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Climate Smart Performance

Trust Germinal for expert advice and
climate smart strategies for grassland
management

Product catalogue
2024

 **Germinal**
Sowing future seeds.



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Change for the better

As we approach another season, we have experienced ongoing impacts of changing weather patterns and continued pressure to improve practices and reduce our carbon footprint.

Adapting to change is not new for farmers as they are natural adopters of on-farm methods to get the results they need. For Germinal, agricultural change is about adaptation and mitigation, both critical in the face of climate-related risks. There are many challenges to tackle – reducing inputs such as fertiliser application to restrict greenhouse gas emissions, maximising animal performance and food production, while facing a changing climate.

Focusing on forage solutions, Germinal continues to offer the highest performing grass varieties for meat and milk production with Aber HSG also possessing the climate smart advantage of reducing harmful emissions. This year, the range takes an evolutionary step forward with AberSevern. A late diploid perennial ryegrass, AberSevern has the highest grazing yield and quality of any grass on the 2023/24 BSPB Recommended Grass and Clover Lists (RGCL) and is exclusively available in Germinal mixtures.

Being climate smart also means providing environmental solutions. With DeepRoot, we are launching a new range of grasses that are both high yielding and more drought-tolerant. New for 2024, AberRoot is our first grass in the DeepRoot range, and is the first and only festulolium included in the RGCL.

This year's catalogue also contains solutions to other key environmental issues like nutrient management and soil fertility with clovers and multi-species mixtures to support your sustainable food production.

Farmers are resilient and so, farming systems must be also. The scientific and applied research we do at Germinal Horizon directly targets climate change problems and we're continually looking at grasses, clovers and other multi-species forage solutions.

Choose performance plus environment.

We are excited to introduce the next generation of Aber HSG grasses and support all farmers on their own commitment and journey towards positive progress.

Here's to a productive year ahead.

Ben Wixey

Agricultural Director
Germinal UK and Ireland

Meet the team

This year's 2024 Product Brochure reinforces the technical information and practical insight into our products provided by our expert team in the field.



Ben Wixey

Agricultural Director

Ben has worked in the seed trade for almost all of his career bringing a wealth of expertise to customers and farmers. He is passionate about on-farm productivity from good grassland management and believes improvements can always be made in forage production and utilisation.

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William Fleming

Scotland and North East England

William spent 25 years on his family farm near Lanark, gaining valuable experience to complement his agricultural qualifications. He maximised production from forage through regular reseeding and maintaining high-quality leys; a policy he now helps farmers adopt with Germinal.

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Paul Morgan

Southern England and South Wales

Paul comes from a mixed farming background in Monmouthshire with 12 years' experience in the agricultural supply trade. His in-depth knowledge of high sugar grasses helps farmers make forage improvements to benefit their sustainable livestock production.

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Harley Brown-Keech

Central England and North Wales

Harley grew up on a mixed farm in the East Midlands before studying Agriculture and Crop Management at Harper Adams University. His recent experience in biosolids and extensive knowledge of soil regeneration are helping farmers adapt to the demands of climate change.

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Aber High Sugar Grass (HSG)

Agriculture connects directly to the economy, society and biodiversity making it an important frontier for innovation. Food production and profitability continues to raise complex challenges for farmers whilst lowering emissions from livestock remains a priority for responsible agriculture.

At Germinal Horizon, our research strategy is to ensure innovations in plant science allow pasture-based livestock systems to thrive even as environmental demands increase. This translates directly to helping farmers adapt to the pressures of climate change, better manage valuable resources and be more sustainable producers.

Germinal's Aber HSG is a climate smart leader with a superior energy-protein balance. These grass mixtures deliver highly productive swards that have the capability of driving high levels of output and reducing the production and release of ammonia and nitrous oxide by adding energy to the rumen to enable greater protein capture.

Aber HSG varieties offer highly efficient forage production plus environmental gain. For 2024, we are introducing several new Aber HSG varieties which will be exclusively available in Germinal mixtures.



General purpose	Aber HSG 1 Milk and Meat Production Aber HSG 4 Dairy System
Grazing	Aber HSG 3 Long-Term Grazing AberXtend HSG Extended Grazing Aber HSG Multi-Species
Cutting	Aber HSG 2 Early Cut Aber HSG 2 Later Cut Aber HSG 2 Multi-Cut Aber HSG Multi-Species Aber Red 5 HSG Quality Silage
Overseeding	Aber HSG Short-Term Overseeding Aber HSG Long-Term Overseeding
Anaerobic digestion	Aber HSG for AD Short-Term Aber HSG for AD Medium-Term Aber HSG for AD Long-Term

James Henderson

Sustainability is driving profitability for Co. Down beef and sheep farmer James Henderson, a Grassland Manager of the Year finalist at the 2023 Farmers Weekly Awards.

"Ten years ago, I would have described this farm as one where we kept beef and sheep. Today, I would say this is a grassland farm where beef and sheep keep us.

"Grassland management is the crux of our farm business. Having the top-performing Aber High Sugar Grasses in our bespoke mixtures is essential for both maximising grass production and stock performance.

"We are currently using Germinal's red clover mixture and have found it to be an excellent product. It's very much part of our plans going forward as we seek to reduce our nitrogen usage and increase our homegrown protein."

Farm details

- Seafields Farm, Killeel, Co. Down
- 150 acres (60 hectares) farmed
- Finishing 90 dairy-beef heifers annually
- 1,444kg/ha cattle liveweight produced
- Lambing 250 Rouge x Texel ewes and 50 ewe lamb replacements put to Primera tups
- 430kg/ha sheep carcase weight

LONG-TERM

Aber HSG 1

Milk and Meat Production



Aber HSG 1 is an all-round mixture offering sustainable, high-performance grazing for dairy, beef and sheep systems.

Key benefits

- Produces a dense sward resistant to poaching
- Reduced emissions: ammonia and nitrous oxide
- Suitable for all grazing stock (NB. unsuitable for horses)
- Maintains a high-quality sward for 5-7 years
- High digestibility to drive dry matter intake
- Outstanding grazing yield and grazing D-value
- Option for a heavy, high-quality silage cut in late May

Fig 01.

Aber HSG 1 Milk and Meat Production:

T = Tetraploid

Kg / acre	Variety	Type	Heading Date
3.00	AberZeus	Perennial Ryegrass	26 May
4.00	AberWolf	Perennial Ryegrass	27 May
3.00	AberGreen	Perennial Ryegrass	29 May
4.00	AberGain	Perennial Ryegrass (T)	04 Jun
1.00	AberDairy	White Clover Blend	
15.00			

Heading date average for Aber HSG 1 Milk and Meat Production is 30th May for central Britain. 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.

Fig 02.

Aber HSG 1 Milk and Meat Production:

Spread of heading dates



MEDIUM-TERM

Aber HSG 2

Early Cut



With Aber HSG 2 Early Cut, you get a mixture that produces high-quality, high-yielding silage early in the season while offering sustainability benefits.

Reformulated for 2024, this mixture includes AberRoot from our DeepRoot range of drought-tolerant grasses. The first festulolium to reach the Recommended List, AberRoot combines the deep rooting of Atlas fescue with the climate smart performance of Aber HSG.

Key benefits

- Stock digest protein more efficiently
- Reduced emissions: ammonia and nitrous oxide
- Early vigour and spring growth
- Produces a deeper root system
- Start producing silage from late April to mid-May
- Offers quality and yield for 3-4 years
- Outstanding metabolisable energy (ME) yield

Fig 03.

Aber HSG 2 Early Cut:

T = Tetraploid

Kg / acre	Variety	Type	Heading Date
4.00	AberEcho	Hybrid Ryegrass (T)	18 May
6.00	NEW AberRoot	Festulolium (T)	22 May
5.00	NEW AberImage	Hybrid Ryegrass (T)	27 May
15.00			

Heading date average for Aber HSG 2 Early Cut is 22nd May for central Britain. 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.

Fig 04.

Aber HSG 2 Early Cut:

Spread of heading dates



LONG-TERM

Aber HSG 2

Later Cut



Offers good mid-season growth and sustains performance for a high-quality crop in mid-to-late May, making it well-suited to later silage cuts.

Key benefits

- Get climate smart with high-performance Aber HSG varieties
- Inclusion of AberClaret red clover boosts protein content
- Nitrogen fixing clover reduces need for applied nitrogen
- Produces up to four high-quality, high-yielding silage cuts
- Quality and yield maintained for at least five years

Fig 05.

Aber HSG 2 Later Cut:

T = Tetraploid

Kg / acre	Variety	Type	Heading Date
6.00	AberGain	Perennial Ryegrass (T)	04 Jun
4.00	AberBite	Perennial Ryegrass (T)	05 Jun
5.00	AberBann	Perennial Ryegrass	05 Jun
15.00			

Heading date average for Aber HSG 2 Later Cut is 5th June for central Britain. 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.

Fig 06.

Aber HSG 2 Later Cut:

Spread of heading dates



LONG-TERM

Aber HSG 2

Multi-Cut



Aber HSG 2 Multi-Cut produces large quantities of leafy, high-quality silage from multiple cuts during peak grass growth.

Key benefits

- Ideal for early season cutting, avoiding stemmy later season growth
- Excellent ground cover for soil protection and prevention of weed ingress
- Can cut at four to five weekly intervals from late April
- Quality and yield are maintained throughout the season
- Suitable for winter grazing
- Exceptional metabolisable energy (ME) yield
- Narrow heading date range allows close control of silage production/quality
- Aber HSG varieties enhance silage fermentation and reduce livestock emissions

Fig 07.

Aber HSG 2 Multi-Cut:

T = Tetraploid

Kg / acre	Variety	Type	Heading Date
4.00	AberZeus	Perennial Ryegrass	26 May
3.50	AberSpey	Perennial Ryegrass (T)	29 May
3.50	AberAvon	Perennial Ryegrass	02 Jun
4.00	AberGain	Perennial Ryegrass (T)	04 Jun
15.00			

Heading date average for Aber HSG 2 Multi-Cut is 30th May for central Britain. When cutting for silage, aim to cut 10-15 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.

Fig 08.

Aber HSG 2 Multi-Cut:

Spread of heading dates





Rheinallt Harries

To increase milk production on his tenanted Carmarthenshire farm, Rheinallt Harries concentrated on the metabolisable energy (ME) yield of his grass not just dry matter production.

"Our entire system is dependent on highly nutritious grass. We have increased dry matter yields from 10 tonnes DM/ha to nearer 14 tonnes, but it's the improvements in grass quality which have impacted milk yields the most. ME is over 12 for all our fresh grass samples.

"Converting the farm from a mixed sheep and dairy operation, we've increased grass performance through a comprehensive reseedling programme.

"We've used Aber HSG varieties across most of our grazing land to provide the high-quality, high-energy grass we need. We use AberXtend HSG on the drier parts of the farm for grazing when other areas are too wet and have introduced the Aber HSG Multi-Species mix for drought tolerance and to reduce inputs.

"Our nitrogen use has decreased from 210kg/ha to 160kg/ha without compromising growth thanks to the nitrogen-fixing clovers in the diverse swards.

"I see reseedling as a vital investment for tenant farmers."

Farm details

- Llwynmenny Farm, Bethlehem, Carmarthenshire
- 40ha grazing platform, plus 52ha off-farm for silage and youngstock
- 165 spring block-calving herd of New Zealand Friesians with Jersey cross and Holsteins
- Average yield 6,400 litres, with 4,353 litres from forage
- 4.6% butterfat, 3.6% protein

Aber HSG

LONG-TERM

Aber HSG 3

Long-Term Grazing

Aber HSG 3 is a high-performance, sustainable grazing ley for cattle and sheep in rotational and set-stocking systems.

Key benefits

- Aber HSG diploids produce a dense sward
- Can be tailored to specific farm requirements
- Suitable for all grazing stock (NB. unsuitable for horses)
- High digestibility to drive dry matter intakes
- Impressive daily liveweight gains
- Outstanding grazing yield and grazing D-value
- Lower ammonia and methane excretion
- Persists for up to 10 years



Fig 09.

Aber HSG 3 Long-Term Grazing:

Kg / acre	Variety	Type	Heading Date
3.00	AberZeus	Perennial Ryegrass	26 May
2.00	AberMagic	Perennial Ryegrass	27 May
3.00	AberGreen	Perennial Ryegrass	29 May
2.00	AberThames	Perennial Ryegrass	06 Jun
4.00	AberBann	Perennial Ryegrass	05 Jun
1.00	AberPasture	White Clover Blend	
15.00			

LONG-TERM

Aber HSG
Multi-Species Swards

-  Available without red clover
-  Available without white clover
-  Available with herbs

This climate smart mixture is ideal for low-input systems seeking high daily liveweight gain and improvements in soil health. Produces a dense sward of Aber HSG varieties, timothy, herbs and legumes.

Key benefits

- Superior sward performance through complementary plant species
- Higher nutrient levels driving improved animal performance
- Lower animal emissions
- Improved soil structure and fertility
- Increased drought tolerance
- Poaching resistance
- Reduced reliance on nitrogen fertilisers

Fig 10.

Aber HSG Multi-Species Grazing:

T = Tetraploid



Kg / acre	Variety	Type	Heading Date
3.00	 AberRoot	Festulolium (T)	22 May
3.00	AberZeus	Perennial Ryegrass	26 May
3.00	AberGreen	Perennial Ryegrass	29 May
1.00	Comer	Timothy	08 Jun
0.75	Tonic	Plantain	
0.50	Puna II / Endure	Chicory	
1.00	AberPasture	White Clover Blend	
0.50	AberClaret	Red Clover	
1.00	Global	Red Clover	
13.75			

Fig 11.

Aber HSG Multi-Species Cutting:

T = Tetraploid

Kg / acre	Variety	Type	Heading Date
3.00	 AberRoot	Festulolium (T)	22 May
3.00	AberZeus	Perennial Ryegrass	26 May
3.00	AberGreen	Perennial Ryegrass	29 May
1.00	Comer	Timothy	08 Jun
0.75	Tonic	Plantain	
1.00	AberDairy	White Clover Blend	
0.50	AberClaret	Red Clover	
1.00	Global	Red Clover	
0.75	Crimson	Red Clover	
4.00	Vetch	Vetch	
1.00	FiXatioN	Balansa Clover	
19.00			



Julian Bowers

Moving from intensive beef production to an extensive low-input system embracing multi-species has seen Julian Bowers transform his farm and thinking.

“We moved from milking dairy cows to raising dairy bull calves, but when feed prices started escalating, we knew it wasn’t sustainable.

“When I looked at how I could improve my soils to support our plans to finish Angus cross cattle outside, diversity and the use of herbal leys came into it more and more.

“I established the multi-species in 2021 and started grazing it in May 2022. We direct-drilled into cereal stubble and it took brilliantly. Having always had clean pasture and grown clovers successfully, we have good plant numbers within the sward.

“We’re trying to achieve great daily liveweight gains using less bought-in feed while looking after the soils with less reliance on fertilisers and chemicals.

“I think grazing a high-end quality animal outside on a multi-species ley without fertiliser is the future.”

Farm details

- Top House Farm, Cockshutt, Shropshire
- 89ha including 33ha GS4 herbal leys
- 200 Angus/Longhorn cross bull calves
- Min till/no till approach

LONG-TERM

Aber HSG 4

Dairy System



Delivers a first cut in May, an optional second cut five-to-six weeks later, and rotational grazing for the rest of the year.

Key benefits

- Outstanding grazing yield and D-value
- High digestibility to drive dry matter intakes
- High-performance Aber HSG varieties reduce environmental impact
- Two high-quality silage cuts and outstanding aftermath grazing
- AberDairy clover blend fixes nitrogen to feed companion grasses and reduce fertiliser costs
- Dense and persistent sward maintaining excellent ground cover for soil protection and prevention of weed ingress

Fig 12.

Aber HSG 4 Dairy System:

T = Tetraploid

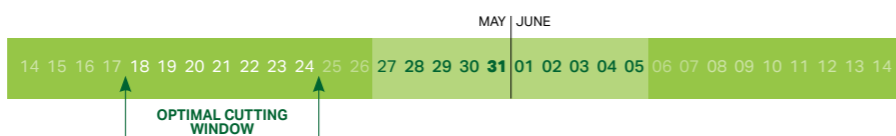
Kg / acre	Variety	Type	Heading Date
2.00	AberWolf	Perennial Ryegrass	27 May
3.00	AberGreen	Perennial Ryegrass	29 May
2.00	NEW AberSevern	Perennial Ryegrass	29 May
3.00	AberGain	Perennial Ryegrass (T)	04 Jun
2.00	AberBite	Perennial Ryegrass (T)	05 Jun
2.00	AberBann	Perennial Ryegrass	05 Jun
1.00	AberDairy	White Clover Blend	
15.00			

Heading date average for Aber HSG 4 Dairy System is 31st May for central Britain.
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.

Fig 13.

Aber HSG 4 Dairy System:

Spread of heading dates



MEDIUM-TERM

Aber Red 5 HSG

Quality Silage

Unlock climate smart performance with a red clover silage mixture that increases homegrown protein production while reducing your need for applied nitrogen.

Key benefits

- Low-input, highly productive silage mixture
- First cut in mid-late May, then at 5-6 week intervals after
- Improved protein content of silage
- Outstanding grazing yield and D-value
- Sustainable performance for 4-5 years
- Lower ammonia and methane excretion
- Excellent aftermath grazing for finishing lambs

Fig 14.

Aber Red 5 HSG Quality Silage:

T = Tetraploid

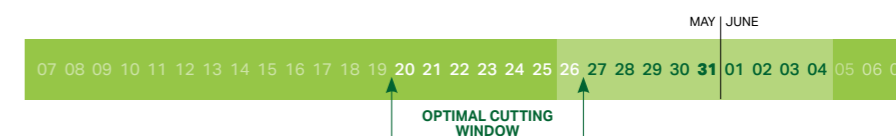
Kg / acre	Variety	Type	Heading Date
2.00	AberZeus	Perennial Ryegrass	26 May
3.00	AberWolf	Perennial Ryegrass	27 May
4.00	AberGain	Perennial Ryegrass (T)	04 Jun
3.00	AberClaret	Red Clover	
12.00			

Heading date average for Aber Red 5 HSG is 31st May for central Britain.
For optimum forage quality, aim to cut red clover silage when 25% of red clover plants are in flower.

Fig 15.

Aber Red 5 HSG Quality Silage:

Spread of heading dates



MEDIUM / LONG-TERM

AberXtend HSG

Extended Grazing

Grows a high-performance sward for dairy, beef and sheep, offering extended grazing with exceptional growth during the shoulders of the season.

Key benefits

- Suitable for all grazing stock (NB. unsuitable for horses)
- High-quality grazing from early spring to autumn
- Aber HSG varieties boost production and reduce emissions
- Exceptional grazing and metabolisable energy (ME) yield
- White clover increases digestibility to drive dry matter intakes
- Sward can maintain quality for seven years or more with good management

Fig 16.

AberXtend HSG Extended Grazing

T = Tetraploid

Kg / acre	Variety	Type	Heading Date
5.00	AberZeus	Perennial Ryegrass	26 May
5.00	AberMagic	Perennial Ryegrass	27 May
4.00	AberGain	Perennial Ryegrass (T)	04 Jun
1.00	AberPasture	White Clover Blend	
15.00			





Organic mixtures

A range of mixtures designed specifically to perform on organic farms.

Bio Cutting

Fig 17.

Bio Cutting:

T = Tetraploid

Kg / acre	Variety	Type	Heading Date
3.00	AberEdge	Hybrid Ryegrass (T)	23 May
3.50	AberClyde Organic	Perennial Ryegrass (T)	25 May
2.80	AberWolf Organic	Perennial Ryegrass	27 May
3.50	AberSpey Organic	Perennial Ryegrass (T)	29 May
0.20	AberGreen	Perennial Ryegrass	29 May
1.00	AberDairy	White Clover Blend	
14.00			

Bio Dual

Fig 18.

Bio Dual:

T = Tetraploid

Kg / acre	Variety	Type	Heading Date
3.00	AberClyde Organic	Perennial Ryegrass (T)	25 May
2.00	AberWolf Organic	Perennial Ryegrass	27 May
2.00	AberGreen Organic	Perennial Ryegrass	29 May
3.20	AberGain	Perennial Ryegrass (T)	04 Jun
2.80	AberLee Organic	Perennial Ryegrass	06 Jun
1.00	AberPasture	White Clover Blend	
14.00			



Organic mixtures

Bio Pasture

Fig 19.

Bio Pasture:

T = Tetraploid

Kg / acre	Variety	Type	Heading Date
2.90	AberClyde Organic	Perennial Ryegrass (T)	25 May
3.00	AberGreen Organic	Perennial Ryegrass	29 May
0.80	AberGain	Perennial Ryegrass (T)	04 Jun
2.40	AberBann	Perennial Ryegrass	05 Jun
3.90	AberChoice Organic	Perennial Ryegrass	09 Jun
1.00	AberPasture	White Clover Blend	
14.00			

Bio Red 5

Fig 20.

Bio Red 5:

T = Tetraploid

Kg / acre	Variety	Type	Heading Date
2.00	Solid Organic	Hybrid Ryegrass (T)	16 May
0.60	AberEdge	Hybrid Ryegrass (T)	23 May
4.00	AberClyde Organic	Perennial Ryegrass (T)	25 May
2.40	AberGreen Organic	Perennial Ryegrass	29 May
1.00	AberClaret	Red Clover	
2.00	Avisto	Red Clover	
12.00			

Aber HSG

Overseeding



Rejuvenate underperforming pastures with minimal time out of production. Short-term and long-term overseeding mixtures can establish quickly to produce better forage in challenging conditions.

Key benefits

- Increase production when a reseed isn't possible
- Grow high-performance, homegrown forage from Aber HSG varieties
- Rapid establishment
- Increased dry matter yields and D-value
- Suitable for all grazing stock (NB. unsuitable for horses)

Fig 21.

Aber HSG Long-Term Overseeding:

T = Tetraploid

Kg / acre	Variety	Type	Heading Date
3.00	AberSpey	Perennial Ryegrass (T)	29 May
3.00	AberGain	Perennial Ryegrass (T)	04 Jun
3.00	AberBite	Perennial Ryegrass (T)	05 Jun
1.00	AberDairy	White Clover Blend	
10.00			

Fig 22.

Aber HSG Short-Term Overseeding:

T = Tetraploid

Kg / acre	Variety	Type	Heading Date
5.00	AberEcho	Hybrid Ryegrass (T)	18 May
5.00	NEW AberImage	Hybrid Ryegrass (T)	27 May
10.00			

Aber HSG

Anaerobic Disgestion

Grass provides a cost-effective, environmentally sustainable feedstock for anaerobic digesters.

Compared to crops requiring annual cultivations, grass leys allow more opportunity to spread the liquid or solid waste product from digesters without the need to plough back in.

Key benefits

- Aber HSG varieties offer higher WSC content
- These AD mixtures generate a higher yield and rate of biogas production

Fig 23.

AD Short-Term:

T = Tetraploid

Kg / acre	Variety	Type	Heading Date
5.00	AberEve	Hybrid Ryegrass (T)	21 May
5.00	AberEdge	Hybrid Ryegrass (T)	23 May
4.00	AberClyde	Perennial Ryegrass (T)	25 May
14.00			

Fig 24.

AD Medium-Term:

T = Tetraploid

Kg / acre	Variety	Type	Heading Date
6.00	AberEve	Hybrid Ryegrass (T)	21 May
8.00	AberWolf	Perennial Ryegrass	27 May
14.00			

Fig 25.

AD Long-Term:

T = Tetraploid

Kg / acre	Variety	Type	Heading Date
5.00	AberWolf	Perennial Ryegrass	27 May
4.00	AberGreen	Perennial Ryegrass	29 May
5.00	AberBite	Perennial Ryegrass (T)	05 Jun
14.00			

Clover in the climate fight

Clovers are members of the legume family and have stand out advantages as a multi tasking forage option with environmental and economic benefits. Clovers in pasture can mitigate the negative effects of climate change by lowering reliance on the application of chemical fertiliser. They are also a great source of homegrown traceable protein.

With a heritage well beyond Germinal's almost 200 years, clover is not a new tool to agronomy but at Germinal Horizon we have invested in research to innovate it as a modern technology tool. Germinal DoubleRoot is a world first hybrid white clover with rhizomes and stolons, offering greater resilience to different climatic factors. This adaptive quality makes it a great choice in soils affected by water deficit or cold climate stress.

Dr Jo Matthews, Technical Trials Manager at Germinal Horizon Wiltshire, comments, "The most underutilised and undervalued crop on farms is clover. This climate friendly plant has the power to reduce your reliance on mineral fertiliser, to boost your homegrown protein supply and fundamentally reduce your outgoings and maximise your livestock production. It's a very simple thing to adopt and has huge potential from a sustainability perspective."

You will find links below to farmer profiles and technical information on using our exclusive red and white clover mixtures, both driving performance of livestock and supporting nutrient efficient protein production.



Scan or click [here](#) to view our online articles



Scan or click [here](#) to view our online Knowledge Hub



Red Clover

Red clover is a high-quality, cost-effective source of homegrown protein able to be grazed or cut and with the ability to fix nitrogen reducing the need for both bought-in feed and N fertiliser.

When cut, it typically has a dry matter (DM) percentage, metabolisable energy (ME) content and crude protein level above that of grass silage. With a protein content of 16-20% and containing an enzyme reducing protein breakdown in the clamp, it is an attractive option for feeding high-performing livestock.

Red clover also performs well in severe weather, its long taproot increases its resilience to cold and drought. In the dry summer of 2022, red clover was still producing 10-15 tonnes DM/ha in many areas. The long taproot also benefits soil structure and fertility.

One of its shortcomings has been its relatively short persistence in the sward but the new generation Germinal red clovers, including AberClaret, have overcome this problem.

Bred at Germinal Horizon in Aberystwyth, AberClaret lasts at least four years in a cutting sward and is significantly more tolerant of grazing. This longer productive life makes it more compatible with medium to long-term leys.



Scan or click [here](#) to view our full Red Clover Guide

Aled and Owain Rees

Clover has enabled 2022 BGS winners Aled and Owain Rees to go organic and cut costs with their west Wales dairy operation no longer using artificial nitrogen.

"We'd never have achieved what we have without clover. My father was a believer in it 30-40 years ago and we've continued using it ever since. It allowed us to go organic.

"We can't use inorganic nitrogen fertiliser, so all our nitrogen comes from clover and our own slurry. And with fertiliser prices where they are, this is benefiting us financially.

"We find red clover useful for recovering rented land if we take it on in poor condition and it worked well under some forage rye struggling on heavy ground. Direct drilling a red clover and perennial ryegrass mix really helped the rye pick up.

"We use Germinal's organic mixes with a high white clover content for grazing and a mixture of white and red clover in the silage fields. We were using older, short-term red clovers when we were in the Tir Gofal environmental scheme. Now we're focusing on dairy production with increased cow numbers, we're enjoying the newer, more persistent varieties.

"The high quality of our silage including the red clover has reduced our bought-in feed costs. We used to feed 18 or 21% cake in the parlour but this has dropped to 16% and could probably be 14% if we were brave enough."

Farm details

- Trefere Fawr, Cardigan, Wales
- Farming 950 acres total
- Split block calving herd (200 autumn, 100 spring)
- 100-head flying herd
- Average yield 7,333 litres with 4,010 from forage





White Clover

White clover increases the nutrient intake of livestock, particularly during the summer when grass productivity may be slowing down.

A high-quality source of protein, it supports constituent levels in dairy cows and drives performance in sheep and cattle.

Its strong, creeping stem makes white clover tolerant of grazing and enables the plant to store energy and protein over winter and into spring. It is also able to fix nitrogen, reducing the need for N fertiliser applications.

The Germinal white clover blends are leading the way in producing higher yields and lasting longer. Newer varieties are achieving optimum targets of a 30-35% contribution to total sward dry matter under a range of management systems, with five Germinal varieties found on the latest recommended grass and clover list.

* Specific blends are available on request

Key benefits

- Increased output of milk and meat from forage
- Improved soil structure and grazing quality
- Balanced grass/clover sward
- Suitable for a wide range of soil types and management systems
- Reduces reliance on artificial nitrogen



Scan or click [here](#) to view our full White Clover Guide



Fig 26.

AberDairy:
High production grazing and cutting

%	Variety	Type
11	AberHerald	Medium leaf
11	Liflex	Medium leaf
45	AberSwan	Medium-large leaf
33	AberDai	Medium leaf

Fig 27.

AberPasture:
Cattle set stocking and rotational sheep grazing

%	Variety	Type
15	Liflex	Medium leaf
10	AberPearl	Small-medium leaf
20	AberDai	Medium leaf
15	AberLasting	Small-medium leaf
5	AberAce	Small leaf
35	AberSwan	Medium-large leaf

Fig 28.

AberSheep:
Continuous or rotational grazing, upland and lowland

%	Variety	Type
50	AberLasting	Small-medium leaf
20	AberAce	Small leaf
15	AberPearl	Small-medium leaf
15	Rivendel	Small leaf



Alternative forage crops

Growing alternative forage crops is all about cost efficiency, helping to cut bought-in feed costs and fill feeding gaps. They complement efforts to improve grassland and produce high-quality grazing and grass silage, as a companion, break or following crop.

The wide variety of available brassicas ranges from leafy kales and forage rapes to root crops, including stubble turnips and swedes. They are a versatile feeding solution to fill summer grazing gaps, extend autumn grazing, or support outwintering systems taking the pressure off conserved forage stocks.

When used between grass leys, brassicas are an effective break crop, disrupting the life cycle of pests able to damage newly established leys.

Herbs such as chicory and plantain can be used in a mixed grazing sward to provide a high-quality feed rich in valuable minerals while protein-rich lucerne offers an alternative cutting crop.

Germinal also produces a range of seed mixtures which support farmers aiming to protect and enhance the natural environment and comply with government environmental schemes.

Benefits of Puna II

Perennial Chicory

Puna II is a forage crop for use as a pure stand or part of a mixed sward in medium to long-term rotational grazing.

Puna II perennial chicory is the superior choice of chicory when seeking a broad-leaved forage crop as part of a mixed sward with grass and clover or grown alone in a pure stand. It can boost growth rates and productivity to finish stock earlier. This perennial variety, bred in New Zealand, gives greater persistency lasting 2-5 years, longer than the short-lived common chicory.

Key benefits

- High digestibility to drive growth and productivity
- Capable of producing 10 tonnes dry matter/ha/year
- High-quality feed throughout the summer
- Valuable mineral content for optimal growth and development
- Suitable for finishing stock, calves and flushing ewes
- Long persistency of 2-5 years
- Rapid regrowth after grazing
- Tolerance to drought and disease
- Improved soil structure
- Good compatibility with perennial ryegrass



Fig 29.

Lamb Finisher:

Kg / acre	Variety	Type
0.50	Puna II	Perennial Chicory
0.50	Endure	Perennial Chicory
1.00	Tonic	Plantain
3.25	Global	Red Clover
5.25		

Key benefits

- 2-3 years intensive finishing mixture
- Red clover can contribute up to 150kg N/ha
- Full production from May to September
- High protein forage suitable for finishing early lambs

Fig 30.

Lamb Finisher with White Clover:

Kg / acre	Variety	Type
0.50	Puna II	Perennial Chicory
0.50	Endure	Perennial Chicory
1.00	Tonic	Plantain
2.50	Global	Red Clover
1.00	AberDairy	White Clover Blend
5.50		

Key benefits

- As Lamb Finisher, but with the added benefit of white clover to improve ground cover during late season
- 2-3 years duration

Fig 31.

Livestock Grazer:

T = Tetraploid

Kg / acre	Variety	Type
4.00	AberWolf	Perennial Ryegrass
3.95	AberEve	Hybrid Ryegrass (T)
0.40	Puna II	Perennial Chicory
0.40	Endure	Perennial Chicory
1.00	Tonic	Plantain
1.50	AberDairy	White Clover Blend
11.25		

Key benefits

- 3-4 year medium term ley
- Ideal for lambs, flushing ewes, beef finishing youngstock (or calves)
- The grasses in this mixture offer improved grazing and ground cover in autumn

Tonic

Plantain

Tonic plantain is an ideal forage herb in mixed species swards with Aber High Sugar Grasses and Germinal white and red clovers to boost growth and liveweight gain.

Tonic plantain is a protein and mineral-rich forage well suited to intensive or rotational grazing systems for dairy and beef cattle, sheep and finishing lambs. Its high protein and mineral content make it a nutritious addition to a mixed sward alongside Aber High Sugar Grasses and clovers.

Tonic plantain offers good spring and autumn growth, allowing a longer productive season, and shows rapid regrowth post-grazing.

Key benefits

- Suitable for all grazing stock
- Excellent nursing crop for ewes post-lambing
- High digestibility to drive intakes and growth
- Stimulates milk production
- Outstanding protein content and D-value
- High mineral content, particularly selenium and copper
- Drought tolerant



Soil and Animal Health

Herbs pack

Adding diversity to your leys with the Soil and Animal Health Herbs pack can increase the overall performance of a sward.

This pack's mixture of leguminous herbs helps you make the best use of the natural resources above and below ground. It will improve your soil health and structure by increasing the mixture of plants in your swards.

The increased plant activity will also reduce your nitrogen losses and increase your carbon capture, improving your overall environmental benefits across the farm.

Key benefits

- Suitable for all grazing stock
- Increased performance from a mixed sward
- Improved soil health and structure
- Drought tolerant
- Lower nitrogen losses and increased carbon capture, reducing environmental impact



Fig 32.

Soil and Animal Health Herbs Pack :

Germinal offers a 1kg herb inclusion pack that includes the following:

Puna II perennial chicory	Deep rooted, drought tolerant and mineral rich
Endure perennial chicory	Deep rooted, drought tolerant and mineral rich
Tonic plantain	Deep rooted, drought tolerant and mineral rich
Burnet	Deep tap root and mineral rich
Alsike clover	Nitrogen fixing legume
Sheeps Parsley	Deep rooted and mineral rich
Yarrow	Deep rooted and drought tolerant
Birdsfoot Trefoil	Mineral rich, anthelmintic properties
Black Medic	Low and prostrate nitrogen fixing legume



Sustainable Farming Incentive

We understand that government schemes can help farmers transition to sustainable farming practices that will unlock long-term benefits.

For English farmers, the Sustainable Farming Incentive (SFI) is back on the agenda following a series of government updates.

With SFI covering several areas, Germinal will be providing a range of mixtures in 2024, including options that are suitable for the actions for soils (SAM1-3). This is driven by Germinal Horizon's extensive research into formulating multi-species mixtures that are sustainable and productive.

SAM3 Herbal Leys can be claimed by establishing multi-species and we are ready to support applicants with a variety of mixtures. Below is an example of our core SAM3 mixture – scan the QR code on this page to see the full range on our website.

Please note that SFI rules are subject to change and that this mixture is, to our understanding, compliant at the time of publication.

Fig 33.

SAM3 Mixture:

Kg/pack	Variety	Type
1.00	AberNiche	Festulolium
4.00	AberGain	Perennial Ryegrass (T)
2.00	AberGreen	Perennial Ryegrass
2.10	AberZeus	Perennial Ryegrass
0.50	Comer	Timothy
0.50	Lucullus	Cocksfoot
0.50	Iliade	Soft Leafed Tall fescue
0.80	AberDairy	White Clover Blend
0.50	Global	Red Clover
0.10	Leo	Birdsfoot Trefoil
0.40	Tonic	Plantain
0.20	Puna II / Endure	Perennial Chicory Blend
0.15	Burnet	Burnet
0.10	Yarrow	Yarrow
0.15	Sheeps Parsley	Sheeps Parsley
13.00		



Scan or click [here](#) to view our current SFI mixtures online



Multi-species mixtures that perform

Germinal Horizon builds on variety development by looking to mixture formulation and farming practices to provide cutting-edge climate smart solutions.

This has been central to our development of multi-species mixtures. In multi-year trials, we have tested numerous combinations to determine what's effective and guide formulation.

In some cases, mixtures were producing around 19 tonnes of dry matter per hectare. As for establishment, we found spring can be more effective than summer due to herbs needing warmer temperatures to germinate and grow.

We have also received independent validation for our multi-species mixtures. In a 2022 lamb growth rate trial, AHDB found that Germinal's GS4 Legume and Herb-Rich Sward mixture outperformed the alternatives with 372 g liveweight gain (LWG) per day and 20.8 kg total LWG over 56 days.

What also stands out is that the trial was conducted during drought conditions, highlighting the need for multi-species mixtures that produce nutritious homegrown forage, even in dry conditions.

With our multi-species trials ongoing, Germinal is ready to meet the challenge of formulating SFI-eligible mixtures that deliver production, improve soil health and offer climate smart performance in challenging weather conditions.



Maris Kestrel

Kale

Maris Kestrel

Kale is a high-quality, cost-effective winter feed for all classes of stock.

It can also help overcome grass shortages towards the end of summer. This high-yielding, high leaf-to-stem ratio variety is highly digestible so is suitable for grazing.

Key benefits

- High palatability driving intakes
- Good cold weather and frost tolerance
- Stems resistant to lodging
- Ideal for outwintering

Variety

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

Swift

Redstart

Hybrid brassicas

Swift and Redstart

If you're looking for a flexible, cost-effective forage crop, hybrid brassicas are a new interspecies of kale and rape, ideal for high energy grazing of cattle and sheep.

The crop grows quickly and vigorously, offering grazing options from July to around the end of January depending on sowing date.

Key benefits

- High energy and protein
- Suitable for cattle and sheep
- Good cold weather and frost tolerance
- Good late season yields

Variety

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

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

Appin

Grazing turnip

Appin

Grazing turnip offers a flexible feeding option reducing reliance on concentrates during the autumn and winter.

It can be used as a catch crop during summer shortfalls.

Key benefits

- High palatability and easy to digest driving intakes
- Suitable for cattle and sheep
- Fast growing with excellent regrowth potential offering versatile grazing
- Wide sowing window

Variety

Appin Drill at 2kg/acre from March to mid-September. Feed from May to December.

Vollenda

Stubble turnip

Vollenda

Stubble turnip is another cost-effective feeding solution in summer, autumn or winter for sheep or cattle.

As well as providing a main crop, it can be used as a catch crop during summer grazing shortfalls.

Key benefits

- High energy and protein
- Suitable for cattle and sheep
- Easy establishment and quick growth
- Good clean grazing for lambs

Variety

Vollenda Drill at 2-3kg/acre from May to the end of August. Feed from July to the following January.



Swede

Triumph

A high-yielding feed suitable for outwintering all classes of stock.

Key benefits

- High energy feed for cattle and sheep
- Outstanding dry matter yields
- Good cold weather tolerance

Variety

Triumph Drill at 1kg/acre for natural seed drill from mid-May to end of June. Feed from December to March.

Stego

Forage rape

Stego

Rape is a fast-growing, high protein feed particularly well-suited to finishing lambs.

It also offers potential for extended grazing of cattle through summer, autumn and winter.

Key benefits

- High leaf-to-stem ratio
- Excellent disease resistance
- Suitable for outwintering

Variety

Stego Drill at 2.5kg/acre (or broadcast at 4kg/acre) from March to July. Feed from June to December.

Aled Evans

Aled Evans' motivation for using a brassica crop is twofold. As well as a good break crop before a grass reseed, it provides a valuable source of homegrown, high-protein forage when demand is high.

"Adding a brassica crop into our rotational grazing system suits us well. To avoid taking land out of the grazing platform for too long, we use the hybrid brassica Redstart. Its ability to establish aggressively, achieving a good yield relatively quickly means we can start grazing it in just a few weeks.

"We aim to graze for 270 days a year, using a mixture of high-sugar grasses, white clover and plantain, alongside red clover and forage crops.

"If we buy in more store lambs, we plant the forage crop in autumn for use in January and February before a spring reseed. But if we have more breeding ewes, we sow a forage crop in spring, such as Vollenda stubble turnip or Redstart, to satisfy the lambs and ewes in the drier summer months. We then reseed in the autumn.

"Most recently we've followed the spring-sown Vollenda stubble turnips with an autumn reseed of Aber HSG, plantain, timothy, white clover and red clover."

Farm details

- Rest Farm, Carmarthenshire
- 550 acres
- 650 cattle as part of beef rearing and finishing unit
- 750 New Zealand Romney and Highlander breeding ewes
- Additional store lambs
- 128 acres as a TechnoGrazing platform





Brassica mixtures

Brassica mixtures 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.

Key benefits

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

Fig 34.

Winter Feed:

Kg/acre	Variety	Type
1.00	Maris Kestrel	Kale
1.00	Swift	Hybrid Brassica
2.00		

Fig 35.

Late Sown Winter Feed:

Kg/acre	Variety	Type
0.75	Swift	Hybrid Brassica
0.75	Redstart	Hybrid Brassica
0.65	Appin	Leafy Turnip
0.10	Maris Kestrel	Kale
2.25		

Fig 36.

Autumn Multigraze:

Kg/acre	Variety	Type
1.25	Swift	Hybrid Brassica
0.90	Appin	Leafy Turnip
0.10	Maris Kestrel	Kale
2.25		

Fig 37.

Summer Multigraze:

Kg/acre	Variety	Type
0.50	Appin	Leafy Turnip
1.00	Swift	Hybrid Brassica
0.90	Stego	Forage Rape
0.10	Maris Kestrel	Kale
2.50		

Find out more

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

[geminal.com](https://www.geminal.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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