agrovista seeds

Grass Seed Mixtures

2023

growing through ***innovation***

techni sward GRASS SEED

agrovista seeds

2022 was a record-breaking year. Input costs soared to heights never experienced before and the weather throughout much of the country was the driest and hottest on record.

Optimising production from forage has never been more important and quality grass leys are central to the profitability of any ruminant livestock enterprise.

The TechniSward range of grass leys are designed to be highly productive and have resilience built in. They contain only the best varieties from the BSPB/AHDB recommended lists, the SRUC Scottish lists and the Teagasc PPI index. Quality and innovation are at the forefront of our mixtures, and we are proud to support the SRUC via the levy payment and the British Grassland society through corporate membership. TechniSward grass mixtures combine varieties with high fibre digestibility and high sugar to ensure maximum animal performance and make use of the latest grass breeding innovations to produce a sward that will stand up to the rigours of an increasingly unpredictable climate.

Agrovista have specialist technical advisors to help you choose the correct grass mixture for your needs. In addition, our agronomists can help ensure your soils and inputs are tailored to obtain maximum return for your investment in grassland.

Please contact your local Agrovista agronomist or contact enquiries@agrovista.co.uk for further details.

techni sward GRASS SEED

Contents

The technology behind TechniSward

Combining high sugars and cell wall digestibility

Agrovista works with leading seed breeders to produce seed mixtures that combine the best production and quality traits available.

Using varieties that contain higher levels of water-soluble carbohydrates (sugars), allows the rumen bacteria to convert more of the plant protein into meat and milk, meaning less protein is wasted, resulting in improved performance and lower ammonia and methane emissions.

Cell wall components contain up to 60% of the energy found in a grass plant, and it is for this reason that ruminants developed their multi chambered digestive tract, enabling them to make use of cell wall carbohydrates, something no other mammal can do. Using grass varieties that exhibit greater cell wall digestibility means that much more of the plants' energy is available for rumen fermentation.

The combination of high sugar and available cell wall carbohydrates make TechniSward grass leys some of the most productive, cost effective and environmentally friendly options available.

In an age when environmental responsibility is as important as food security, being able to produce sustainable, energy and protein rich food for a growing population from grasses and legumes that we ourselves cannot eat, and often from ground upon which we cannot grow food crops for human consumption makes perfect sense.

Added to this grasses and forage legumes are also very good at recycling and storing carbon, removing greenhouse gasses from the environment, and helping to combat climate change.

Festuloliums

A festulolium is a type of intergeneric hybrid that possesses a wider range of agronomic traits than traditional interspecific hybrids.

The word festulolium comes from the Latin names for fescue; *Festuca* and ryegrass; *Lolium*. The parent plants of a festulolium can be any ryegrass crossed with any type of fescue. The most common crosses are between Italian or perennial ryegrass and meadow fescue or tall fescue.

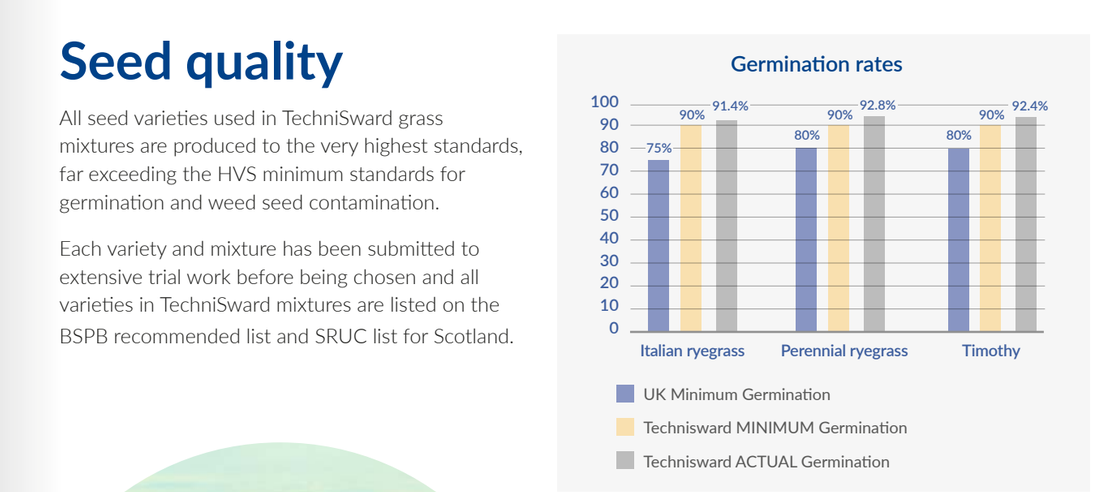
The resulting hybrids demonstrate:

- Greater stress tolerance
- Deeper roots
- Improved disease resistance
- Higher yields (up to 3 tonnes more DM per year compared to the parent ryegrass)
- Higher levels of hybrid vigour

Seed quality

All seed varieties used in TechniSward grass mixtures are produced to the very highest standards, far exceeding the HVS minimum standards for germination and weed seed contamination.

Each variety and mixture has been submitted to extensive trial work before being chosen and all varieties in TechniSward mixtures are listed on the BSPB recommended list and SRUC list for Scotland.



TechniSward mixtures could contain up to 1 million more viable seeds per acre compared to the government minimum standard

Why replace your grass leys

- *Over time sown species die off leaving space that is taken up by weed grasses and broad-leaved weeds*
- *A typical 5-year-old ley contains only 50% of the original sown species*
- *Reductions in energy yield and energy density add up to an annual loss of c86,400 MJ of energy per hectare. Equivalent to six and a half tonnes of concentrate feed*
- *New grass leys grow more vigorously and respond better to fertiliser inputs, thus reducing wastage and cost as well as reducing environmental impact*
- *The addition of clover following effective weed control can also provide up to 250 kg of Nitrogen per hectare annually*

Overseeding and clover mixtures

Key benefits

- Cost effective solution where a short-term boost to production is needed
- Enables rejuvenation of worn-out pastures where ploughing is not an option
- Effective means of establishing clover into a sward after weed control has been carried out

Overseeding, or "stitching in" of a new ley into an old sward can bring multiple benefits.

Over time swards naturally lose their vigour and become open in the bottom. This space is quickly taken up with weed grasses and broad-leaved weeds reducing the productivity of the sward.

Overseeding offers a cost-effective solution without the loss of production or cost associated with a complete reseed.

Introducing Clover

Clover safe sprays are now virtually non-existent and so introducing clover into a new ley by overseeding after weed control has been carried out is a cost effective and practical solution to this problem.

Typically, overseeding white clover at 3.5kg/ha will provide sufficient clover in the established sward to boost protein yield, increase dry matter intakes and provide up to 180kg/ha of nitrogen.

Establishment

The key to success with overseeding is achieving a good seed to soil contact and reducing competition from existing grasses. Therefore, the optimum time for overseeding is in mid-summer when grass growth slows, as long as moisture is present.

Overseeding immediately after a defoliation, either by cutting or grazing but not topping is advised and scarification to remove thatch and shallow rooted weed grasses is also highly beneficial. Livestock can continue to graze after sowing thus reducing competing grasses. Upon seedling emergence stock must however, be removed or they will take out the emerging seedlings.

Specialist overseeding drills are now widely available and are by far the best means of establishment, though a grass harrow with an air seeder attached can do a good job, especially with clover seed. Rolling, ideally with a Cambridge roll is a must with all establishment methods.

TechniSward **GrassMax™ cut**

- Specialist cutting mixture providing up to a three-year boost to production
- Available with red or white clover

30% Lofa *Festulolium*

35% Tetragraze *(T) Hybrid ryegrass*

35% Nolwen *(T) Intermediate perennial ryegrass*

Optional Red Clover

Optional White Clover

TechniSward **GrassMax™ dual purpose**

- Suitable for grazing or dual-purpose leys providing up to four years production
- Available with 10% white clover

35% Tetragraze *(T) Hybrid ryegrass*

35% Hurricane *(T) Late perennial ryegrass*

30% Nolwen *(T) Intermediate perennial pyegrass*

Optional White Clover

TechniSward **clover blends**

- TechniSward clover blends can be added to any grass mixture or be used for overseeding into new leys following weed control or for boosting clover content in existing swards

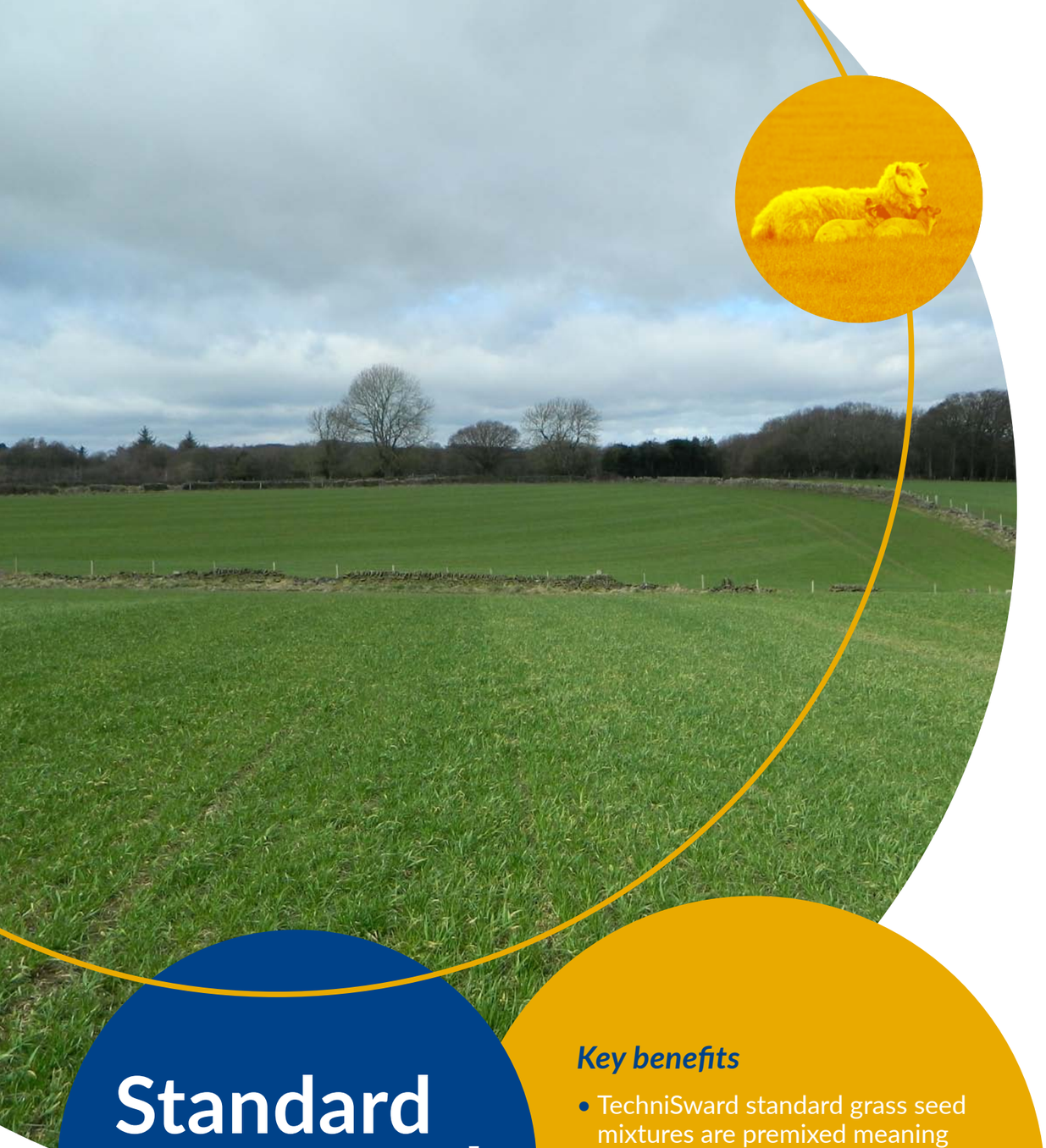
White clover blends	Grazing	Dual purpose	Cutting
Small	54%	27%	-
Medium	46%	23%	-
Large	-	30%	60%
Very large	-	20%	40%

Red clover blend	
Diploid	70%
Tetraploid	30%

Mixture selector

Mixture	Page	Cutting	Grazing	Duration (years)	Clover options	Organic version	Diploid: Tetraploid ratio
Catch crop	11	✓✓✓✓	✓	1 - 2			50:50
Turbo charge	11	✓✓✓✓	✓	2 - 3	Red 15%		15:85
Multi- Cut Plus	12	✓✓✓✓	✓	3 - 4	Red 25%	✓	0:100
Super Cut	12	✓✓✓✓	✓	4 - 5	Red 20%		25:75
Endurance	13	✓✓✓✓	✓✓✓	5	White 7%		20:80
Dual purpose	14	✓✓✓	✓✓✓✓	6	White 6%		62:38
Cut and Graze	14	✓✓✓✓	✓✓✓	6	White 6%	✓	38:62
HS Intensive graze	15	✓✓	✓✓✓✓	5+	White 7%		53:47
Early bite	16	✓✓	✓✓✓✓	6+	White 7%		58:42
Long term	16	✓✓	✓✓✓✓	6+	White 6%	✓	64:36
Hay maker	17	✓✓✓✓	✓✓	5+			100:0
Haylage	17	✓✓✓✓	✓	2			35:65
Drought prone	19	✓✓✓	✓✓✓✓	4 +	Std		
Flood prone	19	✓✓✓	✓✓✓✓	4 +			
Herbal light land	21	✓	✓✓✓✓	4+			
Herbal med-heavy land	21	✓	✓✓✓✓	4 +			
Maize undersowing	23		✓✓	0.5 - 3			
Horse paddock	25	✓	✓✓✓✓	5+			
Herbal horse paddock	25		✓✓✓✓				
Forage crops	26-28		✓✓✓✓				
Amenity mixtures	29			7+			

Std = Included as standard



Standard grass seed mixtures

Key benefits

- TechniSward standard grass seed mixtures are premixed meaning that delivery lead times are shorter than with bespoke mixtures
- Mixtures designed to fit most situations, eliminating the need for more costly bespoke mixtures
- Tried and tested over time meaning complete reliability

TechniSward **Catch crop**

1-2 years

50% Sikem *Italian ryegrass*

50% Turgo *Tetraploid Italian ryegrass*

Italian ryegrass blend specifically designed to fill short term gaps in a crop rotation

✓	Intensive cutting		Beef grazing
✓	Cutting		Sheep grazing
	Dairy grazing	✓	Aftermath grazing

- Minimum suggested sowing rate of 12kg/acre (30kg/ha)
- Provides good early production for cutting or grazing
- Can be autumn or spring sown
- Vigorous establishment and winter hardiness lends to sowing after maize
- High sugar content provides a rapid lactic fermentation

TechniSward **Turbo charge**

2-3 years

Variety	Heading date
Hunter *(T) Italian ryegrass*	19th May
Alamo *Italian ryegrass*	21st May
Perseus *Festulolium*	25th May
Astoncrusader *(T) Hybrid ryegrass*	19th May

A highly productive intensive cutting ley suitable for aftermath grazing

✓	Intensive cutting		Beef grazing
✓	Cutting		Sheep grazing
	Dairy grazing	✓	Aftermath grazing

- Minimum suggested seed rate 14kg/acre (35kg/ha)
- 6 day spread of heading dates for optimum silage quality
- Intensive cutting with good aftermath grazing
- Quick recovery after cutting
- Ideal for haylage production
- Contains Perseus Ryegrass Plus™ for yield, persistency and disease resistance
- 15% red clover option available

Optional Red Clover

TechniSward **Multi cut plus**

3-4 years

High production specialist multi cutting mixture containing 100% ryegrass plus festuloliums

✓	Intensive cutting		Beef grazing
✓	Cutting		Sheep grazing
	Dairy grazing	✓	Aftermath grazing

- 5 day spread of heading date for optimum quality
- Minimum suggested seed rate 14kg/acre (35kg/ha)
- 4-6 cuts per year plus aftermath grazing
- High sugar content provides a rapid lactic fermentation and drives intakes
- 25% red clover option available
- Up to 3.5 tonnes/ha more dry matter from ryegrass plus varieties compared to standard Italian ryegrass
- Organic version available

Variety	Heading date
Lofa *Festulolium*	22nd May
Perseus *Festulolium*	25th May
Perun *Festulolium*	21st May

Optional Red Clover

ORGANIC VERSION AVAILABLE

TechniSward **Super cut**

4-5 years

Medium term mixture for cutting with excellent quality aftermath grazing

✓	Intensive cutting		Beef grazing
✓	Cutting		Sheep grazing
	Dairy grazing	✓	Aftermath grazing

- Minimum recommended sowing rate 14kg/acre (35kg/ha)
- Huge yield potential
- Suitable for Multicut systems and zero grazing
- High sugar content provides a rapid lactic fermentation and drives intakes
- Now available with 20% red clover

Variety	Heading date
Lofa *Festulolium*	22nd May
Astoncrusader *(T) Hybrid ryegrass*	19th May
Boyne *Intermediate perennial ryegrass*	21st May
Seagoe *(T) intermediate perennial ryegrass*	23rd May

Optional Red Clover

TechniSward **Endurance**

5+ years

A specialist long term cutting mixture that also provides high quality grazing

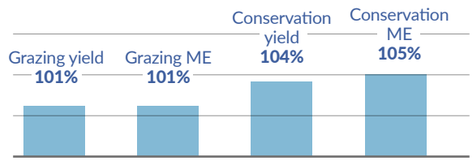
	Intensive cutting		Beef grazing
✓	Cutting		Sheep grazing
✓	Dairy grazing	✓	Aftermath grazing

- Minimum recommended sowing rate 15kg/acre (37kg/ha)
- Incredibly dense hard-wearing sward
- Huge yield potential over multiple cuts
- High sugar content provides a rapid lactic fermentation and drives intakes
- 7 day spread of heading dates for optimum quality
- Excellent cell wall digestibility means that quality is maintained for longer if cut ting is delayed
- White clover option available

Variety	Heading date
Agaska *Intermediate perennial ryegrass*	30th May
Diwan *(T) Intermediate perennial ryegrass*	30th May
Nashota *(T) Late perennial ryegrass*	5th June
Gracehill *(T) Late perennial ryegrass*	2nd June

Optional White Clover

Endurance performance



Figures expressed as a percentage of perennial ryegrass bench-mark figures from the AHDB/BSPB recommended lists

Endurance has now been a part of the TechniSward offering for two years and is proving to be a huge success. First year sales were exceptional for a new mixture and the second year saw volumes more than double, with repeat orders making up a large part of that volume.

The combination of high yields, high levels of water-soluble carbohydrates and excellent cell wall digestibility together with class leading ground cover set it apart from the crowd.

TechniSward **Dual purpose**

5+ years

A truly dual-purpose mixture. Denser than Cut and Graze and therefore more suited to long periods of grazing

	Intensive cutting	✓	Beef grazing
✓	Cutting	✓	Sheep grazing
✓	Dairy grazing	✓	Aftermath grazing

- Minimum suggested sowing rate of 15kg/acre (37kg/ha)
- Suitable for all classes of grazing livestock
- Capable of producing 2-3 cuts of quality silage or haylage
- 62% diploid varieties ensures tremendous sward density
- Season long performance
- White clover option available

Optional White Clover

Variety	Heading date
AberZeus *Intermediate perennial ryegrass*	27th May
AberSpey *(T) Intermediate perennial ryegrass*	30th May
Cancan *Late perennial ryegrasss*	12th June
Wetherby *Late perennial ryegrass*	2nd June
Nashota *(T) Late perennial ryegrass*	5th June
Thegn *(T) Late perennial ryegrass*	6th June

TechniSward **Cut and graze**

5+ years

High yielding multi-purpose mixture with a slight leaning towards more cutting than grazing

	Intensive cutting	✓	Beef grazing
✓	Cutting		Sheep grazing
✓	Dairy grazing	✓	Aftermath grazing

- Minimum recommended sowing rate 14kg/acre (35kg/ha)
- 62% Tetraploid inclusion provides sugars for a rapid fermentation
- 2-4 cuts plus quality grazing
- High inclusion of DLF Fiber Energy™ varieties gives flexibility around cutting dates without compromising digestibility
- White clover option available
- Organic version available

Optional White Clover

ORGANIC VERSION AVAILABLE

Variety	Heading date
Galgorm *Intermediate perennial ryegrass*	23rd May
Diwan *(T) Intermediate perennial ryegrass*	30th May
Seagoe *(T) Intermediate perennial ryegrass*	23rd May
Agaska *Intermediate perennial ryegrass*	30th May
Nashota *(T) Late perennial ryegrass*	5th June

TechniSward **HS intensive graze**

6+ years

A medium to long term specialist grazing mixture for rotational grazing systems

	Intensive cutting	✓	Beef grazing
✓	Cutting		Sheep grazing
✓	Dairy grazing		Aftermath grazing

- Minimum recommended sowing rate 15kg/acre (37kg/ha)
- 100% Aber High Sugar grasses
- Produces a dense, palatable, and highly digestible sward that produces right through the season
- Paddocks can be shut up to produce excellent quality silage
- White Clover option available

Optional White Clover

Variety	Heading date
AberZeus *Intermediate perennial ryegrass*	27th May
AberSpey *(T) Intermediate perennial ryegrass*	30th May
AberBann *Late perennial ryegrass*	7th June
AberGain *(T) Late perennial ryegrass*	5th June

Intensive graze performance

Figures expressed as a percentage of perennial ryegrass bench-mark figures from the AHDB/BSPB recommended lists

Intensive graze has been designed to meet the demands of extended grazing systems using only Germinal High Sugar Grasses.

Varieties have been selected to give exceptional production at both ends of the grazing season and include AberGain which is the top performing late tetraploid on both the Teagasc PPI list and the BSPB recommended list

TechniSward **Early bite**

6+ years

A specialist long-term, hard-wearing mixture that will produce quality forage over a long grazing season

	Intensive cutting	✓	Beef grazing
✓	Cutting	✓	Sheep grazing
	Dairy grazing		Aftermath grazing

Variety	Heading date
Galgorm *Intermediate perennial ryegrass*	23rd May
AberSpey *(T) Intermediate perennial ryegrass*	30th May
AberZeus *Intermediate perennial ryegrass*	27th May
Fojtan *Festulolium*	20th May
Nashota *(T) Late perennial ryegrass*	5th June
Dolina *Timothy*	8th June

- Optimum suggested sowing rate of 15kg/acre (37kg/ha)
- Excellent early production that persists throughout the season and well into the autumn
- Produces a dense highly palatable sward
- Fojtan Festulolium helps to make this mixture very drought tolerant
- Timothy provides early grazing up to a month ahead of ryegrasses
- Available with white clover or white clover and plantain

Optional White Clover

Optional Plantain

TechniSward **Long term**

6+ years

An extremely versatile long-term mixture that will thrive in any area of the UK

	Intensive cutting	✓	Beef grazing
✓	Cutting	✓	Sheep grazing
✓	Dairy grazing	✓	Aftermath grazing

Variety	Heading date
Galgorm *Intermediate perennial ryegrass*	23rd May
AberZeus *Intermediate perennial ryegrass*	27th May
Diwan *(T) Intermediate perennial ryegrass*	30th May
Cancan *Late perennial ryegrass*	12th June
Thegn *(T) Late perennial ryegrass*	6th June
Nashota *(T) Late perennial ryegrass*	5th June
Dolina *Timothy*	8th June

- Minimum suggested sowing rate of 15kg/acre (37kg/ha)
- Timothy provides highly palatable early bite
- A dense and durable sward that will withstand hard grazing
- Persistent and winter hardy
- White clover option available
- Organic version available

Optional White Clover

ORGANIC VERSION AVAILABLE

TechniSward **Haymaker**

5+ years

Specialist hay mixture with 100% diploid varieties, ensuring rapid, even drying

Variety	Heading date
Fojtan *Festulolium*	20th May
Agaska *Intermediate perennial ryegrass*	30th May
Boyne *Intermediate perennial ryegrass*	21st May
Cavendish *Late perennial ryegrass*	5th June
Laura *Meadow fescue*	5th June
Dolina *Timothy*	8th June

- The inclusion of Timothy and Meadow fescue produces a fine quality, palatable hay with a pleasant aroma
- Fojtan festulolium, though early heading, possesses excellent cell wall digestibility meaning forage quality is maintained longer
- Provides a very dense sward suitable for winter sheep grazing

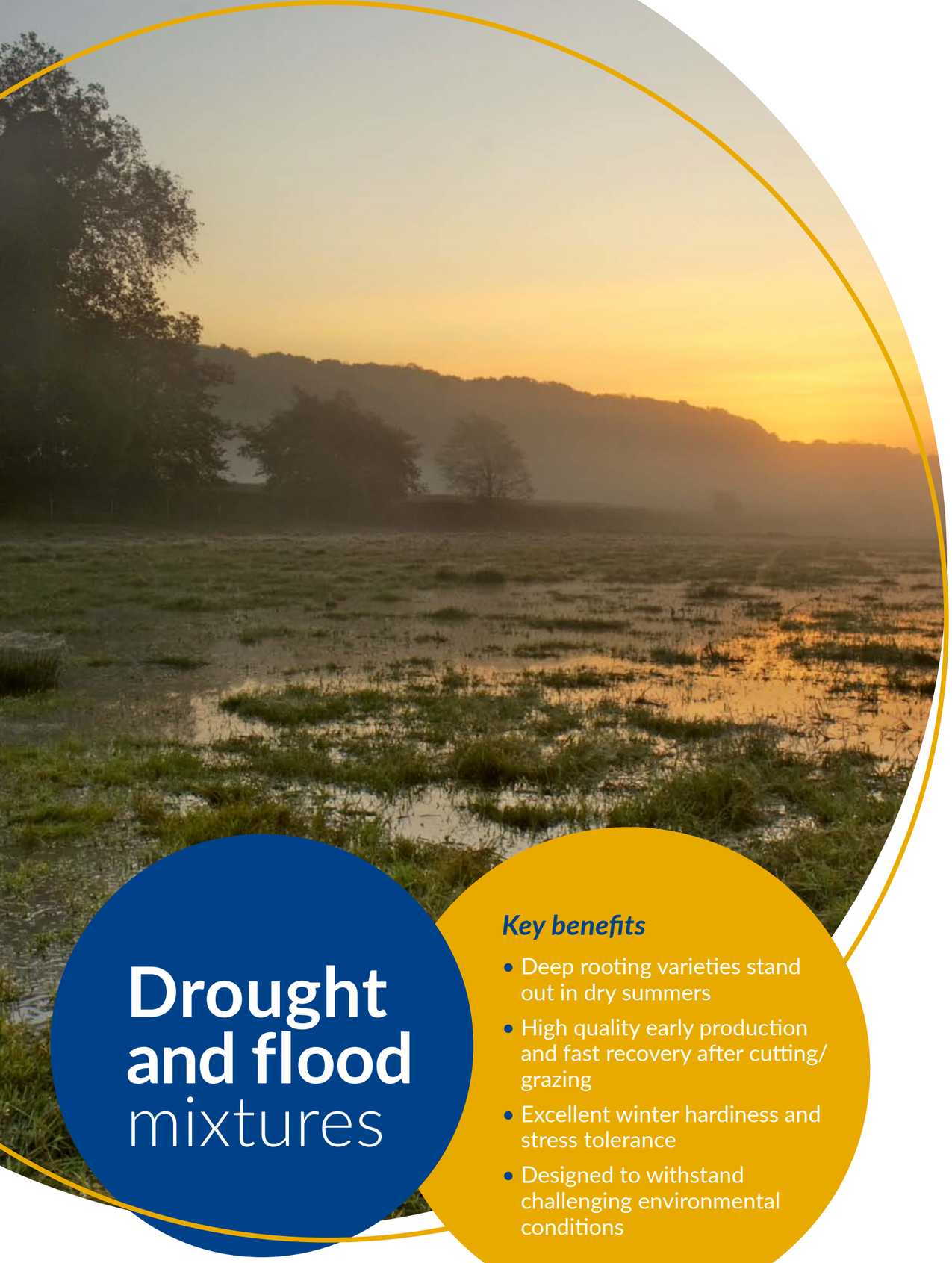
TechniSward **Haylage**

2 years

Specialist haylage mixture will produce three to four cuts of quality haylage suitable for all livestock

Variety	Heading date
Alamo *Italian ryegrass*	21st May
Hunter *(T) Italian ryegrass*	19th May
Cazzano *(T) Italian ryegrass*	21st May

- Produces excellent coarse hay/haylage suitable for the equine market
- High tetraploid inclusion ensures a rapid fermentation when wrapped
- Provides good quality aftermath grazing
- Over grazing should be avoided as with all tetraploid grasses



Drought and flood mixtures

Key benefits

- Deep rooting varieties stand out in dry summers
- High quality early production and fast recovery after cutting/ grazing
- Excellent winter hardiness and stress tolerance
- Designed to withstand challenging environmental conditions

TechniSward **Extreme drought prone**

5+ years

Fojtan *Festulolium*

Hipast *Festulolium*

Nolwen *(T) Intermediate perennial ryegrass*

Thegn *(T) Late perennial ryegrass*

Donata *Soft leaved cocksfoot*

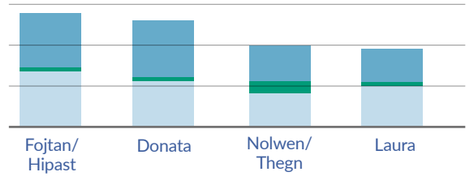
Laura *Meadow fescue*

Grazing white clover blend

A specialist long term grazing mixture that can withstand long periods of hot dry weather

- Minimum recommended sowing rate 15kg/acre (37kg/ha)
- Incredibly dense hard-wearing sward
- Contains deep rooting varieties including Fojtan and Hipast tall fescue plus™ festuloliums
- White clover helps maintain ground cover, reducing moisture losses to evaporation

Drought tolerance mechanisms



TechniSward **Extreme flood prone**

5+ years

Fojtan *Festulolium*

Hipast *Festulolium*

Dolina *Timothy*

Bowie *Late perennial ryegrass*

Donata *Soft leaved cocksfoot*

Laura *Meadow fescue*

Evora *Smooth stalked meadow grass*

Maxima *Creeping red fescue*

A specialist long term grazing mixture specifically designed for flood prone land

- Minimum recommended sowing rate 15kg/acre (37kg/ha)
- Incredibly dense hard-wearing sward
- Contains deep rooting varieties including Fojtan and Hipast tall fescue plus™ festuloliums
- Creeping red fescue helps to prevent soil erosion due to its extensive creeping stolons
- All varieties are proven to be winter hardy, give good ground cover and have excellent stress tolerance

Herbal grazing mixtures

Key benefits

- Improvements in soil structure and fertility
- Drought tolerance
- Improved animal performance and health
- Good for building soil carbon stocks
- May be suitable for environmental schemes

Drought Tolerance

Diverse swards containing a range of grasses, herbs and legumes have a wide range of root types and depths, from shallow fibrous roots to deep penetrating tap roots that can extend to several metres below ground, breaking through compacted soil to reach moisture at levels that ryegrass could never reach.

Additionally; the diverse root structures in herbal leys help to build soil organic matter and for every 1% increase the soils water holding capacity can increase by up to 188,000l per hectare.

Soil Health and Fertility

Diverse herbal mixtures are made up of multiple stratified layers both above and below ground with the different species growing to different heights within the sward and with varying leaf sizes and shapes. This allows for maximum capture of sunlight whatever the time of day and position of the sun. This in turn means that more CO^2 and water are converted to sugars. Sugar that is surplus to the plants requirements is released into the soil around the roots and is used by the mycorrhizal fungi encouraging them to colonise the area around the roots where they form a symbiosis with the plant which helps the plant to make use of soil nutrients such as phosphorous.

Animal Health and Performance

Diverse swards containing herbs and legumes benefit livestock performance in several different ways:

- Legumes are protein rich and have the benefit of fixing N
- The deep roots of many of the species bring up essential minerals, trace elements and vitamins from deep within the soil
- Some legumes are bioactive meaning that they contain condensed tannins or polyphenol oxidase. These compounds can protect protein from rumen fermentation meaning that the risk of bloat is reduced, and the protein is degraded in the hind gut where it is used more efficiently by the animal, losses to methane are also reduced
- Protein losses in conserved forages is reduced meaning there is more available for livestock
- Some herbs and legumes have anthelmintic properties, and so reduce parasitic worm burdens
- The diverse nature of the sward tends to drive up utilisation and dry matter intakes

TechniSward **Herbal light land**

GS4 compliant

20% Fojtan *Perennial plus festulolium*	**4% Lucerne**
14% Nolwen *(T) I PRG*	**1.5% Birds foot trefoil**
16% Donata *Cocksfoot*	**3.5% Plantain**
7% Winnetou *Timothy*	**1% Chicory**
4% Laura *Meadow fescue*	**1.75% Sheeps burnet**
10% Red clover blend	**1% Sheeps parsley**
16% Sainfoin	**0.25% Yarrow**

TechniSward **Herbal medium to heavy land**

GS4 compliant

25% Lofa *Hybrid plus festulolium*	**3% Birds foot trefoil**
22% Nolwen *(T) L PRG*	**4% Plantain**
10% Winnetou *Timothy*	**2.5% Sheeps burnet**
12% Donata *Cocksfoot*	**1% Chicory**
5% Laura *Meadow fescue*	**1% Sheeps parsley**
10% Red clover blend	**0.25% Yarrow**
4% Alsike clover	**0.25% Black medick**

Maize undersowing mixtures

Key benefits

- Reduce nitrate leaching
- Potential for better digestate utilisation
- Improves soil structure
- Helps to reduce soil erosion
- Increase soil organic matter levels
- Potential for winter livestock grazing

Concerns around the environmental impact of growing a maize crop need to be taken seriously and treated as a matter of priority

Future environmental legislation may well require that maize stubbles are protected from soil erosion and nutrient leaching by utilising cover crops. Establishing a cover crop after maize has been harvested, especially in a late season where weather conditions have deteriorated is a significant challenge.

Undersowing the maize crop with a grass seed mixture designed specifically for that purpose has proved to be successful when done correctly. It is imperative to sow at the right time with the right species so the growing crop isn't affected.

TechniSward **Soilmax**

At sowing

45% Fojtan *Tall fescue plus*

55% Tower *Tall fescue*

- Specifically designed to be drilled at the same time as the maize crop (inter-row)
- The slower germinating tall fescue and tall fescue plus helps to suppress weed emergence without competing with the maize
- As the grasses mature the root mass develops, helping retention of any residual nutrients which are left in the soil post-harvest
- The deep rooting grass species help to improve soil structure
- Sow at 3 to 5kg/acre (7.5–12.5kg/ha)

TechniSward **Enviromax**

4-6 leaf stage

70% Hopi *Tetraploid late perennial ryegrass*

30% Fojtan *Tall fescue plus*

- An under-sown mix which is more suited to being sown inter-row once the maize has established and is at the 4-6 leaf stage
- The inclusion of perennial ryegrass helps to ensure the quicker and more reliable establishment needed to survive in the growing maize crop
- It is important that the grass is established before the maize canopy fully develops
- Excellent ground cover post-harvest with a fibrous root system for soil stabilisation
- Capable of providing high quality winter grazing
- Sow at 3 to 5kg/acre (7.5–12.5kg/ha)

Equine mixtures

Key benefits

- Lower sugar, no ryegrass mixtures
- Highly palatable
- Dense and hard wearing
- Drough tolerant
- Long growing season

TechniSward **Horse paddock**

26% Fojtan *Tall Fescue plus festulolium*

14% Winnetou *Timothy*

16% Donata *Soft leaved cocksfoot*

21% Evora *Smooth stalked meadow grass*

15% Maximan *Creeping red fescue*

8% Laura *Meadow fescue*

A persistent and hard-wearing, ryegrass free paddock mixture that is low in the plant sugars that can cause laminitis in horses

- Though slower to establish than mixtures containing ryegrasses, this mixture will be incredibly dense and resilient once established and will be more drought tolerant than ryegrass mixtures, reducing the need for supplementary feeding during dry summers
- The relatively small seed size of these grasses means that a sowing rate of 14kg/acre will provide a sufficient plant density in most situations. Jumping paddocks and other high traffic areas should be sown at 17-20kg/acre

TechniSward **Herbal horse paddock**

26% Fojtan *Tall Fescue plus Festulolium*

14% Winnetou *Timothy*

12% Donata *Soft leaved cocksfoot*

20% Evora *Smooth stalked meadow grass*

12% Maximan *Creeping red fescue*

8% Laura *Meadow fescue*

2% Ribwort plantain

2.5% Birds foot trefoil

1.75% Sheeps burnet

1.5% Sheeps parsley

0.25% Yarrow

A mixture of traditional grasses, herbs and legumes designed for competition horses and brood mares

- The addition of beneficial herbs and the bioactive legume Birdsfoot Trefoil have been shown to improve health and performance in competition horses. Diverse herb rich swards supply essential minerals such as copper via Yarrow. Copper deficiency in pregnant mares during the third trimester has been linked to Developmental Orthopaedic Disease
- Sow at 14kg/acre
- This mixture may not be suitable for overweight horses and ponies.

Forage crops

Key benefits

- Economical to grow
- Reduces bought in feed costs
- Provides a break in cropping

Rapid Root (for autumn use)

The forage rape element of this mixture ensures a rapid establishment and high protein yields, whilst the stubble turnips are high in energy and improve the stock holding capacity. Sow mid-April to mid-September

60% Forage rape	**Sowing rate**	6-8.5 kg/ha
35% Stubble turnip	**Pack size**	5 kg
5% Kale	**Treatment**	Untreated

Winter graze (for use December onwards)

This mixture is ideal for sowing after winter cereals to provide grazing from December onwards, winter hardiness is excellent. Sow from mid-July to mid-September.

35% Forage rape	**Sowing rate**	6-8.5 kg/ha
60% Stubble turnip	**Pack size**	5 kg
5% Kale	**Treatment**	Untreated

Stubble turnips

- Extremely versatile crop that can be grown for either summer or autumn/winter use for grazing in situ
- Bulbing and leafy varieties are available

Dry matter yield (t/ha)	Dry matter content (%)	Crude protein	D-value	ME (MJ / kg DM)
4-4.5	9-12	17-18	70	10.5-11

Fodder beet

- Grown as a main crop rather than a break crop, Fodder beet has similar inputs to sugar beet. The roots are very palatable with a high energy value
- Fodder beet can be lifted and stored or grazed in situ

Dry matter yield (t/ha)	Dry matter content (%)	Crude protein	D-value	ME (MJ / kg DM)
18-22	12-19	12-13	78	12.5-13.5

Extended Graze

- Extended graze is a mixture of Italian ryegrass and hybrid forage brassica
- Sown in late summer or early autumn at a rate of 20-25kg/ha, this mixture can be grazed within 6-8 weeks of sowing and will go on to product quality forage for up to 12 months
- The forage brassica element will provide a second grazing providing a residual stubble height of 4-6 inches is left following the first grazing
- Adding berseem clover to this mixture can lift protein yield, fix nitrogen for the following crop and improve soil structure

Dry matter yield (t/ha)	Dry matter content (%)	Crude protein	D-value	ME (MJ / kg DM)
15	12-15	13-15	68	10-11

Spitfire hybrid brassica

- Spitfire is a kale/rape hybrid brassica, capable of very high yields with excellent feed value
- A medium tall variety with a low dry matter stem which boosts utilisation, Spitfire can provide up to three grazing periods
- Spitfire demonstrates high vigour, establishing quickly and providing a utilisable crop within 9 weeks of sowing

Dry matter yield (t/ha)	Dry matter content (%)	Crude protein	D-value	ME (MJ / kg DM)
7-9	12-15	17-19	70	10.5-11.5

Amenity grass mixtures

TechniSward **multi purpose landscaper**

- Extremely hard-wearing land scaping mixture perfectly suited for use in caravan/camping sites and event car parks
- 50:50 mixture of amenity ryegrass and creeping red fescue

TechniSward **Pro Master 51**

- Hard wearing Lawn with ryegrass that will establish quickly
- Ideal for general purpose lawns. Contains Double 4turf® amenity ryegrass for improved colour and increased drought tolerance

TechniSward **Pro Master 52**

- An economical and hard wearing fine lawn mixture containing only fescues for ease of management
- Suited to cutting with a cylinder mower

Silage Inoculants

Key benefits

- Enhances the natural fermentation process
- Rapid pH drop
- Reduced Dry Matter losses
- Optimal nutrient retention

techni sward

Giving nature a helping hand

Conserved forages form the bulk of most ruminant livestock's daily dry matter intake for much of the year, and as such, the quality of that forage is a major pre-determinant of enterprise efficiency.

In essence silage making is a straightforward process; cut and chop the crop, clamp, or bale it, exclude air, and let the bacteria in the clamp do the rest...simple!

However, much can go wrong, even when best practice is observed, and the knock-on effect on animal performance and farm profitability can be huge.

There are two critical points at which things can go wrong.

Ensiling

The principal objective of silage making is to achieve a rapid pH drop down to a safe and stable level. The more rapid the acidification is, the more we are able to preserve nutrients and reduce dry matter losses.

Feed-out

Once the clamp has been opened and exposed to oxygen, spoilage organisms such as yeasts and moulds will quickly become active, resulting in heating of the clamp and losses of both nutrients and dry matter.

Using an inoculant containing crop specific microorganisms influences and enhances the natural fermentation process and maintains aerobic stability in the presence of oxygen.

The result is optimal preservation of dry matter and nutrients, meaning improved animal health and performance.

"No matter how good you are at making silage, the results are almost always better when an inoculant is used."

Product	Crop type	Benefits
Pioneer 1188	Grass below 25% DM	• Fermentation • Animal performance
	Grass and clover below 30% DM	
Pioneer 11A44	Grass above 35% DM with good digestibility	• Significantly improves aerobic stability
	Cereal silages	
Pioneer 11G22 Rapid React	Grass or grass and clover 25% DM and above with good digestibility	• Fermentation • Animal performance • Aerobic stability in as little as 7 days
	Grass or grass and clover 25% DM or above with poor digestibility	
	Arable silages	
Pioneer 11GFT	Grass and clover 25% DM and above with poor digestability	• Fermentation • Animal performance • Fibre digestibility • Aerobic stability
	Cereal silages	

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