SALTIRE

MIXTURES

2026

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INTRODUCTION

We are pleased to present our 2026 seed catalogue, designed to guide you in improving sward performance, increasing soil health and building a more resilient farming system. Selecting the appropriate mixture for each field remains fundamental to achieving optimal results, and we hope the information provided will support your decision making.

The 2025 season was marked by significant weather extremes. Following a very wet 2024, conditions shifted dramatically as much of the country experienced a prolonged dry spring and summer. While this brought more favourable lambing and calving conditions, it also created challenges for fieldwork. Livestock markets performed exceptionally well, reaching record prices. However, the cereal sector faced difficulties, with strong yields offset by high screenings and reduced demand for malting barley, resulting in subdued prices.

Throughout the year, we were pleased to attend a wide range of industry events, including the NSA Highland Sheep at Midfearn, where we welcomed many visitors to our demonstration plots. The Royal Highland Show was once again an excellent event, and it was a pleasure to meet so many of you over the four days and express our appreciation for your continued support. We are now looking forward to this year's NSA Scotsheep, hosted at Wedderlie Farm by the Tilson family. It promises to be a superb showcase of a Borders farming enterprise.

Successful reseeding begins with getting the fundamentals right, and soil sampling remains a core part of our service, ensuring that seed is sown into optimal conditions.

Demand continues to grow for more diverse mixtures, driven in part by changes to the EFA in Scotland and the SFI in England. While many mixtures may meet scheme requirements, it is essential that species selection also supports livestock performance. To assist with this, we have included a species guide on page 7 to help identify the most suitable options. Due to the increasing complexity of agri-environmental requirements, we have also produced a dedicated catalogue, available for download or as a printed copy on request.

Forage crops remain an attractive option, offering highly palatable feed that can reduce costs, act as a pioneer crop and support soil improvement. Selecting the correct crop depends on sowing date, utilisation period and livestock class. Our brassica guide on page 8 provides further detail to support this choice.

We continue to work closely with leading plant breeders across Europe and further afield, drawing on recommended lists and our own on farm palatability trials to select the most suitable varieties for our mixtures. Ultimately, the best mixture is the one tailored to your specific conditions, and we welcome the opportunity to discuss your requirements.

We thank you for your continued support and wish you a productive and successful year ahead.

VARIETY ASSESSMENT

All the grasses varieties used in the Saltire Mixture range have been approved by independent trials conducted by the SRUC. From this data, the key factors we consider in variety selection include the following attributes:

Yield: Annual, seasonal, cutting & grazing
Persistence: Ability to compete & survive
Quality Energy value, mid season D Value & WSC content
Winter Hardiness:

		SRUC 1ST Choice	AHDB	Ground Cover
ITALIAN RYEGRASS				
Meribel	Meribel is high yielding with strong late growth, good D values and ground cover, but some winter risk.	✓		A
Messina (T)	Exceptional early season growth and good quality across all its cuts.	✓	✓	C
HYBRID RYEGRASS				
Barclamp	A later heading hybrid combining good ground cover with consistent quality and yield across the season.	✓	✓	A
INTERMEDIATE PRG				
Moira	A reliable perennial ryegrass delivering strong yields, dense cover, quality grazing and consistent high energy forage throughout season.	✓	✓	B
Caledon (T)	Good yields under both managements.	✓		C
Fintona (T)	Good spring and autumn growth. Exceptional variety for both cutting & grazing.	✓	✓	C
Seagoe (T)	Offers early season growth giving excellent spring grazing and first cut yield.	✓	✓	C
LATE PRG				
Callan	Good productivity under both managements early on in the season.	✓	✓	B
Dundrod	Good conservation yield and particularly strong grazing at the back end of the season.	✓	✓	B
Glenrock	Good grazing variety, especially mid-season.	✓		B
Glenfield (T)	Particularly good grazing at the shoulders of the season combined with good herbage quality.	✓		-
Gracehill (T)	Consistent quality throughout the season under both managements with particularly good mid to late season grazing.	✓	✓	C
TIMOTHY				
Comer	Best spring growth of the timothys. Softer than others for better palatability.	✓	✓	A
WHITE CLOVER				
Aberystwyth S184	Good persistence and yields with intensive sheep grazing.	SMALL		
Crusader	Good performance both early and late in the season.	MEDIUM		
Alice	High yielding and good ground cover	LARGE		
Barblanca	Excellent persistency and good early spring and autumn growth.	LARGE		
Clodagh	Exciting new large leaf variety from Teagasc with high ground cover under conservation & rotational grazing.	LARGE		

SPOILT FOR FIRST CHOICE

We enjoy a very positive relationship with a range of key breeders, across Europe and beyond, that enables us to procure the best varieties possible for our Saltire Mixtures.

SRUC

afbi AGRI-FOOD & BIOSCIENCES INSTITUTE

An Roinn Talmhaíochta, Bia agus Mara
Department of Agriculture, Food and the Marine

AHDB

DSV

BARENBRUG

RAGT

DLF SEEDS & SCIENCE

Semences de France

Germinal

LG

JD JOUFFRAY-DRILLAUD

SALTIRE MIXTURE SELECTION

MIXTURE	DURATION (YEARS)	MAINLY CUTTING	DUAL PURPOSE	INTENSIVE GRAZING	SOWING RATE (KG/ACRE)
SALTIRE 1	**1-2**	✓			**14**
SALTIRE 2	**2**	✓			**14**
SALTIRE 3	**3-5**		✓		**14**
SALTIRE 4	**3-5**		✓		**14**
SALTIRE 5	**4-6**	✓	✓		**14**
SALTIRE 6	**3-6**	✓	✓	✓	**14**
SALTIRE 7	**4-10**		✓	✓	**14**
SALTIRE 11	**5-7**		✓	✓	**15**
SALTIRE 12	**3-6**		✓		**10**
SALTIRE 14	**4-10**		✓	✓	**14**

The proportion of varieties and species used in every Saltire Mixture has been determined after the most careful consideration of farming conditions in Scotland.

The duration of a grass mixture is mainly dependent on two factors: the component varieties and the management regime. Varieties giving higher yields can often be less persistent, so there is a balance to consider between these two important characteristics.

See the chart for a guide to mixture selection. However, we recommend you consult your distributor, agent or our office for advice on which mixture best suits your needs.

If we are forced to make any substitution of varieties in our Saltire Mixtures, owing to demand, we will ensure that we only use the best alternative varieties available.

Colin Lowrie, Blegbie, Humbie, East Lothian

SALTIRE 1

HIGHLY PRODUCTIVE ITALIAN BASED MIX

- Long growing season
- Produces enormous crops if intensively managed
- The addition of the hybrid assists leafiness and persistency
- Can be sown in spring or autumn to produce large crops of silage

VARIETY	TYPE	%
Meribel Messina (T)	Italian Ryegrass	85.8
Barclamp	Hybrid Ryegrass	14.2

Andrew Reid, Gyratesmyre Farm, Laurencekirk.

SALTIRE 2

LEAFY MAINLY CUTTING

- Produces high yields of silage
- More persistent than S1 due to the inclusion of late perennials and clover

VARIETY	TYPE	%
Meribel Messina (T)	Italian Ryegrass	34.3
Barclamp	Hybrid Ryegrass	35.0
Seagoe (T)	Late PRG	26.4
Rotational	White Clover Blend	4.3

SALTIRE 3

DUAL PURPOSE MIX

- Highly productive dual purpose mixture
- Produces bulky cuts of silage
- Produces quality grazing

VARIETY	TYPE	%
Moira Caledon (T) Seagoe (T)	Intermediate PRG	58.2
Dundrod Glenfield (T)	Late PRG	29.3
Comer	Timothy	7.1
Rotational	White Clover Blend	5.4

SALTIRE 4

DUAL PURPOSE MIX

- Well suited for cuts of hay or silage
- Slightly higher timothy content
- Adaptable to either a cutting or grazing regime

VARIETY	TYPE	%
Moira Fintona (T)	Intermediate PRG	56.1
Dundrod Glenfield (T)	Late PRG	26.4
Comer	Timothy	12.1
Rotational	White Clover Blend	5.4


Robin Croal, Parkhead Farm, Wolfhill, Perthshire.

SALTIRE 5

DUAL PURPOSE MIX

Highly versatile dual purpose mixture

Will produce two large cuts of silage and quality grazing per year

VARIETY	TYPE	%
Moira Seagoe (T)	Intermediate PRG	40.4
Dundrod Gracehill (T)	Late PRG	47.5
Comer	Timothy	7.1
Rotational	White Clover Blend	5.0


Davie Stewart, Mains of Dalrulzeon, Blairgowrie.

SALTIRE 6

DUAL PURPOSE MIX

Our most popular Saltire Mixture

Contains persistent varieties ensuring good yields for cutting and grazing over many years

Rotational clover blend copes well with frequent cutting producing elevated protein levels

VARIETY	TYPE	%
Moira Seagoe (T)	Intermediate PRG	37.2
Dundrod Glenrock Glenfield (T) Nashota (T)	Late PRG	50.0
Comer	Timothy	7.0
Rotational	White Clover Blend	5.8

Firm of RB Miller, Prieston Farm, By Dundee

SALTIRE 7

INTENSIVE GRAZING MIX

- Excellent grazing mixture for long term performance
- Produces a good, dense sward
- High clover content

VARIETY	TYPE	%
Moira Seagoe (T)	Intermediate PRG	28.6
Callan Dundrod Gracehill (T)	Late PRG	55.7
Comer	Timothy	8.6
Permanent	White Clover Blend	7.1

SALTIRE 11

DAIRY SPECIALIST, DUAL PURPOSE MIX

- Designed to produce high D value silage
- Has a dense leafy sward
- Contains no timothy
- Also available with clover

VARIETY	TYPE	%
Moira	Intermediate PRG	13.3
Callan Dundrod Glenfield (T)	Late PRG	86.7


Ms E Robertson, Home Farm, Dalkeith, Midlothian

SALTIRE 12

REJUVENATION, DUAL PURPOSE MIX

- Suitable for overseeding or direct drilling into old swards
- Improves quality and production
- All tetraploid mixture, designed for fast seedling development
- Also available with clover

VARIETY	TYPE	%
Fintona (T)	Intermediate PRG	15.0
Ballintoy (T) Gracehill (T)	Late PRG	85.0

SALTIRE 14

HEAVY/WET SOILS, DUAL PURPOSE

- The all diploid composition of this mixture helps in the creation of a dense persistent sward
- High percentage of late heading diploid ryegrasses assist in reducing sward structure damage through poaching
- Good mixture for wet heavy ground

VARIETY	TYPE	%
Moira	Intermediate PRG	15.0
Callan Dundrod	Late PRG	78.6
Permanent	White Clover Blend	6.4

SCOTTISH SCHEMES

EFA FALLOW LAND

EFA Fallow Land is arable land that is kept out of production and not used for grazing between 15 January and 15 July inclusive. The aim is to create a diverse and beneficial habitat that supports pollinators, farmland birds, and soil health.

Grass + Legume Fallow Mix

A late heading mixture that has been designed to retain its quality after the fallow period has ended. The inclusion of legumes will provide a valuable nitrogen source as well as enhancing soil health.

TYPE		%
Dundrod Glenfield (T)	Late PRG	89.7
Rotational White Clover Blend		6.0
Birdsfoot Trefoil		1.8
Alsike Clover		2.5

STUBBLES FOLLOWED BY GREEN MANURE IN AN ARABLE ROTATION

A stubble followed by green manure option keeps residues in place after harvest, then establishes a cover crop to protect soil, capture nutrients, add organic matter, and support biodiversity. This helps maintain soil health and improves fertility for the next crop within an arable rotation.

Green Manure 2

Very vigorous green manure.

TYPE	%
Vetch (common)	40.0
Mustard	40.0
Fodder Radish	20.0

Disclaimer: The information provided is offered in good faith and reflects our current knowledge. We cannot accept liability for any actions taken by growers based on this information. Scheme rules may change and it is the responsibility of each grower to ensure that the mixtures or species selected meet the requirements of their own scheme. We make every effort to supply products as described, although availability may vary with the season and with demand.

EFA HERB & LEGUME RICH PASTURE

Aims to increase and maintain species diversity in rotational grass swards by overseeding or reseeding with diverse grass and legume mixes. Extending the grassland phase in arable rotations builds organic matter, reduces soil disturbance, retains carbon, and improves soil health, habitat diversity, and livestock performance.

Basic Herbal Ley 1

A combination of species that haven proven their worth across various soil types and geographical locations.

TYPE			%
Strangford Seagoe (T)	Intermediate PRG	Grasses	84.64
Dundrod Gracehill (T) Glenfield (T)	Late PRG		
Timothy			
Permanent White Clover Blend Alsike Clover		Legumes	10.71
Chicory Plantain		Herbs	4.65

Basic Herbal Ley 2

A mix of species that have shown their value across many soil types and regions.

TYPE			%
Strangford	Intermediate PRG	Grasses	86.44
Dundrod Gracehill (T)	Late PRG		
Timothy			
Cocksfoot			
Soft Tall Fescue			
Creeping Red Fescue			
Permanent White Clover Blend Alsike Clover		Legumes	9.28
Chicory Plantain		Herbs	4.28

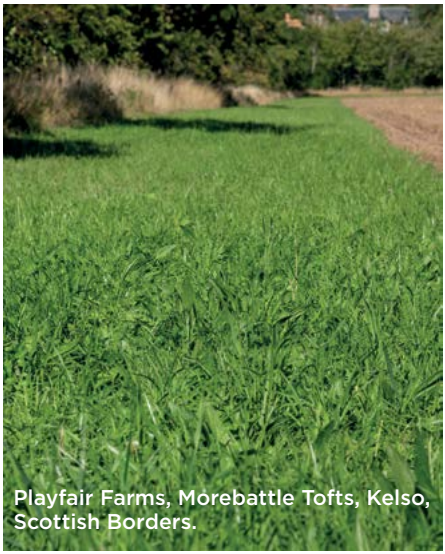
EFA MARGIN

Margins provide vital habitat for farmland wildlife, strengthen ecological networks, and protect water quality. They must remain in place from 1 January to 31 December. Features such as headlands, beetlebanks, and grass or watercourse margins support pollinators, natural pest control, and reduce erosion and nutrient loss.

Mat Forming + Herbs

More diversity for insects, pollinators and invertebrates

TYPE	%
Soft Tall Fescue	25.0
Smooth Stalked Meadow Grass	12.0
Timothy	6.0
Cocksfoot	5.0
Meadow Fescue	14.0
Highland Bent	4.0
Creeping Red Fescue	17.0
Red Clover Blend	9.0
Birdsfoot Trefoil	3.0
Plantain	4.0
Yarrow	1.0



Playfair Farms, Morebattle Tofts, Kelso, Scottish Borders.

ROOTS & FORAGE

Rising feed costs have renewed interest in forage crops as a cost effective and reliable feed source. With the potential to deliver very high yields in a short growing season, these crops offer flexibility, with sowing possible from early summer through to the beginning of August. Many can be grazed or lifted within ten to fourteen weeks of sowing, providing valuable feed at key times of the year.

Root and forage crops suit all classes of livestock, supporting both milk production and liveweight gain. They fit well into both conventional and organic systems and require relatively modest inputs of fertiliser and agrochemicals. With high dry matter yields, their production costs compare favourably with conserved grass, maize, and wholecrop cereals.

At Watson Seeds, we carefully select varieties from leading plant breeders to ensure our customers have access to a versatile range of options. Whether swedes, kale, forage rape, fodder beet, rape/kale hybrids, stubble turnips, or our own specially designed mixtures, each offers proven performance across a wide range of farm systems.

This section also includes helpful practical information, including a feeding guide, to support you in getting the most from your crops.

CROP	SOW	MATURE (WEEKS)	UTILISABLE	RATE PER ACRE (Drill | Broadcast)	DM (T)	CRUDE PROTEIN	D VALUE
Fodder Beet	Apr - May	24-28	Oct - Nov	40,000 seeds/acre	6.0-7.25	12-13%	78
Stubble Turnip	May - Aug	12-14	Aug - Feb	2kgs | 3kgs	1.6-2.25	17-18%	69
Rape/Kale Hybrid	July - Aug	12-14	Sep - Feb	2kgs | 3kgs	1.4-1.6	15-24%	66
Forage Rape	May - Aug	10-12	Sep - Feb	3kgs | 4kgs	1.4-1.6	19-20%	65
Kale	May - Jun	16-20	Sep - Mar	2kgs | 3kgs	3.25-4.0	16-17%	70-75
Swedes	May	20	Sep - Feb	100-325g	2.85-4.0	10-11%	82
Main Crop Turnips	May - Jun	12-15	Sep - Feb	0.2-0.3kgs | 0.75kg	2.2-2.45	17-18%	68-70

HOW TO CHOOSE BRASSICAS

The range of brassica crop options runs from stubble turnip and forage rape, as the fastest to establish and taking ten to twelve weeks, to maincrop swedes and kale, which take more than twenty weeks and offer the highest yield potential but require the longest growing period to achieve.

The key determining factor is the month in which you aim to utilise the crop in order to gain the maximum nutritional contribution for your class of stock.

Forage rape and hybrid kale, along with stubble turnips, are ideally suited for utilisation from November to January. Their weakness is that in areas prone to prolonged periods of hard frost these crops are the first to succumb, and the nutritional quality is lost.

The benefit of these crops is that they allow you to harvest silage crops and cereals before establishment. They are genuine catch crops that can help fill a gap in forage stocks in a dry season such as we experienced in 2025. Direct drilling into burnt off swards or stubbles allows for low cost establishment and successful results when soil nutrition is good. More arable rotations are looking at these catch crop options and the golden hoof as a means of returning fertility to their soils and recycling nutrients.

The advantage of maincrop kales and swedes is the increased yield potential and their ability to carry more stock over a prolonged period after the first of January. Good strong crops of maincrop kale can provide more than double the utilisable yield of a short term hybrid or forage rape. Swedes likewise are an excellent feed option to provide nutrition for sheep into March and April.

Choosing your crop option for this time of year depends very much on altitude and soil type to achieve good utilisation.

The downside of maincrop kales and swedes is the challenge of establishment given the longer period in the ground. Weed control is a major issue, whether keeping grasses suppressed in direct drilled crops or tackling broad leaved weeds in cultivated soils, especially now that chemical options for brassicas are much reduced. Another significant challenge in many areas is the cabbage stem flea beetle which has developed an uncanny ability to find young emerging brassica cotyledons to attack. Many of these beetles move out of oilseed rape crops in May and June and look for newly emerged brassica crops to feed on.

We are investigating and trialling work on diversionary mixtures with mustard and radish included, as these are very attractive to the cabbage stem flea beetle at a time when resistance to pyrethroid insecticides has become widespread.

Whichever crop option best suits your farm requirements and any seasonal challenges, we at Watson Seeds can share our knowledge to ensure that you get the correct varieties and species for your brassica solution.

SOWING RATES FOR GRADED SEEDS (g/acre)

	SEED SPACING			
ROW WIDTH	2" (5cm)	4" (10cm)	6" (15.25cm)	8" (20cm)
20" (50cm)	325	275	225	200
24" (60cm)	300	250	200	150
26" (65cm)	275	225	175	125
28" (70cm)	250	200	150	100

PRECISION DRILL RECOMMENDATIONS

SEED GRADING	GRADE	SIZE (mm)	STANHAY BELT SIZE	SPRING BASE	CHOKE	WEBBS SELECTOR WHEEL
Fodder beet pelleted	Q-U	3.5-4.75	15 OR 16	C	A	EP
Swede	H	1.75-2.0	8	A	T	B
Turnip	G	1.5-1.75	7	A	T	A
Kale	J	2.0-2.25	8.5	A	T	C

FERTILISER GUIDELINES FOR FORAGE CROPS

CROP	Nitrogen (kg/ha)	Phosphate (kg/ha)	Potash (kg/ha)	N applied at sowing	N applied later (% of total)
Swede	40-100	45-100	80-215	50%	50% at 10-12 weeks
Kale	40-130	50-80	130-260	50%	50% at 10-12 weeks
Stubble Turnip	40-100	25-85	20-110	60%	40% at 6-8 weeks
Grazing turnips	40-100	25-85	20-100	100%	Further N may be applied for regrowth
Forage rape/ rape kale hybrid	40-100	25-85	20-110	100%	Further N may be applied for regrowth

100kg per ha equals 80 units per acre. (Source: Fertiliser Manual (RB209) - Germinal GB)

Brassicas are also prone to sulphur (S) deficiency which is shown by yellowing of the leaves. If suspected, a tissue analysis is the best guide. 10-30kg S/ha (8-24 units/acre) is recommended depending on deficiency severity.

SWEDES

Can be fed to sheep, dairy and beef cattle

Ideal for finishing lambs

High energy winter grazing, winter hardy, high yield

Can be sown on a range of soil types

Low production costs and cost effective

WHICH VARIETY IS BEST FOR YOU?

SWEDES

- **HIGH (DM%)** — Better winter hardiness & suitable for long keep systems (Jan-Feb) → INVITATION
- **MEDIUM (DM%)** — Large DM yields & easily eaten (Nov-Jan) → MAGRES, TRIUMPH, LOMOND, GOWRIE, KENMORE
- **LOW (DM%)** — Earlier to bulk (Oct-Dec) → AIRLIE

VARIETY	DESCRIPTION	TYPE
INVITATION	Winter hardy with large leaves for extra potential	Forage
MAGRES	Excellent resistance to mildew and splitting	Culinary
TRIUMPH	Optimum bulb dry matter and good winter leaf retention	Forage
LOMOND	Big yields & consistent performance *natural seed only*	Dual Purpose
GOWRIE	Excellent yield & disease resistance	Dual Purpose
KENMORE	Early variety with high yields *natural seed only*	Forage
AIRLIE	Bulky and early with good resistance to mildew	Dual Purpose

FODDER BEET

One of the highest yielding forage crops

High in energy, palatability and digestion

Can be grazed in situ or lifted, stored and then fed whole or chopped

VARIETY	DESCRIPTION	DM%	SKIN COLOUR
ROBBOS	Clean yellow roots, very consistent performance	20	Yellow
JAMON	High palatability and easily eaten in situ or fed whole or chopped	18	Orange
GERONIMO	Very high potential yield and greater bolting resistance	16	Orange
LACTIMO	Good seedling vigour & produces very high fresh yields of medium dry matter	16	Orange
FELDHERR	Orange roots which grow out of the ground producing huge fresh yields	16	Orange
FORTIMO	Produces excellent yields of medium dry matter	15	Red
BRIGADIER	A traditional polyploid, mangel type fodder beet	14	Orange
FOSYMA	New variety with a high dry matter content which provides a high energy feed for dairy and beef.	20	Pink

Sowing Rates	Sowing Period	Utilisation Period
40,000-48,000 seeds/acre	April to May	October to November

FODDER BEET SELLS OUT FAST - PLEASE ORDER EARLY TO ENSURE YOU GET YOUR PREFERRED VARIETY

KALE

Best for late utilisation
Buffer feed for dairy cows during dry summer
Used for out wintering systems
Winter hardy
Second highest utilisable yield
Higher yields than hybrid rape/kale

WHICH VARIETY IS BEST FOR YOU?

KALE

DAIRY & BEEF
Taller, thick-stemmed varieties with maximum yield potential
→ BOMBARDIER, CALEDONIAN

SHEEP & LAMBS
Leafy types with a shorter growing season
→ KEEPER, MARIS KESTREL

VARIETY	DESCRIPTION
CALEDONIAN	Our highest yielding kale which is clubroot tolerant. Its high yield and quality makes it an ideal feed for cattle.
BOMBARDIER	Produces a high dry matter, high yielding crop. Clubroot tolerant. Suitable for sheep and cattle.
KEEPER	Low growing winter hardy variety. Good leaf to stem ratio and high dry matter. Suitable for sheep and cattle. Popular game cover.
MARIS KESTREL	Low growing, high yielding. High dry matter content with good leaf to stem ratio. Suitable for sheep and cattle.

Sowing Rates	Sowing Period	Utilisation Period
Direct drilled - 2kgs/acre Broadcast - 3kgs/acre	May to June	September to March

KALE MIXTURES

"I have grown a mix of Maris Kestral kale and Kenmore swedes for a number of years now and have found it consistently suits this farm in both dry seasons and wet. The crop is used for feeding lambs and for wintering the breeding ewes. Both are fed in breaks to give the lambs a reasonably consistent and nutritious diet, while the ewes have their intake controlled by the time allowed for grazing the crop each day. I find there are fewer risks growing the kale than the alternatives, and the high bulk means the crop grazes a lot of mouths with very acceptable results."

Ian Duncan Millar, Tirinie, Aberfeldy, Perthshire.

Our full season forage mixture options combine high yield with strong winter hardiness. Kale 1 is ideally suited to finishing lambs, while the inclusion of swede in Kale 2 and 3 gives greater winter hardiness and an energy source. The marrow stemmed Caledonian in Kale 3 has a greater yield potential but is more suited to cattle grazing.

KALE 1 MIXTURE

TYPE	%
Maris Kestrel Kale	30.0
Keeper Kale	30.0
Gorilla Forage Rape	32.0
Massif Turnip	8.0

KALE 2 MIXTURE

TYPE	%
Maris Kestrel Kale	95.0
Lomond Swede	5.0

KALE 3 MIXTURE

TYPE	%
Caledonian Kale	45.0
Maris Kestrel Kale	45.0
Triumph Swede	10.0

KALE 4 MIXTURE

TYPE	%
Maris Kestrel Kale	76.0
Triumph Swede	8.0
Oil Radish	12.0
Brown Mustard	4.0

MAIN CROP TURNIP

- Very high fresh yields
- Slower growth than stubble turnips
- Suitable for late sowing (later than swedes)
- Can be mixed with kale, hybrid or rape to extend grazing days

VARIETY	DESCRIPTION	DM %	SKIN COLOUR	FLESH COLOUR
IMPERIAL GREEN GLOBE	Traditional white fleshed variety, with some winter hardiness.	8.2	Green	White
MASSIF	A very high yielding variety of good keeping quality. A replacement for Greentop Scotch.	9	Green	Yellow

Sowing Rates	Sowing Period	Utilisation Period
Direct drilled - 0.2-0.3kgs/acre Broadcast - 0.75kgs/acre	May to June	September to February

RAPE & HYBRIDS

Hardy, can grow on poorer soils and exposed sites
Ideal for fattening lambs or flushing ewes
Can also be lightly grazed by cattle
Flexible sowing period
Fast growing

VARIETY	DESCRIPTION
SWIFT (HYBRID)	A very aggressive growing variety that will present a fast and reliable forage option. Consideration must be taken into sowing and utilisation dates as can become quite fibrous if not grazed on time.
GORILLA (RAPE)	It is a dark green dwarf variety that has a higher than average DM, which leads to high total dry matter yields. Its shorter status presents a very palatable crop that is easy to fence for strip grazing. It is a valuable option if clubroot may be an issue as it has good tolerance.
HOBSON (RAPE)	Highly digestible variety with good standing power and mildew resistance.
MAINSTAR (RAPE)	Mainstar forage rape is a high yielding, high quality source of forage. It is well suited to the UK climate and conditions. This crop is known for its high palatability, nutritional benefit for livestock and its fast growing capabilities with a good potential for regrowth.
RAMPART (RAPE)	A newer variety of forage rape that is fast growing and has good yield potential. It is suitable for both dairy and lamb production.
REDSTART (HYBRID)	A winter hardy hybrid offering a high energy protein crop that is ideally suited for cattle and sheep grazing. It combines rapid establishment and growth rates with good winter hardiness. It has regrowth capability when early sown for multi-graze options.
UNICORN (HYBRID)	A hybrid variety that is fast to establish and ready to utilise in 12-14 weeks. It produces a high DM yield that is suitable for sheep, beef, and dairy. It is not as winter hardy as some of the other hybrids so would be ideally suited to pre-Christmas grazing.

Sowing Rates	Sowing Period	Utilisation Period
Direct drilled - 2-3kgs/acre Broadcast - 3-4kgs/acre	May to August*	September to February

*Some varieties don't suit early sowing, speak to your seed specialist to discuss

HYBRID MIXTURES

"This is our first year trying a hybrid mix. It was a bit of an experiment, direct drilling onto sprayed off grass, and what a tremendous yield we've had from it. We'll start strip grazing lambs on here from October and start selling off fat lambs from November onwards. This field will then be ploughed next spring and sown with a Fyvie mix, which always works really well for us."

Steven Blackwood, Bisset & Blackwood, Mill Farm, Caithness.

Our hybrid mixtures are a careful combination of mid season brassicas. They all provide fast growth and the potential for high energy, high protein forage. The hybrids offer greater winter hardiness than rape alternatives and are palatable to both sheep and cattle. The main crop turnip provides greater winter hardiness, while the stubble turnips offer a faster growing energy source.

HYBRID 1 MIXTURE

TYPE	%
Redstart Hybrid	30.0
Swift Hybrid	30.0
Gorilla Forage Rape	32.0
Massif Turnip	8.0

HYBRID 2 MIXTURE

TYPE	%
Redstart Rape/Kale Hybrid	80.0
Samson Stubble Turnip	20.0

HYBRID 3 MIXTURE

TYPE	%
Redstart Hybrid	40.0
Swift Hybrid	40.0
Samson Stubble Turnip	20.0

FORAGE RAPE MIXTURES

"The field was drilled in late June following a grazed mixed fodder crop of clover, chicory and vetch. Historically the field has been very wet and is heavy clay, so a good series of break crops was needed. Cattle dung was applied before the forage crop, which was drilled with a Claydon drill."

John Davidson, Penicuik Estate, Penicuik, Midlothian. Pat, Andrew and Cameron are pictured.

The forage rape mixtures combine valuable catch crops that offer the potential to extend the grazing season. They are all fast growing and can produce a crop in around 12 to 14 weeks under the right conditions. Main crop turnips add a winter hardy aspect, while stubble turnips provide a fast growing energy source. The large percentage of stubble turnips in the Rape 3 mixture makes it suitable for post winter cereal sowing, and the inclusion of rape helps to boost the protein content of the forage.

RAPE 1 MIXTURE

TYPE	%
Gorilla Forage Rape	87.5
Samson Stubble Turnip	12.5

RAPE 2 MIXTURE

TYPE	%
Gorilla Forage Rape	93.75
Massif Turnip	6.25

RAPE 3 MIXTURE

TYPE	%
Gorilla Forage Rape	40.0
Rondo Stubble Turnip	30.0
Samson Stubble Turnip	30.0

STUBBLE TURNIPS

Summer buffer for dairy cows
Good winter feed for sheep or cattle
Easy to establish
Good resistance to bolting
Palatable and easy to digest
Can be sown after harvest

VARIETY	DESCRIPTION
SAMSON	Can produce very large tankard shaped purple bulbs. This variety which is tried and tested in the UK has been shown to be preferentially grazed, which can lead to higher intakes and live weight gain. Ideal for finishing lambs and grazing cattle.
RONDO	It is a winter hardy variety that has excellent root anchorage that can reduce wastage. It is green skinned and quick to establish with a leafy growth habit. Being frost tolerant it is a viable option for sowing later in the season.
WHITESTAR	Trusted for its winter hardiness and palatability, it is an excellent choice for after harvest. It is a white skinned globe type which mostly sits out of the ground but is well anchored. It has a very clean root.
TYFON	A hybrid turnip that is a cross between a stubble turnip and a Chinese cabbage. It produces a very small bulb but massive palatable leaves. It benefits from being spring sown and grazed in the summer and offers regrowth potential. Extremely fast growing and can be utilised in 8-10 weeks.
SKYFALL	A leafy brassica that is ideally suited to grazing. Produces a small bulb but large palatable leaves that are well suited to dairy, beef or sheep. Deep rooting species that has good regrowth potential.

Sowing Rates	Sowing Period	Utilisation Period
Direct drilled - 2kgs/acre Broadcast - 3kgs/acre	May to August	August to February

WINTER FEED ALLOCATION

Fodder Crop Requirements

The table below helps estimate how much fodder crop is required for different classes of stock. It gives a guide to how many animals can be fed per hectare over a 90-day period, and the likely time to full utilisation.

		NUMBER OF ANIMALS/HA OVER 90 DAYS				
		Sheep		Cattle		
CROP	DM YIELD (T/HA)	Ewes	Lambs	Cows	Stores	DAYS UNTIL UTILISATION
Kale	9	96	119	6	14	154-210 days
Rape/Kale Hybrid	3.5	37	46	3	5	70-110 days
Stubble Turnip	4	43	53	3	6	56-100 days
Swedes	9	96	119	4	14	170-220 days
Fodder Beet	17	181	225	12	26	175-210 days

Based on 70% of diet from crop and 25% wastage. Intakes assumed: ewes (70kg) 1.6% LW, lambs (30kg) 3% LW, cows (750kg) and stores (350kg) 2.2% LW.

Feed Allocation

The DM yields shown are guide values taken from book figures. Actual yield will vary with variety, soil, climate, and crop management. To plan feeding accurately, a simple field assessment should be carried out. This allows calculation of DM yield and daily allocation, which in turn determines how far to move the fence each day.

Measuring DM Yield – Quick Method

You will need:

- 1m² quadrat (or 3.54m pipe loop)
- Bag
- Shears or a knife
- Hand scales
- Notebook and pen

Steps

1. Place the quadrat on a representative part of the field, avoiding headlands or poor patches.
2. Harvest within the square
   - Roots – lift all roots and leaves, clean off soil.
   - Leafy crops – cut 2–3cm above ground.
3. Weigh the sample.
4. Multiply weight by 10,000 = fresh weight/ha.
5. Multiply by crop DM % ÷ 100 = DM/ha.

Example:

Sample weight = 7kg
7 × 10,000 = 70,000kg FW/ha
× 15% DM = 10,500kg DM/ha = 10.5 t DM/ha

Using DM Yield

Once DM yield is known, stock requirements can be matched to available feed. This provides a practical guide to stocking rate, grazing duration, and fence movement. An example calculation for a 70kg ewe is shown overleaf.

Calculating Daily Allocation (adapted from AHDB)

		EXAMPLE: 70kg ewe
A	Total Estimated Intake (using 1.6% of liveweight)	1.20kg DM/day
B	Crop Inclusion of the Diet (allowing 30% fibrous forage)	70%
C	Daily Requirement of Forage (AxB)	0.84kg DM
D	Number of Animals Grazed	300
E	Daily Requirement of Fodder Beet (CxD)	252kg DM
F	Estimated Crop Yield (DM/m2) (crop yield as above – 10.5 tonnes @ 80% utilisation – (1.05kg/m2 x 0.8)	0.84kg/DM/m2
G	Total Grazing Area Required/Day (E/F)	300m2
H	Length of Electric Fence (Feed Face)	150m
I	Width of Fence Moved Per Day (G/H)	2.00m/day

Using simple DM and daily allocation calculations show how far to move the electric fence each day to achieve high utilisation.

A feed budget can then be used to calculate the total area needed for the winter, as shown below for 70kg ewes.

Calculating Feed Budget (adapted from AHDB)

		EXAMPLE: 70kg ewe
A	Total Estimated Intake (using 1.6% of liveweight)	1.20kg DM/day
B	Crop Inclusion of The Diet (allowing 30% fibrous forage)	70%
C	Daily Requirement of Forage (AxB)	0.84kg DM
D	Feeding Period	120 days
E	Total DM Requirement per Animal (CxD)	101kg DM
F	Total Required for flock (e.g.300 ewes x E/1000)	30.30 tonnes DM
G	Forage Utilised Yield (t DM/ha) 10.5 tonnes @ 80% utilised	8.40 tonnes DM
H	Forage Area Required for Winter (F/G)	3.60 hectares

Ensure an area of run-back is also budgeted for.

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