Specialist white clover blend for sheep grazing
- Dense sward
Specialist horse and pony mixture

<table>
<thead>
<tr>
<th>Kg/acre</th>
<th>Variety</th>
<th>Type</th>
<th>Heading Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0</td>
<td>Boyne</td>
<td>Perennial Ryegrass</td>
<td>18 May</td>
</tr>
<tr>
<td>2.0</td>
<td>Elysium</td>
<td>Perennial Ryegrass (T)</td>
<td>25 May</td>
</tr>
<tr>
<td>4.5</td>
<td>Kerry</td>
<td>Perennial Ryegrass</td>
<td>02 June</td>
</tr>
<tr>
<td>2.0</td>
<td>Maxima</td>
<td>Creeping Red Fescue</td>
<td></td>
</tr>
<tr>
<td>2.0</td>
<td>Presto</td>
<td>Timothy</td>
<td></td>
</tr>
<tr>
<td>0.5</td>
<td>Laura</td>
<td>Meadow Fescue</td>
<td></td>
</tr>
<tr>
<td>15.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key benefits in summary
- Creeping grasses to minimise poaching
- Rapid establishment
- Dense and persistent sward
- Good grazing and hay yields
- Very palatable

Heading date average for Horse Paddock is 26 May for Northern Ireland. When cutting for silage, aim to cut 5 - 10 days before average heading date for optimum quality.
Overseeding

Where a full reseed is impractical or unwarranted, short term productivity can be improved through a number of different overseeding methods. When overseeding, it pays to use the best available varieties that have been selected specifically for the purpose.

AberHSG Long Term Overseeding

<table>
<thead>
<tr>
<th>Kg/acre</th>
<th>Variety</th>
<th>Type</th>
<th>Heading Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0</td>
<td>AberClyde</td>
<td>Perennial Ryegrass (T)</td>
<td>23 May</td>
</tr>
<tr>
<td>3.0</td>
<td>AberGain HSG</td>
<td>Perennial Ryegrass (T)</td>
<td>03 Jun</td>
</tr>
<tr>
<td>4.0</td>
<td>AberBite HSG</td>
<td>Perennial Ryegrass (T)</td>
<td>04 Jun</td>
</tr>
</tbody>
</table>

Key benefits in summary
- 100% tetraploids for rapid establishment
- Perennial ryegrasses for persistency
- High ranking Aber HSG varieties

AberHSG Short Term Overseeding

<table>
<thead>
<tr>
<th>Kg/acre</th>
<th>Variety</th>
<th>Type</th>
<th>Heading Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0</td>
<td>AberEcho</td>
<td>Hybrid Ryegrass (T)</td>
<td>14 May</td>
</tr>
<tr>
<td>5.0</td>
<td>AberNiche</td>
<td>Festulolium</td>
<td>22 May</td>
</tr>
<tr>
<td>10.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key benefits in summary
- Rapid establishment
- High yielding under cutting
- New festulolium for increased rooting

T = Tetraploid
Grassland renewal key to productivity

Continual improvement of grazing and silage leys is an integral part of Co Tyrone dairy farmer Kevin McGrade’s strategy of maximising milk production from forage.

He’s currently reseeding around 15% of his grassland each year, ideally following a full cultivation, but over-seeding – or stitching-in – is also proving invaluable.

Farming at Dromore, Kevin is milking 180 autumn calving Holstein Friesians. He operates a grass-based system, with high quality silage and well-managed grazing underpinning production, and he is currently at around 3,000 litres from forage of a herd average just under 7,000 litres.

Currently, silage leys are based on the late heading perennials AberGain, a tetraploid, and the diploid AberChoice, both Aber High Sugar Grasses that are highly ranked on both the Irish PPI and the Recommended Grass and Clover List. The proportion for these silage leys is typically 30% tetraploid and 70% diploid, though Kevin uses closer to a 50:50 mix on his drier fields. He also uses a higher proportion of tetraploids for over-seeding, as he believes the larger seed has a better chance of establishing in the conditions.

Grazing leys are also dominated by Aber High Sugar Grass varieties, with intermediate diploids including AberGreen and AberWolf typically included. Kevin finds these diploids provide the higher sward density that is required in a grazing situation, particularly on his heavy ground.

Kevin McGrade, Dairy Farmer, Dromore, Co Tyrone
Tonic plantain and Puna II perennial chicory

Tonic plantain is a broad leaved perennial forage herb that is an ideal companion in multi-species swards with Aber red and white clovers and Aber High Sugar Grasses.

Plantain is a coarse-rooted plant that is well adapted to a range of soil types. With similar total annual yields to Puna II perennial chicory, it has slightly better spring and autumn growth.

Tonic plantain is highly productive and provides high-quality feed that can boost liveweight gain in livestock. It is ideally suited to intensive or rotational grazing systems, with rapid regrowth post-grazing in dry summers.

Key benefits of Tonic plantain
- More milk or meat production
- Increased daily liveweight gain
- Heavier weights at weaning
- High dry matter production from early spring to late autumn
- Reduces the effects of internal parasites
- High in minerals, especially copper and selenium
- Very palatable

Puna II is the leading perennial chicory variety, selected through a long term breeding programme in New Zealand for its nutritive value, productivity, palatability and persistency.

It is a broad-leaved perennial forage crop that can be grown in the UK as a pure stand or as a key part of multi-species swards with clover, or grass and clover, for medium to long term rotational grazing (2 - 5 year persistency). Perennial chicory should not be confused with short-lived common chicory, grown unsuccessfully previously.

Selection strategy in breeding Puna II has included tolerance to the fungal disease Sclerotinia, which causes plant death, and an erect growth habit to improve compatibility with ryegrass.

Key benefits of Puna II
- Outstanding animal performance (e.g. lamb growth rates of 300-400g/day)
- Yields up to 15tDM/ha in a season; crude protein up to 25%; D-value 70-80
- High mineral content, including zinc, potassium and copper
- Good tolerance to drought, acid soils and major pests
- Rapid regrowth after grazing
- Reduces the effect of internal parasites
- Provides high quality feed through the summer
- Does not cause bloating
### Fig 22. **Lamb Finisher:**

<table>
<thead>
<tr>
<th>Kg/acre</th>
<th>Variety</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td>Puna II</td>
<td>Perennial Chicory</td>
</tr>
<tr>
<td>2.00</td>
<td>AberClaret</td>
<td>Red Clover</td>
</tr>
<tr>
<td>1.25</td>
<td>AberChianti</td>
<td>Red Clover</td>
</tr>
<tr>
<td>1.00</td>
<td>Tonic</td>
<td>Plantain</td>
</tr>
<tr>
<td>5.25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Key benefits in summary**
- 2 - 3 years, intensive finishing mixture
- Red clover can contribute up to 150kgN/ha
- Full production from May to September
- High protein forage suitable for finishing early lambs

### Fig 23. **Lamb Finisher with White Clover:**

<table>
<thead>
<tr>
<th>Kg/acre</th>
<th>Variety</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td>Puna II</td>
<td>Perennial Chicory</td>
</tr>
<tr>
<td>1.50</td>
<td>AberChianti</td>
<td>Red Clover</td>
</tr>
<tr>
<td>1.00</td>
<td>AberClaret</td>
<td>Red Clover</td>
</tr>
<tr>
<td>1.00</td>
<td>AberDai</td>
<td>White Clover</td>
</tr>
<tr>
<td>1.00</td>
<td>Tonic</td>
<td>Plantain</td>
</tr>
<tr>
<td>5.50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Key benefits in summary**
- As Lamb Finisher, but with the benefit of white clover to improve ground cover during late season
- 2 - 3 years duration

### Fig 24. **Livestock Grazer/Beef Finisher/Puna II HSG Medium Term Ley:**

<table>
<thead>
<tr>
<th>Kg/acre</th>
<th>Variety</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.00</td>
<td>AberEcho HSG</td>
<td>Hybrid Ryegrass</td>
</tr>
<tr>
<td>4.00</td>
<td>AberWolf HSG</td>
<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>0.75</td>
<td>Puna II</td>
<td>Perennial Chicory</td>
</tr>
<tr>
<td>1.50</td>
<td>AberDai</td>
<td>White Clover</td>
</tr>
<tr>
<td>1.00</td>
<td>Tonic</td>
<td>Plantain</td>
</tr>
<tr>
<td>11.25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Key benefits in summary**
- 3 - 4 year medium term ley
- Ideal for lambs, beef youngstock – finishing or flushing ewes
- The grasses in this mixture offer improved grazing and ground cover in autumn

### Fig 25. **Long Term Aber HSG Multi Species:**

<table>
<thead>
<tr>
<th>Kg/acre</th>
<th>Variety</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.00</td>
<td>AberWolf HSG</td>
<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>3.00</td>
<td>AberClyde HSG</td>
<td>Perennial Ryegrass (T)</td>
</tr>
<tr>
<td>3.00</td>
<td>AberGreen HSG</td>
<td>Perennial Ryegrass</td>
</tr>
<tr>
<td>1.00</td>
<td>Presto</td>
<td>Timothy</td>
</tr>
<tr>
<td>0.50</td>
<td>Puna II</td>
<td>Perennial Chicory</td>
</tr>
<tr>
<td>0.75</td>
<td>Tonic</td>
<td>Plantain</td>
</tr>
<tr>
<td>1.00</td>
<td>AberDai</td>
<td>White Clover</td>
</tr>
<tr>
<td>1.5</td>
<td>AberClaret</td>
<td>Red Clover</td>
</tr>
<tr>
<td>13.75</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Heading date average for Aber HSG Multi Species is 29 May for Northern Ireland.

**Key benefits in summary**
- 7 - 10 year long term ley
- Ideal for lambs, beef youngstock – finishing or flushing ewes
- The grasses in this mixture offer improved grazing and ground cover in autumn
Lucerne

Lucerne is a nitrogen-fixing legume, most commonly grown as a stand-alone crop for cutting and with some grazing potential.

**TIMBALE**
- Excellent nutritional value (thin stemmed with good leaf retention)
- Good disease resistance
- High yielding

**GALAXIE**
- Exceptional yields
- Good disease resistance

**GALAXIE MAX**
- A blend of Timbale and Galaxie
- Two of the leading lucerne varieties with cold tolerance for northern European climates

Timbale, Galaxie and Galaxie Max from Germinal are pre-inoculated and treated with Seed Applied Solution (SAS Energy):
- Unique Seed Applied Solution (SAS Energy) to improve lucerne establishment
- Multi-layered permeable coating with 100% active ingredients
- Essential minerals and trace elements specific to lucerne requirements
- Stimulates early vigour and improves root and leaf development

Timbale, Galaxie and Galaxie Max are sold in Precidose packs
- Precidose ensures optimum plant population and prevents problems due to overseeding or underseeding
- Easy to use; 2 Precidose packs per hectare in good conditions
- Increase to 2.3 packs/ha for later sowing or heavier conditions

In trials, SAS Energy treated seed drilled at Precidose rates achieved:
- 14% INCREASE IN PLANT ESTABLISHMENT
- 6% INCREASE IN FIRST CUT DRY MATTER YIELDS
The roles of white and red clovers in modern sustainable livestock farming are growing as new varieties offering higher yields and greater persistency become available.

Varieties of white clover bred at IBERS Aberystwyth University lead the way and are now, for example, achieving optimum targets of a 30-35% contribution to total sward dry matter under a range of management systems.

Grass and clover breeding at Aberystwyth has always maintained a strong affinity with real agricultural practice, which means selection and testing takes into account performance in the silo and in the rumen, as well as in the field under animal grazing and/or cutting regimes. This coordinated approach ensures the new varieties meet farmers’ needs.

Aber grass and clover mixtures are offered as standard with a recommended Aber clover blend. However, specific blends of white or red clover can be requested to suit a particular farming system or requirement.

### Aber clover blends

**The role of clover**

**White Clover varieties**

**Benefits of Aber clover blends**

- Boosts output of milk and meat from forage
- Improves soil structure
- Improves the quality of grazing
- Helps to maintain a balanced grass/clover sward
- Performs reliably on most soil types and under most management systems
- Tolerates moderately high applications of nitrogen fertiliser
- Reduces fertiliser requirements

**AberAce (small leaved)**: The smallest recommended variety, it has excellent grazing persistency at low nitrogen levels and while having the low yield potential expected of such a very small clover variety, it supports a high grass yield.

**AberDai (medium leaved)**: Produces very high clover yields, is at its most vigorous in the main summer periods and maintains a good persistency rating for its leaf size.
Grow your own protein to cut costs of production

High protein forage brassicas present a significant opportunity to drive down costs of production, yet are not grown on a large majority of livestock farms.

According to Germinal’s latest survey, less than a third of UK livestock farmers are growing forage brassicas, with fewer still tapping into the benefits of other homegrown high protein sources such as red clover and lucerne.

With growing uncertainty over agricultural support and the likelihood of continued commodity price volatility, livestock farmers need to reduce their reliance on bought-in feed and fertiliser and become more self-sufficient.

“Homegrown forage protein crops will reduce the need for bought-in protein, which will always be expensive and susceptible to price volatility, and there are additional benefits too, such as improved soil fertility, soil structure and pest control,” says Germinal NI’s David Little.

“There are now many modern forage brassica varieties that offer an excellent source of protein and can boost productivity as summer catch crops, autumn grazing or even out-wintering. These brassicas also work very effectively as break crops in grassland reseeding, helping to reduce the threat of common pests such as leatherjackets and frit-fly. This is more important as chemical pest control options become more restricted.”

Mr Little points out that the varying attributes and agronomy of forage proteins means farmers should make the decision on which crop to grow based on individual farm conditions and requirements.

“Look at where you can start building protein crops into a rotation if that fits with your system. When growing any crop, it’s important to pick the right field and grow it well. It’s also important to know how much you are growing, to utilise it effectively and ensure you have enough of the crop to make a difference in the ration.”
Planning your brassica crops

**Rate and extent of regrowth depends on weather conditions.**

### Summer/Early Autumn
- **Jun - Sep**
  - Stubble turnip: Appin, Vollenda
  - Forage rape: Stego
  - Hybrid brassica: Swift, Redstart

### Autumn/Winter
- **Oct - Feb**
  - Stubble turnip: Appin, Vollenda
  - Hybrid brassica: Swift, Redstart
  - Kale: Maris Kestrel, Bittern
  - Swede: Triumph

### Regrowth Potential *
- **High**
  - Swift
  - Appin
  - Redstart

### Winter Tolerance
- **Low**
  - Bittern, Vollenda
- **Good**
  - Swift, Appin, Redstart
- **High**
  - Maris Kestrel, Bittern, Triumph

### Sowing to Grazing Period
- **8 Weeks**
  - Appin, Stego
- **10 Weeks**
  - Swift, Redstart
- **12 Weeks**
  - Vollenda

### When do you require your brassica crop?

<table>
<thead>
<tr>
<th>Season</th>
<th>Sowing to Grazing Period</th>
<th>Regrowth Potential</th>
<th>Winter Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer/Early Autumn</td>
<td>8 Weeks</td>
<td>Nil Vollenda, Stego</td>
<td>Low Vollenda</td>
</tr>
<tr>
<td>Autumn/Winter</td>
<td>10 Weeks</td>
<td>High Swift, Appin, Redstart</td>
<td>Good Swift, Appin, Redstart</td>
</tr>
<tr>
<td></td>
<td>12 Weeks</td>
<td></td>
<td>High Maris Kestrel, Bittern, Triumph</td>
</tr>
</tbody>
</table>
Forage brassica options

**Maris Kestrel**
**Kale**

Maris Kestrel is established as the leading kale variety in the UK and is suitable for all classes of stock.

Sow at 2 - 3kg/acre from May to the end of June. Feed from July to the following March.

**Main uses**
- Ideal for out-wintering
- Good late summer/early autumn feed for cattle or sheep
- Solution to late season grazing deficits

**Key benefits**
- Outstanding leaf-to-stem ratio
- High whole plant D-value
- Vigorous early growth
- Resistant to lodging
- Good winter hardiness
- Long utilisation period

**Bittern**
**Kale**

Bittern is a medium height kale with the versatility to be used either for grazing or as a game cover crop.

Sow at 2 - 3kg/acre from May to the end of June. Feed from September to the following March.

**Main uses**
- Maintenance for dry cows
- Game cover
- Cattle grazing following game cover use

**Key benefits**
- Good leaf-to-stem ratio (44 - 48% leaf)
- Excellent palatability (high stem sugar content)
- Winter hardy with very good frost tolerance
- Added versatility due to club root resistance
- Medium height with good lodging resistance
Swift
Hybrid brassica

Swift is the first of a revolutionary range of interspecies (rape x kale) hybrids developed in New Zealand to provide a new generation of flexible and cost effective forage crops.

Sow at 2 - 3kg/acre from May to the end of August. Feed from July to the following March.

Main uses
• High energy grazing for cattle and sheep
• Summer, autumn and winter grazing
• Ideal for out-wintering systems

Key benefits
• Fast and vigorous growth
• Winter hardiness
• Regrowth potential
• Good late season yield potential
• High energy and good protein source

Redstart
Hybrid brassica

Redstart is from the same breeding line as Swift and offers similarly flexible and cost effective solutions to year-round quality forage supply, but with higher feed quality.

Sow at 2 - 3kg/acre from May to the end of August. Feed from July to the following March.

Main uses
• High energy grazing for cattle and sheep
• Summer, autumn and winter grazing
• Ideal where fast growth is required, such as upland situations

Key benefits
• Very rapid and vigorous growth
• Winter hardiness
• Regrowth potential
• Good late season yield potential
• High energy and good protein source
Stego is a high-yielding forage rape ideally suited to finishing lambs as summer or autumn grazing.

Drill at 3kg/acre (or broadcast at 4kg/acre) from March to July. Feed from June to December.

**Main uses**
- Autumn/winter brassica for lamb finishing
- Extended grazing for cattle

**Key benefits**
- High leaf-to-stem ratio
- High stem digestibility, so low plant residues after grazing
- Excellent disease resistance, including mildew

Vollenda is a high yielding stubble turnip offering cost effective feeding solutions in summer, autumn or winter for sheep or cattle.

Drill at 2kg/acre (or broadcast at 3kg/acre) from March to August. Feed from June to December.

**Main uses**
- Catch crops for overcoming summer grazing shortfalls
- Versatile autumn/winter grazing that reduces concentrate feeding period
- Valuable source of clean (worm free) grazing for lambs

**Key benefits**
- Easy to establish (undersown or scratched into stubbles)
- Early vigour variety suitable for May sowing (July feeding)
- Winter hardy variety ideal for later drilling (November – January feeding)
- Good resistance to bolting
Forage brassica options

**Appin**
Grazing turnips

Appin is a fast growing leafy grazing turnip providing a rapid source of palatable, easy-to-digest fodder for sheep and cattle.

Drill at 2kg/acre (or broadcast at 3kg/acre) from March to mid-September. Feed from May to December.

**Main uses**
- Catch crops for overcoming summer grazing shortfalls
- Versatile autumn/winter grazing that reduces concentrate feeding period
- Autumn/winter brassica for worm free lamb finishing
- Extended grazing for cattle

**Key benefits**
- Vigorous establishment and quick maturity
- Wide sowing window
- Multi-crowned with excellent regrowth potential
- Good root anchorage

**Triumph**
Swede

Triumph is a very high yielding, yellow-fleshed, first crop swede, suitable as over-winter grazing for all classes of stock.

Drill from mid-May to the end of June at 250g/acre (precision drilled).
Graze from November through to March.

**Main uses**
- High energy winter grazing for cattle and sheep

**Key benefits**
- Very high dry matter yields
- Winter hardy
- Good dry rot and mildew tolerance
Brassica mixtures

Brassica mixtures are being used increasingly by livestock farmers and are an effective way of tailoring a grazing crop more precisely to specific circumstances.

Individual crops including kale, forage rape and turnips have their own strengths but also grow well in combination and, as such, offer advantages in a similar way to herbage mixtures.

- Increased forage choice for livestock
- Higher dry matter intakes
- Greater overall production per hectare

**Potential advantages of brassica mixtures**

**Fig 28.**

**Winter Feed:**

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maris Kestrel kale</td>
<td>1.0kg</td>
</tr>
<tr>
<td>Swift hybrid brassica</td>
<td>1.0kg</td>
</tr>
<tr>
<td></td>
<td>2.0kg/acre (5.0kg/ha)</td>
</tr>
</tbody>
</table>

**Main use**
- Out-wintering for all ruminant livestock

**Key features**
- A winter hardy blend of palatable fodder
- Yield potential of over 12 tonnesDM/ha

**Fig 29.**

**Late Sown Winter Feed:**

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swift hybrid brassica</td>
<td>0.75kg</td>
</tr>
<tr>
<td>Restart hybrid brassica</td>
<td>0.75kg</td>
</tr>
<tr>
<td>Appin grazing turnip</td>
<td>0.65kg</td>
</tr>
<tr>
<td>Maris Kestrel kale</td>
<td>0.10kg</td>
</tr>
<tr>
<td></td>
<td>2.25kg/acre (5.56kg/ha)</td>
</tr>
</tbody>
</table>

**Main use**
- Out-wintering for sheep or cattle

**Key features**
- Fast growing fodder for late sowing

**Fig 30.**

**Summer Multigraze:**

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appin grazing turnip</td>
<td>0.5kg</td>
</tr>
<tr>
<td>Swift hybrid brassica</td>
<td>1.0kg</td>
</tr>
<tr>
<td>Stego forage rape</td>
<td>0.9kg</td>
</tr>
<tr>
<td>Maris Kestrel kale</td>
<td>0.1kg</td>
</tr>
<tr>
<td></td>
<td>2.5kg/acre (6.0kg/ha)</td>
</tr>
</tbody>
</table>

**Main use**
- Early lamb finishing
- Supplementary summer grazing for dairy or beef cattle

**Key features**
- A blend of fast growing grazing turnips and forage rape with the added high yield, quality and regrowth potential of Swift
- Regrowth potential

**Fig 31.**

**Autumn Multigraze:**

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swift hybrid brassica</td>
<td>1.25kg</td>
</tr>
<tr>
<td>Appin grazing turnip</td>
<td>0.90kg</td>
</tr>
<tr>
<td>Maris Kestrel kale</td>
<td>0.10kg</td>
</tr>
<tr>
<td></td>
<td>2.25kg/acre (5.5kg/ha)</td>
</tr>
</tbody>
</table>

**Main use**
- Late lamb finishing
- Flushing ewes
- Improving late season grazing when grass growth is declining

**Key features**
- A blend that combines the winter hardiness and quality feed value of Swift for later grazing and the rapid establishment of Appin grazing turnip
Swift solution shortens the winter

Out-wintering is certainly an important part of Ards Peninsula beef farmer Andrew McClements’ system, helping to shorten the winter and reduce feed and bedding costs.

Swift hybrid brassica is usually established after winter barley to provide up to six weeks grazing for the cows after calves have been weaned.

“Last year the Swift was drilled in early August and was strip grazed from around mid-October,” explains Andrew. “A seven acre field lasted 80 cows through to the beginning of December. We tend to use our free-draining ground that runs down to the sea for out-wintering as it is more suitable than the heavier ground we have further inland.”

“We move the fence daily and always supplement the cows with straw, with this usually from a barley crop that has been under sown with grass. The overall impact of the out-wintering is a significant reduction in our use of bedding and grass silage, and far less manure to deal with.”

Andrew McClements, Beef Farmer, Ards Peninsula
Anaerobic digestion (AD) is a growth area in renewable energy with increasing numbers of farm businesses involved with their own units or by growing feedstock.

The use of grass leys as a feedstock is attracting interest due to the range of advantages offered:

- Grass as a crop is relatively cheap and easy to grow in our climate and soil types
- It is cost effective compared to other biogas fuels (see Fig. 32)
- Equipment and infrastructure to grow and handle this feedstock is already in place
- Grass can be used fresh (offering the highest rate of gas production) and would be cut and carried on a rotational basis; it can also be stored and used as silage
- Medium and long term grass leys offer a more environmentally sustainable option than crops requiring annual cultivations
- Grass leys allow more opportunity to spread the waste products from the digesters, whether that is liquid or solid, without the need to plough back under
- Blackgrass control:
  - Medium to long term grass leys cut three or more times a year will reduce the blackgrass seed production; by constantly cutting the ley there is little if any seed returning to the soil
  - The viability of old undisturbed blackgrass seed within soil reduces by 70% per annum, meaning after the 3 plus years of grassland the blackgrass seed populations are reduced dramatically
  - 65% to 75% of blackgrass volunteers germinate in the autumn, so establishing your grass ley in the spring (even undersown to a cereal crop) will help to further reduce the blackgrass populations

### Comparative costs of methane production:

<table>
<thead>
<tr>
<th>Grass Type</th>
<th>Estimated Fresh Weight (Tonnes/Acre/Year)</th>
<th>Cost E/Acre</th>
<th>Methane M/Tonnes</th>
<th>Methane M/Acre</th>
<th>Cost £/M³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring Barley (35%DM)</td>
<td>10</td>
<td>£480.00</td>
<td>108</td>
<td>1080</td>
<td>£0.44</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>£480.00</td>
<td>108</td>
<td>1296</td>
<td>£0.37</td>
</tr>
<tr>
<td>Spring Triticale (35%DM)</td>
<td>12</td>
<td>£485.00</td>
<td>108</td>
<td>1296</td>
<td>£0.37</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>£485.00</td>
<td>108</td>
<td>1512</td>
<td>£0.32</td>
</tr>
<tr>
<td>Winter Hybrid Rye (35%DM)</td>
<td>14</td>
<td>£535.00</td>
<td>108</td>
<td>1512</td>
<td>£0.35</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>£535.00</td>
<td>108</td>
<td>1728</td>
<td>£0.31</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>£535.00</td>
<td>108</td>
<td>1944</td>
<td>£0.28</td>
</tr>
<tr>
<td>Hybrid Ryegrass (25%DM)</td>
<td>26</td>
<td>£635.00</td>
<td>90</td>
<td>2340</td>
<td>£0.27</td>
</tr>
<tr>
<td></td>
<td>28</td>
<td>£635.00</td>
<td>90</td>
<td>2520</td>
<td>£0.25</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>£635.00</td>
<td>90</td>
<td>2700</td>
<td>£0.24</td>
</tr>
</tbody>
</table>
As with the supply of feed for livestock, where well managed Aber HSG leys are the cheapest source of nutrition for meat and milk production, Aber HSG offers great potential for biogas production.

Studies carried out at IBERS show that Aber HSG ryegrasses perform well compared to general grassland mixtures. All the Aber HSG varieties outperformed mixed grassland with the conclusion that higher water soluble carbohydrate (sugar) content in grass has a positive effect on both the yield and rate at which biogas is produced.

To help answer outstanding questions, Germinal is setting up further research at IBERS comparing Aber HSG varieties with alternative feedstocks that have a range of D-values and at varying harvest dates.

Aber High Sugar Grass varieties that have been bred for higher water soluble carbohydrate content and rank high for D-value offer the ideal combination of characteristics for an AD feedstock, whether ensiled or as a fresh crop.

### Aber HSG mixtures for AD

#### Kg/acre

<table>
<thead>
<tr>
<th>Variety</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0 AberEcho HSG Hybrid Ryegrass (T)</td>
<td></td>
</tr>
<tr>
<td>4.0 AberEve HSG Hybrid Ryegrass (T)</td>
<td></td>
</tr>
<tr>
<td>5.0 AberNiche Festulolium</td>
<td></td>
</tr>
<tr>
<td>14.0 AberEcho HSG Hybrid Ryegrass (T)</td>
<td></td>
</tr>
<tr>
<td>6.0 AberMagic HSG Perennial Ryegrass</td>
<td></td>
</tr>
<tr>
<td>8.0 AberMagic HSG Perennial Ryegrass</td>
<td></td>
</tr>
<tr>
<td>14.0 AberMagic HSG Perennial Ryegrass</td>
<td></td>
</tr>
</tbody>
</table>

---

Aber High Sugar Grass for AD

As with the supply of feed for livestock, where well managed Aber HSG leys are the cheapest source of nutrition for meat and milk production, Aber HSG offers great potential for biogas production.

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Aber High Sugar Grass varieties that have been bred for higher water soluble carbohydrate content and rank high for D-value offer the ideal combination of characteristics for an AD feedstock, whether ensiled or as a fresh crop.
Leisure Amenity

Germinal supplies a wide range of amenity mixtures for sports grounds, landscaping, turf and conservation. These mixtures bring together species to suit the different applications. All varieties are STRI listed.

Leisure Lawn Seeds

Shamrock Lawn
A high quality mixture designed to give a dense fine-leaved lawn.

Executive Lawn
A mixture formulated for general use providing a low maintenance, hard wearing lawn with a fine-leaved appearance.

Emerald Lawn
A highly popular mixture, hard-wearing, low maintenance and long-lasting.

Victoria Lawn
A hard-wearing economical mixture especially suitable for childrens’ play areas and other areas when a dense hard-wearing lawn is required.

Utility
A very economical mixture where emphasis is placed on durability rather than a fine turf appearance.

Amenity Mixes

Sportground Mix
70% Amenity Perennial Ryegrass
25% Creeping Red Fescue
5% Browntop Bentgrass
- Hard wearing
- Good ground cover
- Ideal for new sports grounds

Roadside Mix
35% Perennial Ryegrass
30% Amenity Perennial Ryegrass
20% Hard Fescue
10% Browntop Bentgrass
5% White Clover
- Low maintenance
- Suitable for most soil types
- Includes White Clover

Low Maintenance Mix
40% Creeping Red Fescue
20% Chewings Fescue
20% Hard Fescue
10% Smooth Stalked Meadow Grass
10% Browntop Bentgrass
- Low maintenance
- Tolerant of poorer soils
- Natural appearance

Renovator Mix
85% Amenity Perennial Ryegrass
15% Creeping Red Fescue
- Fast to establish
- Dense sward
- Hard Wearing
Find out more

Should you require any more information or to request a selection of free brochures and technical guides please visit our website:

germinalni.com

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The mixtures in this brochure are correct at the time of going to press and the supplies of the varieties used in the mixtures should be adequate for this season. If however we do run short of some, they will be replaced by the next best variety on the Recommended List.
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