DLF

SEEDS & SCIENCE

QUALITY GRASS & FORAGE MIXTURES

- Grass Mixtures
- Multi-Species Mixtures
- Forage Crops
- Cover Crops
- Lawn Seed
- Wildflower Mixtures

Irish Certified Grass Seed Mixtures

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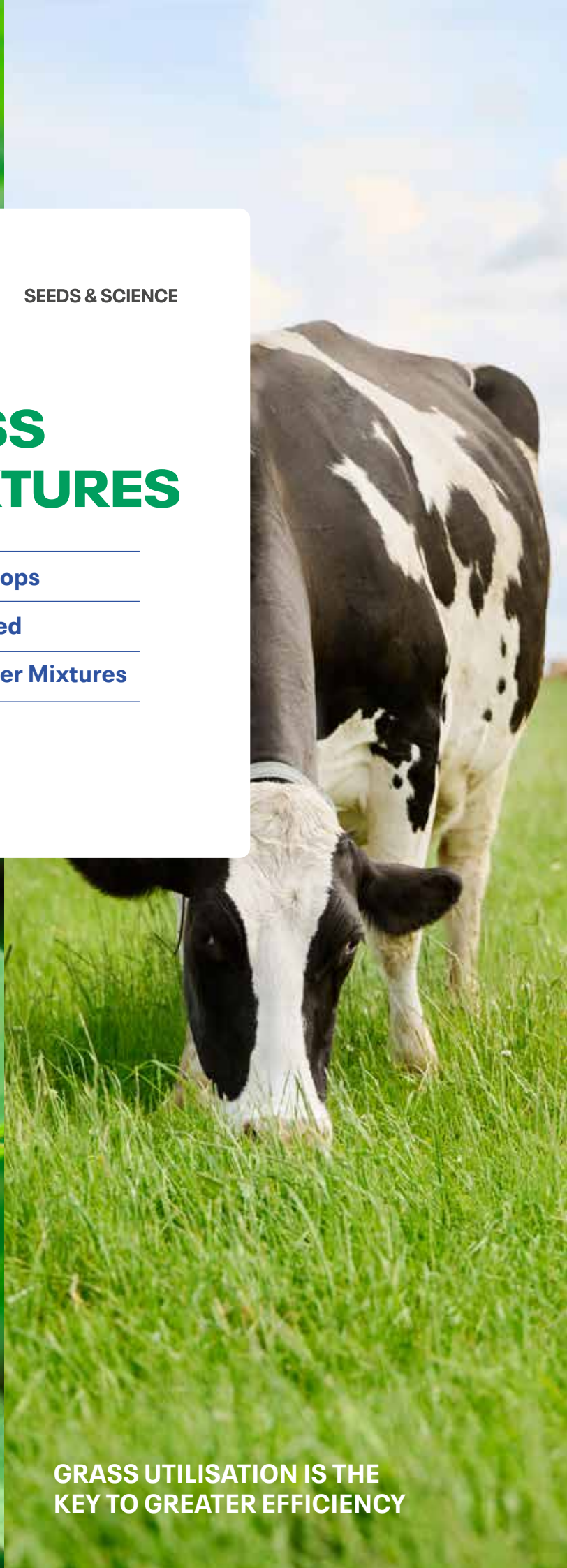

GRASS UTILISATION IS THE KEY TO GREATER EFFICIENCY

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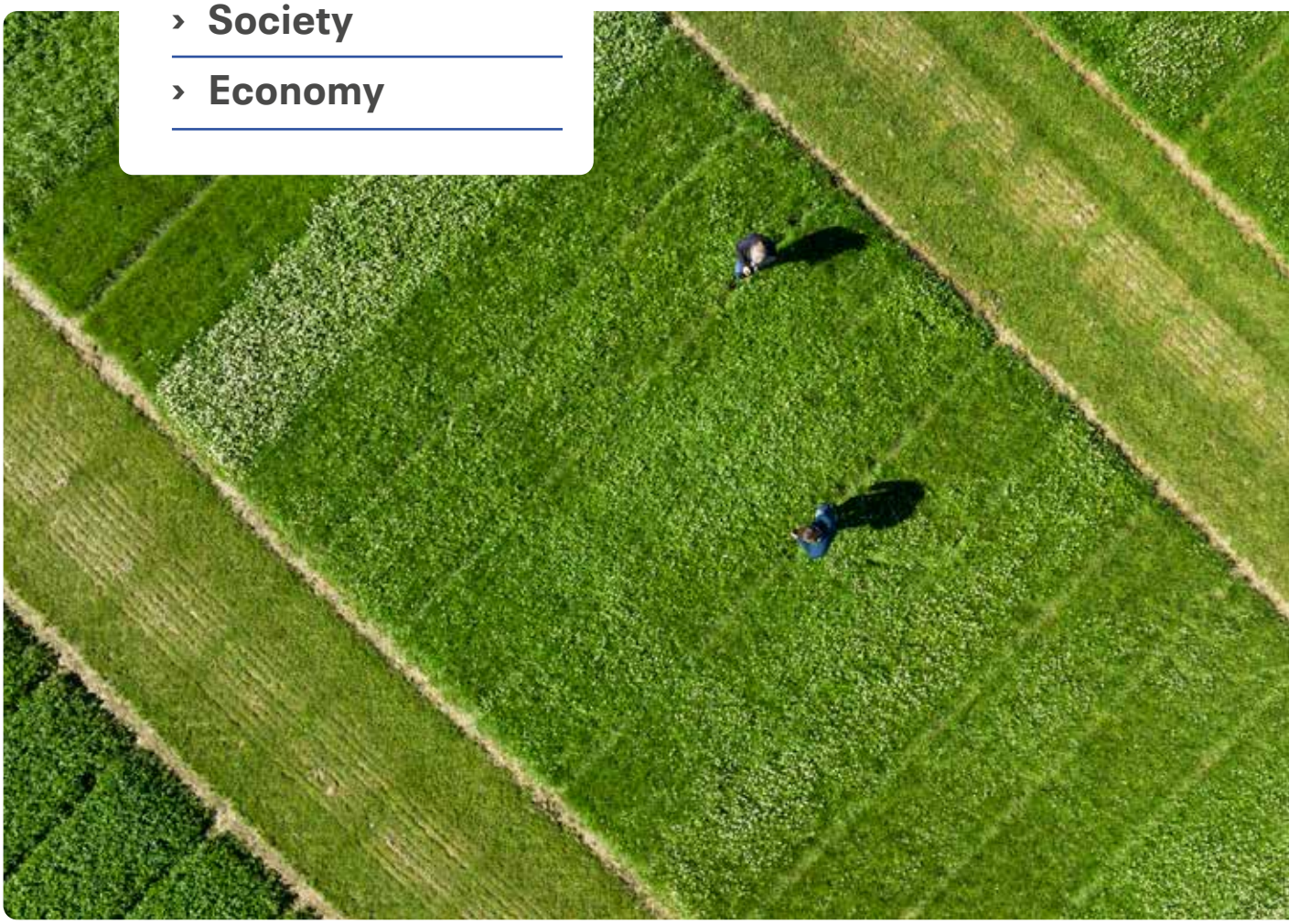
SUSTAINABILITY THAT WORKS FOR YOUR FARM AND THE PLANET

Climate change and environmental pressures demand more sustainable methods of agricultural production. To be truly sustainable, these methods must enhance our environment, our community and ultimately, our business.

We now have a clear target to achieve a 25% reduction in emissions from agriculture by 2030 while supporting the three pillars of sustainability.

- › Environment
- › Society
- › Economy



EASY WAYS TO REDUCE YOUR ENVIRONMENTAL IMPACT

DLF are committed to delivering forage solutions to contribute to Irish Agriculture achieving our climate targets.

We are taking a research-led approach so that Irish farmers can choose results-driven solutions without compromising the impact on the planet. We already have many tools to enable progress towards these goals while working at a global level to bring NxtGen solutions.

CHOOSE GRASS VARIETIES WITH HIGH UTILISATION FIGURES

Every additional tonne of grass DM utilised can increase profitability by €181/ha and reduce GHG emissions intensity by 4%, according to data from Teagasc. Choose 5*Grazing Utilisation varieties like DLF Nashota, Xenon and Aspect to maximise grass utilisation.

DIVERSE SWARDS - REDUCE N REQUIREMENT & IMPROVE RESILIENCE

Every 1kg of N applied as fertiliser can lead to the emission of ~5kg CO2-eqv. Incorporating red and white clover and multi-species swards into your farm system could reduce your fertiliser requirement by 150 – 250kg N/ha per year.

HOME-GROWN FEED

Reduce your C footprint and keep control of your winter feed stocks by growing your own protein and energy crops. High-energy crops like DLF Maize and DLF Beet are cheaper to produce per unit of energy utilised than 1st cut silage and bought-in grain. Protein crops like DLF N Saver Silage and DLF Alfalfa can reduce the amount of bought-in protein needed over winter and don't require any N fertiliser.

IMPROVE SOIL & WATER QUALITY

DLF's Cover Crop mixtures are designed to boost a range of soil functions and sequester C. The most important job of any cover crop is to cover the ground and prevent soil erosion, compaction and nutrient loss – keeping your soil and nutrients in the field and out of waterways!

DLF's Ecotain Environmental Plantain has been proven to reduce nitrate losses to water by up to 90%. Ecotain is available as an option with DLF grass mixtures and included in our Multi-Species mixtures.

DAFM RECOMMENDED LISTS AND TEAGASC PPI

			PASTURE PROFIT INDEX VALUES €/ HA/ YEAR							*Teagasc Grazing Utilisation Trait	Spring	Summer	Autumn	Total Yield	Mean DMD	1st Cut Silage	2nd Cut Silage	Ground Cover
			Total	Sub-Indices							(t DM/ha)	(t DM/ha)	(t DM/ha)	(t DM/ha)	(g/kg)	(t DM/ha)	(t DM/ha)	(Score)
Variety Name	Ploidy	Heading date	PPI	Spring growth	Summer growth	Autumn growth	Quality	Silage	Persist	Rating 1-5	1.17	7.54	2.44	11.2	843.6	4.55	4.38	5.8
INTERMEDIATES																		
Moira	D	26 May	209	108	39	57	-32	36	0	***	1.65	7.08	2.43	11.17	826.8	4.89	4.16	6.1
Astonconqueror	D	27 May	206	75	52	48	-10	42	0	****	1.46	7.39	2.34	11.19	835.7	5.21	3.93	6.2
Abermagic	D	28 May	215	31	64	78	18	24	0	***	1.19	7.69	2.62	11.51	844.9	4.64	4.09	6.2
Aberwolf	D	30 May	209	54	54	48	11	43	0	**	1.33	7.45	2.35	11.12	840.9	4.85	4.45	6.7
Abergreen	D	31 May	193	38	69	70	5	11	0	*	1.23	7.82	2.55	11.60	842.2	4.31	4.13	6.5
Gusto	D	31 May	176	50	51	64	2	9	0	****	1.30	7.37	2.50	11.18	838.9	4.32	4.04	5.8
Barwave	T	22 May	244	93	61	59	-20	50	0	-	1.56	7.62	2.45	11.64	836.0	4.98	4.51	4.9
Fintona	T	24 May	190	49	52	49	-5	45	0	*****	1.30	7.40	2.35	11.05	839.1	5.22	4.01	5.4
Aberclyde	T	25 May	253	51	66	46	44	46	0	****	1.31	7.74	2.32	11.38	852.0	5.23	4.04	5.6
Dunluce	T	29 May	184	23	58	52	24	34	-6	****	1.14	7.54	2.38	11.05	845.6	4.52	4.62	5.4
LATES																		
Oakpark	D	2 Jun	149	32	52	52	-12	25	0	*	1.19	7.40	2.38	10.98	833.3	4.33	4.55	6.5
Ballyvoy	D	3 Jun	186	65	46	47	19	10	0	*	1.39	7.24	2.34	10.97	843.1	4.14	4.32	6.2
Callan	D	3 Jun	126	71	39	35	-35	16	0	****	1.43	7.08	2.23	10.74	830.1	4.55	3.96	6.2
Drumbo	D	5 Jun	146	23	44	42	24	13	0	*	1.14	7.19	2.29	10.62	842.6	4.19	4.36	6.2
Astonking	D	5 Jun	141	61	50	36	-25	18	0	***	1.37	7.34	2.24	10.95	828.3	4.36	4.29	5.8
Aberbann	D	10 Jun	190	5	81	75	-25	54	0	***	1.03	8.11	2.59	11.74	832.2	4.46	5.36	5.9
Aberchoice	D	11 Jun	190	15	65	58	22	30	0	***	1.09	7.73	2.44	11.26	844.8	4.18	4.93	6.0
Bowie	**D**	**16 Jun**	**170**	**19**	**53**	**54**	**28**	**16**	**0**	**-**	**1.11**	**7.43**	**2.40**	**10.94**	**838.7**	**3.63**	**5.22**	**6.4**
Aberbite	T	1 Jun	175	-2	56	53	32	36	0	*****	0.99	7.49	2.39	10.87	849.5	4.55	4.62	5.8
Astonenergy	T	1 Jun	151	5	47	43	49	6	0	*****	1.03	7.27	2.30	10.60	854.1	4.33	3.95	5.5
Triwarwic	**T**	**2 Jun**	**141**	**20**	**53**	**30**	**7**	**32**	**0**	**-**	**1.12**	**7.42**	**2.18**	**10.72**	**842.5**	**4.63**	**4.39**	**5.8**
Nashota	**T**	**3 Jun**	**214**	**53**	**57**	**39**	**28**	**38**	**0**	**-**	**1.32**	**7.51**	**2.26**	**11.09**	**845.7**	**4.68**	**4.54**	**6.0**
Glenfield	T	3 Jun	207	59	63	40	3	41	0	-	1.36	7.68	2.28	11.31	841.1	4.74	4.55	5.7
Meiduno	T	3 Jun	195	45	56	46	27	21	0	****	1.27	7.50	2.33	11.10	848.8	4.41	4.31	5.2
Briant	T	3 Jun	156	10	58	46	13	29	0	***	1.06	7.54	2.33	10.93	841.2	4.51	4.47	5.5
Aspect	**T**	**3 Jun**	**136**	**11**	**50**	**30**	**27**	**23**	**-6**	*****	**1.07**	**7.36**	**2.19**	**10.61**	**848.5**	**4.13**	**4.77**	**6.0**
Abergain	T	4 Jun	241	34	61	50	47	49	0	****	1.20	7.63	2.37	11.20	852.0	4.91	4.56	5.6
Gracehill	T	4 Jun	241	46	60	58	10	67	0	**	1.28	7.60	2.44	11.31	840.9	5.35	4.56	5.6
Ballintoy	T	4 Jun	195	36	60	43	23	32	0	****	1.22	7.59	2.30	11.11	846.6	4.59	4.44	5.4
Anurad	**T**	**5 Jun**	**191**	**54**	**52**	**41**	**31**	**19**	**-6**	***	**1.33**	**7.40**	**2.28**	**11.01**	**846.7**	**4.64**	**3.82**	**5.6**
Xenon	**T**	**7 Jun**	**143**	**12**	**49**	**35**	**29**	**17**	**0**	*****	**1.08**	**7.33**	**2.23**	**10.64**	**846.1**	**3.98**	**4.77**	**6.2**
Aberplentiful	T	8 Jun	204	59	63	50	11	26	-6	**	1.36	7.67	2.37	11.40	842.1	4.27	4.69	5.5

D = Diploid T = Tetraploid *Teagasc Grazing Utilisation Trait is a provisional trait

RECOMMENDED WHITE CLOVER VARIETIES 2022

[1] Controls in 2018 Trial were Barblanca, Alice, Chieftain and Crusader.

* Values in brackets indicate leaf size compared to the variety 'Aran' (i.e. Aran = 1.00), based on data from UK D.U.S. tests. Data in square brackets [ ] provisional.

Variety Name	Total Yield	Leaf Size*	Clover %	Year 1st Listed	Breeder
[1]Control Mean (t DM/ha): 9.6t DM/Ha					
Barblanca	104.7	Large (0.76)	49.3	2009	Barenbrug
Violin	**101.2**	**Large (0.75)**	**45.9**	**2020**	**DLF**
Alice	100.0	Large (0.73)	49.0	1995	Barenbrug
Dublin	**101.8**	**Large (0.73)**	**49.0**	**2018**	**Teagasc**
Chieftain	97.2	Medium (0.68)	44.7	2005	Teagasc
Aberswan	94.3	Medium (0.65)	49.1	2022	IBERS
Buddy	**98.4**	**Medium (0.58)**	**46.1**	**2015**	**Teagasc**
Iona	**95.4**	**Medium (0.56)**	**43.3**	**2014**	**Teagasc**
Crusader	96.4	Medium (0.56)	44.1	2009	Barenbrug
Aberherald	97.7	Medium (0.56)	44.8	2003	IBERS
Coolfin	**103.8**	**Small (0.51)**	**46.3**	**2017**	**Teagasc**
Aberpearl	99.6	Small [0.51]	44.7	2022	IBERS
Galway	**95.4**	**Small (0.36)**	**37.2**	**2017**	**Teagasc**
Aberace	95.1	Small (0.26)	32.8	2016	IBERS

DLF PARTNER FARM PROGRAMME

With the support of a global research programme, DLF Ireland invests in Irish agriculture with a complete lab-to-farm research programme, delivering Forage First solutions for Irish farmers. We are not a seed trading company; we breed, research, and develop forage solutions for Irish Farms across all forage species and our Partner Farm Programme is an important part of this investment.

The DLF Partner Farm Programme plays a significant role in extending our R&D investment beyond our research trial site in Waterford. It allows DLF to bring our research to the farm gate, bridging the gap between controlled plots and the cut and thrust of a working farm with its management, livestock and weather challenges. Here we can see how new DLF varieties and mixtures really perform in Irish conditions.

Our Grass Partners are at the forefront of new technologies and mixtures. They are leading the way on concepts like over-sowing white clover, red clover silage, multi-species mixtures, Festulolium grasses and the inclusion of home-grown protein crops like Alfalfa.

The Partner Farms provide a focal point to demonstrate best practice management of new and emerging forage solutions on real working farms.

We have established the DLF Variety Grazing Trials on our Partner Farms to provide a detailed on-farm evaluation of up-and-coming DLF varieties. Each variety is assessed under real-life grazing conditions in terms of DM production, grazing utilisation and efficiency and animal performance. These Grazing Trials assess how our grass varieties perform on farm, which varieties work best in a rotational grazing system and, ultimately, which ones the cows like to eat the most!

We already see impressive results from this programme and the value it is bringing to Irish agriculture.

Kevin O'Hanlon,
Farm Manager

Co. Wexford

Michael O'Sullivan,
Farmer

Co. Kerry

Eamonn Kent,
Farmer

Co. Waterford

Frank Crinion
Farmer

Co. Meath

David Thomas,
Farmer

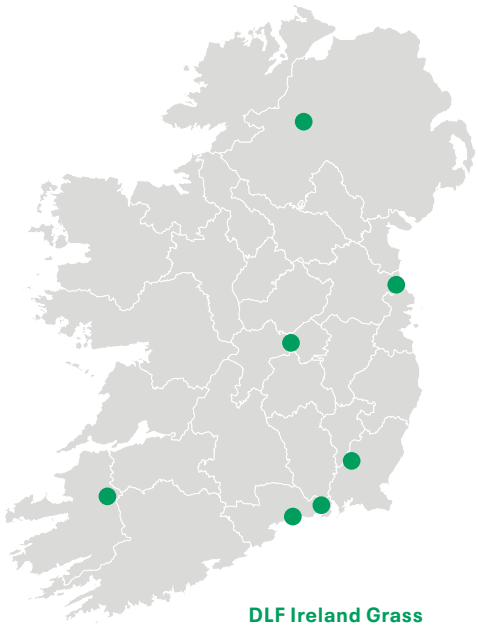
Co. Offaly

David Hunter,
Farmer

Co. Tyrone

Jonathan Tighe
Farmer

Co. Waterford



DLF Ireland Grass Partner Programme

Tetraploid varieties are the key to Grazing Utilisation

Research from Teagasc and the DLF Variety Grazing Trials (Figure 1) shows that Tetraploid varieties graze out better than Diploids, and the new Grazing Utilisation Trait on the pasture profit index confirms this. DLF's NxGen Tetraploids are changing grass traditions with the graze-out of varieties such as Nashota, Xenon and Aspect now understood by farmers who seek these out in their grass mixtures.

AVERAGE POST-GRAZING RESIDUAL FOR DIPLOID AND TETRAPLOID VARIETIES ON 4 PARTNER FARMS

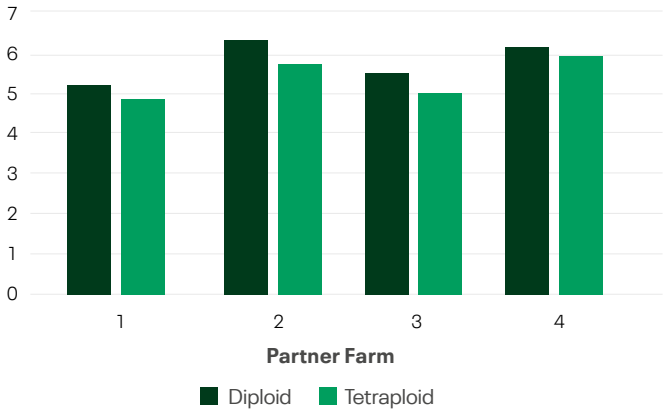


FIG 1: Average Post-Grazing Residual (cm) for Diploid and Tetraploid Varieties on 4 Partner Farms

"Through the Grass Partner Programme, I've learned the value of using grass varieties with high utilisation figures and how clover and multi-species can reduce my nitrogen bill."

Frank Crinon, Partner Farmer

PARTNER FARM GRAZING TRIALS SHOW THE VALUE OF EARLY AUTUMN RESEED

DLF Grazing trials show that swards sown in August will produce up to 1 tonne more grass the following spring than those sown in September (Table 1). This shortfall in spring grass growth by not reseeding in August could cost up to €250/ha.

DLF DELIVERS NXT GEN FORAGE FIRST SOLUTIONS TO IRISH FARMS

If you would like more information on the results of the Grass Partner Programme and would like to attend one of our Partner Farm events, please get in touch with Dr Thomas Moloney on 087 396 1265.

TABLE 1

Autumn sowing date and spring yield.

Spring yield is total grass DM up to April 15th.

Farm	Autumn Sowing Date	Spring Yield (kg DM/ha)
1	11th August	3224
2	31st August	2996
3	14th September	1890
4	18th September	1913

GRAZING UTILISATION

DLF has created the unique DLF 4N Grazer Mixture on the back of our research and with the PPI grazing utilisation star-ratings.

DLF 4N Grazer is an all-Tetraploid mixture designed to hit all your grazing targets and provide quality forage throughout the season, ensuring maximum grass utilisation.

DLF 4N GRAZER

Intensive Grazer

FEATURES

A unique all-Tetraploid mixture for excellent quality and graze-out.

- Nashota Xenon and Aspect are all 5 star grazing varieties
- 4N Grazer contains only late-heading varieties for maximum quality through the grazing season

***Vast is an outstanding performer on the DLF Variety Grazing trial providing exceptional spring growth and quality. Available in 4N Grazer from summer 23**

Nashota Late Tetraploid	53%
Xenon Late Tetraploid	20%
Aspect Late Tetraploid	20%
Grazing Blend White clover	7%

14KG BAGS = 1 ACRE

> **"single most important trait that farmers should be looking for when reseeding is… 5 star grazing utilisation"**
>
> **DR. THOMAS MOLONEY, DLF**

GRAZING

DLF 4N Grazer & DLF Grazer are high-quality grazing mixtures providing high grazing yields, low grazing residuals with 5* Grazing Utilisation varieties offering excellent quality throughout the grazing season.

White Clover is included at a rate of 1kg to help with successful establishment and reduce N fertiliser.

DLF GRAZER
Intensive Grazer

FEATURES
A specialist grazing mixture based on our latest genetics.

- DLF Grazer contains a mixture of Diploids and Tetraploids ensuring high yield, quality and excellent grazability
- Bowie is the latest heading variety on the PPI giving prolonged quality well into June
- Anurad is new to the PPI in 2023 and offers one of the highest quality scores on the list

Bowie Late Diploid	40%
Anurad Late Tetraploid	23%
Nashota Late Tetraploid	20%
Triwarwic Late Tetraploid	10%
Grazing Blend White clover	7%

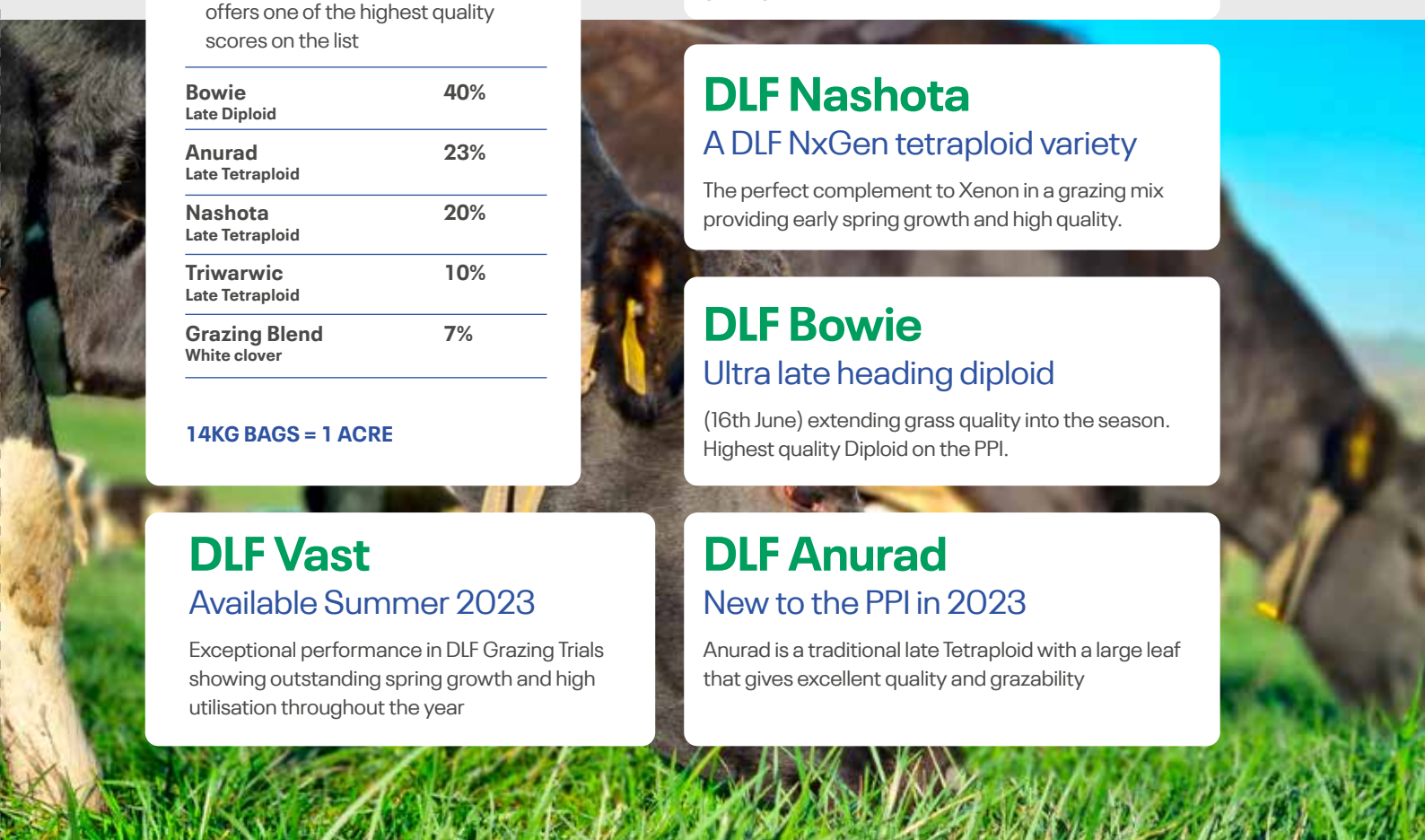
14KG BAGS = 1 ACRE

DLF Xenon
5* Grazing Variety

A DLF NxGen variety Xenon is a true grazing variety ensuring low residuals and high quality grass throughout the seasons.

DLF Aspect
5* Grazing Variety

Aspect has a very high leaf to stem ratio ensuring quality in the leaf through out the grazing season.



DLF Nashota
A DLF NxGen tetraploid variety

The perfect complement to Xenon in a grazing mix providing early spring growth and high quality.

DLF Bowie
Ultra late heading diploid

(16th June) extending grass quality into the season. Highest quality Diploid on the PPI.

DLF Vast
Available Summer 2023

Exceptional performance in DLF Grazing Trials showing outstanding spring growth and high utilisation throughout the year

DLF Anurad
New to the PPI in 2023

Anurad is a traditional late Tetraploid with a large leaf that gives excellent quality and grazability

CUT & GRAZE MIXTURES

DLF Cut & Graze mixtures contain varieties chosen to strike the perfect balance between quality grazing and high yields of excellent quality silage.

DLF PERFORMANCE
Cut & Graze

FEATURES
A highly versatile mixture with an excellent combination of high yields, quality and graze-out.

- Designed for mixed grazing and silage systems
- High spring growth and quality from Nashota and Anurad for early turnout
- Anurad and Bowie ensure the highest quality throughout the season

Bowie Late Diploid	20%
Drumbo Late Diploid	20%
Nashota Late Tetraploid	20%
Anurad Late Tetraploid	25%
Dunluce Late Tetraploid	10%
Cut & Graze Blend White clover	5%

14KG BAGS = 1 ACRE

DLF PERSISTENCE
Cut & Graze

FEATURES

DLF Persistence is a dual-purpose mixture designed to produce a dense sward that supports early turnout and an exceptional first-cut silage yield.

- Contains top PPI varieties Nashota and Bowie
- Broad range in heading dates gives flexibility for both cutting and grazing
- Over 50% Diploid content makes Persistence our densest and most persistent mixture

Nashota Late Tetraploid	25%
Agaska Intermediate Diploid	20%
Nifty Intermediate Diploid	15%
Toddington Late Diploid	15%
Bowie Late Diploid	10%
Thegn Late Tetraploid	10%
Cut & Graze Blend White clover	5%

14KG BAGS = 1 ACRE

DLF ALL STOCK
Cut & Graze

FEATURES

A versatile mixture to cut or graze. Suitable for all classes of stock.

- Good spring production for early turnout
- Excellent first-cut silage yield
- Timothy included for additional spring growth, palatability and winter hardiness

Boyne Intermediate Diploid	15%
Nifty Intermediate Diploid	15%
Drumbo Late Diploid	20%
Triwarwic Late Tetraploid	23%
Anurad Late Tetraploid	15%
Dolina Timothy	7%
Cut & Graze Blend White clover	5%

14KG BAGS = 1 ACRE

DLF HEAVY SOILS
Cut & Graze

FEATURES

Designed for more challenging soils, DLF Heavy Soils will perform in challenging conditions.

- High proportion of Diploid varieties gives excellent ground cover and durability
- Very early spring growth from cold-hardy species Timothy and Meadow Fescue
- Variety of species ensures excellent performance in heavy soils

Drumbo Late Diploid	20%
Abergreen Intermediate Diploid	15%
Dunluce Intermediate Tetraploid	15%
Bowie Late Diploid	15%
Triwarwic Late Tetraploid	13%
Comtal Timothy	7%
Laura Meadow Fescue	5%
Maxima Creeping Red Fescue	5%
Cut & Graze Blend White clover	5%

14KG BAGS = 1 ACRE

GET THE MOST OUT OF EVERY MOUTHFUL

DLF has overturned the traditional trade-off between yield and quality by improving fibre digestibility. DLF Fiber Energy grasses make your livestock more productive as they create up to 8% more energy when compared to ordinary grasses.

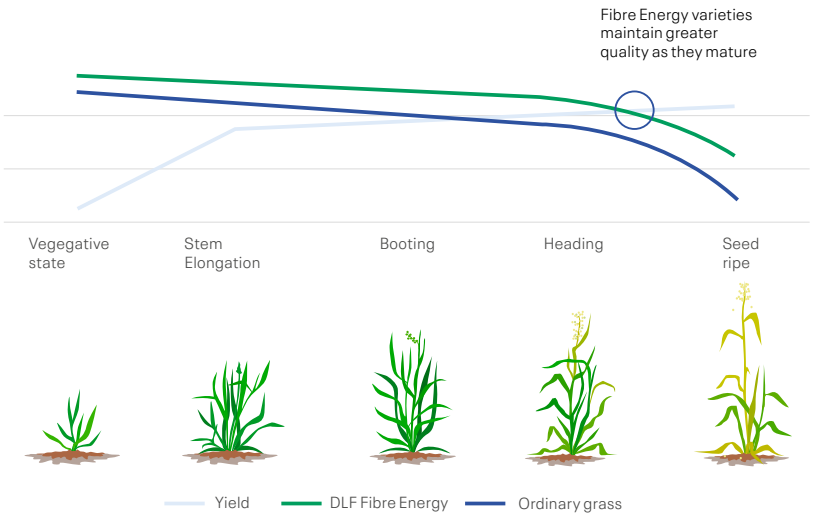
With DLF Fiber Energy, animal intake increases, resulting in a higher output of milk or meat. The quality of DLF Fiber Energy grasses is higher because the plant fibres are more digestible, which means more of the plant's energy is available for digestion.

In addition, DLF Fiber Energy grasses let you increase yield by leaving your sward to mature for longer without compromising quality.

The graph here shows how the feed quality of a DLF Fiber Energy plant remains high for much longer through the plant life cycle. As the plant matures, the yield increases yet the quality remains high. That makes DLF Fiber Energy varieties extraordinarily efficient: a bigger yield at a higher quality gives you a hugely improved feed value.

The benefits of DLF Fiber Energy grasses apply in cutting and grazing systems. DLF Fiber Energy grass varieties are Nashota, Xenon, Bowie and Nifty.

GENERALISED RELATIONSHIP BETWEEN FORAGE YIELD AND FORAGE QUALITY AS AFFECTED BY STAGE OF MATURITY



DLF N SAVER SILAGE

Cutting /5 years

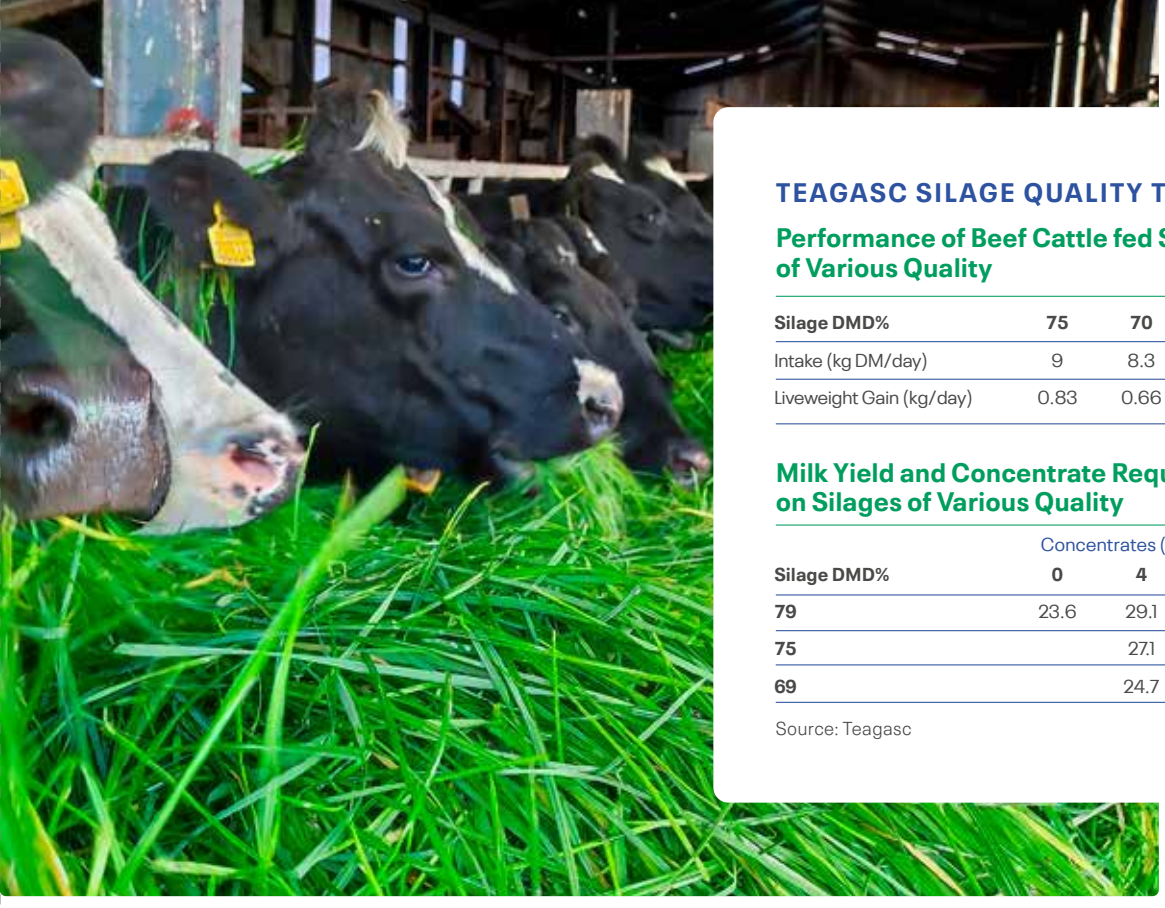
FEATURES

DLF's best-selling N Saver Silage Mixture with 40% clover content is designed to produce high protein silage with excellent digestibility.

- High clover content to reduce N fertiliser requirement
- Nashota and Triwarwic provide excellent spring growth
- Contains large leaf white clover specifically for cutting

Abergreen Intermediate Diploid	15%
Drumbo Late Diploid	20%
Nashota Late Tetraploid	10%
Triwarwic Late Tetraploid	10%
Cutting Blend White clover	10%
Garant Red Clover	17%
Rozeta Red Clover	18%

14KG BAGS = 1 ACRE



TEAGASC SILAGE QUALITY TABLE

Performance of Beef Cattle fed Silage of Various Quality

Silage DMD%	75	70	65	60
Intake (kg DM/day)	9	8.3	7.6	7
Liveweight Gain (kg/day)	0.83	0.66	0.49	0.31

Milk Yield and Concentrate Requirement on Silages of Various Quality

	Concentrates (kg/cow/day)			
Silage DMD%	**0**	**4**	**8**	**12**
79	23.6	29.1	32.8	32
75		27.1	29.3	28.8
69		24.7	27.3	30.1

Source: Teagasc

DLF PERENNIAL SILAGE
Cutting / 8 years

FEATURES
- Excellent silage mixture with early spring growth
- Ideal for first-cut silage in May
- Includes DLF's cutting clover blend

Abergreen Intermediate Diploid	35%
Drumbo Late Diploid	20%
Dunluce Intermediate Tetraploid	25%
Nashota Late Tetraploid	15%
Cutting Blend White Clover	5%

14KG BAGS = 1 ACRE

DLF HYBRID SILAGE
Cutting/5 years

FEATURES
DLF Hybrid Silage is the most intensive medium-term silage mixture available.

- Inclusion of Hybrid Ryegrass ensures exceptionally high yields of quality silage
- DLF Festulolium varieties are extremely drought tolerant compared to pure ryegrass varieties
- A medium-term silage mixture

Tetragraze Hybrid Ryegrass	60%
Lofa Festulolium	30%
Fojtan Festulolium	10%

14KG BAGS = 1 ACRE

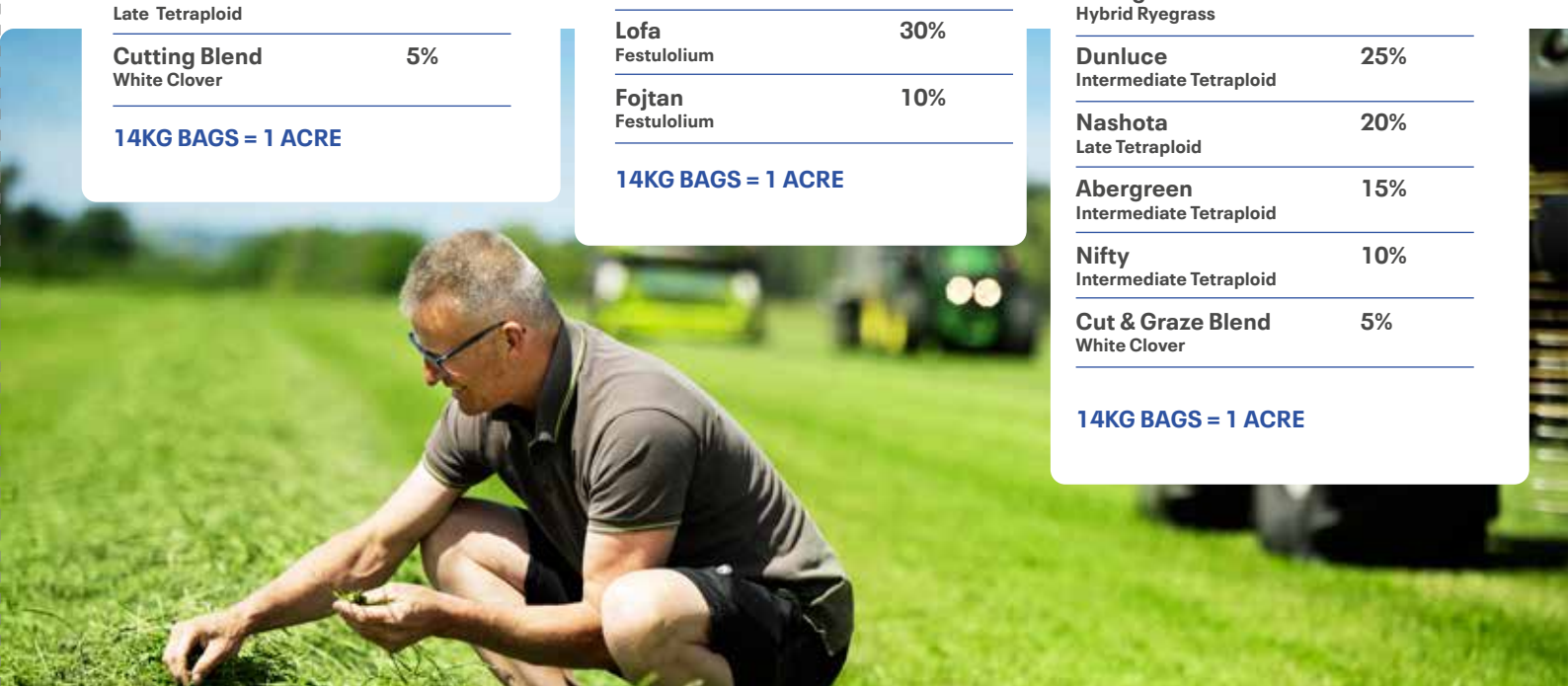
DLF ZERO GRAZE
Cutting /5 years

FEATURES
DLF Zero-graze is a unique dual-purpose grazing/zero-graze mixture that combines strong production and high quality.

- Tetragraze Hybrid Ryegrass is bred specifically for intensive cutting systems
- Contains Nifty for early spring growth
- Tetraploid varieties mean excellent quality and rapid regrowth

Tetragraze Hybrid Ryegrass	25%
Dunluce Intermediate Tetraploid	25%
Nashota Late Tetraploid	20%
Abergreen Intermediate Tetraploid	15%
Nifty Intermediate Tetraploid	10%
Cut & Graze Blend White Clover	5%

14KG BAGS = 1 ACRE



SPECIALIST MIXTURES

DLF ProNitro
Oversowing

FEATURES

ProNitro treated seeds contain 15% N to feed seedlings throughout the establishment phase

- Unique ProNitro seed coating delivers stronger establishment with 34% more plants and 30% longer roots
- ProNitro leads to a healthier sward with less weeds
- Ideal for rejuvenating damaged swards

Nashota Late Tetraploid	40%
Triwarwic Late Tetraploid	28%
Anurad Late Tetraploid	25%
Coolfin White clover	7%

14KG BAGS = 1 ACRE

ProNitro® READY TO GROW

DLF LOW INPUT PASTURE
Cut & Graze

FEATURES

Formulated to thrive on very low N input in challenging soils.

Mixture contains different grass species tap into different nutrient reserves in the soil

- Higher mineral content than ryegrass-only mixtures
- This mixture can produce quality hay
- Deep-rooting species like cocksfoot provide drought tolerance

Cocksfoot	15%
Creeping red fescue	5%
Meadow Fescue	15%
Rough stalked meadow grass	5%
Smooth stalked meadow grass	15%
Timothy	20%
Tall Fescue	15%
Cut & Graze Blend White Clover	10%

14KG BAGS = 1 ACRE

DLF HORSE PADDOCK
Equine Cut & Graze

FEATURES

Specially formulated low-sugar grass mixture for equine grazing or hay.

- Produces a hard-wearing dense sward
- Low sugar grasses prevent laminitis
- Capable of producing a crop of quality hay

Boyne Intermediate Diploid	30%
Nifty Intermediate Diploid	20%
Drumbo Late Diploid	20%
Creeping red fescue	10%
Smooth stalked meadowgrass	10%
Dolina Timothy	10%

14KG BAGS = 1 ACRE

ORGANIC MIXTURES

DLF Organic Grazer
Grazing 95% organic

FEATURES
An organic mixture designed for maximum grass quality and utilisation

- Contains 5 star grazing variety Nashota
- Fojtan Festulolium provides strong spring growth and drought tolerance
- Pastor red clover persists longer under grazing than traditional red clover varieties

Toddington Late Diploid	15%
Diwan Intermediate Tetraploid	15%
Nashota Late Tetraploid	33%
Dolina Timothy	7%
Fojtan Festulolium	10%
Laura Meadow Fescue	5%
Pastor (Grazing Type) Red Clover	5%
Klondike White Clover	10%

14KG BAGS = 1 ACRE

DLF Organic Silage
Cutting 70% organic

FEATURES
High protein organic silage mixture

- 5kg clover/acre for high protein silage
- High quality grass varieties to aid preservation
- Fojtan Festulolium provides early spring growth and good drought tolerance

Nifty Intermediate Diploid	20%
Toddington Late Diploid	20%
Diwan Intermediate Tetraploid	10%
Fojtan Festulolium	15%
Garant Red Clover	15%
Rozeta Red Clover	15%
Klondike White Clover	5%

14KG BAGS = 1 ACRE

DLF Organic Multi-species
Grazing 72% organic

FEATURES
An organic multi-species mixture to suit a range of conditions

- Excellent summer production compared to grass-only swards
- Ecotain Environmental Plantain is proven to reduce nitrate leaching
- Chicory produces high quality forage through the summer months

Nifty Intermediate Diploid	12%
Diwan Intermediate Tetraploid	15%
Toddington Late Diploid	10%
Fojtan Festulolium	15%
Dolina Timothy	8%
Laura Meadow Fescue	5%
Klondike White Clover	7%
Pastor (Grazing Type) Red Clover	8%
Ecotain Plantain	10%
Choice Chicory	10%

14KG BAGS = 1 ACRE

"Organic farming to us is about coming back to nature and the way nature grows plants. There is no monoculture's in nature and that is why we sow multi species swards on the dairy farm. The plants complement each other's true enhancing soil biology, and soil structure."

Kevin O'Hanlon
Organic Farmer & DLF Partner Farmer

HOME GROWN PROTEIN

Drought Tolerance | High Protein Content | Nitrogen Savings

LEGUMES ARE GOOD FOR COST-EFFECTIVE FARMING

- Higher feed intake
- Reduced expenditure on imported concentrates
- Reduced need for artificial fertiliser
- Residual effect on subsequent crops

Legumes are natural nitrogen-fixers. They can fix between 150-250kg N/ha per year depending on local growing conditions. Much of this free nitrogen can be utilised by neighbouring grasses and herbs in the sward. Legumes are also a source of high quality, home-grown protein.

White clover is typically used in grazing mixtures and can significantly reduce the amount of artificial N fertiliser required over the growing season. Furthermore, it can improve the protein content and palatability of forage leading to improved animal performance. For more information on establishing white clover see page 18.

Red clover is best suited to silage-making. DLF N Saver Silage Mixture with 35% Red Clover produces up to 4 harvests per year without N fertiliser as demonstrated on our Partner Farms**.**Red clover silage is higher in protein than grass silage and can offset the need for bought-in protein feeds during winter. For more information on red clover see our Clover Agronomy Guide at **www.dlfseeds.ie**

DLF Alfalfa is similar to red clover but is much more drought tolerant preferring light, dry soil. It is commonly used to produce hay and silage in North America, the Mediterranean and Middle East. We currently have a number of trials assessing the performance of different Alfalfa varieties both in plots and on our Partner Farms.

The cost of all feeds have increased substantially in 2022.

Home-produced feeds, and grazed grass in particular, remain our cheapest feed resource. Grass-white clover pastures are particularly cost-effective. Incorporating legumes like red clover into silage fields can also be an effective method to reduce winter forage costs during high N price years.

Source: Teagasc

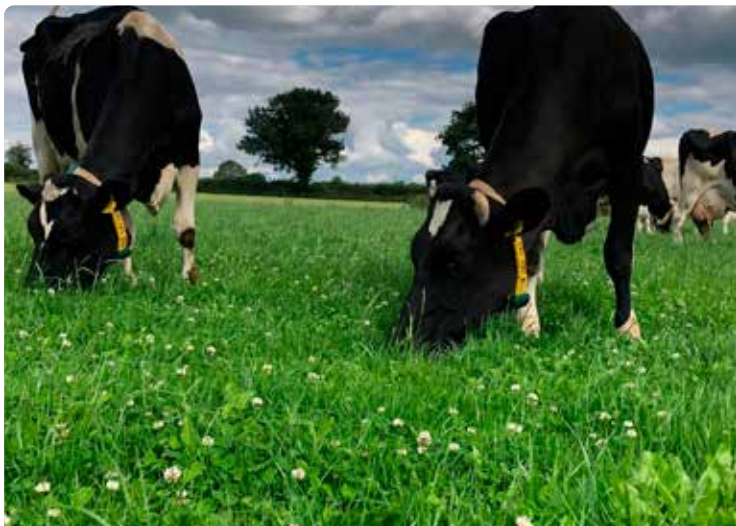
The table below outlines the relative costs of some common feedstuffs on both a kg DM basis and a feed value basis. Home-grown red clover silage, beet and maize can all help to reduce feed costs on farm and buffer against rising input costs.

TEAGASC FEED CONTROL TABLE

Estimated costs (€) to produce feed at current (April 2022) and market prices

APRIL	Grazed grass 13t DM/ha	Grass white clover 13 t DM/ha	Pit silage 10 t DM/ha	Baled silage 10 t DM/ha	Red clover pit silage 10 t DM/ha	Maize silage 13 t DM/ha	Fodder beet* 15 t DM/ha	Purchased rolled barley
Total costs/ha (incl. land costs)**	1577	1269	2175	2517	1742	2953	3685	.
Total costs/ha (excl land costs)	836	528	1657	1999	1248	2212	2944	.
Total costs/t DM grown (incl land costs)**	121	98	218	252	181	231	246	450
Total costs/t DM grown (excl land costs)	64	41	166	200	130	173	196	450
Relative cost to grazed grass per energy utilised (UFL)***	1	0.6	3.3	3.7	2.7	3.2	2.8	5.2

DM = dry matter, t = tonnes
* Fodder beet costs do not include the cost of additional protein supplementation required
** Land charge is €741/ha (€300/acre)
*** Excluding land charge associated with home-produced feeds



WHITE CLOVER

White clover is the most commonly sown legume in Ireland and is primarily used for grazing in mixtures with grass.

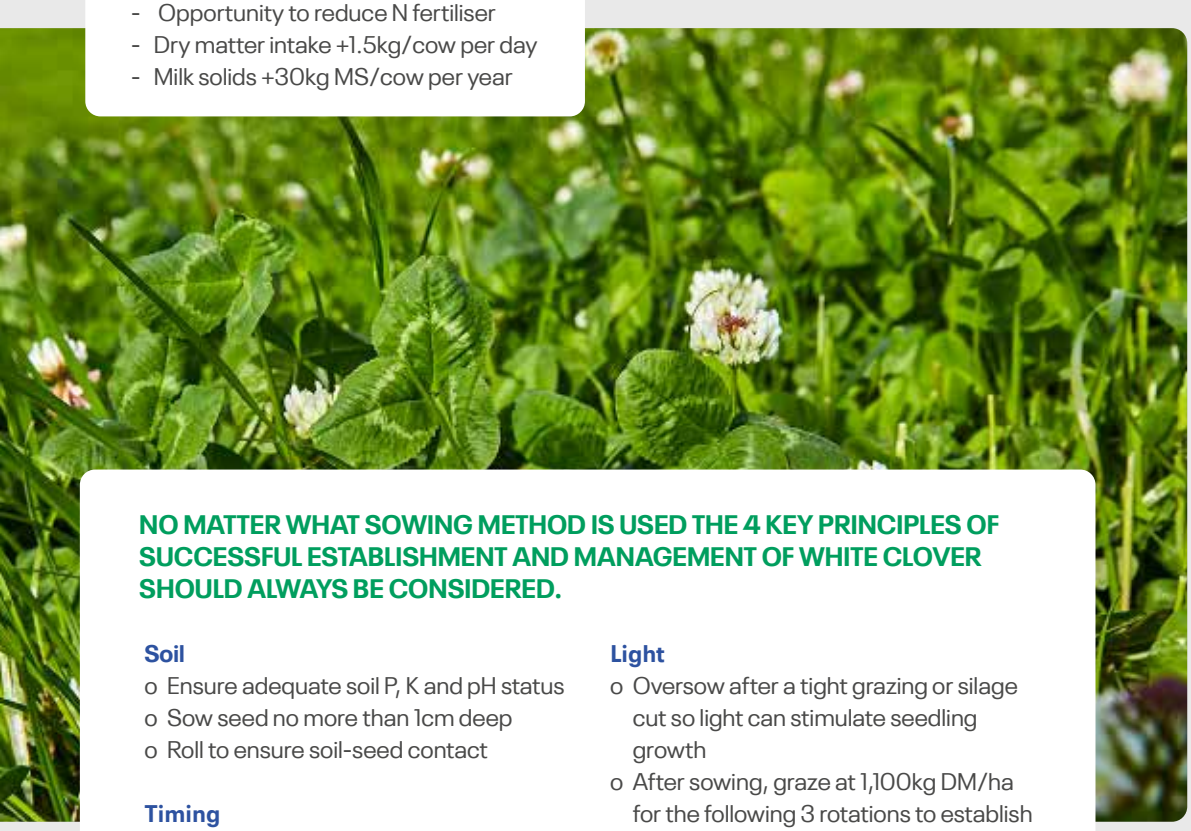
As a forage, white clover is highly digestible with crude protein content averaging over 20%. But the most significant benefit of white clover is it's ability to fix N from the atmosphere for use by neighbouring grasses in the sward. The use of white clover in grass mixtures has the potential to offset up to 150kg N/ha per year in inorganic N fertiliser.

Tips to Avoid Bloat

- Introduce animals to high-clover swards slowly
- Make sure animals are not hungry entering high clover swards
- Do not graze clover with a heavy dew
- The use of bloat oil in water troughs will reduce the risk of bloat

BENEFITS OF WHITE CLOVER IN THE SWARD @ 20-30%

- +800kg DM/ha
- Opportunity to reduce N fertiliser
- Dry matter intake +1.5kg/cow per day
- Milk solids +30kg MS/cow per year



NO MATTER WHAT SOWING METHOD IS USED THE 4 KEY PRINCIPLES OF SUCCESSFUL ESTABLISHMENT AND MANAGEMENT OF WHITE CLOVER SHOULD ALWAYS BE CONSIDERED.

Soil
- Ensure adequate soil P, K and pH status
- Sow seed no more than 1cm deep
- Roll to ensure soil-seed contact

Timing
- Sow when soil is warm (+10°C), and there is some moisture – ideally April to May

Seeding
- Oversow at a rate of 2 – 2.5kg/acre
- Use small and medium-leaf varieties for grazing and large-leaf for cutting.

Light
- Oversow after a tight grazing or silage cut so light can stimulate seedling growth
- After sowing, graze at 1,100kg DM/ha for the following 3 rotations to establish adequate white clover content
- Once established, graze white clover swards at low covers (max 1,600kg DM/ha) down to 4cm to avoid competition from grass and allow light reach the clover plants

Establishing and Managing White Clover in the Sward

Establishing white clover takes time and some specific management. DLF recommends targeting up to 30% of the farm at a time in which to establish white clover.

Achieving good white clover content across the farm should be a medium-term goal and carried out over a number of years.

A full reseed is the most reliable method of establishing white clover. However, as the options for post-emergence treatment become more limited, many farmers are choosing to oversow white clover into existing swards.

Clover Content Scorecard

The clover content scorecard is a tool that farmers can use to identify the level of clover in their grass swards.

Source: Michael Egan, Teagasc Moorepark

DLF Clover Grazing Blends & Cut & Graze Blends suitable for oversowing are available

For maximum benefit a sward with white clover content of 20-30% is required

NITROGEN FERTILISER APPLICATION STRATEGY

ROTATION DATE	GRASS 250kg	GRASS CLOVER 150kg
Mid-late January	28	28
Mid March	28	28
April (2nd rotation)	33	33
May (3rd rotation)	40	9
May (4th rotation)	30	9
June (5th rotation)	17	9
July (6th rotation)	17	9
July (7th rotation)	17	9
August (8th rotation)	17	9
Mid September	33	12

FIGURE 1: Nitrogen fertiliser application strategy. Source: Teagasc

MULTI-SPECIES SWARDS

Multi-species swards are a sustainable source of high-quality forage. As well as producing high yields of quality forage, sowing multi-species can lead to significantly reduced N fertiliser requirement, increased animal performance and health.

A multi-species sward is a mixture of three or more species whose growth characteristics complement each other resulting in improved productivity compared to when each species is grown on their own. Many farmers are using multi-species swards as a tool to reduce their N fertiliser bill. This is very effective as, apart from a couple of small fertiliser applications in spring, multi-species swards are almost totally N self-sufficient. In addition, as feed for grazing livestock, multi-species swards produce large quantities of highly digestible forage rich in minerals and high in protein.

Since the peak growth rates of multi-species swards occur in summer, they complement grass swards on the grazing platform perfectly. Having a mixture of grass and multi-species swards on the grazing platform will ensure a steady supply of the highest quality forage through spring, summer and autumn, as well as buffering against drought and reducing the cost of forage production.

The benefits of multi-species swards

Multi-species swards can produce similar DM yields to perennial ryegrass swards at significantly lower rates of inorganic N fertiliser (Figure 1).

Multi-species swards are a source of highly digestible, high protein forage and can maintain their high quality throughout the growing season.

The inclusion of warm-season species like chicory and red clover means multi-species swards have strong summer production compared to a grass sward.

These deep-rooting species make the sward much more tolerant of drought than a grass sward.

The inclusion of mineral-rich herbs provides a more balanced diet than grass alone, with species like chicory, also providing some anthelminthic benefits to grazing livestock.

The use of multi-species swards compared to grass only swards in agriculture can also provide a wide range of environmental benefits, including:

- Reduced N_2O emissions and nitrate leaching associated with reduced fertiliser use
- Higher rates of carbon sequestration due to deeper root-depths
- Enhanced biodiversity, particularly pollinators feeding on the variety of flowering plants in multi-species swards

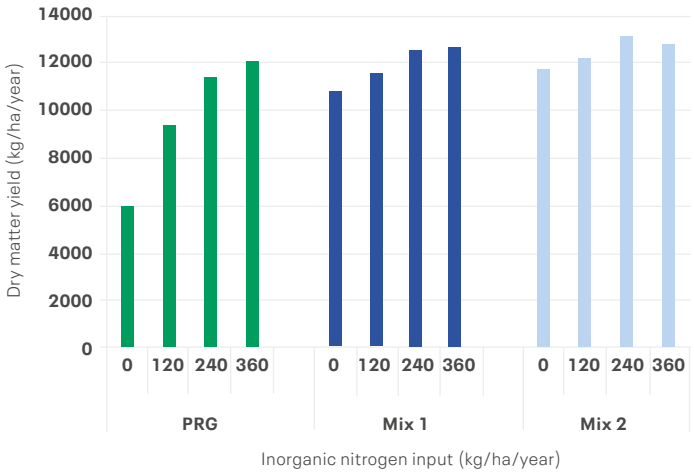


Figure 1: Taken from Moloney et al (2021), Yield of binary- and multi-species swards relative to single-species swards in intensive silage systems.

Join the FACEBOOK DLF MSS Discussion Group

For more information on Multi-Species Swards and management practices,

see www.DLFseeds.ie

Ecotain™
ENVIRONMENTAL PLANTAIN

ECOTAIN

DLF's Ecotain Environmental Plantain has been proven to reduce nitrate losses to water by up to 90%

Almost half of Ireland's waterways are in an unsatisfactory condition, particularly where land use is dominated by ruminant production systems (Source: EPA).

The continued reduction in water quality comes despite improvements in N-use efficiency on farms across the country.

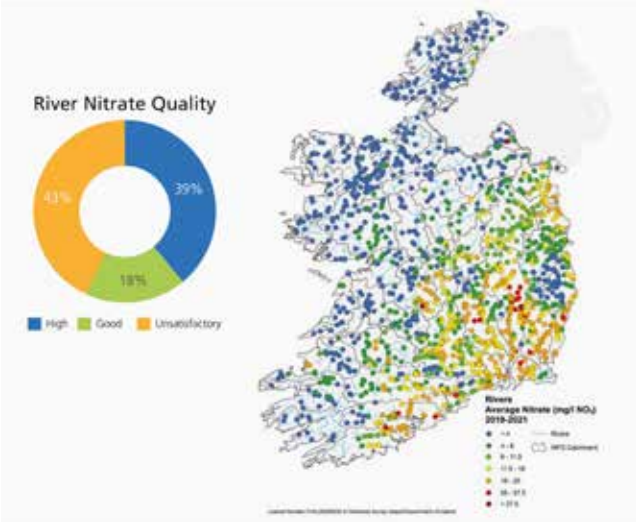
One part of the N cycle we have yet to tackle is the urine patch, especially from bovines.

It is estimated that the equivalent of ~700kg N/ha is produced every time a cow pees. This is far too much for a grass sward to utilise at once, and much of this N is lost as leachate, ending up in surface and groundwater.

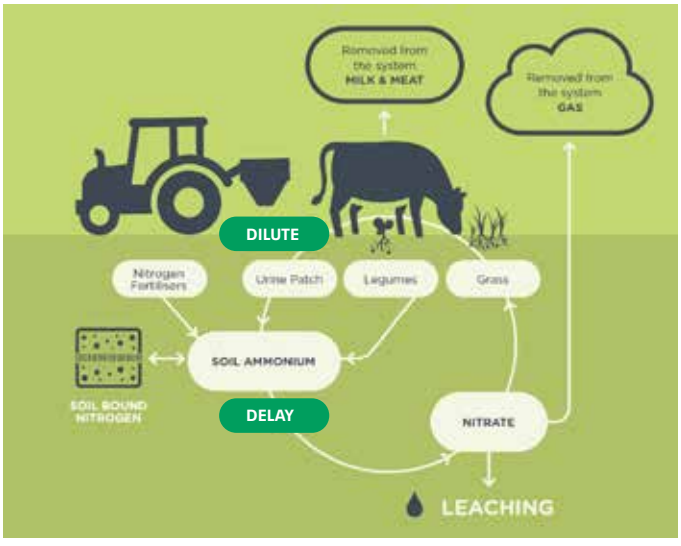
Ecotain Environmental Plantain was developed in New Zealand, where it is now an option in many environmental schemes as a nitrate-reducing measure.

Incorporating Ecotain into grass swards in Ireland could reduce nitrate losses by up to 90% and enhance sward productivity too.

Keeping N in its more stable ammonia form means more N for plant uptake and less nitrate available for leaching



Dilute and delay nitrate loss with Ecotain Environmental Plantain



DILUTE N concentration via the diuretic effect of plantain – more urine produced means a more even application of urine N across a paddock

DELAY the rate of ammonia nitrification to nitrate in both urine and soil

Ecotain is used in **DLF Multi-Species Mixtures** and can be added to **DLF 4N Grazer Mixture** and **DLF Grazer Mixture**

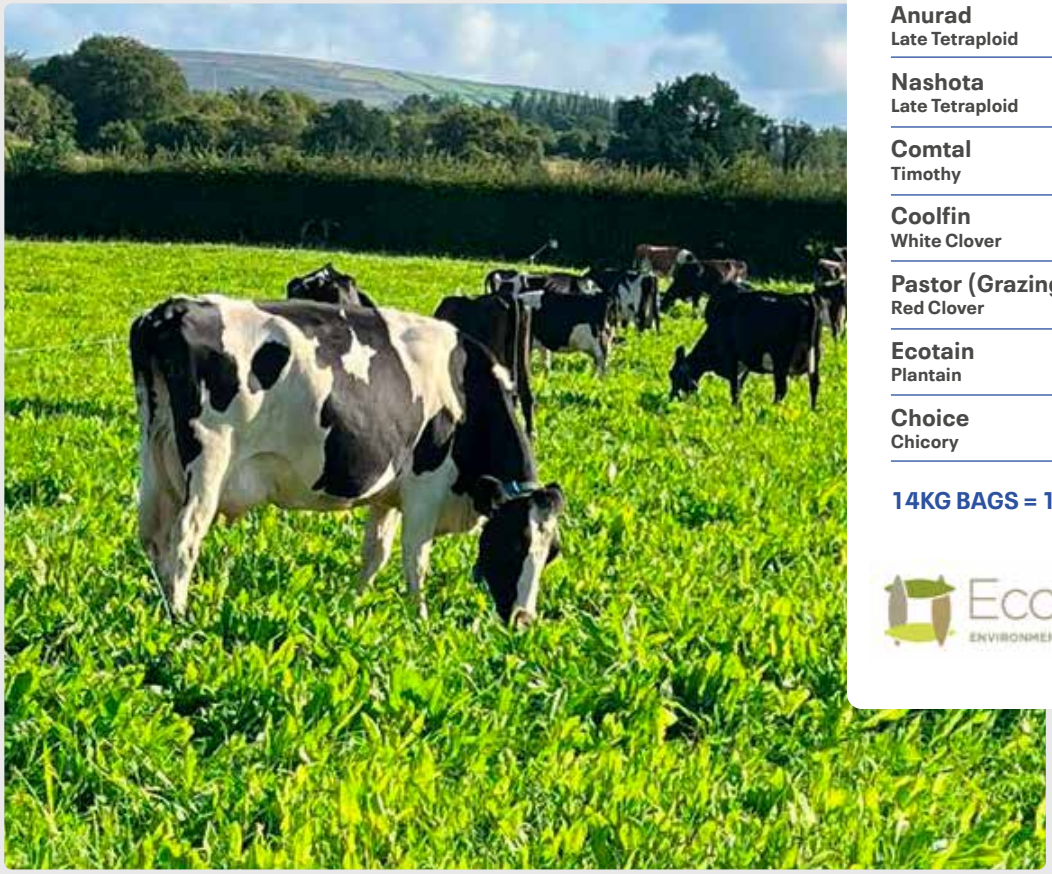
DLF MULTI-SPECIES MIXTURES

DLF Multi-Species Mixtures are specially selected with the optimum blend of species to produce a productive multi-species sward.

Farmers are experiencing first-hand the benefits of using MSS and including more forage herbs in their system.

While the management of MSS differs from traditional grass paddocks, they are gaining confidence in including more diverse mixtures on the grazing platform.

DLF supports this through our Multi-Species Agronomy Guide and farmers are invited to join the Facebook DLF MSS Discussion Group to learn from other farmers and experts in this field. See page 20 for details.



DLF 6 SPECIES HERBAL LEY

Grazing

FEATURES

A versatile multi-species mixture that will perform on a range of soil types

- Capable of producing high yields of excellent forage with little or no N fertiliser
- Chicory and Ecotain Plantain are extremely palatable with excellent quality leading to increased animal performance
- Excellent production in summer when grass growth can be slow

Bowie Late Diploid	28%
Anurad Late Tetraploid	10%
Nashota Late Tetraploid	18%
Comtal Timothy	10%
Coolfin White Clover	7%
Pastor (Grazing Type) Red Clover	8%
Ecotain Plantain	10%
Choice Chicory	10%

14KG BAGS = 1 ACRE

Ecotain™ ENVIRONMENTAL PLANTAIN

DLF 14 SPECIES HERBAL LE Y

Grazing

FEATURES

Multi-species mixture suitable for a range of conditions from heavy soils to drought conditions

- Diverse root structure gives excellent nutrient-use efficiency
- Boosted mineral and trace element content from herbs like yarrow, burnet and parsley
- Sainfoin and trefoil are thought to reduce methane produced from ruminants

Timothy	**20%**
Meadow Fescue	**5%**
Festulolium	**8%**
Red Clover	**9%**
Vetch	**3%**
White Clover	**8%**
Alsike Clover	**5%**
Birdsfoot trefoil	**4%**
Sainfoin	**10%**
Chicory	**10%**
Plantain	**10%**
Burnet	**4%**
Yarrow	**2%**
Sheep's Parsley	**2%**

14KG BAGS = 1 ACRE

Ecotain™
ENVIRONMENTAL PLANTAIN

FERTILISER

FERTILISER TABLE

	MAIZE (Kg/ha)			FODDER BEET (Kg/ha)			HYBRID RYE (Kg/ha)			TRITICALE (Kg/ha)			FORAGE RAPE (Kg/ha)			SWEDES/STUBBLE TURNIPS (Kg/ha)			FORAGE KALE (Kg/ha)		
	N	P	K	N	P	K	N	P	K	N	P	K	N	P	K	N	P	K	N	P	K
0	180	70	250	175	70	320	210	54	120	210	54	120	150	60	220	90	70	120	150	60	220
1	140	50	225	145	55	240	180	44	105	180	44	105	130	50	210	70	60	100	130	50	210
2	110	40	190	105	40	160	120	34	90	120	34	90	100	30	170	40	40	60	100	30	170
3	75	20	120	70	20	80	80	0	0	80	0	0	70	0	0	20	40	60	70	0	0

Source: Teagasc Johnstown Castle
Note: to convert kg/ha to units/acre multiply by 0.8

AVAILABLE NUTRIENT CONTENT OF ORGANIC FERTILISERS
(KG/M3 & UNITS/1,000GLNS)

	NITROGEN (N)		PHOSPHORUS (P)		POTASSIUM (K)	
	kg/m3	units/1,000glns	kg/m3	units/1,000glns	kg/m3	units/1,000glns
Cattle Slurry	0.7	6.5	0.6	5	3.3	30
Pig Slurry	2.1	19	0.8	7	1.9	20
Soil Water	0.4	84	0.08	7	0.6	5
Farm Yard Manure	1.35	2.7	1.2	2.4	6	12
Broiler Litter	5.5	11	6	12	12	24
Turkey Litter	14	28	13.8	27.6	12	24

Source:
Teagasc Johnstown Castle

DLF

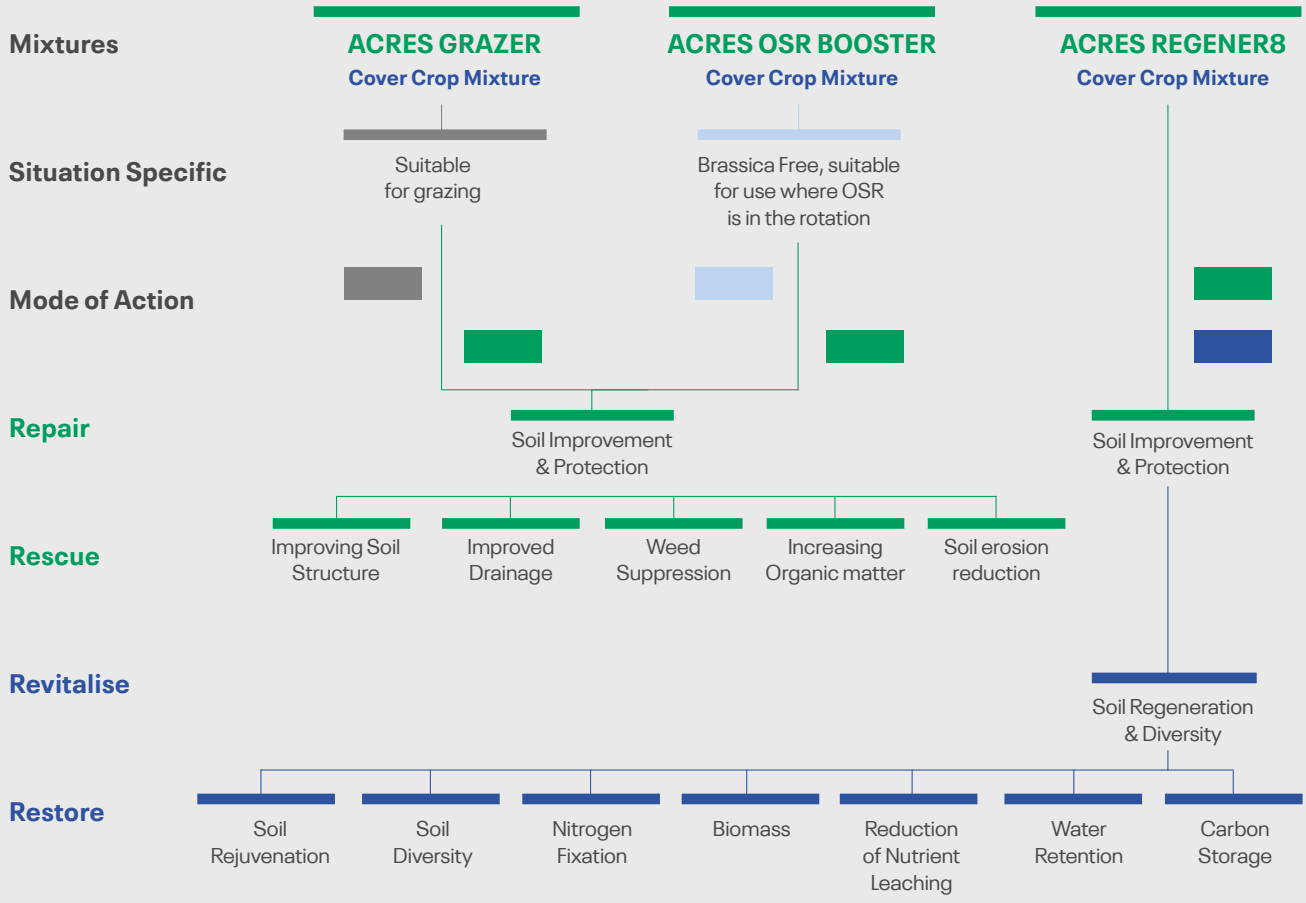
FORAGE CROPS

SEEDS & SCIENCE

COVER CROP MIXTURES

Use Cover Crops to farm in synchrony with nature and the four ecosystem processes to REPAIR, REBUILD, REVITALISE & RESTORE the soil which expands to supporting life above the soil.

How to choose a suitable catch crop mixture for your farm



Suitable for Grazing

Brassica Free, suitable for use where OSR is in the rotation

Repair & Rescue
Soil Improvement & Protection

Revitalise & Restore
Soil Regeneration & Carbon Restoration

COVER CROPS

Cover crops, catch crops or green manures are normally grown between successive production crops to provide ground cover, capture soil nutrients and improve soil characteristics or provide nutrients to the following crop.

Cover Crops can be sown as a single species or as a mixture of species, each species carries its own characteristics and benefits i.e. nutrient capture, carbon storage, soil protection and nitrogen fixation.

A careful selection process needs to take place with species of cover crop depending on your tillage rotation e.g. brassicas are not suited where Oil Seed Rape is in the rotation.

Sustainability of Cover crops

- Maintaining soil fertility & quality is key to every farm and catch/cover crops can be a useful tool for this. Our range offers a broad spectrum of solutions for improving/ maintaining soil quality.
- Cover crop mixtures with a more efficient root system make better use of vital nutrients and improve soil health.
- A well grown cover crop will lift and hold nitrogen during autumn and winter period, then release this on its destruction, ready for use by the following crop.
- Cover crops help to prevent both the loss of N through rain and leaching into water courses
- Sowing catch crops is supported by DAFM schemes e.g. ACRES

> **Cover crops are very beneficial in protecting and rejuvenating our soils and are set to become a more significant part of crop rotations.**
>
> **They offer massive improvements to soil fertility and structure, which are vital for yield, crop quality and profitability.**
>
> Ned Kehoe, DLF

ACRES Grazer
Soil enhancer grazing mix

FEATURES

A soil enhancing brassica mix offering excellent grazing potential

- Winter grazing
- Biomass
- Weed suppression
- Organic matter increase
- Retain nutrients
- Fast establishment

10kg Leafy Turnip

6kg Rampart Forage rape

SOW 8KG /HA AVAILABLE IN 16KG PK (2HA)

ACRES 'Regener 8'
Comprehensive soil rejuvenation mix

FEATURES

Versatile soil conditioner with a wide range of species providing

- Biomass
- Nitrogen fixation
- Organic matter
- Fast establishment
- Diverse range of species
- Soil rejuvenation
- Weed suppression
- Improved drainage

3kg Tillage radish

2kg Fodder radish

2kg Mustard

3kg Fodder Rape

6kg Vetch

2kg Crimson clover

2kg Linseed

2kg Phacelia

SOW 11KG/HA AVAILABLE IN 22KG PK (2HA)

ACRES OSR Booster
Ultimate N fixer with soil replenishment

FEATURES

Soil replenishment with excellent nitrogen fixation

- Biomass
- Nitrogen fixation
- Organic matter
- Fast establishment
- Includes three species to improve soil biology
- Soil rejuvenation
- Weed suppression
- Improved drainage

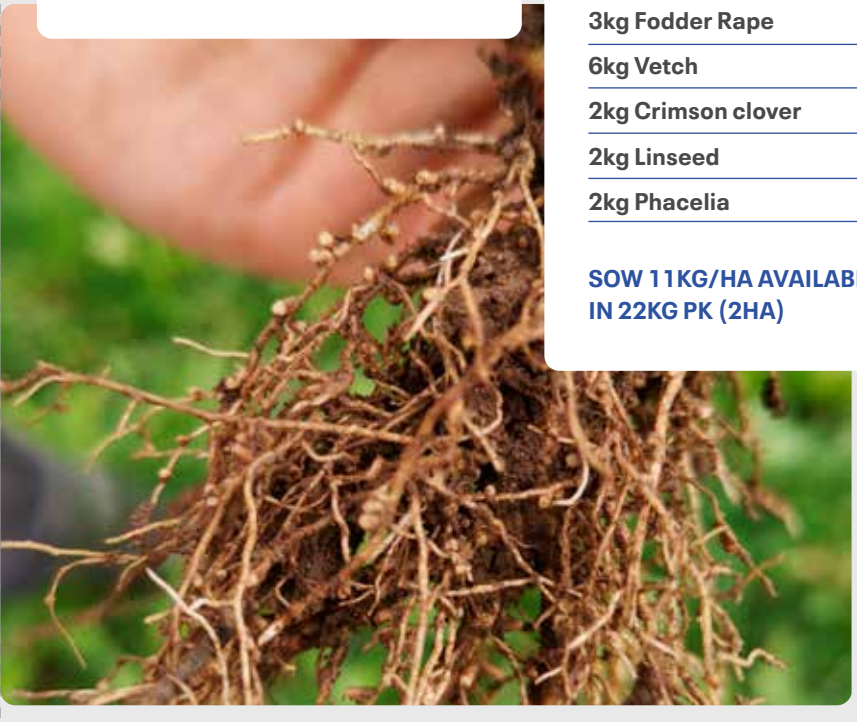
3kg Balansa clover

3kg Crimson clover

6kg Vetch

2kg Phacelia

SOW 14KG/ HA AVAILABLE IN 14KG PK (1HA)



CROP SELECTOR

CHOOSING THE RIGHT FORAGE CROP

Unfortunately, we cannot control the price paid for farm produce, but we can control some of the cost of animal feed used. Home grown forage whatever the crop will always be cheaper than buying in compound feed.

CROP SELECTOR

FORAGE CROPS

Arable Forages	Forage Brassicas
Hybrid Rye & Triticale	Forage/ Hybrid Rape
Arable Silage	Kale
Forage Rye	Swedes
Westerwolds	Stubble Turnips
Maize	
Beet	

TEAGASC FEED CONTROL TABLE

Estimated costs (€) to produce feed at current (April 2022) market prices

APRIL	Grazed grass 13t DM/ha	Grass white clover 13 t DM/ha	Pit silage 10 t DM/ha	Baled silage 10 t DM/ha	Red clover pit silage 10 t DM/ha	Maize silage 13 t DM/ha	Fodder beet* 15 t DM/ha	Purchased rolled barley
Total costs/ha (incl. land costs)**	1577	1269	2175	2517	1742	2953	3685	.
Total costs/ha (excl land costs)	836	528	1657	1999	1248	2212	2944	.
Total costs/t DM grown (incl land costs)**	121	98	218	252	181	231	246	450
Total costs/t DM grown (excl land costs)	64	41	166	200	130	173	196	450
Relative cost to grazed grass per energy utilised (UFL)***	1	0.6	3.3	3.7	2.7	3.2	2.8	5.2

DM = dry matter, t = tonnes
* Fodder beet costs do not include the cost of additional protein supplementation required
** Land charge is €741/ha (€300/acre)
*** Excluding land charge associated with home-produced feeds

FORAGE CROP SELECTION

Use this guide to select the forage crop which best suits your system and feed objectives. The chart below details forage crops essential information from sowing times and rates to growing costs, yield and feed quality data.

FORAGE CROP SELECTION

Crop	Pack size	Average Sowing Rate kg /ha		Sowing date	Utilisation period	Average row Depth cm	Average row Width cm	Days Sowing to Grazing	No of possible Grazing	Dry Matter (%)	Digestibility (DMD)	CP (% DM)	ME (MJ/ kg DM)
		Broad cast	Direct Drill										
Fodder Beet	50,000 seeds		Precision drill 100,000/ha	Mar- May	Oct - Mar	2.5 - 3	50 - 60	-	-	13 - 23%	80	9%	11
Maize	50,000 Seeds		94 -120,000 Seeds	Late March - Early May	Sept - Early Nov	3 - 6	15 - 20	-	-	30 - 35%	80	9 - 10%	11.5
Forage Rape	5kg & 25kg	8	6	May- Mid Sept	Jul - Dec	1 - 2.5	n/a	90 - 110	2	12 - 13%	65	19 - 20%	11
Kale	5kg	7.5	5	Apr - Jul	Sept - Mar	1 - 2	n/a	150 -220	1	13 - 15%	68	16 -17%	11
Stubble Turnip	10kg & 25kg	7.5	5	April – Mid Sept	Jun - Jan	1 - 2	n/a	60 - 100	1	8 - 10%	75 - 80	18%	11
Swede	500g & 1kg	2.5- 5	Direct Drill 3 Precision drill 0.370 – 0.865 kg/ ha grade H	Apr - June	Aug - Mar	1 - 2	20	170 -250	1	10 - 12%	80	10 - 11%	12.5

HOW MUCH SHOULD I GROW?

SPECIES	AVERAGE FRESH YIELD	LESS WASTAGE FACTOR	UTILISABLE YIELD	GRAZING DAYS PER HECTARE		
				Sheep Ration		Dairy or Beed Ration
	Tonnes per hectare	Grazing wastage %	Tonnes per hectare	7.5kg 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
Forage Rye	20	15	17	2,266	1,700	772

FORAGE CROPS

CROP ROTATIONS

Forage crops provide a fantastic break crop and entry back into grass – they allow you to control any serious weed problems and will add vital animal manures back into your soil. Using the chart below, you can easily introduce forage crops into your rotation. Just look at the options in the column marked "What do you want to achieve?"

DLF offers a full range of forage crops from high yielding harvested crops like Fodder Beet, Maize and Wholecrop to in-situ grazed brassicas. To determine which option suits best, we have to consider the window for growing the crop, rotation, site and intended use. A forage crop programme takes a planned approach and beginning with identifying the feed demands by month is the start of the decision process.

FORAGE CROP ROTATION

What do you want to achieve?

	Year 1 Crop Suggestions		Year 2 Crop Suggestions	
	SPRING	AUTUMN/WINTER	SPRING	AUTUMN/WINTER
Cereal to Grass	Spring Barley	Stubble Turnips/Forage rape	Spring Grass Reseed	
High Energy	Fodder Beet		Forage Maize	Feed/Wholecrop W wheat
Profitable Sheep	Swede		Arable Silage	Forage Rape
Protein Boost	Arable Silage + Peas	Lucerne (sow no later than July)		
New Grass	Worn Out Grass Ley (after 1st cut silage)	Kale	Spring Sown Grass Ley	
Milk Yield	Maize	Forage Rye/Westerwolds	Maize	
Outwintering	Fodder Beet		Kale	
Grass Revival	Low Yielding Ley	Stitch In Grass/Clover	Revitalised Grass	
Triple Cereal	Spring Barley	Forage Rye	Forage Maize	

If you have any questions, our seed specialists are here to help, see page?? for contact details.

> **"Let's stop for a moment to realise the power of rotation"**
>
> Damien McAllister, DLF

FEEDING GUIDELINES

Many of the forages that appear in this booklet are grazed and utilised in the field (grazed in situ). To get the best from your crops, a few simple steps can make all the difference in maximising animal performance and profitability.

The following are some of the key management tools you may consider:

- Recommended inclusion rates should be between 35 - 50% of total dry matter intake
- Access to straw or hay as well as the forage brassica is important
- Ensure a good water supply
- Occasionally, over-feeding can cause Goitre, and blood anaemia, but access to straw and hay can help reduce risks of this problem

STRIP GRAZING

- Using an electric fence will help reduce wastage in the field
- Long narrow strips are best to allow full animal access
- Introduce the animals to the crop slowly
- Move the electric fence daily if possible
- Providing a dry run back will keep the animals clean

FEEDING SAFETY

POTENTIAL HEALTH ISSUES WHEN FEEDING FORAGE BRASSICAS

Always speak to your vet about the risks of using brassicas and how to incorporate risk prevention techniques into the farm health plan.

PHOTO-SENSITISATION

Cause: Compounds within the brassica cause the skin to be sensitive to sunlight, which can result in skin damage. This usually occurs when crops are grazed too early when they are still growing and is more common with rape and kale.

NITRATE POISONING

Cause: Nitrates accumulating in the leaves of brassica crops, usually occurs when fast growing crops are grown in soil with high nitrate levels after rain, which has followed a dry spell. Cool, overcast conditions and high N fertiliser use will also increase the risk.

GOITRE

Cause: Brassicas, especially root crops, contain glucosinolates, which block the uptake of iodine from the diet. Brassicas are also low in iodine, which may increase the risk of iodine deficiency, affecting the thyroid gland and the hormones it produces.

KALE ANAEMIA (REDWATER)

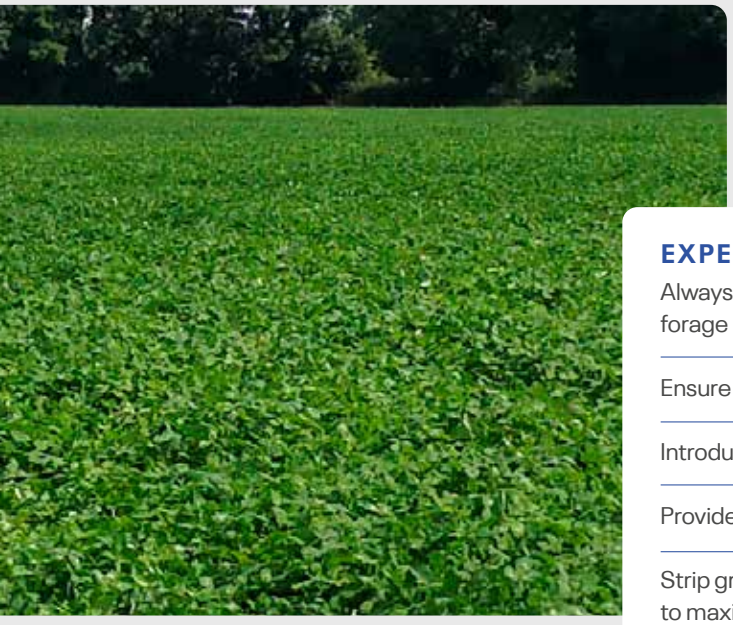
Cause: Excess levels of amino acid compound S-methyl cysteine sulfoxide (SMCO) in the plants, can cause anaemia and appetite loss. The levels of SMCO are worse when soil phosphate levels are low, and nitrogen and sulphur levels are high. SMCO levels also increase when crops are flowering.

BLOAT

Consider the risk of bloat, as brassicas can be rapidly degraded in the rumen. It is essential to feed fibre alongside the crops and introduce non-hungry stock gradually.

FEEDING FLOWERING BRASSICAS

Cause: Some species of brassica are biennials and therefore will flower in the following spring season if they are sown in the summer or autumn period and left ungrazed. Early sown brassica can also vernalise and flower in a short period of time (10-12 weeks). The plant is most toxic when in flower. It contains sulphur-based heterosides (thiocosides): gluconapine and progoitrin, which when hydrolysed will yield isothiocyanates (mustard oil) and goitrin. These toxic compounds are irritant, haemolytic, goitrogenic and can cause malnutrition.



EXPERT ADVICE

- Always feed with a fibrous forage like straw or hay
- Ensure a good water supply
- Introduce stock to the crop gradually
- Provide a grass 'run back' area
- Strip graze using an electric fence to maximise crop use

FORAGE CROPS HYBRID RYE & TRITICALE

What does Hybrid Rye offer Farmers?

Hybrid Rye offers the farm a range of rotational and management benefits. Grown in Ireland as wholecrop silage for cattle and Anaerobic Digestion (AD) in NI.

A fast-establishing winter cereal crop with a wide sowing window spanning from mid- September to early November means it can be sown when conditions and time allow. Harvesting for wholecrop is typically early July leaving plenty of time for a grass reseed.

An added benefit is Cranefly larvae (leatherjackets) will not lay eggs in hybrid rye and any subsequent reseed has low risk of attack. A late summer reseed after a cereal tends to be largely "weed free" compared with grass into grass.

YIELD & FEED QUALITY

Average Dry Matter Yield 13-16t/ha	**Crude Protein** 10%
Average Fresh Yield 30-40t/ha Dry Matter	**Digestibility Value** 65%
Dry Matter 35-40%	**Energy (ME)** 11 MJ/kg

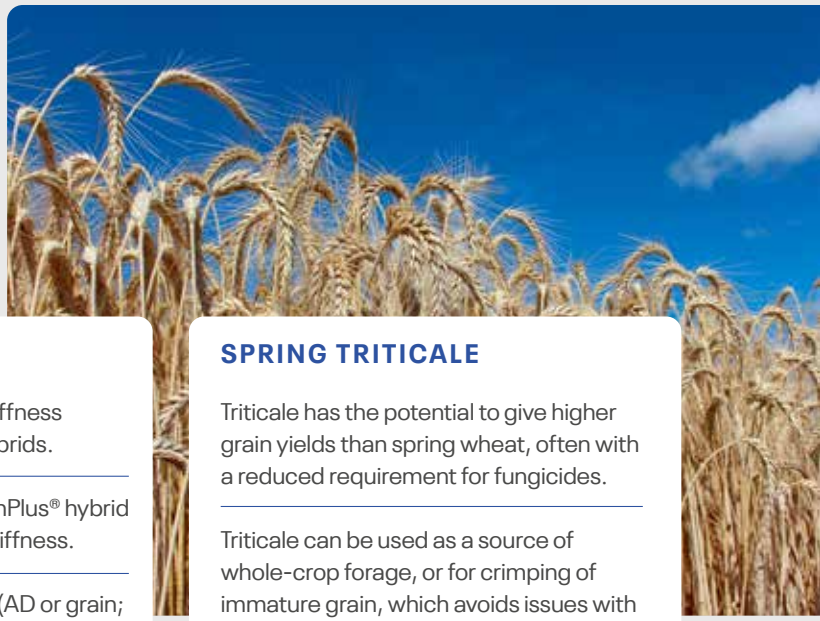
Why sow spring Triticale?

Triticale can be grown as wholecrop on a wide range of soils requiring fewer inputs than traditional cereals.

The cereal of choice where rabbit damage occurs, it establishes rapidly, and rabbits find it less palatable. It is a cross between wheat and rye which can be under sown with grass.

YIELD & FEED QUALITY

Average Dry Matter Yield 8-10t/ha	**Crude Protein** 10%
Average Fresh Yield 25-30t/ha Dry Matter	**Digestibility Value** 65%
Dry Matter 30-35%	**Energy (ME)** 10.5 MJ/kg



KWS SERAFINO

Excellent stem stiffness and brown rust resistance.

Multi-purpose hybrid (AD or grain; feed flour and distilling).

No. 1 harvest index (grains/ear) to drive grain yield .

KWS TAYO

Offers robust stem stiffness compared to older hybrids.

New generation PollenPlus® hybrid with excellent stem stiffness.

Multi-purpose hybrid (AD or grain; feed, flour and distilling).

SPRING TRITICALE

Triticale has the potential to give higher grain yields than spring wheat, often with a reduced requirement for fungicides.

Triticale can be used as a source of whole-crop forage, or for crimping of immature grain, which avoids issues with pre-harvest sprouting.

ARABLE SILAGE

Arable Silage mixtures offer an alternative or additional feed to grass or maize silage and are particularly suitable for farmers wishing to increase their levels of home-produced protein and reduce their reliance on purchased feed and fertiliser.

Arable silage produces a cost-effective, high quality forage of consistent quality and palatability, with high yields of dry matter even in dry seasons and cold weather. They can be self-fed from the silage-face or as bales, and their early harvest allows for earlier drilling of other autumn combinable crops or reseeding of grass. The crop can also be undersown with grass in the spring.

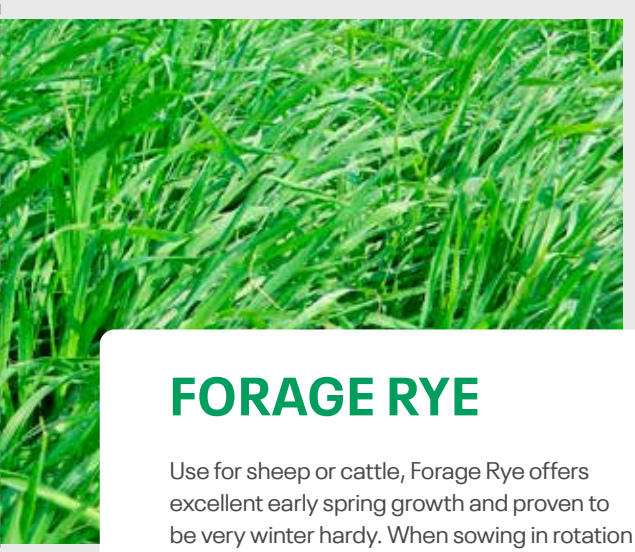
YIELD & FEED QUALITY

Average Dry Matter Yield 9t/ha	**Crude Protein** 20%
Average Fresh Yield 40t/ha Dry Matter	**Digestibility Value** 65% DMD
Dry Matter 25%	**Energy (ME)** 10.5 MJ/kg

AS1 (60% BARLEY, 40% PEAS)

Arable Silage Mixtures offer an alternative or additional feed to grass or maize silage and are particularly suitable for farmers wishing to increase their levels of home-produced protein and reduce their reliance on purchased feed and fertiliser.

FORAGE RYE AND WESTERWOLDS



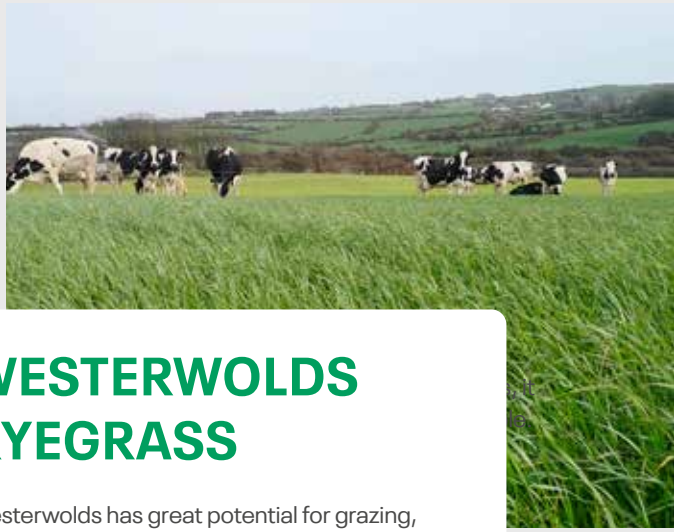
FORAGE RYE

Use for sheep or cattle, Forage Rye offers excellent early spring growth and proven to be very winter hardy. When sowing in rotation it works well after cereals or maize.

Strip graze to avoid wastage whilst filling the hungry gap period. Forage Rye has few and infrequent diseases.

YIELD & FEED QUALITY

Average Dry Matter Yield 5.5t/ha	**Crude Protein** 10-11%
Average Fresh Yield 25t/ha Dry Matter	**Digestibility Value** 65% DMD
Dry Matter 18-23%	**Energy (ME)** 10 MJ/kg



WESTERWOLDS RYEGRASS

Westerwolds has great potential for grazing, zero-grazing and silage. A valuable crop that can be sown right into October for early spring grazing or an early silage harvest to fill fodder deficits.

Westerwolds is quick to establish with vigorous growth at low temperatures which makes it ideal for sowing after maize or spring cereals.

Ready to graze or zero-graze after 6-8 weeks or for cutting in just 12 weeks.

YIELD & FEED QUALITY

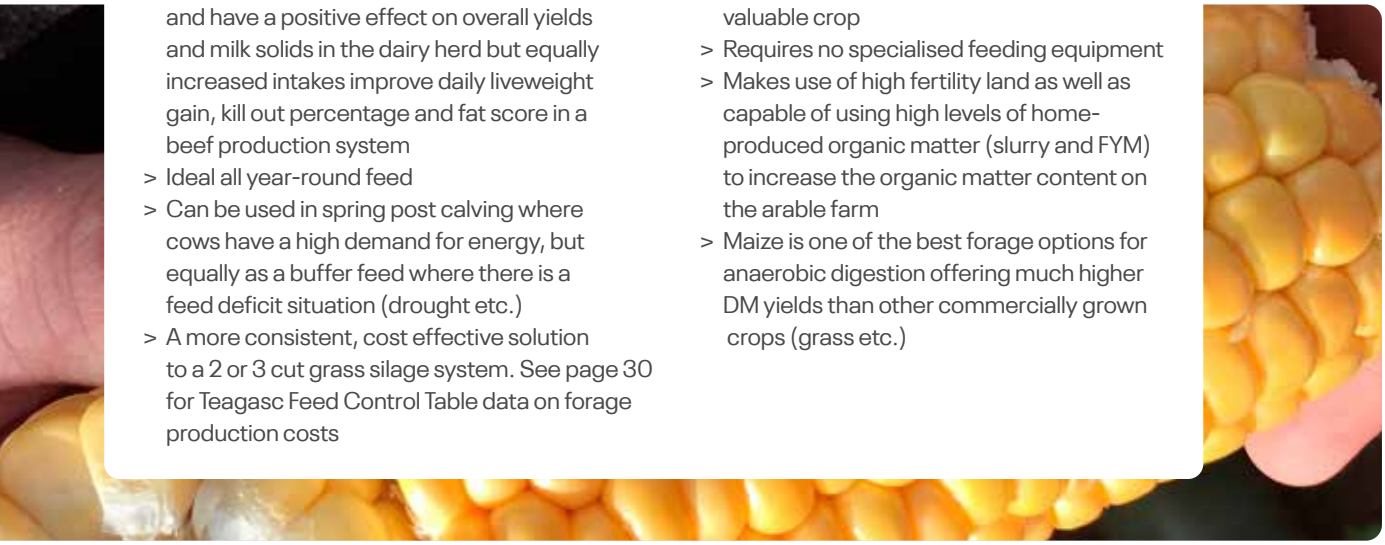
Average Dry Matter Yield 16-20t/ha (autumn sowing)	**Digestibility Value** 68-75% DMD
Average Fresh Yield 90-100t/ha	**Energy (ME)** 10-11 MJ/kg

MAIZE

Suitable for forage and Anaerobic digestion

WHY GROW MAIZE?

- A high starch (energy), high dry matter home- grown feed
- When included in diets will increase intakes and have a positive effect on overall yields and milk solids in the dairy herd but equally increased intakes improve daily liveweight gain, kill out percentage and fat score in a beef production system
- Ideal all year-round feed
- Can be used in spring post calving where cows have a high demand for energy, but equally as a buffer feed where there is a feed deficit situation (drought etc.)
- A more consistent, cost effective solution to a 2 or 3 cut grass silage system. See page 30 for Teagasc Feed Control Table data on forage production costs
- An excellent break crop in a continuous tillage situation while offering an opportunity for farm to farm sale of a valuable crop
- Requires no specialised feeding equipment
- Makes use of high fertility land as well as capable of using high levels of home-produced organic matter (slurry and FYM) to increase the organic matter content on the arable farm
- Maize is one of the best forage options for anaerobic digestion offering much higher DM yields than other commercially grown crops (grass etc.)



OPEN V COVERED SOWING

The open sown market is increasing year on year and this is demonstrated by the Department of Agriculture conducting open sown trials. With the marked shift away from plastic for environmental and sustainability reasons and along with the significant improvements in open sown varieties, farmers have a very real choice in considering open sown maize. At DLF we are trialing new varieties every year, searching for the most consistent open sown varieties with all the key characteristics the grower needs.

There is very little required of the grower in terms of crop husbandry between open and covered sowing other than using a film at sowing. Fertiliser and chemical rates are very similar, but timings may differ slightly.

SOWING

On a suitable site, open sown maize is proven to deliver on fresh weight/ dry matter yield and starch. Site selection is important when open sown is being considered as site aspect, elevation and soil type will potentially have a bigger effect on crop performance if an unfavorable growing year occurs. For open sown maize it is prudent to wait for a soil temperature of 10°C for optimum establishment.

GETTING THE MOST FROM YOUR ROTATION

Growing a crop of maize typically means sowing in April/ May and harvesting in September/October. This can leave a period of up to six months where there's an opportunity to use a second crop to gain extra production. If your maize crop forms part of an arable rotation and an early maturing variety has been chosen, winter crops such as cereals may be sown after harvest.

STUBBLE MANAGEMENT AND CROPPING OPTIONS

For both production and environmental reasons, it makes sense that no maize stubbles should be left bare or uncultivated over the winter.

This is not only a missed opportunity to produce more forage, but also can lead to soil related problems such as surface water run-of, soil erosion and loss of valuable soil nutrients.

Crops such as Rye, Westerwolds or using a DLF cover crop mixture offers more benefits than leaving maize stubble overwinter.

DLF MAIZE VARIETIES

SOWING INFORMATION

Sowing Period
Late March – Early May

Precision Drill
98-120,000 seeds/ha

Soil Temperature
+10oC

YIELD & FEED QUALITY (OPEN)

Average Dry Matter Yield
14-16 t/ha

Average Fresh Yield
45 t/ha

Dry Matter
30-35%

Crude Protein
9-10%%

Digestibility Value
75%

Energy (ME)
11.5 MJ/kg

Starch
25-35%

GROWING COSTS (OPEN)

€1951/ha*

Fresh Weight
€43.35/t
(@45/ha fresh weight yield)

Dry Matter
€0.14c/kg

*as per Teagasc Crop Cost and Returns 2022

RESOLUTE

OPEN SOWING / LATE MATURITY

New open sown maize which is a top performer in Irish trials.

Resolute has delivered massive yields on farm with the ideal balance between desired starch and dry matter.

Proven with farmers who moved from covered to open maize.

SEVERUS

OPEN SOWING / EARLY MATURITY

This is Irelands most popular open sown maize and for good reason!

Excellent early vigour, super starch and high ME.

Consistent performance on farm looking for an early maturing variety.

PROSPECT (NEW)

OPEN SOWING/ EARLY MATURING

Excellent early vigour and superb standing power for a safe harvest.

Very early maturing with high yield that makes it suitable for all maize growing sites.

Prospect has top-rated Eyespot tolerance and fusarium resistance.

Combines high digestible fibre, with a high starch content to produce superb quality feed

NEW

KONFLUENS

OPEN SOWING / MEDIUM MATURING

New and in demand! Konfluens is a big yielding high quality hybrid.

Konfluens has a very high yield potential, combined with good starch and dry matter yield.

Konfluens has performed exceptionally well on farm yet again and is fast becoming a farmers favourite.

MAIZE RL OPEN LIST

	YIELD OF DRY MATTER (T/HA)	DRY MATTER CONTENT (%)	STARCH CONTENT (%)
Controls*	**15.5t/ha**	**35.4%**	**23.3%**
SEVERUS (PR-1)	102	104	114
KROFT (R)	92	113	121
ACTIVATE (PR-1)	96	120	117
AMBITION (R)	105	106	113
ATRIUM (R)	101	90	105
BEACON (R)	99	99	108
BEETHOVEN (R)	104	94	88

Source: DAFM 2015 3 year average 2012 to 2014* The Control varieties were Beethoven, Beacon and Destiny in 2013 trials and Beethoven and Beacon in 2014 trials.

RECOMMENDED LIST OF COVERED FORAGE MAIZE 2022

	YIELD OF DRY MATTER (T/HA)	STARCH CONTENT (%)	ME CONTENT (%)
Controls*	**19.5t/ha**	**23.1%**	**-**
AMBITION (R)	87	121	11.3
KONFLUENS (R)	106	100	11.0
LG31235 (R)	100	97	11.2
P8200 (R)	107	99	10.7
P8201 (R)	118	103	11.3
SPYCI CS (R)	94	107	11.1
SY FEEDITOP (R)	93	106	11.0

DAFM trials carried out in the period 2019 to 2022 (3 year average).
* The Control varieties were Award, LG30211 & LG31235 in 2019, LG30211, LG31235, P8200 & Spyci CS in 2020 and LG31235, P8200 & Spyci CS in 2021.

STUBBLE MANAGEMENT AND CROPPING OPTIONS

	Prevent run off	Build organic matter	Retention of soil nutrients	Crop output	Timing
Humbolt forage rye	✓	✓	✓	✓	Sept-Oct
Westerwolds ryegrass	✓	✓	✓	✓	Sept-Oct
Undersowing grass	✓	✓	✓	✓	June-July
Chisel ploughing	✓	✗	✗	✗	Sept-Nov

FODDER BEET

Fodder beet is grown as a main root crop, which requires similar husbandry to sugar beet. Beet is a superb home grown forage, that can produce substantial yields of high-quality fodder and is an excellent supplement to grass silage.

The roots are very palatable to stock and have superb feed quality. Specialist harvesting equipment is required to lift the roots and storage is required unless they are strip grazed in situ. Medium dry matter varieties tend to have a higher percentage of root above ground and can be lifted with a top lifter and therefore have a relatively low dirt tare.

SOIL TYPE/SITE SELECTION:

A crop of fodder beet can thrive on a wide range of soils, but a light to medium, free draining field is ideal. A soil pH of 7 is the target and good accessibility is vital for heavy harvesting machinery.

SEEDBED & SOWING METHODS:

Aim for firm, fine tilth with pre-Christmas ploughing. Keep moisture loss to a minimum in the spring. Monogerm seed has eliminated the need for labour intensive singling. However, allow for some field losses if seedbed conditions are poor. As a general guide, soil temperatures need to be at least 5°C before sowing. Early April is a typical drilling date in the south. Sowing earlier in cold conditions can lead to bolting. Delayed drilling leads to yield losses. Ensure that the seed is drilled to a depth of 2.5/3cm - use the deeper depth for dry seedbeds. A precision drill is essential.

FERTILISER:

This is a demanding crop in terms of nutrients. All the compound fertiliser is best applied before sowing. Nitrogen is generally applied in June when the plant is well established and able to use it up quickly. It is advised to use sulphur with your nitrogen application. The use of farmyard manure and slurry can be beneficial, as it can help if your soil indexes need attention. Trace elements (especially boron and manganese) are very important when growing beet.

WEEDS, DISEASES & PEST CONTROL:

Some farmers may be prepared to take on inter-row cultivations, but good herbicide control is possible to control weeds. It is vitally important to control weeds as their presence can severely reduce yields. Weed beets are very undesirable and every effort must be made to eliminate them. An application of fungicide in July can keep the leaves in much better condition to enhance a longer harvest window and can add extra yield by keeping leaves greener for longer. DLF Beet seed is treated with fungicide to provide extra potential during establishment. The crop can be attacked by many pests, including slugs, leather jackets and wireworms.

HARVESTING:

Although the crop continues to put on yield into the autumn, this must be balanced against the potential problems associated with a late harvest. Some farmers have their own lifting equipment, while others will use a contractor. Machines can be divided into 'leaf' or 'root lifters' – whichever is used, the tops must be removed down to the base of the leaf petioles. Keep soil contamination to a minimum.

ROOT STORAGE:

A pre-cleaner is recommended to remove soil contamination. Clamps should be checked regularly for signs of any hot spots. The high DM varieties such as Gahan Beet tend to store better on a long-term basis and are less prone to damage.

FEEDING:

Fodder beet may be fed chopped or whole. Chopped beet should provide a better liveweight gain in beef animals. Feeding the roots at ground level can reduce the risk of choking. The roots have a high energy but low protein content and make a good substitute for grain in rations for dairy, beef and sheep. Crops can also be strip-grazed in outwintering systems.

DLF BEET VARIETIES

SOWING INFORMATION

Sowing Period
Late March

Precision Drill
100-110,000 seeds/ha

Soil Temperature
+5oC

YIELD & FEED QUALITY

Average Dry Matter Yield
18 t/ha

Average Fresh Yield
91t/ha (ref Rathvilly & Wexford)

Dry Matter
21%

Crude Protein
9%%

Digestibility Value
80%

Energy (ME)
11.5 MJ/kg

GROWING COSTS

€2706/ha*

Fresh Weight
€29.73/t
(@91/ha fresh weight yield)

Dry Matter
€0.14c/kg*

*as per Teagasc Crop Cost and Returns 2022

GAHAN

LIFT & PIT

This is a next generation sugar beet with high dry matter content and very high yields.

This clean beet has proven very popular countrywide with both contractors & farmers, and it has also proven its ability to drive improvements in animal performance

DELICANTE

LIFT & PIT

A new variety that is proving to have the best fresh weight yield for a white fodder beet.

Fitting in well with both growers and buyers, as an early pulling beet with huge yield potential.

This white fodder beet is proving very promising in terms of yield and also has a high dry matter content.

BANGOR

LIFT & PIT

Fast becoming one of Ireland's most popular beet varieties, Bangor has developed a strong following over the last three years.

Bangor delivers the best fresh yield without compromising on dry matter yield.

Bangor is 65% above ground, easy to harvest and has a smooth, clean root.

BLAZE

GRAZE/LIFT & PIT

This red beet offers colossel fresh ton yields to farmers.

it is a very clean variety as it sits 60% above ground and is suitable for grazing in situ.

Blaze also works well for lifting & pitting.

TRIAL DATA

VARIETY	YEARS IN TRIAL	TYPE	COLOUR	MEAN FRESH YIELD/HA	REL. FRESH YIELD	MEAN DM %	REL. DM YIELD	DIRT SCORE	% ABOVE GROUND
Gahan	4	Sugar Beet	White	88.55	95%	24.20%	123%	5	25%
Yoda	4	Sugar Beet	White	85.83	92%	22.84%	116%	6	25%
Acker	5	Sugar Beet	White	84.2	91%	22.00%	112%	6	25%
Bangor	6	High DM Fodder Beet	Yellow	101.1	109%	18.06%	92%	2	65%
Delicante NEW	3	High DM Fodder Beet	White	99.3	107%	17.66%	90%	4	60%
Magnum ©	6	High DM Fodder Beet	White	95.5	103%	19.82%	101%	4	50%
Enermax ©	6	High DM Fodder Beet	White	90.4	97%	19.41%	99%	5	45%
Brick	3	High DM Fodder Beet	White	83.8	90%	22.57%	115%	5	30%
Blizzerd	5	High DM Fodder Beet	White	87.4	94%	20.56%	105%	6	35%
Blaze	4	Low DM Fodder Beet	Red	110	118%	16.95%	86%	3	60%
Feldherr	4	Low DM Fodder Beet	Orange	105.7	114%	14.33%	73%	2	70%

Source: Beet trials conducted in Carlow from 2016 – 2019 & Wexford 2020 & 2021
*Control is an average of Magnum and Enermax. The results are an average of the last 3 year trials.

FORAGE RAPE

WHY GROW FORAGE RAPE?

> Fast growing, leafy catch crop
> Flexible sowing period
> High protein content
> Finishing lambs
> Longer lasting than stubble turnips
> Sheep, dairy or beef production
> Winter hardy hybrids available

Forage Rape has the advantage of being a very fast-growing crop suitable for grazing by sheep or cattle. It is an ideal catch crop for boosting midsummer forage production for livestock farmers when planted in the spring, it is also suitable for fattening lambs and overwintering cattle in the autumn/winter.

Why Grow Forage Rape?

Forage rape extends the grazing season in the autumn and is superb for growing livestock. It is better to strip graze to avoid excessive wastage. Forage Rape can be mixed with stubble turnips and kale to combine the many benefits of these crops.

Feeding:

Forage rape crops can be ready to utilise between 12-14 weeks from sowing. They are ideally used for finishing lambs or used to feed in-lamb ewes and can be grazed by cattle. As with any brassica crop, feeding should be introduced gradually over a 2-week period. Ideally there should be an area of grassland to allow stock to 'run back' onto, along with access to hay or straw and water. Forage rape is also the ideal companion to stubble turnips. The two sown together can be fed successfully with the forage rape, adding extra crude protein content and winter hardiness.

As a companion crop:

Many farmers have successfully mixed approximately 250-500g of forage rape seed into their grass seed mixtures, allowing them to be grazed whilst the young grass seedlings continue to establish underneath. Forage rape can also be mixed with Italian ryegrass to create a cleaner autumn keep.

TRIAL DATA

VARIETY	FRESH YIELD t/ha	RELATIVE FRESH YIELD %	DM CONTENT %	DISEASE RESISTANCE 9 = BEST MILDEW	ALTEMARIA
INTERVAL	38.69	125	12.3	9	8
HOBSON	31.41	101	13.9	8	8
RAMPART	32.30	104	12.7	8	8
EMERALD ©	30.98	100	13.2	6	8
REDSTART	29.48	95	13.1	7	7
HUNGRYGAP	24.75	80	13.6	9	8

Data Source: Limagrain UK trials 1993-2021© Control * Emerald
Note: Not all varieties trialled every year, not all scores taken every year

DLF FORAGE RAPE VARIETIES

SOWING INFORMATION

Sowing Period
May to August

Direct Drill
6kg/ha

Broadcast
8kg/ha

YIELD & FEED QUALITY

Average Dry Matter Yield
3.5-4.5t/ha

Average Fresh Yield
25-35t/ha

Dry Matter
12-13%

Crude Protein
19-20%

Digestibility Value
65%DMD

Energy (ME)
11 MJ/kg

GROWING COSTS

€847/ha*

Fresh Weight
€20.16/t
(@42t/ha fresh weight yield)

Dry Matter
€0.16c/kg

*as per Teagasc 'Crops cost and returns 2022'

INTERVAL FORAGE RAPE

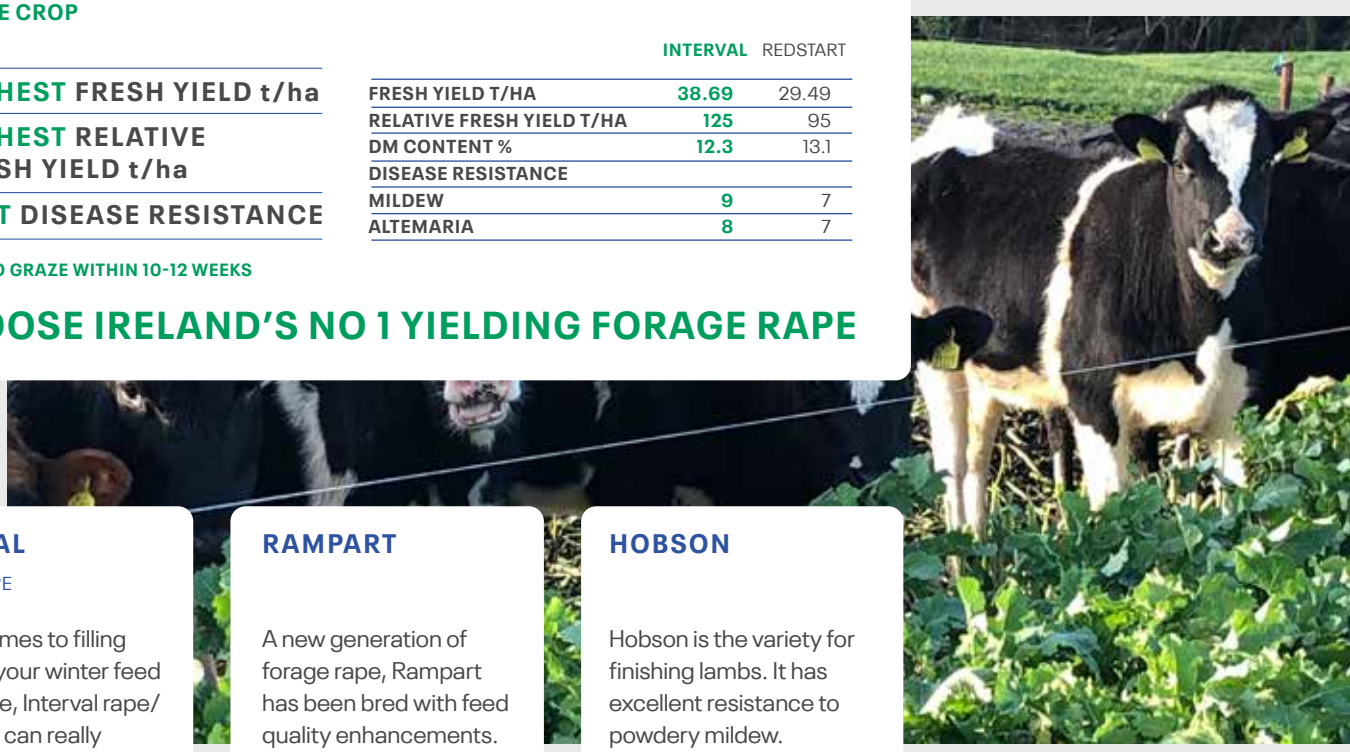
FORAGE CROP

- ✓ **HIGHEST FRESH YIELD t/ha**
- ✓ **HIGHEST RELATIVE FRESH YIELD t/ha**
- ✓ **BEST DISEASE RESISTANCE**

	INTERVAL	REDSTART
FRESH YIELD T/HA	38.69	29.49
RELATIVE FRESH YIELD T/HA	125	95
DM CONTENT %	12.3	13.1
DISEASE RESISTANCE		
MILDEW	9	7
ALTEMARIA	8	7

READY TO GRAZE WITHIN 10-12 WEEKS

CHOOSE IRELAND'S NO 1 YIELDING FORAGE RAPE



INTERVAL

HYBRID RAPE

When it comes to filling the gap in your winter feed programme, Interval rape/kale hybrid can really boost your profits.

Interval's exceptional yield potential, disease resistance and palatability, is ideal for finishing lambs or dairy cows.

Interval is very fast to establish with some crops ready to utilise within 10-12 weeks of sowing.

RAMPART

A new generation of forage rape, Rampart has been bred with feed quality enhancements.

This along with its high yield potential and winter hardiness will enable growers to find extra flexibility when feeding the crop.

Rampart is suitable for both dairy and sheep production and is ready to feed 12-14 weeks after sowing

HOBSON

Hobson is the variety for finishing lambs. It has excellent resistance to powdery mildew.

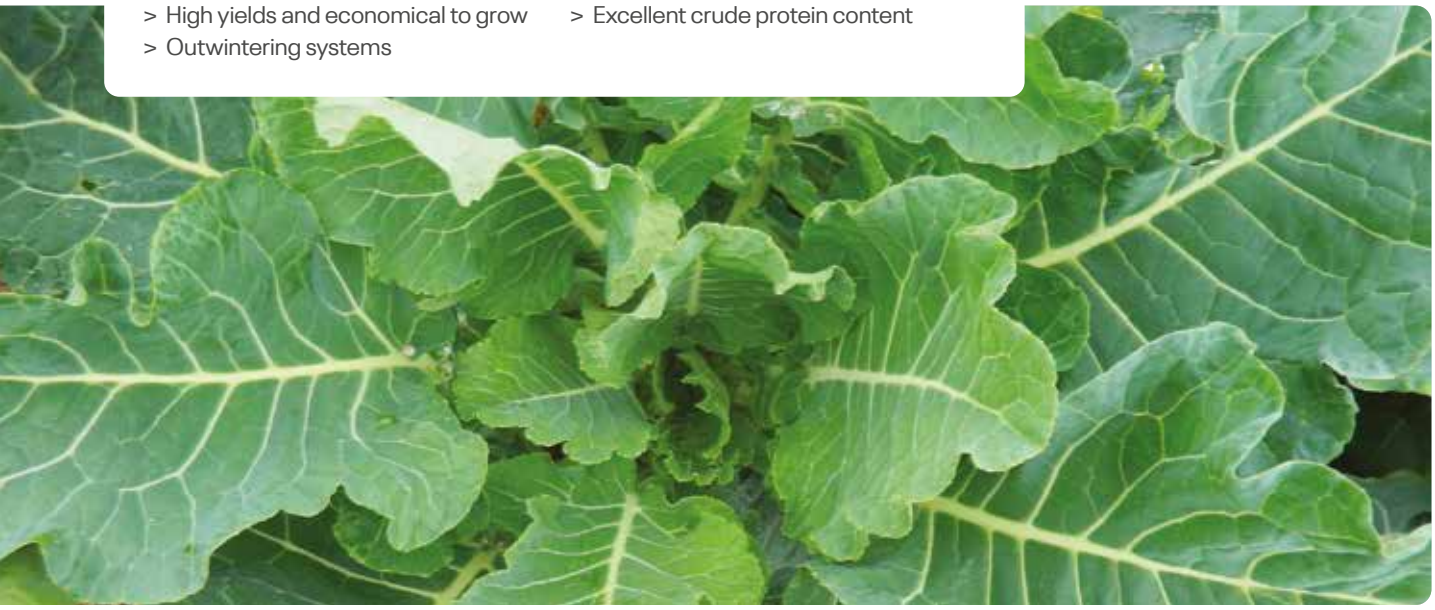
It can be sown in either spring, early summer or after cereals. This offers excellent potential for extra tonnes of valuable dry matter, when required in these critical periods.

Hobson is very platable and digestible.

KALE

WHY GROW KALE?

> Higher yields than rape/kale hybrids
> High yields and economical to grow
> Outwintering systems
> Flexible utilisation period
> Excellent crude protein content



Kale is a brassica traditionally grown for grazing by cattle in the autumn and winter and is very useful to extend the grazing season.

It can also be cut and fed to stock 'in house' or as an alternative can be ensiled as big bale kaleage. This crop is best strip grazed to avoid excessive wastage and ensure both leaf and stem are eaten. Kale require fertile ground with a high pH of 6.3 or more. Kale can also be used as game cover.

Feeding

The traditional method is to utilise the crop fresh, either by strip or zero grazing. Strip graze behind an electric fence which is best moved once or twice a day. Allow a space of 3 meters per cow and an area of grass for the animals to run-back on. Zero grazing – cutting the crop with a forage harvester will help secure the maximum use of this excellent green feed with minimal waste. The kale can then be fed from a forage box or from behind a barrier. Experts suggest that kale should provide no more than 30-35% of the daily dry matter intake for dairy cows. Kale has been used very successfully in outwintering systems.

DLF KALE VARIETIES

SOWING INFORMATION

Sowing Period
April to June

Direct Drill
5kg/ha

Broadcast
7.5kg/ha

YIELD & FEED QUALITY

Average Dry Matter Yield
8-10t/ha

Average Fresh Yield
60-70t/ha

Dry Matter
14-16%

Crude Protein
16%

Digestibility Value
75%DMD

Energy (ME)
11 MJ/kg

GROWING COSTS

€1119/ha*

Fresh Weight
€18.65/t
(@60t**/ha fresh weight yield)

Dry Matter
€0.124c/kg

*as per Teagasc "Crops cost and returns 2022"
**as per Limagrain UK trials 1993 – 20

NEW

BOMBARDIER

CLUBROOT TOLERANT

New high yielding clubroot tolerant variety suitable for dairy and beef cattle.

Bombardier has enhanced quality and high DM yields

COLEOR

SHORT GRAZER

Coleor boasts the highest leaf to stem ratio in the last set of DAFM trials.

Combining high yields, disease resistance and being a short grazer, makes Coleor a great option for dairy and beef cattle or sheep.

It is very distinct with its purple pigmentation.

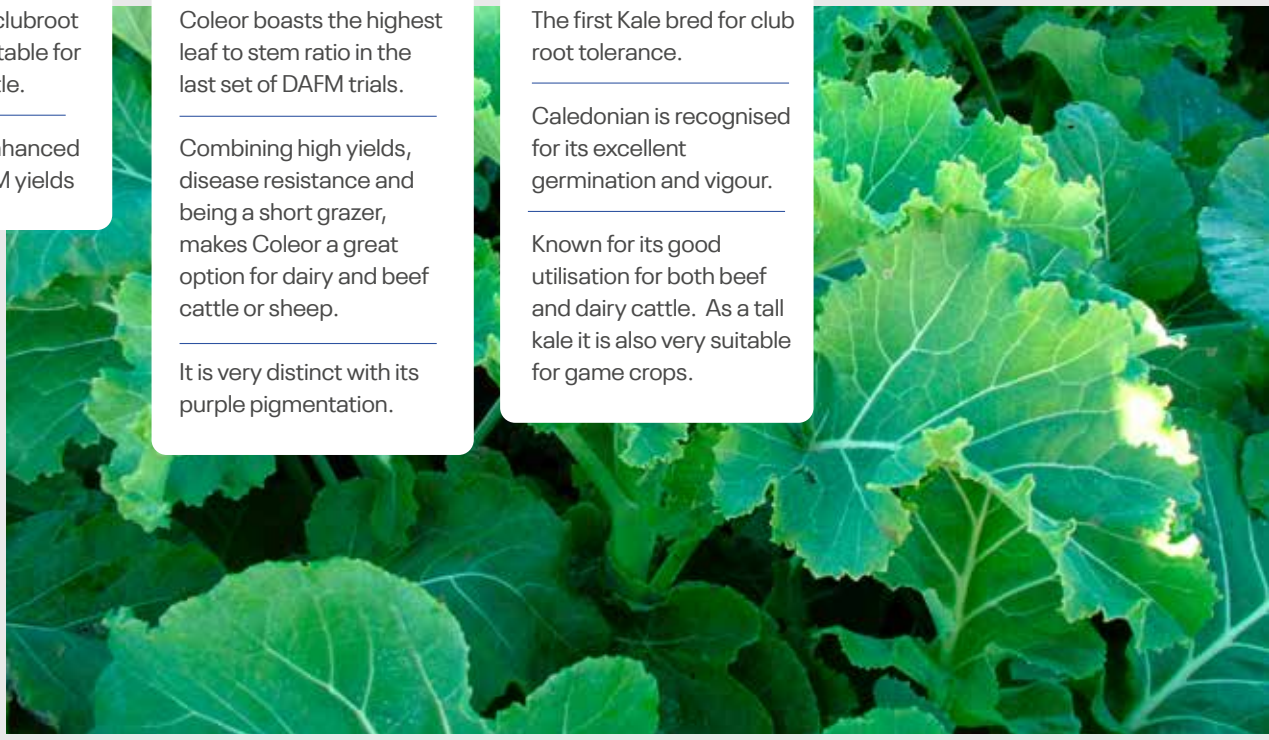
CALEDONIAN

CLUBROOT TOLERANT

The first Kale bred for club root tolerance.

Caledonian is recognised for its excellent germination and vigour.

Known for its good utilisation for both beef and dairy cattle. As a tall kale it is also very suitable for game crops.



TRIAL DATA

VARIETY	TYPE	RELATIVE DM YIELD %	RELATIVE FRESH YIELD %	DM CONTENT %	LEAF: STEM RATIO HIGH = LEAFY	HEIGHT CM	DIGESTIBILITY VALUE %	WINTER HARDINESS 9 = BEST
100% - Tonnes/Ha		9.7	70.2					
Caledonian CR	Marrow Stem	122	123	13.8	0.6	105	71.2	5
Bombardier CR New	Marrow Stem	118	121	13.5	0.5	102	72.2	5
Grampian cr	Marrow Stem	115	113	14.1	0.6	101	73.7	4
Pinfold ©	Intermediate	112	100	15.6	1.0	101	71.1	6
Bittern	Intermediate	112	101	15.5	0.8	94	74.0	*
Voltage	Intermediate	104	93	15.7	0.9	97	70.6	5
Keeper	Short	104	92	15.7	1.2	85	74.2	5
Maris Kestrel	Short	100	100	13.9	1.1	74	75.6	3
Thousand Head	Old standard	100	83	16.6	1.2	99	70.1	*

Data Source: Limagrain UK trials 1993-2017 © Control* No data available Winter Hardiness Scored January 2011 only
Note: Not all varieties trialled every year, not all scores taken every year

SWEDES

WHY GROW SWEDES?

- Excellent high energy winter feed
- High dry matter yields
- Low production costs
- Cost effective (even where yields are only moderate)
- Finishing lambs or winter maintenance

Swedes are a full season root crop which are mainly fed in situ but can also be lifted and stored in a clamp. They are an excellent high energy winter feed.

Feeding

Most fodder swede crops are grazed in situ. However, it is important to remember to select a variety (or varieties) to cover the period you wish to graze. It is advisable to use an electric fence to reduce wastage. Forage swedes can be lifted, and the roots stored in a clamp. The roots need to be clean and free from soil. Try not to store any damaged roots as this will encourage fungal diseases.

DLF SWEDE VARIETIES

SOWING INFORMATION

Sowing Period
April to June

Direct Drill
3kg/ha

Broadcast
5kg/ha

Soil Temperature
+10^{0}C

YIELD & FEED QUALITY

Average Dry Matter Yield
8-10t/ha

Average Fresh Yield
70-80t/ha

Dry Matter
10-12%

Crude Protein
10-11%

Digestibility Value
80%DMD

Energy (ME)
12.5 MJ/kg

GROWING COSTS

€1119/ha*

Fresh Weight
€15.12/t
(@74t/ha fresh weight yield)

Dry Matter
€0.14c/kg

*as per Teagasc "Crops cost and returns 2018"

LOMOND

High, fresh and dry yields make this variety ideal for finishing lambs post-Christmas.

Lomond has both powdery mildew and clubroot resistance and trials show it suffers less from rots and splits in its root.

INVITATION

Invitation is a very uniform, clubroot resistant variety, ideal for utilisation after Christmas.

It also has excellent resistance to powdery mildew and will produce large leaves for extra grazing potential.

Invitation is winter hardy and is suitable for sheep or cattle.

TRIAL DATA

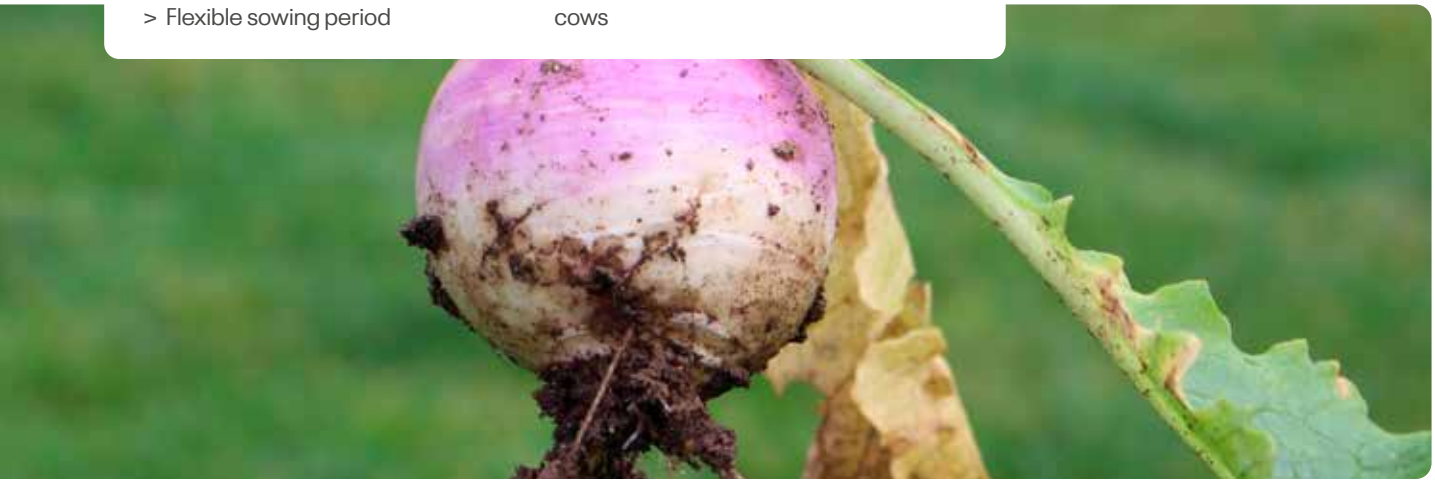
VARIETY	RELATIVE DM YIELD	RELATIVE FRESH YIELD	DM CONTENT %	MILDEW RESISTANCE 9 = BEST	ROOT SHAPE 9 = BEST	NECK LENGTH HIGH SCORE = LONGER NECK
100% - Tonnes/Ha	9.78	89.6				
Lomond	111	109	11.3	9	7	1.4
Ruby	107	102	11.7	7	5	2.0
Invitation	106	94	12.6	8	6	3.5
Brora	100	106	10.4	3	7	1.6
Ruta otofte (C)	100	100	11.0	4	5	2.4
Magres	100	93	12.2	7	6	1.7
Helenor	96	99	11.0	3	7	4.0
Marian	96	97	11.0	5	5	1.5

Data Source: Limagrain UK trials 1993-2017 c Control* No data available Winter HardinessScored January 2011 only **Note: Not all varieties trialled every year, not all scores taken every year**

STUBBLE TURNIPS

WHY GROW STUBBLE TURNIPS?

> Fast growing catch crop
> Economical to grow
> Autumn or winter feed
> Flexible sowing period
> Finishing lambs
> Helps reduce winter feed costs
> Summer buffer feed for dairy cows



Stubble Turnips are a fast-growing catch crop, popular with livestock farmers. They may be sown after first cut silage for summer grazing or after winter cereals for autumn usage.

Feeding

The stubble turnip crop is an attractive source of very palatable and easy to digest fodder. Both cattle and sheep should be introduced gradually to the crop and between grazing's, be able to run-back on grass or have access to grass silage. It is also advisable to have hay or straw on offer prior to each grazing, particularly in the case of dairy cows.

It is a good idea to introduce animals to the crop gradually, allow stock about three weeks to fully adjust to stubble turnips.

Throughout the grazing period, adequate mineral supplements should be fed to all stock. Although the DM content of both the root and the leaf is low, the quality of this DM is very good.

SKYFALL
So, let us introduce to you
Skyfall Bounce Back Brassica (BBB)

Skyfall is a leafy brassica ideally suited for grazing. The large strap leaves are soft and are very easily eaten by dairy, beef or sheep livestock. The leaves have the appearance of a stubble turnip leaf, whilst the root is more like forage rape - deeper, elongated and better able to penetrate the soil. With this deeper rooting system, Skyfall can regrow quickly and will tolerate dry soil conditions. Also comes with Start-up seed treatment, which improves vigour and makes a more even establishment.

> Drill from Mid May onwards for the best results

> Should be ready for grazing within 5 - 7 weeks.

> Yields - 9.55 tonnes of dry matter per hectare, over the 4 grazing periods.

> You can expect bounce back regrowth in approx. 4 - 6 weeks from your first grazing

DLF STUBBLE TURNIP VARIETIES

SOWING INFORMATION

Sowing Period
April to August

Direct Drill
5kg/ha

Broadcast
7kg/ha

Soil Temperature
+10^{0}C

YIELD & FEED QUALITY

Average Dry Matter Yield
4t/ha

Average Fresh Yield
35-40t/ha

Dry Matter
8-10%

Crude Protein
18%

Digestibility Value
70%DMD

Energy (ME)
11 MJ/kg

GROWING COSTS

€402/ha*

Fresh Weight
€16.08/t
(@25t/ha fresh weight yield)

Dry Matter
€0.16c/kg

*as per Teagasc 'Crops Cost and Returns 2022'

SAMSON

In trials, Samson has shown to be preferentially grazed which can lead to higher intake and liveweight gains.

Samson can produce huge tankard shaped purple bulbs which are very palatable to both sheep and cattle.

NEW

SKYFALL

Skyfall (BBB) can also be drilled after first cut silage.

It will produce a very leafy, highly palatable crop in a short period of time.
The leafy forage should be grazed to a height of approx. 10 cm.

An application of 30-35 kg N per hectare will encourage faster growth and recovery

TYFON

Tyfon is ideally sown in the spring and utilised in the summer months when grass growth generally declines.

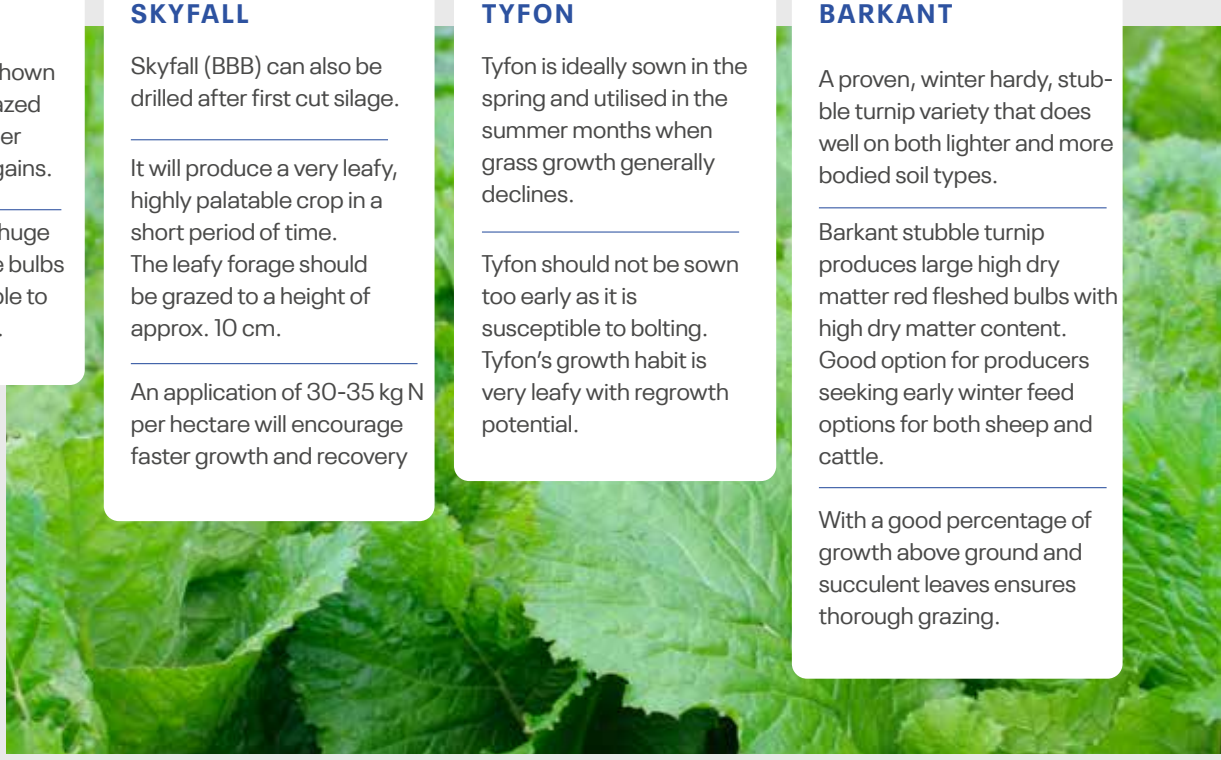
Tyfon should not be sown too early as it is susceptible to bolting. Tyfon's growth habit is very leafy with regrowth potential.

BARKANT

A proven, winter hardy, stubble turnip variety that does well on both lighter and more bodied soil types.

Barkant stubble turnip produces large high dry matter red fleshed bulbs with high dry matter content. Good option for producers seeking early winter feed options for both sheep and cattle.

With a good percentage of growth above ground and succulent leaves ensures thorough grazing.



TRIAL DATA

VARIETY	TYPE	RELATIVE DM YIELD %	RELATIVE FRESH YIELD %	RELATIVE ROOT DM YIELD %	RELATIVE LEAF DM YIELD %	DISEASE RESISTANCE 9 = BEST MILDEW	ALTENARIA
100% - Tonnes/Ha		5.52	51.8				
Samson (TET)	Purple Tankard	103	108	119	83	5	6
Delilah	White Tankard	100	101	118	77	8	7
Barkant (C)	Purple Tankard	100	100	100	100	*	*
Rondo	Green Globe	94	88	96	91	8	7
Dynamo	Purple Globe	88	89	97	75	5	8
Whitestar	White Globe	84	81	78	91	*	*
Skyfall Hybrid	Leafy	87	70	42	141	6	7
Tyfon	Leafy	79	75	57	105	3	7

Data Source: Limagrain UK trials 1993-2018 **(c)** Control **Tet:** Tetraploid * No data available Disease scores Dec 2017
Note: Not all varieties trialled every year, not all scores taken every year

WILD BIRD COVER

About 25% of common Irish farmland bird species are in serious decline. Birds like the greenfinch, yellowhammer, cuckoo and kestrel are becoming rarer and rarer in our countryside while the likes of the corn bunting have already disappeared completely. One very simple but effective measure all farmers can implement is to sow a headland or field-corner with a wild bird cover mixture.

Products

DLF offer the standard wild bird cover option of cereal and linseed which satisfies the minimum requirements of ACRES.

In recent years we have been engaged with various gun clubs around the country and have extended our offering to widen the window of feed available to birds and flowers available for pollinators to forage while enhancing the appearance of the crop.

What is involved in the ACRES wild bird cover scheme?

> Establish wild bird cover before 31st May.

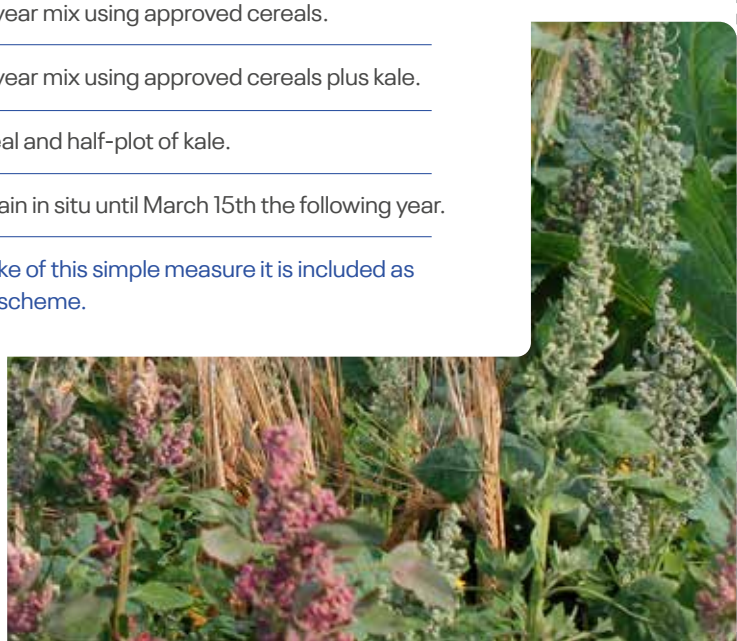
> Establish a one-year mix using approved cereals.

> Establish a two-year mix using approved cereals plus kale.

> Half-plot of cereal and half-plot of kale.

> Crops must remain in situ until March 15th the following year.

To encourage uptake of this simple measure it is included as part of the ACRES scheme.



DLF WILD BIRD COVER MIXTURES

Wild Bird Cover Extend

Traditional Game Cover Mixtures

75kg	Triticale
7.5kg	Linseed
5kg	Mustard
0.5kg	Phacelia

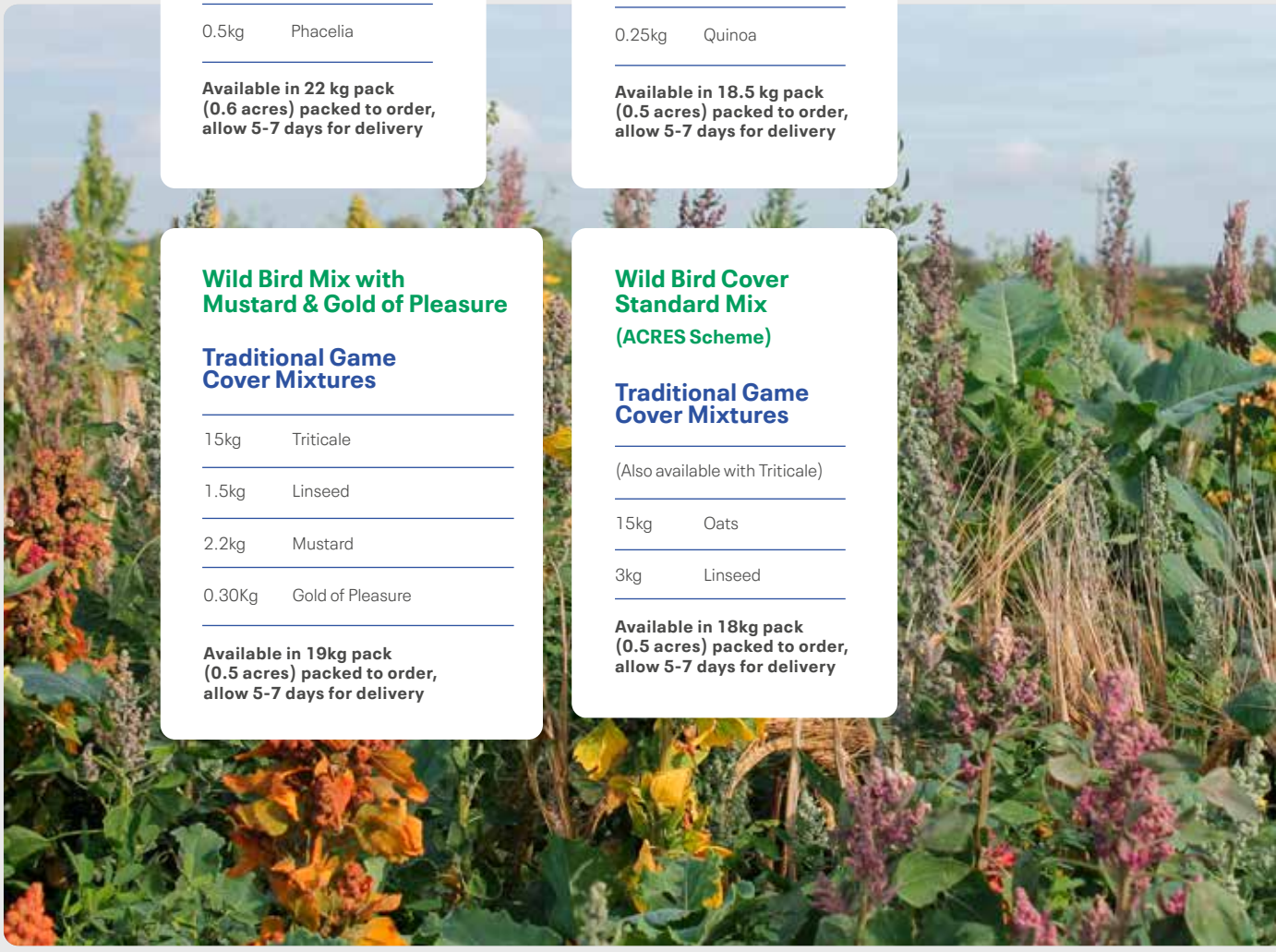
Available in 22 kg pack (0.6 acres) packed to order, allow 5-7 days for delivery

Wild Bird Mix With Phacelia & Quinoa

Traditional Game Cover Mixtures

15kg	Triticale
3kg	Linseed
0.25kg	Phacelia
0.25kg	Quinoa

Available in 18.5 kg pack (0.5 acres) packed to order, allow 5-7 days for delivery



Wild Bird Mix with Mustard & Gold of Pleasure

Traditional Game Cover Mixtures

15kg	Triticale
1.5kg	Linseed
2.2kg	Mustard
0.30Kg	Gold of Pleasure

Available in 19kg pack (0.5 acres) packed to order, allow 5-7 days for delivery

Wild Bird Cover Standard Mix (ACRES Scheme)

Traditional Game Cover Mixtures

(Also available with Triticale)

15kg	Oats
3kg	Linseed

Available in 18kg pack (0.5 acres) packed to order, allow 5-7 days for delivery

DLF WILDFLOWERS

Wildflower mixtures suitable for Amenity landscaping and habitat recreation

Our exciting range of wildflower mixtures have been designed to create attractive amenity spaces that act as an essential food source for a range of animals and invertebrates, especially pollinating insects. These versatile mixtures are ideal for bare patches around the farmyard, on banks along roadways and ditches or as a colourful buffer strip along streams or drains.

SOWING & MAINTAINING WILDFLOWERS

Site preparation
The aim is to produce a firm, weed-free stale seedbed. Subsoils often provide a weed-free, low-nutrient status seed bed and are suitable for wild flora. However, it is occasionally necessary to remove the topsoil in areas of high fertility, as these soils tend to promote the growth of more vigorous grasses and pernicious weeds. Treat existing vegetation with a systemic herbicide before seedbed cultivation, taking note of any site constraints and manufacturer's instructions first.

Sowing annuals & perennials
Sowing can take place throughout most of the year, providing a good stale seedbed can be prepared. However, the months of March/April and August/ September are generally the most suitable.

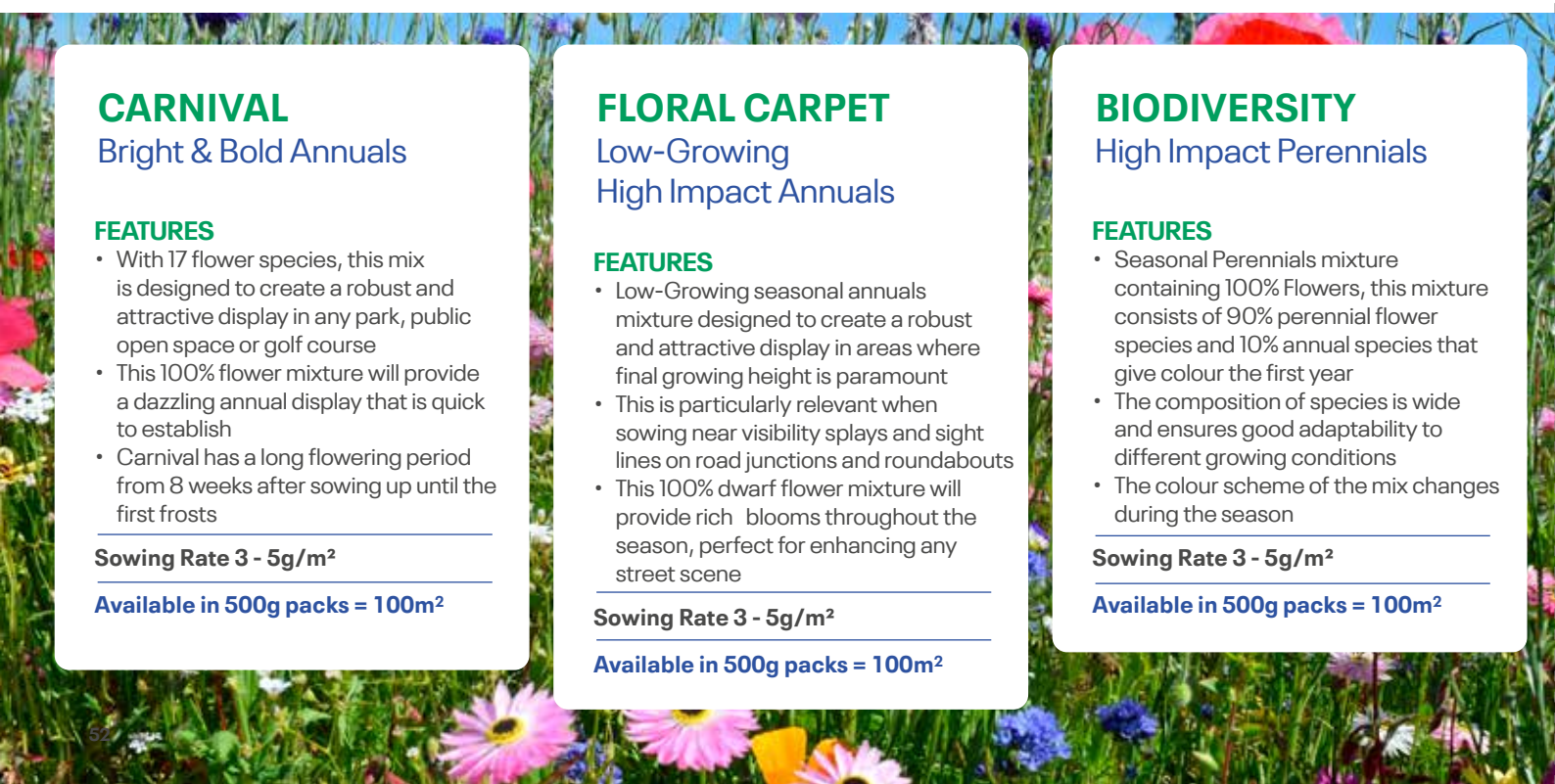
1. Regularly mix seed to ensure even species distribution, drill or broadcast
2. Bulk up small seeding rates with sand or porridge oats, four parts to one part seed
3. Rake or harrow - mix the seed into the soil (depth approx. 0.5cm), roll to firm seedbed

Wildflower maintenance
Annuals complete their life cycle in one year, i.e. they will germinate, grow, produce a flower, set seed and die all in one year. Therefore, you will see them flower the summer after sowing if sown in Autumn and 8 weeks after sowing if sown in Spring. Perennials come back year after year, however, they will not flower until the second year after sowing.

First year management of perennial wildflowers
In the first year, control the weeds and reduce competition from grasses. Cut the sward to a height of 5-7cm every two months or when the sward reaches 15cm. Remove all the cuttings. Dig out or spot-treat any perennial weeds.

Future maintenance management of perennial wildflowers
Cut to 5-7cm during March/April and remove cuttings.
A second cut should take place at the end of the flowering season during August/October. Remove all cuttings.
Further cuts in the autumn period to remove untidy growth may be required.

> **Do something amazing... plant some wildflowers!**
> Damien McAllister, DLF



CARNIVAL
Bright & Bold Annuals

FEATURES
- With 17 flower species, this mix is designed to create a robust and attractive display in any park, public open space or golf course
- This 100% flower mixture will provide a dazzling annual display that is quick to establish
- Carnival has a long flowering period from 8 weeks after sowing up until the first frosts

Sowing Rate 3 - 5g/m²

Available in 500g packs = 100m²

FLORAL CARPET
Low-Growing
High Impact Annuals

FEATURES
- Low-Growing seasonal annuals mixture designed to create a robust and attractive display in areas where final growing height is paramount
- This is particularly relevant when sowing near visibility splays and sight lines on road junctions and roundabouts
- This 100% dwarf flower mixture will provide rich blooms throughout the season, perfect for enhancing any street scene

Sowing Rate 3 - 5g/m²

Available in 500g packs = 100m²

BIODIVERSITY
High Impact Perennials

FEATURES
- Seasonal Perennials mixture containing 100% Flowers, this mixture consists of 90% perennial flower species and 10% annual species that give colour the first year
- The composition of species is wide and ensures good adaptability to different growing conditions
- The colour scheme of the mix changes during the season

Sowing Rate 3 - 5g/m²

Available in 500g packs = 100m²

TRADITIONAL NATIVE WILDFLOWERS

Suitable for agriculture and amenity

Butterfly & Bee Meadow Mix AB8

Native Perennial Wildflowers with Grass

FEATURES

- A wildflower meadow mix with flowers to attract important pollinating insects, including many kinds of butterflies and bees
- The grasses provide a habitat for pollinators and help ensure that weeds don't out compete the flowers
- 50% Flowering species
  50% fine non-aggessive grasses
  Ideal for banks/wasteground

Sowing Rate 1.6g/m²

Available in 1kg packs = 600m²

Cornfield Annuals Mix CFA

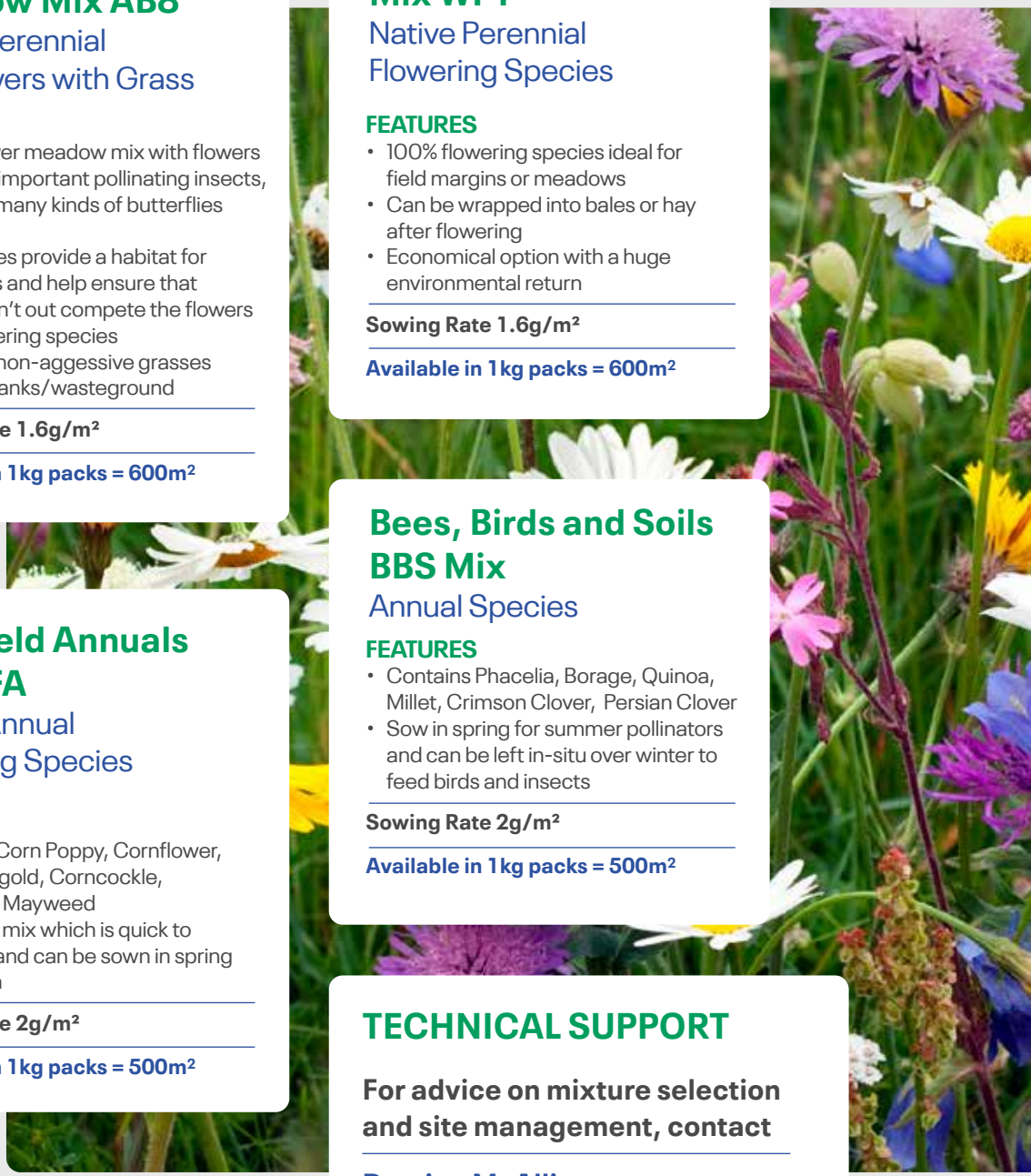
Native Annual Flowering Species

FEATURES

- Contains Corn Poppy, Cornflower, Corn Marigold, Corncockle, Scentless Mayweed
- Attractive mix which is quick to establish and can be sown in spring or autumn

Sowing Rate 2g/m²

Available in 1kg packs = 500m²



Flowering Margin Mix WF1

Native Perennial Flowering Species

FEATURES

- 100% flowering species ideal for field margins or meadows
- Can be wrapped into bales or hay after flowering
- Economical option with a huge environmental return

Sowing Rate 1.6g/m²

Available in 1kg packs = 600m²

Bees, Birds and Soils BBS Mix

Annual Species

FEATURES

- Contains Phacelia, Borage, Quinoa, Millet, Crimson Clover, Persian Clover
- Sow in spring for summer pollinators and can be left in-situ over winter to feed birds and insects

Sowing Rate 2g/m²

Available in 1kg packs = 500m²

TECHNICAL SUPPORT

For advice on mixture selection and site management, contact

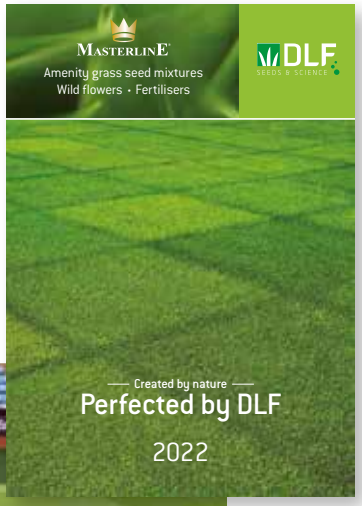
Damien McAllister

T: +44 777 424 9609

E: dmcallister@dlfseeds.ie

AMENITY MIXTURES

A selection of mixtures from the DLF Masterline range. To see the full range, see Masterline Amenity Seed Mixtures Brochure



PRO MASTER 79
Playing Field Renovation

FEATURES

- The introduction of New Double 4Turf ™ Tetraploid ryegrass introduces the latest World cup genetics from DLF, delivering fast establishment, improved colour, drought tolerance, nitrogen efficiency and incredible disease resistance!.
- A good quality sports field renovation mixture.
- Contains only STRI UK listed cultivars. Delivers great results and value.

50%	**Double** Perennial Ryegrass
20%	**Ponderosa** Perennial Ryegrass
30%	**Esquire** Perennial Ryegrass

Sowing rate 35 - 75g/m2

Available in 20kg packs

4turf® by DLF

PRO MASTER 81
Sports Field Renovation

FEATURES

- Incorporating top rated Perennial Ryegrass giving unrivalled sward density and wear tolerance.
- The mixture will establish rapidly providing excellent all year-round colour. A mixture suitable for new builds and the renovation of top performance winter sports pitches.

20%	**Tetragame** Perennial Ryegrass
30%	**Eurodiamond** Perennial Ryegrass
20%	**Gildara** Perennial Ryegrass
30%	**Europitch** Perennial Ryegrass

Sowing rate 35 - 75g/m²

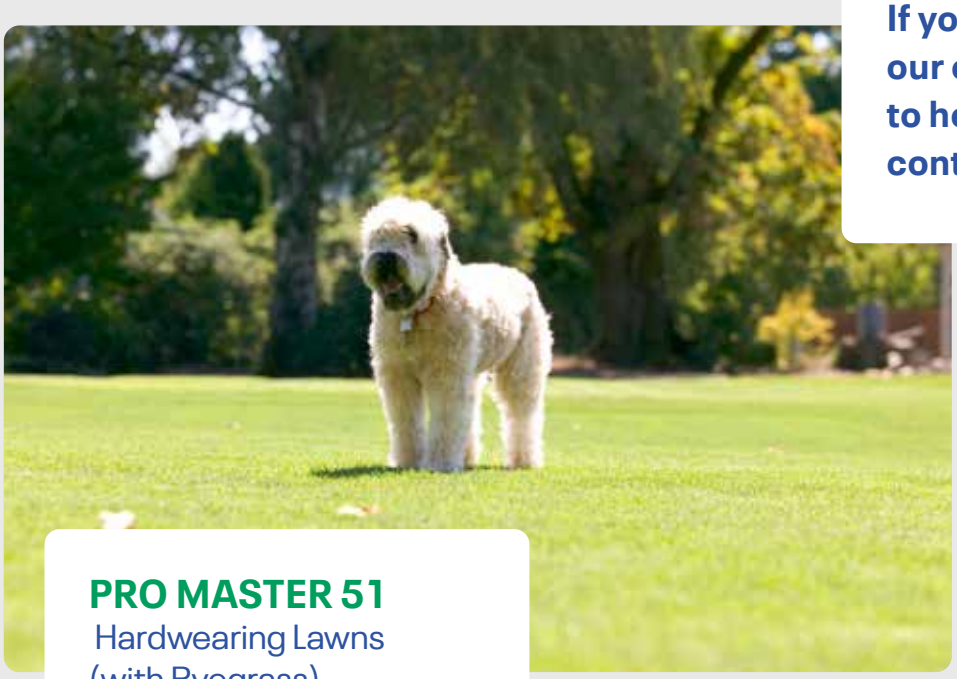
Available in 20kg packs

4turf® by DLF

DLF LAWN SEED

DLF amenity grass seed is highly regarded around the world and used in many of the biggest sporting venues, including the top Premier League grounds, Rugby Stadia's, and Championship Golf Courses.

If you have any questions our experts are here to help, see page 2 for contact details



PRO MASTER 51

Hardwearing Lawns (with Ryegrass)

FEATURES

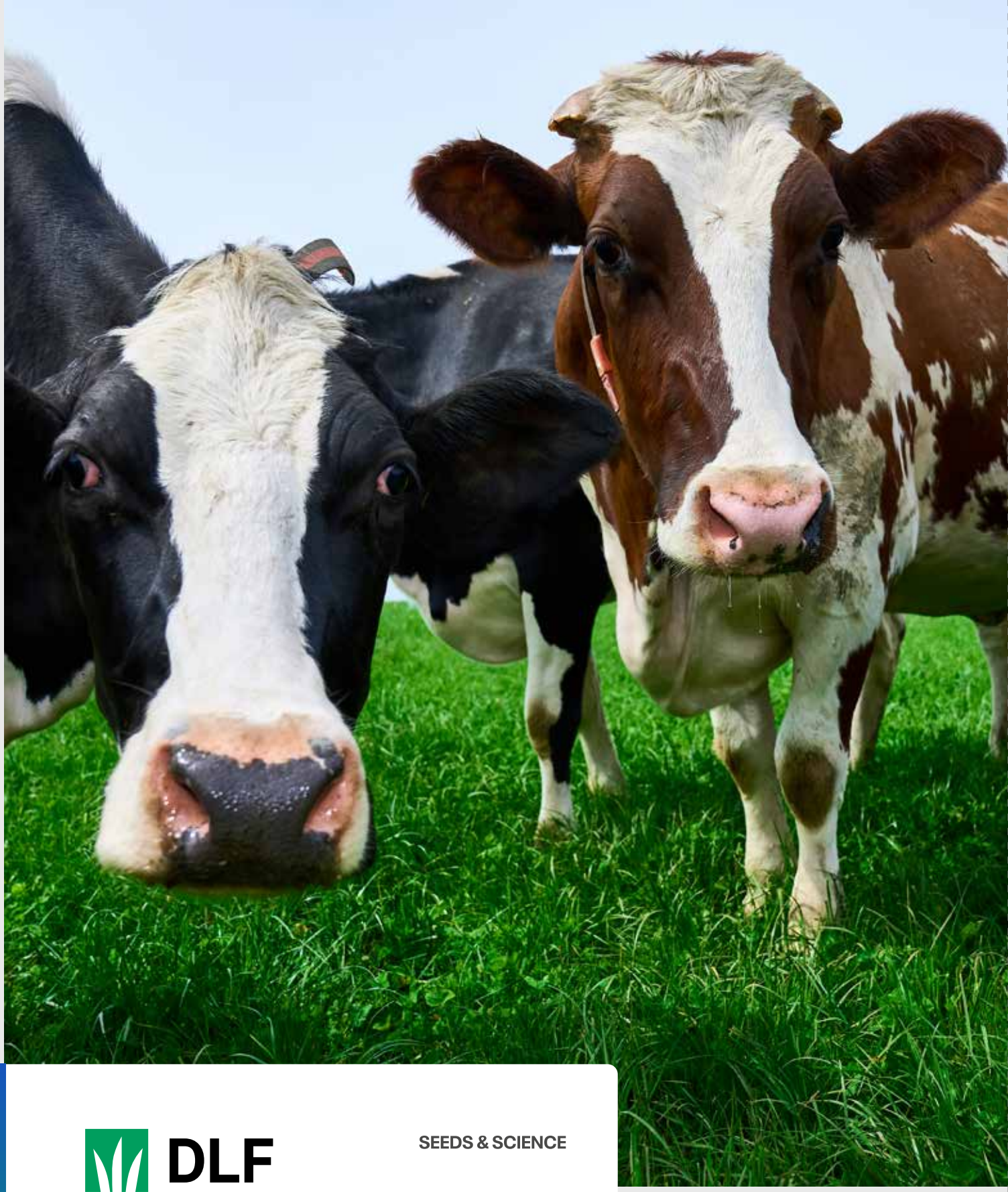
- A hard-wearing mixture that will establish rapidly.
- Ideal for general purpose landscaping & lawns.
- Contains only STRI UK listed cultivars

50%	**Maxima** Creeping Red Fescue
40%	**Esquire** Perennial Ryegrass
10%	**Double** Perennial Ryegrass

Sowing rate 35 - 50g/m²

Available in 10kg & 20kg packs

4turf by DLF



DLF

SEEDS & SCIENCE

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