WATSON SEEDS

2023 CASTLE

MIXTURES

Premium Performance Seed

CONTENTS

TURN TO THE 'BACK' FOR THE
Forage & Root Crop Guide

FOREWORD

50 years on.

In 1973, prior to attending Auchincruive Agricultural College, near Ayr in the South West of Scotland, I worked at Alloway Mill in my first introduction to the seed trade. Whilst the basic principles remain, technological advances have allowed plant breeders to continue producing improved varieties to meet the needs of the farming industry. The enormous sums involved in funding a grass breeding programme nowadays is not something we are in a position to do, but we do feel our role is partly in on-farm observational work.

An update on the preferential beef grazing trial at Upper Nisbet is on page 30. We are very grateful for the collaboration with Robert and Jac Neill and would encourage you to try and find the time for a visit. Further north we have a new trial established last year at Torgorm (see page 31) courtesy of Shaun and Ewan Macdonald and farm manager Euan Ferguson.

The war in Ukraine has had a major impact on us all. Whilst arable farmers are enjoying very high grain prices inputs such as fuel and fertiliser are very expensive. One consequence of the strong grain and rape seed trade is the challenge to get growers to sow grass seed crops at a manageable price for the seed trade. We have excellent stocks secured for the full 2023 season and have endeavoured to keep our on farm prices not too far away from 2022 figures.

Increased interest in clover brought about a significant rise in demand last year with, for example, red clover sales doubling. We have plenty of clover for the 2023 season despite the supply being tight from a combination of a poor harvest and high demand.

Our Irish Castles contain a range of high performing varieties and we are very encouraged at the production levels of high quality grass that they deliver across Ireland.

There is renewed interest in sowing mixtures that contain a more diverse range of species. There is nothing new in sowing a mixture containing more than perennial ryegrass and my grandfather would find it funny to think we are being encouraged to sow a range of species as was the case in the years before ammonium nitrate became the driver in grass production. We are measuring species rich mixtures for grazing yield and nutritional value against more conventional mixtures in a low fertiliser regime. The organic matter production is also being measured to give us the full picture on their potential benefits and of course we need to know how they persist in our environment.

So as with 50 years ago we have much to learn and never lose sight of the basic principles of good soil management. It doesn't cost, it pays!

I wish you every success in the year ahead and thank you for all your support. It is greatly appreciated.

Johnny Watson

Johnny Watson F.R.Ag.S

VARIETY ASSESSMENT

All varieties contained in our Castle Mixtures are 'First Choice' as published in the Grass and Clover Varieties for Scotland 2022-2023.

		SRUC 1st Choice	AFBI / PPI Rated	PPI Grazing Utilisation Trait	Ground Cover	REE
ITALIAN RYEGRASS						
MERIBEL	Very high yielding with great D values & ground cover for an Italian.	✓	✓	-	A	32
GEMINI (T)	Capable of producing high D values for first & second cuts.	✓		-	B	30
HYBRID RYEGRASS						
BARCLAMP	A later heading hybrid combining good ground cover with consistent quality and yield across the season.	✓		-	A	39
ABEREVE (T)	A good variety with the highest D value in second cut.	✓	✓	-	A	34
INTERMEDIATE PERENNIAL RYEGRASS						
ABERMAGIC ★	A proven variety that is good for cutting but is an exceptional grazing variety providing quality yield into the autumn.	✓	✓	3*	A	42
ABERZEUS	Excellent yields under both managements & offers the highest grazing quality in its category.	✓	✓	-	A	40
ASTONCONQUEROR	Very good early season growth of high quality especially under grazing.	✓	✓	4*	A	37
GUSTO	Good grazing yields particularly later in the season & provides good quality under conservation.	✓	✓	4*	B	44
ABERSPEY (T)	Very good yields for both cutting & grazing later in the season. Also has good ground cover for a tetraploid.	✓		-	B	47
BIJOU (T) ★	Good first cut yields due to early spring growth. Bijou is classed as a late variety, however, due to very early nature we find it more appropriate to be used as an intermediate.	✓		-	C	46
FINTONA (T)	Good spring & autumn growth. Exceptional variety for both cutting & grazing.	✓	✓	5*	C	32
SEAGOE (T) ★	Offers early season growth giving excellent spring grazing & first cut yield.	✓	✓	-	C	35

LATE PERENNIAL RYEGRASS						
ABERAVON ★	Consistent performance across the season with particularly good grazing quality.	✓	✓	-	B	47
ABERLEE ★	Performs exceptionally well especially under grazing providing high yields & category leading quality.	✓		-	A	55
BALLYVOY	Overall a good variety for conservation, with good yields throughout the year.	✓	✓	1*	-	47
CALLAN	Good productivity under both managements early on in the season.	✓	✓	4*	B	46
DUNDROD	Good conservation yield and particularly strong grazing at the back end of the season.	✓	✓	-	B	47
GLENROCK	Good grazing variety, especially mid-season.	✓		-	B	52
ABERPLENTIFUL (T)	Good yields and quality at the first cut and good seasonal growth under grazing.	✓	✓	2*	C	53
BALLINTOY (T) ★	Outstanding new addition to our grass mixtures that has really stood out in the trials. It offers high yields in both cutting & grazing.	✓	✓	4*	C	46
GRACEHILL (T)	Consistent quality throughout the season under both managements with particularly good mid to late season grazing.	✓		2*	C	47
NASHOTA (T)	Good ground cover with good D values at 1st & 2nd cut.	✓	✓	-	B	49
TIMOTHY						
COMER	Best spring growth of the timothys. Softer than others for better palatability.	✓	✓	✓	A	53
WHITE CLOVER						
ABERACE	An extremely small leaved variety that will aid with persistency under grazing.	SMALL				
ABERSWAN	Good total yields in grass mixtures.	MEDIUM				
BUDDY	Good grass and clover yields through much of the season.	MEDIUM				
CRUSADER	Good performance both early and late in the season.	MEDIUM				
ALICE	High yielding and good ground cover.	LARGE				
RED CLOVER						
GLOBAL	Yields under cutting in years 1,2 & 3 are very impressive.	EARLY				
ROZETA	A widely used variety that performs well under cutting and grazing and has good persistency.	EARLY				

★ Strong performer at Watson Seeds trials at Upper Nisbet

Southern Fuel & Farm Supplies ltd.

Knockgriffin, Midleton, Co. Cork, Ireland
Tel: 021 4632020
Email: info@southernfueld.ie
www.southernfuels.ie

Jordan Agri

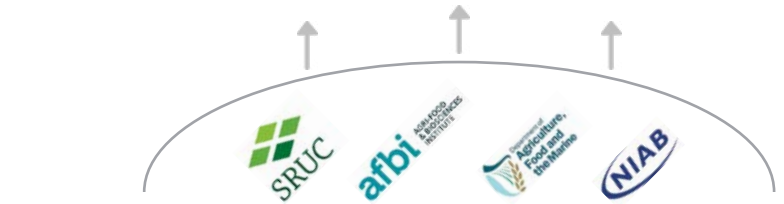
Ratheadon, Leighlin Bridge, Co. Carlow, Ireland
Tel: 059 9723518
Email: office@jordanagri.ie
www.jordanagri.ie

Barrett AGRI
INDEPENDENT Fuel & Farm Supplies

Cappeen West, Coppeen, Co. Cork, Ireland
Tel: 023 8847005
www.barretagri.ie

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 Castle Mixtures.

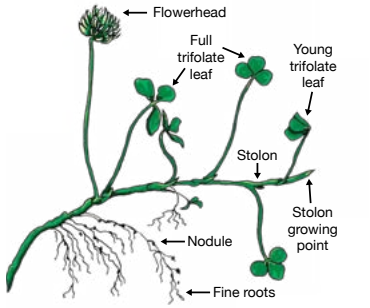


WHITE CLOVER (TRIFOLIUM REPENS)

The recognition of the high forage quality and the nitrogen (N) fixation benefits of grass-white clover pastures has led to a resurgence of interest in its use as a means of reducing the economic and environmental costs in livestock agriculture.

The popularity of white clover fell out of use to some extent in the latter half of the 20th century due to availability of synthetic N fertiliser and broadleaf specific herbicides.

The key to white clover's survival and productivity is its multi-branched creeping stem, called a stolon which provides sites for new leaves, roots and flowers. The stolon stores carbohydrates and proteins meaning that the plant can overwinter and regenerate in the spring.



There are 3 stages of white clover growth from germination to full establishment.

1. Rosette phase - reliant on a central taproot, few branches & small spread. (Plant size 10-20cm). Phase lasts approximately 3 months and does not fix N at this stage. Important to graze during this phase to promote growth.

2. Expansion phase - the plant is reliant on a central taproot, rapid expansion of up to 15 branches (25/30cm in size). Initial rooting is poor on the stolons and requires careful grazing to avoid damage. The taproots starts to die 12 months post sowing and only at 12-18 months does nitrogen fixation begin.

3. Clonal phase - no taproot and reliant on adventitious roots which form at the nodes of the stolons. The clover is actively fixing N. The stolons last for 12-18 months and new stolons are produced at the terminal bud which then become independent plants and this cycle continues each year.

Benefits of white clover tend to occur from May onwards as the sward white clover content increases.

1. Increased herbage quality compared to grass only swards. The D Value is typically two to three points higher under grazing.
2. Increased DM intakes in summer and autumn.
3. Higher milk production and increased LW gain in beef and lamb systems.
4. Nitrogen fixation. Trial work (2013-2020) at Moorepark & Clonakilty in Cork has shown annual herbage production at 13.5T DM/ha with grass-white clover at 150kg N/ha, the same as grass only with 250kg N/ha but increased milk solids with the clover sward. Similarly lamb production at Athenry on a grass-white clover sward (12.9T DM/ha) with 90kg N/ha has outperformed grass only with 145kg N/ha (12.6T DM/ha) and lambs finished in 186 days against 200 days on the grass only.

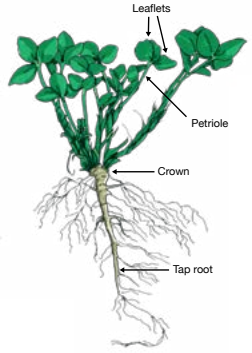
Nitrogen fixation. The quantity of N fixed in a grass-white clover sward depends on some key factors:

1. Sward white clover content - N fixation increases as clover content increases up to an optimum level of about 30% of DM content of the total sward. At this level the white clover can fix up to 180kg N/ha/year. (The sward should appear to have 50/60% clover at its peak growth in August). Clover content is half the amount of what it looks like.
2. N fertiliser application rate - N fixation declines with increasing N application.
3. Soil temperature - N fixation increases as soil temperature increases.
4. Solar radiation (sunlight) – more sunlight, more N fixation.

Soil fertility & optimum growing conditions. Soil pH is critical for white clover development and a target level of 6.3 to 6.5 should be achieved at the outset of establishment. At these levels other nutrients become more available, particularly phosphate where soil index 3 is desirable (9.5-13.4mg/lt) and index 3 potassium (141 – 200mg/lt). Good levels of calcium and sulphur are desirable for rhizobia (N fixing bacteria) survival.

RED CLOVER (TRIFOLIUM PRATENSE)

In contrast to white clover, red clover has an upright growth habit and a strong deep taproot from which finer roots arise. The crown located at the base of the stem acts as a store of nutrients.



USES OF RED CLOVER
Its main role is for silage production, but it is a useful component in grazing mixtures with its drought tolerance, particularly if it is managed on a rotational basis. Care has to be taken to not graze the aftermath below 4cm.

YIELDS of 12-14 tonnes DM/ha when grown with ryegrass and can fix 150-250kg N/ha per year. As with white clover, it takes about 12 months from establishment for these levels of nitrogen to be available. Red clover content and herbage production were greater on swards when zero N was applied compared to 50kg N/ha .

SOIL FERTILITY BUILDER
Improves soil structure and supplies organic matter. Relatively drought tolerant due to deep taproot.

PROTEIN
High protein content of 16-20%. Feeding values of red clover silage higher than straight grass silage, greater DM intakes and higher animal performance

Performs best on well drained and fertile soils.

CHALLENGES
Lifespan typically 2-4 years at farm level but recent research at Teagasc Grange has shown that with very good initial establishment and optimum levels of soil fertility, it can persist for up to 6 years. Critical to this longevity is good management with protecting the crown from overgrazing and cutting too low vital to its persistency.

PERSISTENCY
To maximise persistency, do not cut or graze more frequently than every 30 days. Cut silage crops at 7/8cm stubble height and an optimum grazing residual height of 6cm.

Avoid heavy machinery and traffic in wet conditions (tyre combinations and controlled traffic).

3-4 silage cuts can be taken and approximately 80-90% of total annual yield will be obtained from cuts completed by mid-August. The final cut should be taken no later than mid-October.

Red clover can contain up to 1% oestrogenic compounds which can lower ewe fertility, but store lambs thrive on red clover swards.

BLOAT
Avoid cold wet weather and do not introduce animals when they are particularly hungry. It should be introduced slowly especially in adverse conditions with roughage being fed alongside it.

ROTATION
The main pest of red clover is stem eelworm (causes distortion of growing buds & young leaves – death of the plant) and disease challenge is from sclerotinia. Keep a 5 year break between red clover crops to avoid a build up of eelworm. Not the same strains for white and red clover so white can be sown to break the pest cycle.

CASTLE MIXTURES® FOR ALL YOUR NEEDS

Mixture	Duration (Years)	Mainly Cutting	Dual Purpose (mostly cutting)	Dual Purpose (mostly grazing)	Mainly Grazing	Guide Sowing Rate (Kg/Acre)
BALVENIE™	1-2	✓				14
TANTALLON®	2-3	✓	✓			14
RED TANTALLON®	2-3	✓	✓			14
AIRLIE™ (+ RED)	3-4	✓	✓	✓	✓	15
DUART™	4-7	✓	✓		✓	15
ROSLIN™	4-7	✓	✓		✓	15
EDZELL®	4-7		✓	✓	✓	15
DUNDAS®	4-7		✓	✓	✓	15
HERMITAGE™	4-7			✓		15
HERBAL LEY	4-7			✓	✓	14
GREENAN™	7+		✓	✓	✓	15
MINGARY®	7+			✓	✓	15
FYVIE™	7+			✓	✓	15

- Varieties have been selected from the U.K recommended lists.
- Special mixtures available - for example, extra clover, no clover, addition of cocksfoot or westerwolds.
- Please contact your Watson Seeds representative to help choose the best mixture for your situation.
- If we make any substitutions of varieties in our mixtures, owing to demand, we will ensure that we only use the best alternative available.

Castle Mixtures®
Balvenie™, Tantallon®, Red Tantallon®, Airlie™, Duart™, Duart (NI)™, Greenan™, Roslin™, Edzell®, Dundas®, Hermitage™, Brodie™, Mingary®, Fyvie™

BALVENIE™
VERY BULKY 1-2 YEAR MIX

'Producing high quality grass silage for the onsite AD Plant is very demanding. We need a high yielding early multi cutting two year ley which doesn't thin out in the second year. Watson Seeds embraced this remit with our adapted Balvenie mix and the results are quite exceptional, consistently getting a seasonal FW tonnage of 50-55T/ha at 30% DM. The mix gets away quickly in the spring allowing an early May first cut which sets up the season nicely.'

Gordon Cairns, Stracathro Estates, Brae of Pert, Laurencekirk.
Alex Eggo pictured with Gary Stewart and her dog Frankie.

VARIETY	TYPE	%
Meribel Gemini (T)	Italian Ryegrass	78.6
Barclamp	Hybrid Ryegrass	21.4

Very bulky over several cuts

Leafier than straight Italian

Offers fast establishment

TERM TIME (years)	GRAZING SUITABILITY (1-5)	CUTTING SUITABILITY (1-5)	TETRAPLOID (%)
1-2	2	5	29

TANTALLON®

OUTSTANDING 2-3 YEAR MIX

Johnny and James Lawrie inspecting the first cut at Cuthill Towers on the 15th May 2022 with D.Scobbie and Son contractor. Analysis was as follows: D value - 73.1, ME - 11.7, protein - 16.7, DM - 30.5
'We were very fortunate with what showers we caught at the right time last year and we went on to take 5 cuts over the growing season for the first time here at Cuthill Towers. We are very pleased with the quality and quantity we produce from the adapted Tantallon mixture.'

James Lawrie, Cuthill Towers, Kinross. Home of the award winning Ayrshire herd.

- 3-4 silage cuts per year
- Excellent aftermath grazing
- Careful combination of hybrids & intermediate perennials
- Persistent growth

VARIETY	TYPE	%
Barclamp AberEve (T)	Hybrid Ryegrass	20.0
AberMagic Astonconqueror Bijou (T) Fintona (T)	Intermediate PRG	76.5
Rotational	White Clover Blend	3.5

TERM TIME (years)	GRAZING SUITABILITY (1-5)	CUTTING SUITABILITY (1-5)	TETRAPLOID (%)
2-3	2	5	36

RED TANTALLON®

HIGH PROTEIN 2-3 YEAR MIX

In our experience Red Tantallon always outperforms a monocultural crop of red clover.
We have assessed the grass/clover ratio in Red Tantallon, particularly to help deliver good persistency. The mixture delivers better forage quality under conservation with the fermentation process improved and a higher total yield over the growing season compared with straight red clover.

Watson Seeds Trial Site.

VARIETY	TYPE	%
Barclamp AberEve (T)	Hybrid Ryegrass	24.9
AberMagic Astonconqueror Bijou (T) Fintona (T)	Intermediate PRG	50.1
Rotational	White Clover Blend	3.6
Global	Red Clover	21.4

- High protein silage
- Up to 3-4 silage cuts per year
- Nitrogen fixing
- Excellent for fattening lambs
- High sugar grasses to aid fermentation

TERM TIME (years)	GRAZING SUITABILITY (1-5)	CUTTING SUITABILITY (1-5)	TETRAPLOID (%)
2-3	2	5	30

AIRLIE™ (+ RED CLOVER)

INTENSIVE 3-4 YEAR MIX

'With advice from Pat Lambert, Airlie was selected as the mixture of choice to be drilled within the arable rotation on contracted farmland outside of York, North Yorkshire. Due to the market volatility of fertiliser and the added benefits to soil structure, the environment and nutritional quality of the silage, red clover was also added to the mixture. For the project two good cuts of high quality forage is required for the breeding cattle per annum, then the land returning back into the arable rotation after 3-4 years.'

Tom Unsworth, Glenstone Farm, Stillington, York.

VARIETY	TYPE	%
AberMagic Astonconqueror AberSpey (T) Fintona (T)	Intermediate PRG	62.3
Dundrod Nashota (T)	Late PRG	20.7
Global	Red Clover	13.0
Rotational	White Clover Blend	4.0

- High density per M² of top intermediates
- Designed for maximum yield/quality on multiple cuts
- Blend of red & white clovers for persistence & performance with minimal artificial nitrogen
- Varieties for grazing with high utilisation traits

TERM TIME (years)	GRAZING SUITABILITY (1-5)	CUTTING SUITABILITY (1-5)	TETRAPLOID (%)
3-4	4	5	44

ROSLIN™

MEDIUM TERM DUAL PURPOSE MIX

'The ley was sown with an Amazone drill on the 27th of August and has currently been in the ground for a month. We are delighted with the quick establishment and will be looking to take a light graze before winter. We choose to go with this mix as we are aiming for a quality cut of hay at the end of June and then a subsequent silage crop. The field will be down for 5 years before returning to the arable rotation.'

Robert & Fraser Robb, Woodhead of Aberdalgie, Perth.

- Top intermediates for silage quality
- Outstanding late tetraploids for yield/quality
- Varieties selected from 4 top breeding programmes
- Includes rotational clover blend
- Good percentage of tetraploid for drought resistance

VARIETY	TYPE	%
AberMagic Astonconqueror Seagoe (T)	Intermediate PRG	41.9
Callan Glenrock Gracehill (T) Nashota (T)	Late PRG	53.1
Rotational	White Clover Blend	5.0

TERM TIME (years)	GRAZING SUITABILITY (1-5)	CUTTING SUITABILITY (1-5)	TETRAPLOID (%)
4-7	4	5	43

DUART™

HIGH ENERGY GRASS MIXTURE

'Our average herd performance is 10,000 litres and we produce primarily from grass supplemented with maize silage. We have used Watson Seeds Duart mixture on our farm for many years. It has consistently performed very well for us producing high yielding silage crops and quality grazing with swards that are easy to manage.'

Richard Jackson of Crossnacole Holsteins, Kiltegan, Co. Wicklow pictured with Eoin Jordan of Jordan Agri.

VARIETY	TYPE	%
AberMagic Astonconqueror	Intermediate PRG	13.0
AberLee Callan Dundrod Glenrock AberPlentiful (T) Nashota (T)	Late PRG	87.0

- Produces outstanding energy & protein levels
- Contains a high number of new generation high sugar grasses
- Later heading varieties allow flexibility over cutting dates
- Excellent ground cover & persistency
- Very high D value

TERM TIME (years)	GRAZING SUITABILITY (1-5)	CUTTING SUITABILITY (1-5)	TETRAPLOID (%)
4-7	5	5	32

DUART™ (WITH CLOVER)

HIGH ENERGY GRASS MIXTURE

Clive and Henry Williamson manage a high production liquid milk herd in the dairy heartland of County Wicklow. Good quality grass swards are the primary forage source for their herd plus supplementation with maize and whole crop wheat silages. 'Duart plus clover complements our milk production system. We have a relatively long grazing season and the blend of late perennials and clover gives us leaf palatable swards with good pasture clean out throughout the season. We also use Duart plus clover on our silage swards where it gives us consistent quality and excellent yields. The inclusion of clover in our swards is highly beneficial towards our targets to reduce our chemical fertiliser usage.'

Henry Williamson, Stratford on Slaney, Co. Wicklow pictured with Steve Treacy and Eoin Jordan of Jordan Agri

VARIETY	TYPE	%
AberMagic Astonconqueror	Intermediate PRG	11.0
AberLee Callan Ballyvoy/Dundrod Glenrock AberPlentiful (T) Nashota (T)	Late PRG	81.0
Rotational	White Clover Blend	8.0

- Produces outstanding energy & protein levels
- Contains a high number of new generation high sugar grasses
- Later heading varieties allow flexibility over cutting dates
- Excellent ground cover & persistency
- Very high D value
- Includes rotational clover blend

TERM TIME (years)	GRAZING SUITABILITY (1-5)	CUTTING SUITABILITY (1-5)	TETRAPLOID (%)
4-7	5	5	30

EDZELL®

DUAL PURPOSE LONG TERM MIX

'The quality and quantity of fresh and conserved forage produced by the Edzell mixture from Watsons is a pleasure to behold. Edzell here makes ewes milk during their outdoor lambing, produces quality forage that keeps cattle content in their winter housing, then at very high stocking rates it grows and finishes lambs in the autumn. What's even more impressive is how well it does all this in shallow soil next to the high heather of the Pentland hills.'

Dr Duncan Allison, Anston Farm, Lanark.

VARIETY	TYPE	%
AberMagic Astonconqueror	Intermediate PRG	23.9
AberAvon Dundrod Callan Gracehill (T) Nashota (T)	Late PRG	64.9
Comer	Timothy	6.5
Rotational	White Clover Blend	4.7

- High leaf/stem ratio ensures high quality silage
- Contains the top late heading varieties
- Persistent over many years
- Winter hardy
- Excellent for beef & sheep

TERM TIME (years)	GRAZING SUITABILITY (1-5)	CUTTING SUITABILITY (1-5)	TETRAPLOID (%)
4-7	5	4	28

GREENAN™

HEAVY/WET SOILS MIX

The Murphy family operate a long established high production spring calving Holstein herd near Skibbereen, Co, Cork.

'Quality grass swards combined with managing a long grazing season from February to November is the primary focus for herd nutrition. The Greenan mixture suits our land type well and provides us with large yields of quality silage and good grazing regrowth that's ideal for dairy or young stock grazing .We have also used a number of other Watson Seeds mixtures over the years and we continue to be satisfied with their quality and yield.'

Gearoid Murphy, Skibbereen, Co. Cork pictured with Niall Dwyer Area Manager Barrett Agri and Pat Lambert Watson Seeds.

- Excellent option for rotational grazing
- Highly resistant to poaching on heavier ground
- Offers exceptional ground cover
- High D values

VARIETY	TYPE	%
AberMagic Astonconqueror	Intermediate PRG	14.0
AberAvon Astonchieftain Callan Dundrod	Late PRG	80.0
Permanent	White Clover Blend	6.0

TERM TIME (years)	GRAZING SUITABILITY (1-5)	CUTTING SUITABILITY (1-5)	TETRAPLOID (%)
7+	5	5	0

DUNDAS®

DUAL PURPOSE MEDIUM/LONG TERM MIX

Noel O Shea manages a traditional spring calving Friesian dairy herd. The herd turnout to spring grass is early due to the local mild temperatures and almost continuous grass growth of this coastal farm. Quality grass mixes are important to best avail of these natural advantages. The Dundas mixture has performed well on my farm well across a mixture of soil types. It produces good yields of quality grass for grazing with a dense sward and good ground cover. The inclusion of productive clover blends is ideal and is ever more important in our nitrogen reduction targets.

Noel O Shea , Lough Hyne, Skibbereen , Co. Cork pictured with Niall Dwyer Area Manager Barrett Agri

VARIETY	TYPE	%
Gusto AberMagic AberSpey (T)	Intermediate PRG	38.4
AberAvon Callan Gracehill (T) Nashota (T)	Late PRG	50.1
Comer	Timothy	6.5
Rotational	White Clover Blend	5.0

Dense and highly productive sward

Top intermediates ensure heavy silage cuts

Includes rotational clover blend

Combination of grasses that exploit seasonal growth

TERM TIME (years)	GRAZING SUITABILITY (1-5)	CUTTING SUITABILITY (1-5)	TETRAPLOID (%)
4-7	5	5	39

'Dundas works well for our March lambing ewes at Nunraw in that we get an early bite to get them started. We then shut it up to take 2 cuts of silage in June and August followed by good aftermath in the autumn. Our lower fields are established in August after winter barley and the higher ground after a double break of kale. We like its versatility and ability to produce good yields of silage.'

Harry Hamilton, Nunraw, Garvald, East Lothian.

'I have used Dundas for a number of years and we are delighted with the excellent grazing and its ability here to make up to 3 cuts of high quality silage. Last year we made our best silage ever using Dundas, which went on to win the Agriscot Big Bale category.'

Alex Sanger, Prettycur, Montrose, Angus. Agriscot Big Bale winner, February 2022.

MINGARY®

LONG TERM MAINLY GRAZING MIX

Dan Lynch Area Manager Barrett Agri surveys a newly sown Mingary mixture on the suckler beef farm belonging to Mary Mc Sweeney, Bantry, Co. Cork. Mingary is an ideal mixture for grazing and silage on the more difficult soil types. The inclusion of timothy and clover contribute very positively to yield, sward quality and sward density. Abundant levels of clover such as shown largely help to reduce the requirement of artificial nitrogen enhancing overall farm profitability.

Dan Lynch Area Manager Barrett Agri pictured near Bantry Bay, West Cork.

VARIETY	TYPE	%
Astonconqueror Gusto Fintona (T)	Intermediate PRG	20.1
AberAvon Astonchieftain Callan Nashota (T)	Late PRG	67.4
Comer	Timothy	6.5
Permanent	White Clover Blend	6.0

- Produces very dense swards
- Suited to one cut per year
- High proportion of clover assists with palatability
- Our most popular long term mixture
- Special mixture with added cocksfoot is available

TERM TIME (years)	GRAZING SUITABILITY (1-5)	CUTTING SUITABILITY (1-5)	TETRAPLOID (%)
7+	5	4	27

'Mingary was chosen as the mixture for my situation here at Achtuie Farm, as I run predominantly sheep and aim to make my own silage/hay for the winter months. This field was direct drilled by a local contractor who used an Erth Agri Seeder in 2021 and the results have been very rewarding. I grazed the field with sheep late on this spring, then shut off for a cut of silage, resulting in an impressive crop of 13 bales/acre. In this photo you can see the gimmers enjoying the reseed with a grand view of Loch Ness.'

Donald Fraser, Achtuie, Drumnadrochit, Inverness-shire.

'The field of Mingary has been in the ground for 5 years and it is continuing to perform. The 30 acres is divided into 8 paddocks with stock moved roughly every 4 days depending on grass growth. It has good white clover content and no fertiliser has been applied this year. Despite the dry conditions it has grazed 250 ewes and twins across the season.'

George McFadzean, Woodhead of Mailer, Perth.

HERMITAGE™

DESIGNED FOR RECLAIMING & RESEEDING HILL & MARGINAL GROUND

'The field came out of a very old ley that was limed, manured, and had two years of a kale and rape mixture that was grazed in situ. It was never ploughed and had the forage crops direct drilled before it was power harrowed and sown with grass seed mid-June and rolled straight afterwards to try and maintain what little moisture was there. I am delighted with how it has established and have been impressed with how the diverse grasses and herbs have performed given the dry challenging year. It has finished 300 lambs up until the end of October and is now carrying 150 lambs and 10 heifers into November.'

John Davidson, Farm Manager, Penicuik Estate Partnership, Penicuik, Midlothian.

- Native upland species included
- Maintains sward density under harsh winter conditions
- Permanent clover blend ensures livestock performance

VARIETY	TYPE	%
AberMagic Astonconqueror	Intermediate PRG	26.7
Dundrod AberPlentiful (T) Nashota (T)	Late PRG	41.6
Comer	Timothy	13.0
Maxima	C R Fescue	6.7
Libon	Meadow Fescue	3.3
Aurora	Alsike Clover	2.7
Permanent	White Clover Blend	6.0

TERM TIME (years)	GRAZING SUITABILITY (1-5)	CUTTING SUITABILITY (1-5)	TETRAPLOID (%)
4-7	5	2	21

HERBAL LEY

MULTISPECIES MIXTURE

'Watson Seeds Multi Species Mixture is helping us to farm with significantly less artificial fertiliser and has enhanced our dairy herd performance. Farmyard slurry has been the only source of fertiliser used on our multi species swards this past season. Furthermore they contribute as much grass as conventional swards and our herd produces 2 litres extra milk yield while grazing multi species compared to our existing swards'

Johnny O Hanlon, Golden Hill Farm, Co. Kerry pictured with Nicholas Leen, Watson Seeds agent and Pat Lambert Watson Seeds.

- Excellent soil improver through varying root depths
- Low input
- Provides extended grazing
- Ideal for paddock rotation
- May be cut occasionally
- Diverse feed for ruminants
- Herbs offer anthelmintic benefits

TYPE		%
Intermediate PRG (T) Late PRG (D) Late PRG (T)	PRG Grasses	40.0
Timothy Cocksfoot Tall Fescue Sheeps Fescue Meadow Fescue	Grasses	30.0
White Clover Blend Red Clover Alsike Yellow Blossom	Clovers	20.0
Chicory Plantain Yarrow Burnet Sheeps Parsley	Herbs	10.0

TERM TIME (years)	GRAZING SUITABILITY (1-5)	CUTTING SUITABILITY (1-5)	TETRAPLOID (%)
4-7	5	1	25

FYVIE™
HIGH CLOVER MIX

'Fyvie was sown in mid-May into a very dry seedbed but, despite the very dry summer, it tillered out well. Yearling deer calves have grazed it throughout the summer and autumn increasing growth rates. Now at the end of November, it is still growing well despite no fertiliser at all so it will look good for turn out in the spring.'

David McTaggart, Hallrule Farms, Bonchester Bridge, Hawick.

VARIETY	TYPE	%
AberMagic AberSpey (T)	Intermediate PRG	26.7
AberAvon Dundrod AberPlentiful (T) Gracehill (T)	Late PRG	60.0
Comer	Timothy	4.0
Permanent	White Clover Blend	9.3

- High tetraploid content ensures high palatability
- High clover content ideal for low nitrogen situations
- Excellent on lighter soils
- Drought tolerance due to deeper rooting grasses

TERM TIME (years)	GRAZING SUITABILITY (1-5)	CUTTING SUITABILITY (1-5)	TETRAPLOID (%)
7+	5	4	47

REJUVENATION™
ALL TETRAPLOID RYEGRASS MIX

'The ability to successfully rejuvenate tired pastures on the farm is key to providing suitable paddocks and quality cuts of haylage for my livery and Auchendinny Simmental herd. The field was subsoiled with a Sumo GLX in 2020 and rejuvenated with an Opico Grass Harrow. I am delighted with the establishment of the Watson's Rejuvenation mixture and getting fresh grass into the field has transformed its performance.'

Liz Robertson, Home Farm, Dalkeith, Midlothian.

- All tetraploid offers good establishment in competitive swards
- Highly palatable
- Puts new life and vigour into ageing swards
- Also available with CAST clover blend

VARIETY	TYPE	%
Astoncrusader (T)	Hyrbid Ryegrass	10.0
AberSpey (T) Fintona (T)	Intermediate PRG	40.0
Nashota (T)	Late PRG	50.0

TERM TIME (years)	GRAZING SUITABILITY (1-5)	CUTTING SUITABILITY (1-5)	TETRAPLOID (%)
4-7	4	4	100

ORGANIC
CASTLE MIXTURES

'We have used Organic Fyvie with increased percentage of white clovers for a good number of years now with great success. Over the past 2 years we have added red clover, chicory and plantain to our Fyvie mix with considerable success. Giving good liveweight gains combined with increased soil conditioning. This year we have also sown Organic Airlie with increased percentage of red clover to give us a high quality forage for silage, which will be cut 3 times through the season.'

Giles Henry, Oakwood Mill, Selkirk, Borders.

TANTALLON	For intensive cutting or grazing, contains high red clover content
AIRLIE	Highly productive 3 – 4 year mixture
DUART	A specialist all perennial ryegrass mixture for conservation or grazing
DUNDAS	The very best dual purpose medium/long term mixture suitable for cutting & grazing
MINGARY	The long term grazing mixture
FYVIE	Specialist grazing mixture with a high clover content
HERBAL LEY	4-7 year multi-species mixture
REJUVENATION	The mixture to put new life and vigour into ageing swards

For our full range of organic mixtures, please visit our website www.watsoneeds.com.
Mixtures have been developed to suit organic farming requirements.

AMENITY MIXTURES

We were delighted to support the 200th Anniversary Royal Highland Show last year and catch up with so many of our customers in the Pentland Pavilion.
Kenny Liddell from groGreen works with the showground team to ensure the main ring is in fine order for the show.

Main Ring, Royal Highland Showground, Ingliston, Edinburgh.

Our sister company groGreen offer a large range of grass seed mixtures, fertilisers etc. suited to the landscape & amenity sector.

GRASS SEED & WILDFLOWER MIXTURES

FERTILISERS

HERBICIDES

APPLICATION EQUIPMENT

TOP SOILS & COMPOSTS

PRODUCT GUIDE

www.grogreen.co.uk

VARIETY & MIXTURE TRIALS

2022 has been the third full season of our grazing trial at Upper Nisbet. The 8.4ha field with 8 paddocks has again been stocked with bulling heifers at a stocking rate of 2400kg LW per ha.

Once again the season has been dominated by the very dry period from March to August when the field only received 198mm of rainfall (33mm per month) combined with higher seasonal temperatures.

We have measured weekly grass growth on the plots and recorded residual grazing heights once the cattle move on to the next paddock. The graph for the season shows earlier growth at the end of March (20kg DM per ha day), peaking on the week of the 9th May with 100kg achieved and then steadily falling away, as moisture deficits grew and only 18kg DM ha per day achieved at the end of August. The single stand ryegrass plots received 95kg N/ha and the mixtures with white clover received 50kg N/ha.

Key findings for the season

1. Even in prolonged dry spells the Castle Mixtures with white clover kept their colour and palatability and grew more DM per ha (2.8 tonnes) than the single stand PRG varieties with an additional 45kg N/ha.

2. The mixtures with timothy, cocksfoot and meadow and tall fescue produced more growth both early and late in the season than mixtures based solely on PRG. These mixtures have also analysed very favourably provided they are grazed well and reset for the next round of rotational grazing.

3. The single stand PRG varieties often look stressed with the dry conditions and high SM deficits. The weakness of monocultures has also allowed the ingress of docks whereas the mixtures have not had to be treated due to better ground cover and competition.

4. The tetraploid PRG varieties have once again analysed well and shown more resilience in the dry conditions with their stronger rooting. The next 2 seasons will inform us more on persistency compared to the more prostrate diploid PRG varieties.

5. The amount of below ground rooting mass and general soil health will also become more pronounced as the trial heads into its forth season. Already there are noticeable differences with the more diverse mixtures over the single stand PRG plots.

TORGORM TRIALS

In 2022 Watson Seeds sowed out grass plots, which would demonstrate mixtures, which are commonly used up in the North of Scotland. Shaun and Ewan MacDonald and farm manager Euan Ferguson at Conon Brae Farms, Torgorm, Conon Bridge kindly agreed to let us perform the trial plots and the sole aim of these plots is animal performance DLWG.

The field is 14 acres (5.66ha) in total and is split up into 3 x 1.88ha plots demonstrating 3 grazing mixtures. This field was swedes before being sown out in the grass plots on 7th June 2022. The mixtures have been carefully selected to meet the conditions and a herb aspect has been added, it will be interesting to see how the lambs perform. For the DLWG/animal performance trial, each plot has been set stocked with 70 lambs averaging 39.5kgs. All lambs received a mineral and worm dose prior to grazing their respected plots. These lambs will be on each plot for 3 weeks (starting from 28th September) and re weighed, hoping for a healthy increased DLWG resulting in a good draw for the abattoir.

The mixtures that were chosen are as follows:

Mingary with extra clover. This is the mainstay grazing mixture at Torgorm and is a mainly grazing mixture with the option of a cut of silage/hay. Mingary is a long term mixture that consists of perennial ryegrass, timothy, and white clover.

Hermitage plus alsike clover. This is a multi-species mixture, which includes hybrid ryegrass, perennial ryegrass, cocksfoot, timothy, smooth stalked meadow grass, creeping red fescue, herbs and white clover. In addition we added in alsike clover, as this clover grows particularly well in wetter, more acidic soils and this will help with overall establishment and soil health.

Fyvie plus red clover, chicory, and plantain. This is a long term cutting and grazing mixture, that is tailored for lighter soils, with a higher inclusion of deeper rooting grasses (tetraploid ryegrass) and a higher clover content. Red clover, chicory and plantain was added into the mix and with the large tetraploid ryegrass content. These added herbs and clovers will establish well, as there is plenty room to grow.

By having these 3 grazing mixtures on trial, it will be interesting to see how each lot of lambs perform and this will also give a solid platform for customers and potential customers to have a look in, and anticipate the results coming back.

CONSERVATION MIXTURES

'It is a vital part of the rotation at Penicuik Estate and as much attention must go into the establishment of the green manure as any other crop on the farm. It was direct drilled into wheat stubble around the middle of June and rolled in September before wheat was direct drilled. It is an essential crop in building fertility and cultivating the ground. I am using the green manure in place of a tractor, diesel and a man sitting on a seat. It is helping to improve the overall health of the soils across the farm and creates a friable seedbed which is lovely to drill into.'

John Davidson, Farm Manager, Penicuik Estate Partnership, Penicuik, Midlothian.

There is an increased focus on the environmental contribution the agricultural sector can make. Utilising land and sowing mixtures to comply with government schemes is a good way of generating income, improve biodiversity and soil conditions while fitting into a rotation.

The current schemes available are Ecological Focus Areas (EFA) and Agri-Environment Climate Scheme (AECS).

As an independent seed merchant, we have the benefit of offering bespoke mixtures to comply with the various schemes while offering the maximum benefit to the client and environment.

MAIN SCHEMES

AECS – Scotland

- Species Rich Grassland
- Wild Bird Seed for Farmland Birds
- Forage Brassica for Farmland Birds
- Stubbles followed by Green Manure in Arable Rotation
- Green Manure
- Grass Strips in Arable Fields
- Beetlebank
- Water Margins in Grassland Fields

EFA

- EFA Fallow (EFAFAL)
- EFA Nitrogen Fixer (EFA-NFIX)
- EFA Greencover (EFAGC)

For more information please visit our website or speak to an adviser

www.watsonseeds.com

AGRI-ENVIRONMENTAL MIXTURES

We offer a range of mixtures to suit all agri-environmental schemes. These schemes have become more popular in the past few years and will continue to be a valuable source of income to the agricultural sector. We have listed below our most popular mixtures. However, we can produce mixtures to suit any scheme or specific requirements.

SPECIES RICH GRASSLAND

Mixture containing 15% native Scottish flowers and sympathetic grass species for recreating a species rich grassland. Available as a flower only option.

WILD BIRD SEED (FOR FARMLAND BIRDS)

Where establishment of Wild Bird Seed mixtures are permitted, our mixture offers hardy winter cover and winter feed that supports our wild bird populations. Mixtures must include 3 small seed bearing plants, to include a cereal and an oil rich plant e.g., oats, triticale, barley, quinoa, linseed, millet, mustard or oilseed radish.

BEETLEBANK/FIELD MARGINS

Mixtures that have been designed to create wildlife habitats within farming environments. The mixture must include one tussocky grass species and at least one flowering species.

CUSTOMERS MUST ENSURE THEY ARE SATISFIED THAT THE MIXTURES PROPOSED MEET THE CRITERIA FOR THE SCHEME THEY ARE INTENDED FOR.

GREEN MANURE COVER CROPS

Our standard green cover mixtures have been developed through field experience and our Skateraw trials. For our very short post harvest growing season, these mixtures contain the correct proportions of species to produce optimum growth and therefore, soil benefit. Variations and straight species are available from stock.

MIX 1 (CC1)

Black oats/spring oats
Vetch

MIX 2 (CC2)

Black oats/spring oats
Fodder radish

MIX 3 (CC3)

Mustard
Fodder radish

MIXTURES FOR ALL AGRI-ENVIRONMENT SCHEMES ARE AVAILABLE

SOIL HEALTH

In the current uncertain climate, healthy soil is vital in reducing input costs while at the same time increasing productivity, sustainability and profitability. Assessing every field individually is important, looking specifically at fertility, soil structure and biology.

Soil sampling provides invaluable information on nutrient levels and allows decisions to be made regarding deficiencies and offers the potential to get the most from any crop. It will allow better planning on fertiliser and manure applications and ensure nothing is wasted or under-applied which is good for your business and the environment.

Soil sampling can be carried out at any time of the year although it should be avoided for a couple of months after compound fertiliser or organic manure has been applied. It is a relatively cheap and easy exercise to carry out and offers numerous benefits. A representative sample should be collected from the field aiming to take around 25 cores in a W pattern. It is crucial that the main elements pH, phosphate, potash, magnesium, and calcium are all at target levels and action should be taken to rectify any deficiency.

One of the easiest ways of finding out what is going on in your soil is to grab a spade and have a look, to assess the soil and root structure and any potential compaction issues. Poor soil structure will always lead to reduced yields, increased tillage costs and a higher fertiliser bill. There should be 10 worms per cubic foot in the soil and if there aren't any there is problem! The aim is to create as robust a soil as possible and well drained soils with good structure have the potential to cope better with extreme weather patterns. Make sure that you know your soil texture and how it varies across the farm and make decisions to complement it.

The best way of dealing with compaction is trying to avoid it in the first place. Only use as heavy a tractor as you need for the given job and reduce the tyre pressures. Try to manage grazing intensity and reduce numbers at wetter times of the year when the soil is vulnerable. If action is needed to alleviate compaction an appropriate machine should be used to target the specific depth of the problem.

Soil biology should be forefront to any management decision and the least impactful option should be used whenever possible. Ploughing is still appropriate in some circumstances, but direct drilling may be a quicker, cheaper, and less damaging method to achieve the same results. Consider diverse species using herbs and deeper rooting grasses within swards where suitable and green manures and cover crops during a rotation.

A healthy functional soil is the foundation of any productive farming system. Through soil sampling, soil evaluation and careful management soils can be improved leading to better fertiliser utilisation, improved drainage, increased carbon storage, reduced tillage, better nutrient availability, water retention and a more profitable farm.

WATSON SEEDS OUT & ABOUT

Agriscot Virtual Show in February 2022
Ingliston, Edinburgh

Alex, Euan & Andrew at AgriScot in November 2022
Ingliston, Edinburgh

Royal Highland Show
Ingliston, Edinburgh

Watson Seeds trials open day at
Upper Nisbet, Jedburgh

NSA Scotsheep at
Over Finlarg, Dundee

World Charolais Congress at
Kersknowe Farm, Kelso

Andy all set up for his first
Wigtown Show

Ram Sales in
Kelso

Blackface Sheep National Show at Stirling Mart

GAME COVER MIXTURES

Producing a game cover crop requires the same attention to detail as other agricultural crops. Therefore, pH, seedbed preparation and fertiliser inputs should all be considered before sowing. Please speak to your Watson Seeds contact to discuss these requirements.

When selecting an ideal mixture we look at soil conditions, height of crop required and climatic conditions. This is why we have a large selection of mixtures to choose from. Our most popular ones are listed below.

These mixtures contain a range of species; kale, quinoa, linseed and mustard to name but a few and are mixed in a ratio to give the best results on site.

For our full comprehensive range please visit our website.

GC1

Food and shelter for wild birds and game in year 1 and 2.

Kale
Quinoa

GC3

Cover and food for wild birds and game in year 1 and 2.

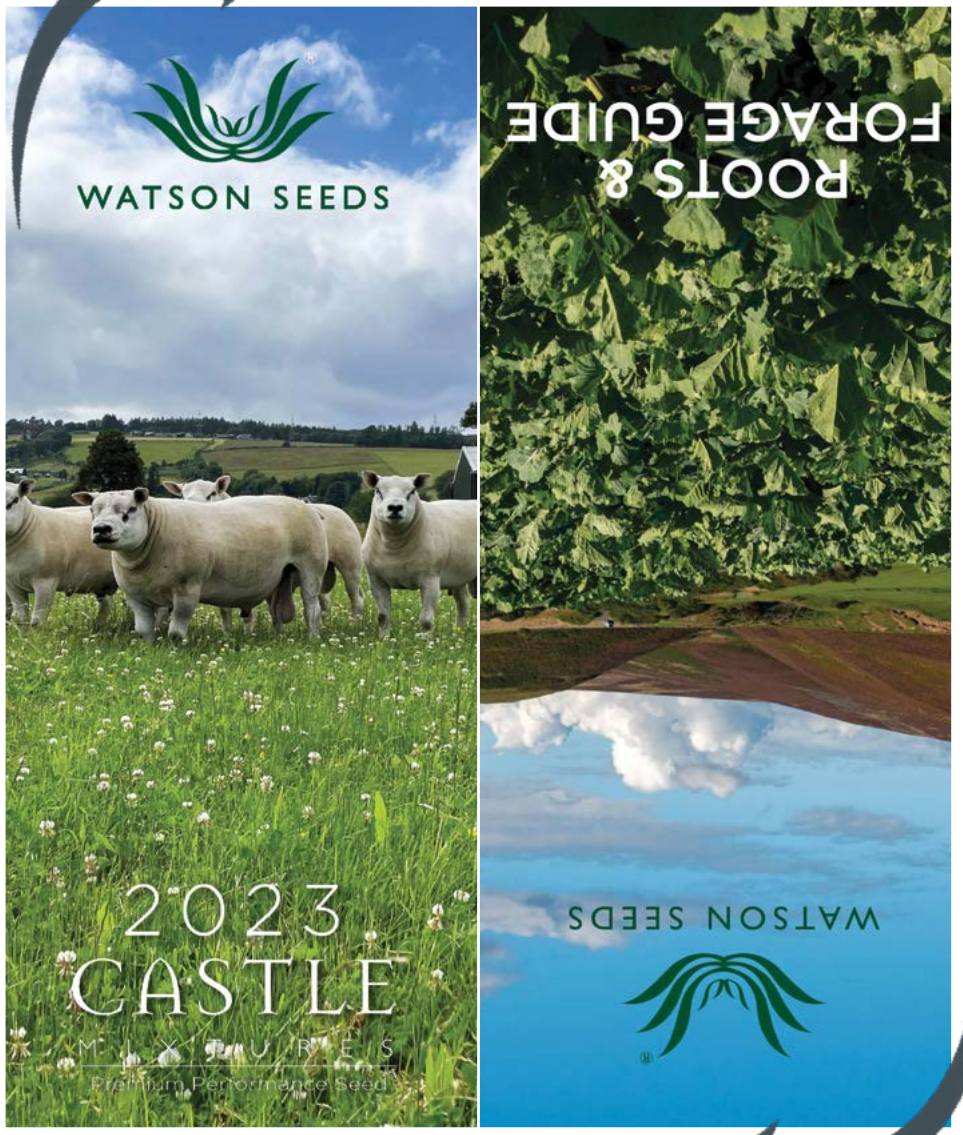
Spring Triticale
Kale
Quinoa

LABRADOR

Tolerates low pH and difficult soil types, whilst providing quality cover.

Spring Triticale
Mustard
Kale
Linseed
Quinoa

TURN OVER & FLIP TO THE 'BACK'



TURN OVER & FLIP TO THE 'BACK'

FEEDING GUIDELINES

In this short feeding guide we aim to give you a few simple steps to ensure the best performance and utilisation is achieved.

- Recommended inclusion rates should be between 70-80% of total dry matter intake
- Access to straw or hay as well as the forage brassica is important
- Ensure a good water supply
- Occasionally, overfeeding can cause goitre and blood anaemia but access to straw and hay can help reduce risks of this problem

A lot of the forage will be grazed in situ and we hope the guide below helps you calculate your feeding numbers.

CROP	AVERAGE FRESH YIELD	LESS WASTAGE FACTOR	UTILISABLE YIELD	GRAZING DAYS PER HA		
				SHEEP RATION		DAIRY OR BEEF RATION
	T/HA	Grazing wastage %	T/HA	7.5kgs per day	10kg per day	22kg/2-3 hour grazing period
KALE	60	25	45	6,000	4,500	2,045
STUBBLE TURNIP	40	25	30	4,000	3,000	1,364
FORAGE RAPE	35	25	26.25	3,500	2,625	1,193
SWEDE	80	25	60	8,000	6,000	2,727

Source: Paul Morgan,Germinal

FEEDING SAFETY

INTRODUCE THEM SLOWLY

Introduce stock to brassicas gradually on full stomachs to avoid digestive upsets. Start with two hours a day, gradually increasing over 7-10 days to unrestricted access.

PROVIDE A RUN-BACK AND PROTECTION

A wide access run-back should have been factored in when the crop was drilled. This could be the grass headland or access to an adjoining field. These run-backs are essential for animal welfare and crop utilisation. Also, always provide shelter, such as a hedge or area they can get out of the wind.

STRIP GRAZE

Long, narrow breaks are best to enable all stock to access the crop at the same time and prevent localised poaching. The fence should be moved daily.

Start grazing at the top of the hill and work your way down to reduce run-off and environmental risk. Double fencing is also advisable. A fence at the feed face can be looped round one end of the field in a U and used to make a second fence line behind. When stock are moved, the first fence line can simply be wound up. This eases stock movement.

Feed plenty of fibre

Brassicas are generally low in dry matter at about 12-15 % DM so fibre needs to be provided to provide scratch factor and promote rumen function. Fibre should make up about 20% of intakes. Straw will be adequate for dry cows, whilst better quality silage will be needed for growing animals. Bales should be put out ahead of grazing. Avoid driving tractors on to the field during the winter to limit poaching. Always provide drinking water.

Provide appropriate minerals

Brassicas tend to be high in glucosinolates, which can negatively effect iodine and vitamin E uptake. They are also low in copper, iodine, phosphorous and magnesium so it's important to provide these minerals. Bolusing every animal is advisable to ensure they get the right dose. A mineral bag can also be cut open over the top of a silage or straw bale to provide mineral with every bite.

SOWING RATES FOR GRADED SEEDS

	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

CROPS	NITROGEN (N) (kg/ha)	PHOSPHATE (P) (kg/ha)	POTASH (K) (k/ha)	N APPLIED AT SOWING (% of total)	N APPLIED LATER (% of total)
SWEDES	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 TURNIPS	40-100	25-85	20-110	60%	40% at 6-8 weeks
GRAZING TURNIPS	40-100	25-85	20-110	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.

MAIN CROP TURNIPS

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 *Available end of July*	A very high yielding variety of good keeping quality. A replacement for Greentop Scotch.	9	Green	Yellow

Sowing Rates

Direct drilled - 0.2-0.3kgs/acre
Broadcast - 0.75kgs/acre

Sowing Period

May to June

Utilisation Period

September to February

FORAGE MIXTURES

'We have been growing forage crops now for 3 years after changing our system, aiming to produce a 100% forage fed sheep system running 1000 ewes on 400 acres. The hybrid mixtures, supplied by James Bretherton, are grown to feed the ewes through winter from January onwards leaving all grass leys to have a rest ready for grazing in the spring. Once finished it is leaving behind a broken up sward ready to be direct drilled improving our grazing with new leys. It is allowing us to carry more ewes on the farm at a lower cost and still growing more forage!'

Mark & Thomas Hartley, A M & C Hartley, Pendle Valley Farm, Nelson. Lancashire.

'First year of using Gorilla forage rape and Samson stubble turnip. I found the yield/crop to be very successful in the dry and challenging summer of 2022. It is standing up well to a high stocking rate and utilising all the stem of the Gorilla and Samson, this seems to be a good solid fodder turnip and will hopefully withstand frosts when broken. I appreciate the professional help and advice about our forage and grass seed requirements from Andrew Best and the rest of the Watsons company.'

Steven Little, Borelands Estate, Eddleston, Peebles.

MIXTURES	DESCRIPTION
RAPE 1	A rape and stubble turnip mixture suitable for early drilling.
RAPE 2	An adaptation of Rape 1 with the inclusion of main crop turnips.
RAPE 3	A stubble turnip and rape mix with fast establishment for later use.
KALE 1	A winter hardy mixture containing kale, rape and main crop turnip, ideal for fattening lambs.
KALE 2	A unique combination of kale and swede for later utilisation.

HYBRID MIXTURES

MIXTURES	DESCRIPTION
HYBRID 1	A rape/kale hybrid, rape and main crop turnip mix similar to Kale 1, but can be sown later.
HYBRID 2	A rape/kale hybrid and stubble turnip mix similar to Rape 1. However, the vegetative yield from the hybrid should extend the grazing days.
HYBRID 3	A rape/kale hybrid and stubble turnip mixture. Vigorous crop that has the ability to be sown later in the season to provide a large dry matter yield for outwintering sheep & cattle.

FORAGE RAPE & HYBRIDS

HARDY, CAN GROW ON POORER SOILS & EXPOSED SITES

IDEAL FOR FATTENING LAMBS OR FLUSHING EWES

CAN ALSO BE LIGHTLY GRAZED BY CATTLE

FLEXIBLE SOWING PERIOD

FAST GROWING

'With input costs being a big concern for our business we needed a crop that would offer a good return on the investment. We decided to go with Redstart for its fast establishment and high yield capabilities and it has certainly offered both very well. Growth rates have been good and the overall condition of the lambs coming off crop has been excellent.'

Daniel Holmes, DHL Livestock Ltd, Back O'Hill Farm, Torrance, Glasgow.

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

KEY VARIETIES FOR CONSIDERATION

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.
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 (RAPE)	A new 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.

'We direct drilled this field of Redstart into a sprayed off grass sward after first cut silage. Sucklers will strip graze the crop with silage bales to reduce costs and to provide a break crop, before being sown back into grass with one of the Castle Mixtures.'

Chalmers Porteous, Barbershall, Castle Douglas, Kirkcudbrightshire.

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

'After some reclamation and drainage works, this field was sown out with Samson stubble turnips. I am delighted with the yield and quality of the crop. We will use it to finish some of our smaller hill lambs later in the season.'

Robert McTurk, Glenhowl, Castle Douglas, Kirkcudbrightshire.

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

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.

'Stubble turnips work well for my situation here at Muirton and by adding in a splash of hybrid rape/kale to the mix really enhances the yield and longevity, making sure I have plenty winter forage in the field for my sheep. This field in the photo was previously grass, and my aim was to sow in a forage break crop, graze it off with sheep and then re-introduce a cereal in the next year. By doing this, it will increase the fertility and organic matter in the field from the sheep dung and break up the soil underneath with all the different root depths from the stubble turnips and hybrid. This will help my next years crop of cereal, by increasing the fertility and organic matter in the soil, resulting in less use of bagged fertiliser, which will help reduce input costs. I am really happy with how the field has done so far, with the plan to start my lambs on this at the end of October and finishing them all off in the coming months. I have used this system for several years now, with great results.'

Rob Mack, Muirton Mains, Muir of Ord, Ross-shire.

KALE

BEST FOR LATE UTILISATION

BUFFER FEED FOR DAIRY COWS DURING DRY SUMMERS

USED FOR OUT-WINTERING SYSTEMS

WINTER HARDY

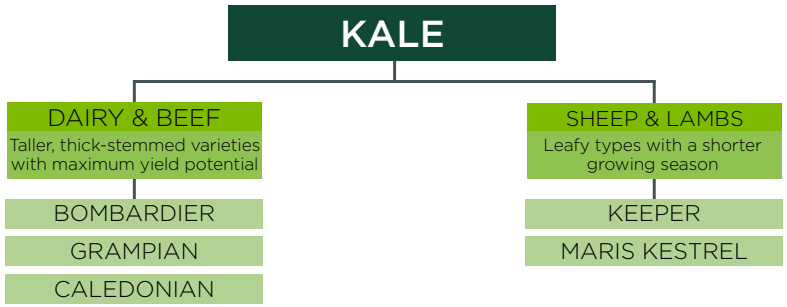
SECOND HIGHEST UTILISABLE YIELD

HIGHER YIELDS THAN HYBRID RAPE/KALE

'This field of Maris Kestrel kale was sown in mid June with an Erth direct drill. We are really pleased with the crop, which will be used to feed our spring calving sucklers from early November through until calving in March.'

Scott Elliot. Jack Armstrong, Barharrow, Castle Douglas, Kirkcudbrightshire.

WHICH VARIETY IS BEST FOR YOU?



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

VARIETY	DESCRIPTION
CALEDONIAN	Our highest yielding kale which is club root tolerant. It's high yield and quality makes it an ideal feed for cattle.
BOMBARDIER	A new variety which produces a high dry matter high yielding crop. Club root tolerant. Suitable for sheep and cattle.
GRAMPIAN	Medium height variety with good digestibility. High yield in autumn & winter. Suitable for sheep and cattle. Good game cover.
BITTERN	High quality and dry matter. Excellent frost tolerance. Suitable for sheep and cattle and good game cover.
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.

KALE VARIETY TRIALS

We established 4x1ha plots of kale on the 20th June at Upper Nisbet after old permanent pasture.

Plot 1 Caledonian kale/Triumph swede & berseem clover.
Plot 2 Bombardier kale/Triumph swede & sweet clover
Plot 3 Maris Kestrel kale/Triumph swede & crimson clover
Plot 4 Caledonian & Maris Kestrel kale 50:50 for standing ability

Despite the challenges of the flea beetle the plots got some rainfall and have emerged well. Robert Neill is going to strip graze the plots with autumn calving cows. We are measuring yield & grazing days and monitoring which of the short term clovers could potentially add some nitrogen & diversity to the mixtures.

FODDER BEET

ONE OF THE HIGHEST YIELDING FORAGE CROPS

HIGH IN ENERGY, PALATABILITY AND DIGESTIBILITY

CAN BE GRAZED IN SITU OR LIFTED, STORED AND THEN FED WHOLE OR CHOPPED

'This is our 2nd year of fodder beet at Longyester and it has allowed us to become more self-sufficient with home grown forage and reduce our reliance on bought in feeds. The Robbos was drilled in early May and despite only 76mm of rainfall in June, July and August it has hung in very well and bulked through September to November to produce an excellent crop. We have chosen to lift and utilise the crop on three to four separate harvesting dates through the winter and early spring so given the healthy leaf area, it should continue to bulk up the yield.'

Messrs Hogg, Longyester Farm, Gifford, East Lothian.

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

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

GET THE BEST FROM YOUR FODDER BEET

SOIL
Fodder beet has been grown in a wide range of soils. However, it is best grown in a light to medium soil in a free draining field. A pH of 7 is ideal.

SEEDBED
A firm, fine tilth is ideal with as little moisture loss as possible in the spring. Soil temperature of 5°C is required before sowing. Sowing too early in cold conditions can lead to bolting. Seed should be precision drilled to a depth of 2.5/3cm.

FERTILISER
Nutrition is essential and fodder beet is a demanding crop. Apply two thirds of N with all of P and K to seedbed. Apply one third of N 2 months after sowing. Trace elements are also important to fodder beet especially Boron and Manganese.

Requirements:

With farmyard slurry:	Without farmyard slurry:
N 100 kg/ac P 50kg/ac K 50kg/ ac	N 125kg/ac P 75kg/ac K 150kg/ac

WEED CONTROL, DISEASE AND PESTS
Good weed control is required to achieve the full yield potential. The use of a pre-emergence herbicide should be routine. The seeds are treated with fungicide and insecticide for protection through establishment. The crop can be attacked by several pests and therefore regular monitoring is essential. Major pests are flea beetle, slugs, springtails, symphalids and beet cysts.

HARVESTING
Many of the varieties can be grazed in situ which will give the benefit of utilising the tops as well as the root. If lifting, it is important to remove the tops down to the base of the leaf petioles. Keep soil contamination to a minimum.

FEEDING
If lifted - fodder beet can be fed whole to cattle over 250kg. Otherwise chop before feeding.

If feeding indoors a maximum of 8-10kg of beet/head/day with a readily available source of fibre. The beet would likely make up around 60% of DM intake per day. If grazed a maximum of 70% of DM intake per day.

It is important to introduce fodder beet **gradually** with a starting point of 2kg DM intake per day/head and adding another 1kg DM intake every 2 days/head up to the maximum of 8-10kg.

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

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

'This crop of Lomond shows the regenerative power of swedes. A month after being sown on the 14th May, you literally had to be on your knees to read a drill, a consequence of capping, drouth, flea, hares, crows etc. I was worried the bulbs would be too small to lift but, although not my usual bumper crop, they have compensated well.'

Keith Cuthill, Ballownie, Brechin, Angus.

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

WHICH VARIETY IS BEST FOR YOU?

SWEDES

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

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

'Growing swedes at Wester Fearn is a very important part of our winter feed ration. The 2 varieties that I tend to choose are Lomond and Invitation. These 2 varieties work well for me as I am impressed with their winter hardiness and the overall yield they produce. I sow them in drills before harvesting in the winter months to feed to cows and calves using an auger bucket as well as using them for ewes pre and post lambing. In this photo I am standing holding up Lomond swedes and the cows behind me are pedigree Aberdeen Angus, with the aim to produce breeding bulls and replacement heifers. Yield measurements were taken at random and the result was a very pleasing with an average of 12.8 tonnes/DM/ha.'

Gregor Laing, Wester Fearn, Ardgay, Sutherland.

Rising feed costs have brought about renewed interest in forage crops.

Forage crops have the potential to produce very high yields over a short growing season, combined with a flexible sowing window from early summer to the beginning of August. These crops can be fed from ten to fourteen weeks from sowing.

Root and forage crops can be fed to all classes of livestock, either for milk production or live weight gain and are suitable for organic and conventional farming.

These crops demand relatively modest inputs of agrochemicals and fertiliser. With their high dry-matter yields, production costs compare favourably with those for conserved grass, maize and whole-crop cereals.

At Watson Seeds we have selected, from the plant breeders, forage crop varieties which will give our customers a flexible range of crops, thus offering a suitable option for almost every farm situation.

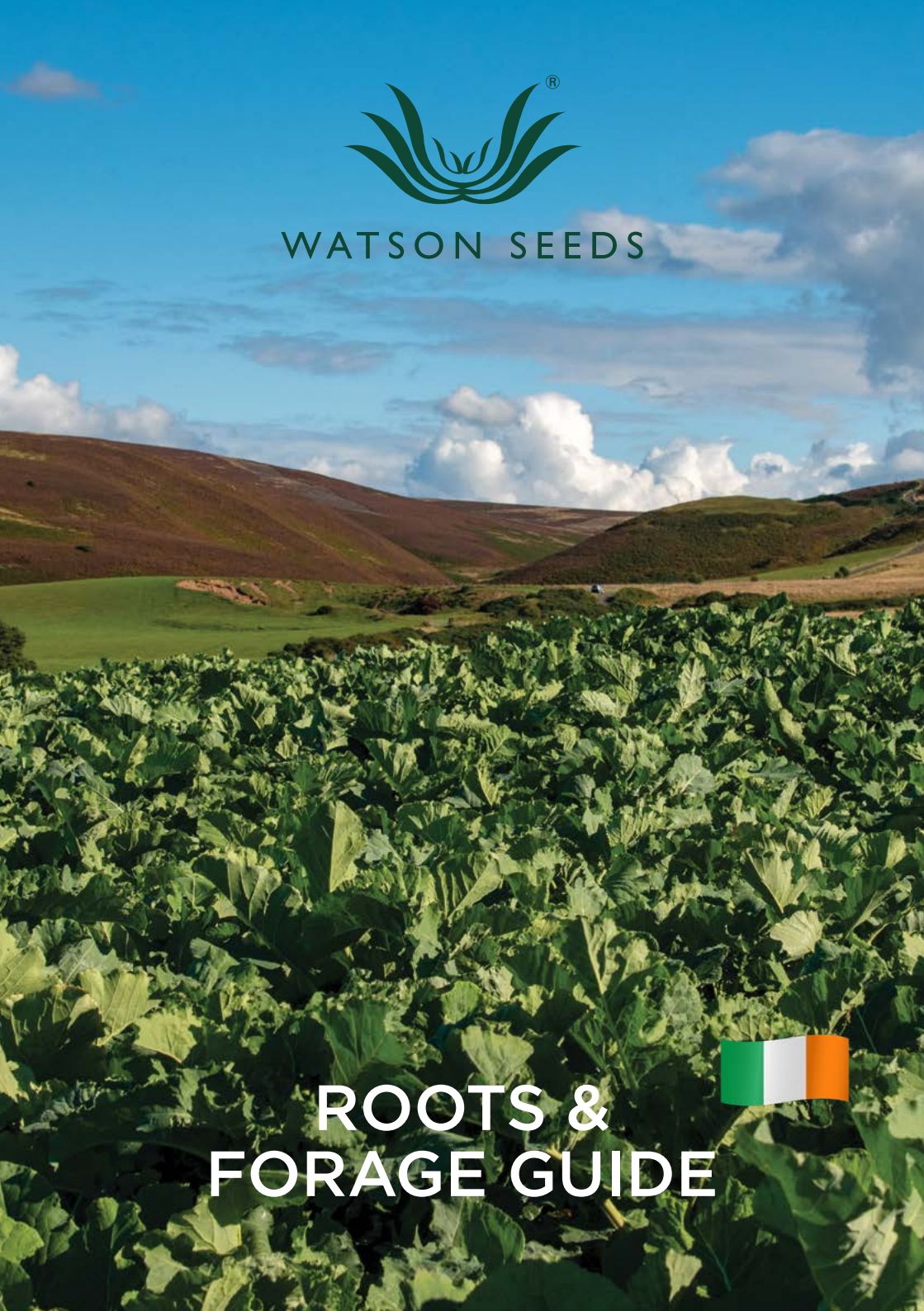
MAIN NUTRITIONAL CHARACTERISTICS OF FORAGE CROPS

CROP	SOWING DATE	TIME TO MATURE	UTILISABLE	SOWING RATE/ACRE	DRY MATTER T/ACRE	CRUDE PROTEIN	D VALUE
FODDER BEET	April - May	24-28 weeks	October to November	40,000 seeds/acre	6.0-7.25	12-13%	78
STUBBLE TURNIP	May to August	12-14 weeks	August to February	2kgs (drilled) 3kgs (broadcast)	1.6-2.25	17-18%	69
RAPE/ KALE HYBRID	July to August	12-14 weeks	September to February	2kgs (drilled) 3kgs (broadcast)	1.4-1.6	15-24%	66
FORAGE RAPE	May to August	10-12 weeks	September to February	3kgs (drilled) 4kgs (broadcast)	1.4-1.6	19-20%	65
KALE	May to June	16-20 weeks	September to March	2kgs (drilled) 3kgs (broadcast)	3.25-4.0	16-17%	70-75
SWEDES	May	20 weeks	September to February	100-325g	2.85-4.0	10-11%	82
MAIN CROP TURNIPS	May to June	12-15 weeks	September to February	0.2-0.3kgs (drilled) 0.75kg (broadcast)	2.2-2.45	17-18%	68-70
CHICORY	May to July	8 weeks	April to October	2kgs	up to 6 (in season)	25%	70-80

CONTENTS

TURN TO THE 'BACK' FOR THE CASTLE GRASS MIXTURES SECTION

WATSON SEEDS®



ROOTS & FORAGE GUIDE