



Recommended Grass and Clover Lists for England and Wales



2020/21



Introduction

Welcome to the full Recommended Grass and Clover Lists (RGCL). This version of the RGCL is specifically for industry specialists to aid farmers in their variety selections for mixtures.

Well-managed grassland provides the most economic feed throughout the year, either as grazing or conserved forage. However, with input costs increasing, selecting the right seed mixture to suit the system is essential for efficient performance.

This booklet has the complete dataset including performance measures for seasonal growth and agronomic characters including ground cover and winter hardiness. The tables also provide information on the number of trials carried out.

The scheme has changed – it is no longer partially funded by merchants, which means the data are available to all. The testing is funded by plant breeders through the British Society of Plant Breeders and the ruminant levy boards (AHDB and HCC).



Both the full list and Handbook are available at www.britishgrassland.com/RGCL



An excel spreadsheet with the full dataset is available to download.

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How To Use This Guide

Varieties are ranked by heading date

Simulated grazing performance

What's the difference between this and conserved forage?

More regular cuts?

Conserved forage performance, e.g. silage

When are cuts taken?

Agronomic characteristics, such as ground cover and hardiness

Disease resistance

The number of trials used to gather yield data

The higher the number the more data behind the results

	Mean of G varieties	Late Diploid Mean	Kendal	Callan	AberTest	Ballyvoy	Toddington
Recommended List status			PG	PG	PG	PG	G
Heading date			31 May	2 Jun	2 Jun	2 Jun	2 Jun
Grazing: management							
Grazing yield (% of 182t DM/ha)	100	99	98	104	103	101	97
Grazing D-value	77.2	76.9	76.4	76.1	79.7	77.4	76.0
ME yield (% of 122,000 MJ/ha)	100	98	97	103	106	101	96
Conservation: management							
Total yield: year 1 (% of 17.32t DM/ha)	100	93	98	98	95	102	9
1st and 2nd cut yield: first harvest year (% of 132,600 MJ/ha)	100	93	100	97	95	105	
Total yield: year 3 (% of 13.16t DM/ha)	100	94	103	105	97	102	
Total yield: mean (% of 15.35t DM/ha)	100	94	100	101	96	102	
Agronomic characters							
Ground cover % (2nd harvest year)	65	67	70	65	70	69	
Ground cover % (3rd harvest year)	61	63	61	62	62	6	
Autumn ground cover (1-9, 1=poor 9=good)	6.2	6.5	6.6	6.3	6.7		
Winter hardiness (1-9, 1=poor 9=good)	7.0	6.8	[6.8]	7.1	7.0		
Disease resistance							
Crown rust (1-9, 1=poor 9=good)	6.1	6.3	8.1	5.8	8		
Drechslera (1-9, 1=poor 9=good)	6.6	5.3	[7.8]	[3.7]			
Mildew (1-9, 1=poor 9=good)	7.0	6.6	7.6	7.9			
Year First Listed							
			2019	2019			
Number of trials for yields							
1st harvest year			6				
2nd harvest year			6				
3rd harvest year							

G General Use

S Recommended for Specific Use

PG Provisional General Use Recommendation

PS Provisional Specific Use Recommendation

White Clover

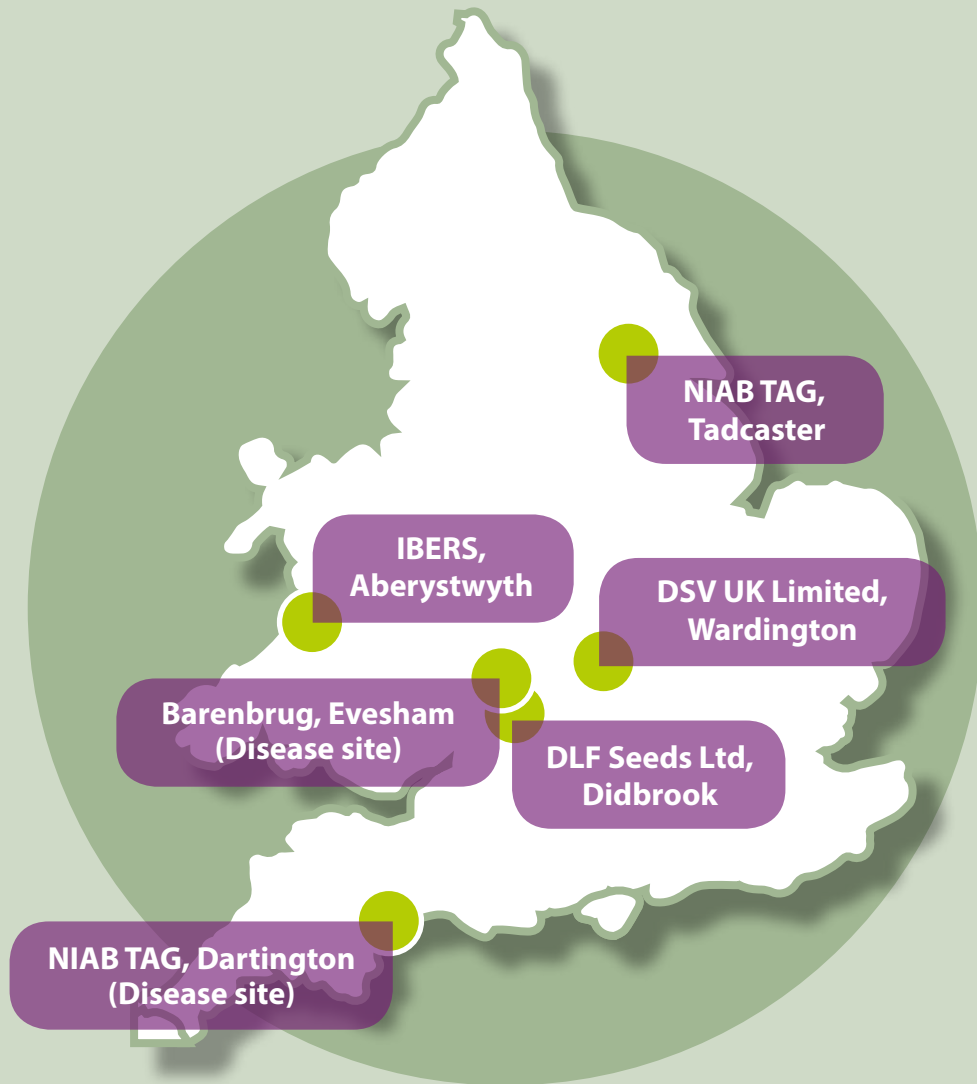
White clover varieties include additional or alternative measures including:

- Specific clover yields within a grass mix sward and overall crop yields
- Measures of clover content in the sward and measures for ground cover

Performance is also measured under two separate systems.

3rd harvest year	
	Yield of clover (% of 4.02t DM/ha) *
	Yield of grass + clover (% of 10.71t DM/ha) *
	% clover
	Clover yield: first cut (% of 0.55t DM/ha) *
	Clover yield: last cut (% of 0.40t DM/ha) *
Autumn ground cover	
Light Defoliation	% cover (1st harvest year)
	% cover (2nd harvest year)
	% cover (3rd harvest year)
	Overall (1-9, 1=poor 9=good)
Hard Defoliation	% cover (1st harvest year)
	% cover (2nd harvest year)
	% cover (3rd harvest year)

Frequently Asked Questions



How and where is this information gathered?

Trial plots for each variety are grown across four locations in England and Wales. The performance of these plots is then compared to each other under different cutting regimes. The location of trial sites can be seen on the adjacent map. The Barenbrug and Dartington sites are only collecting disease data.

Are the results representative of a commercial situation?

All plots are grown outdoors in areas of grassland production. Plots receive nitrogen inputs to represent well-fertilised grassland including returns of animal manures.

What seed rates are they applied at?

Trial plot seed rates vary depending on species.

Species		Seed Rate
Perennial ryegrass	Diploid	25kg/ha
	Tetraploid	37kg/ha
Italian and Hybrid ryegrasses, plus Festulolium	Diploid	33kg/ha
	Tetraploid	50kg/ha
Timothy		16kg/ha
White clover (along with 18kg/ha of companion ryegrass)		3.5kg/ha
Red clover		13kg/ha

What is the difference between conservation and grazing management?

Conservation management applies to perennial ryegrass and timothy in their first and third year after sowing. The aim is to simulate silage cutting with the first cut at early ear emergence and then cuts are taken at six week intervals thereafter. This usually results in up to five cuts per year.

Grazing management applies to perennial ryegrass and timothy in their second year after sowing. The aim is to simulate grazing with the first cut taken at a yield of approximately 1.5t dry matter (DM)/ha and then cuts are taken at three to four week intervals thereafter.

Conservation/rotational grazing management applies to Italian and Hybrid ryegrasses and consists of an early cut followed by two conservation cuts and monthly simulated grazing cuts thereafter. White clover is cut on a monthly basis to assess yields and more frequently in separate plots to assess persistence under simulated grazing.

How much difference is there between trial sites in terms of variety performance?

There is currently no analysis of changes in performance between the same varieties on different trial sites.

How is disease resistance measured?

All perennial and Italian ryegrass variety trials are monitored regularly for the presence of foliar diseases. Usually, plots are inspected just before a cut is due, so that disease will have increased and effective discrimination between varieties can be made. The plot area is assessed visually and the percentage of total leaf area affected by different diseases is estimated. Records are collated at the end of the season and combined with previous years' data to give a robust estimate of the relative differences in resistance to disease. This is then expressed on a 1 to 9 scale, where 9 indicates a mean score of close to zero percent leaf area infected.

At the NIAB-TAG site at Dartington in Devon and the Barenbrug site near Evesham in Worcestershire, natural infection of disease is encouraged through late season management. This information is recorded and used to increase the accuracy of disease resistance values.

What if I want to know the ME value?

Metabolisable energy (ME) is the amount of energy in the sample that is available for the animal (this is calculated from the D-value), whereas D-value is a measure of the digestible organic matter of the variety. So one is a measure of what is available to the animal and the other a measure of what will be digested by the animal.

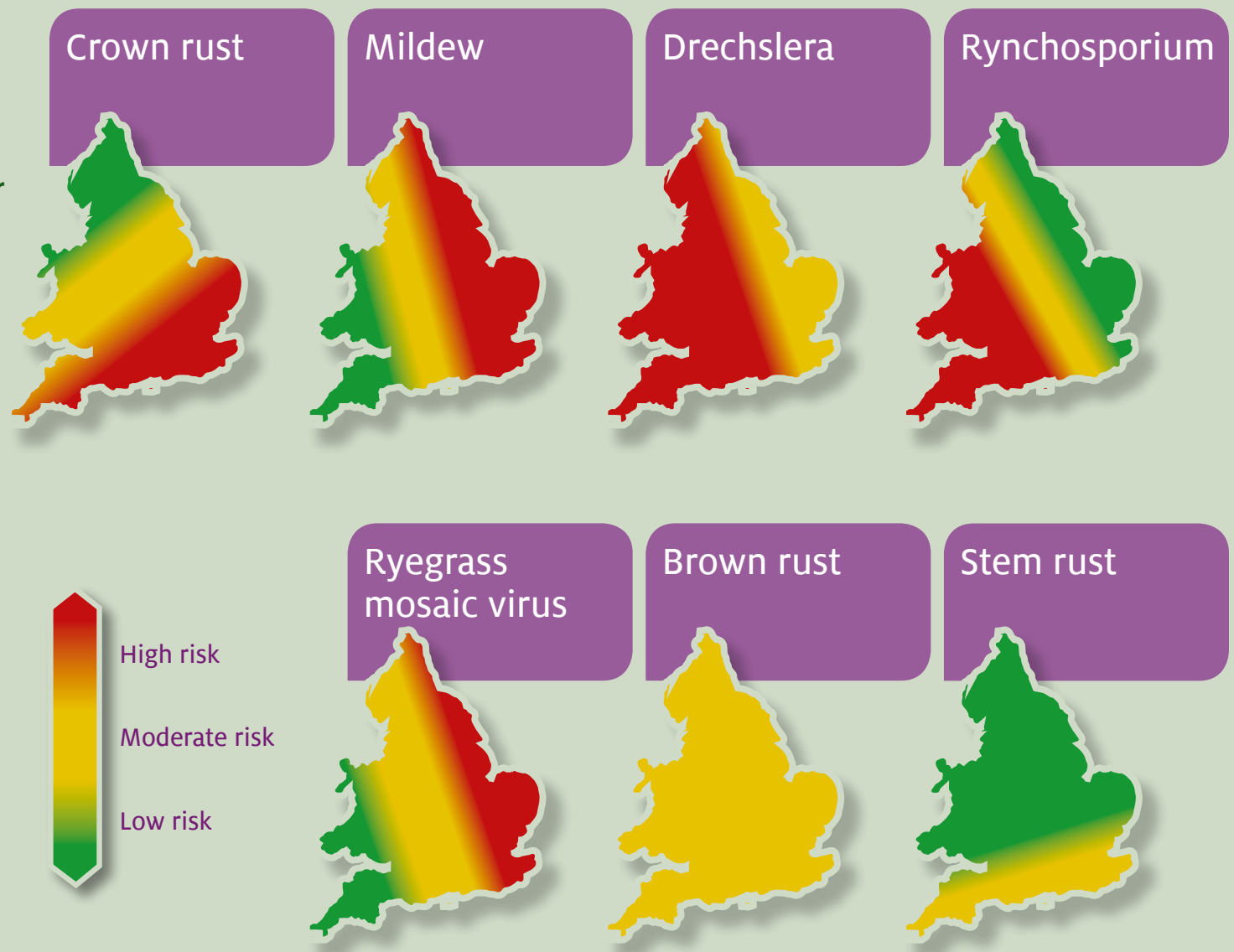
Rule of thumb
1 D-value unit = ME of 0.16

So for example a D-value of 70 would equate to an ME of **11.2 megajoules (MJ)**.

Regional Disease Information

Records taken since the early 1980s show that the diseases illustrated on the right are the main ones to affect grasses in England and Wales. Though some fungicides are effective against grass diseases, their use is very limited, as is the product range available. Using resistant grass or clover varieties in seed mixtures for high risk areas provides a cost effective and reliable way to minimise the effects of disease.

Regional disease risks are shown in the maps. Disease severity is very dependent on overall climate in different areas of the country. Some diseases are more prevalent in the generally wetter and warmer west and south west, while others are more common in the drier east. In some areas, multiple diseases can be high risk. In these areas selecting varieties with a good combination of moderate (ratings 6 or 7) and preferably high (8 or 9) disease resistance is essential.



Major diseases

Crown rust usually occurs in the late summer and autumn, when there are warm days with dew at night. Once largely confined to the south and south west of England, it has recently been recorded at high levels as far north as Yorkshire.

Mildew is an issue with warm and relatively dry conditions and is usually seen between spring and summer along eastern England. It generally does not reach high levels in wet areas.

Drechslera is often most severe at the start and the end of the growing season and is encouraged by cool, wet and humid conditions, although it can occur during wet summers. It can occur throughout England and Wales.

Rhynchosporium is a wet weather disease and is usually confined to the west and south west of England, and Wales. It occurs in the spring and normally dies away during the summer months.

Ryegrass mosaic virus (RMV) is the most important virus disease affecting ryegrass and the symptoms are more common in Italian than perennial ryegrass. It is transmitted by a mite that prefers dry conditions, so RMV largely appears in the drier eastern half of England.

Less prevalent diseases

A number of other pathogens infect perennial and Italian ryegrasses. These are more sporadic than the major diseases described, but can be significant in some years.

Brown rust occurs early in the season, during April and May and throughout England and Wales. It only affects ryegrasses and is a different species to the brown rusts that infects wheat and barley. It can reach moderate levels in some varieties, but most have good resistance.

Stem rust is common in grass seed crops, but can occasionally infect leys in the far south of the country during warm autumn conditions.

Barley yellow dwarf virus (BYDV) may be quite widespread on leys where aphid vector species are present. However, symptoms are quite rare and the significance of the virus is difficult to establish.

Cocksfoot and timothy can be infected by several diseases. **Cocksfoot yellow rust** is common, but this is not the same as **yellow rust** which affects wheat. Timothy can be severely affected by **stem rust**, particularly in hay crops. Other diseases include **selenophoma** and **cladosporium leaf spots** on timothy, and **mastigosporium leaf fleck** on cocksfoot and timothy. These three fungi favour wet conditions and are more common in the west and south west.

Effects of grass diseases

Diseases not only affect yield but also quality and sward composition. On average, a disease can reduce yields by around 3%. However, responses to fungicide treatments have been far greater than this. The effects of grass diseases have been investigated using fungicide programmes on perennial ryegrass. On average, over the life of a three year ley, disease effects were estimated to cause a loss of just over 1t DM/ha, which is about 3% of the average yield of the varieties used. Individual site and variety effects were larger, for instance controlling *Drechslera* leaf spot at one site on a susceptible variety gave a yield response of nearly 1.25t DM/ha at first cut.

One of the most serious effects on quality is the reduction of water soluble carbohydrate, generally by 1-2%, when crown rust was severe in late season cuts. Lower water soluble carbohydrate levels reduce feeding value and may make grass less palatable. In grazing trials, rejection of rusted varieties in favour of cleaner material has been frequently recorded.

Leaf diseases increase the amount of dead material in a ley and will reduce D-value if they are allowed to increase. Mildew and rhynchosporium in Italian ryegrass have been shown to reduce D-value by between 1 to 2 units.

Grass diseases may also affect sward composition and therefore yield and quality, if susceptible varieties become less vigorous due to infection and die out. In extreme cases, there may be an ingress of unproductive weed species although other sown species may compensate.

Red and white clover diseases

The most significant disease of clover is **sclerotinia rot**, caused by *Sclerotinia trifoliorum*. Red clover is more prone to damage than white clover and the same disease can affect winter sown field beans. Symptoms are difficult to see in clover and usually the first sign of a sclerotinia problem is the disappearance of clover plants in the spring. Where infection is established, reseeding with more resistant varieties is the most effective control option.

A wide range of leaf spot diseases affect clover, as well as **powdery** and **downy mildew**. Apart from powdery mildew, most diseases tend to be more prevalent in the wetter western parts of the country. The significance of these foliar diseases is uncertain, though some loss of yield and quality is likely.

Managing diseases

Selection of a proportion of resistant varieties in seed mixtures provides an effective means of suppressing diseases. However where susceptible varieties are used because of other desirable characters, then management techniques will be needed to avoid disease build-up. Generally, cutting or grazing before leaves become significantly infected will help to reduce disease build-up.

Recommended List of Early Perennial Ryegrass Varieties 2020/2021

	Diploids						Tetraploids			
	Mean of G Varieties	Early Diploid Mean (G's only)	Genesis	Moyola	Kilian	Glasker	Early Tetraploid Mean (G and S)	AberTorch	Carraig	Cooky
Recommended List status			G	G	PG	PG		G	S	PS
Heading date			10 May	13 May	16 May	18 May		8 May	16 May	17 May
Grazing: management										
Grazing yield (% of 9.87t DM/ha)	100	99	97	100	97	98	98	97	100	96
Grazing D-value	77.2	76.5	76.6	76.4	77.0	77.2	77.1	77.3	77.0	77.4
ME yield (% of 122,000 MJ/ha)	100	98	97	99	96	98	98	96	100	96
Conservation: management										
Total yield: year 1 (% of 17.32t DM/ha)	100	104	104	103	98	103	102	102	102	102
1st and 2nd cut ME yield, first harvest year (% of 132,000 MJ/ha)	100	97	99	96	93	97	97	98	97	101
Total yield: year 3 (% of 13.16t DM/ha)	100	100	100	99	98	98	97	98	95	100
Total yield: mean (% of 15.35t DM/ha)	100	102	102	101	98	101	100	100	99	101
Agronomic characters										
Ground cover % (2nd harvest year)	65	69	70	68	68	67	67	68	67	63
Ground cover % (3rd harvest year)	61	65	65	65	66	64	62	63	60	62
Autumn ground cover (1-9, 1=poor 9=good)	6.2	6.8	6.9	6.7	6.9	6.6	6.5	6.6	6.4	6.2
Grazing: seasonal growth										
Early grazing yield (% of 1.07t DM/ha)	100	135	137	133	113	123	122	125	118	103
Spring (% of 2.26t DM/ha)	100	116	116	117	109	109	113	114	112	103
Early summer (% of 3.78t DM/ha)	100	90	90	90	89	91	94	92	97	92
Late summer (% of 2.46t DM/ha)	100	95	92	98	95	93	93	90	95	99
Autumn (% of 1.50t DM/ha)	100	103	101	105	102	106	97	94	99	93

	Diploids						Tetraploids			
	Mean of G Varieties	Early Diploid Mean (G's only)	Genesis	Moyola	Kilian	Glasker	Early Tetraploid Mean (G and S)	AberTorch	Carraig	Cooky
Conservation: seasonal growth – Year 1										
1st cut (% of 7.34t DM/ha)	100	95	95	95	84	90	88	90	85	87
1st cut D-value	71.9	70.3	70.3	70.3	72.5	73.0	73.5	72.6	74.4	76.0
2nd cut (% of 3.93t DM/ha)	100	105	108	102	107	106	111	109	112	110
2nd cut D-value	73.2	70.9	71.1	70.7	71.1	71.8	71.3	71.9	70.7	73.0
3rd cut (% of 2.89t DM/ha)	100	102	101	103	100	103	103	101	106	99
4th+ cut (% of 3.03t DM/ha)	100	117	115	119	113	121	116	113	120	107
Agronomic characters										
Winter hardiness (1-9, 1=poor 9=good)	7.0	7.1	7.1	7.1	7.0	7.1	7.2	7.3	7.1	[7.2]
Disease resistance										
Crown rust (1-9, 1=poor 9=good)	6.1	7.0	7.3	6.6	8.9	6.9	3.6	5.0	2.2	7.4
Drechslera (1-9, 1=poor 9=good)	6.6	5.4	6.1	4.8	[5.7]		7.6	6.9	8.4	8.8
Mildew (1-9, 1=poor 9=good)	7.0	7.4	5.9	8.8	6.1	6.2	4.8	4.4	5.2	[7.7]
Year First Listed			2009	2009	2016	2016		2000	2013	2019
Breeder			Teagasc, Eire	AFBI, UK	R2n, France	AFBI, UK		IBERS, Aberystwyth	Teagasc, Eire	R2n, France
Agent			DLF Seeds Ltd	Barenbrug UK Ltd	RAGT Seeds Ltd	Barenbrug UK Ltd		Germinal	DLF Seeds Ltd	RAGT Seeds Ltd
Number of trials for yields										
1st harvest year			19	11	14	11		21	12	5
2nd harvest year			16	11	11	8		18	9	6
3rd harvest year			15	11	8	8		17	7	6

Note that the mean of G varieties include all those from early, intermediate and late maturity groups.

Yields are expressed as a percentage of the mean of all fully recommended PRG varieties in trials. Grazing yields are measured in year 2, Conservation yields in years 1 & 3.

D-values are expressed as D-value minus 65.

Grazing D-value is measured from a late-summer cut in year 2 and the Grazing ME yields are calculated as total yield multiplied by the D-value x 0.16.

Conservation D-value is measured from both the 1st and 2nd cuts in year 1.

Conservation ME yields are calculated as the first year first cut multiplied by its D-value x 0.16, plus the first year second cut yield multiplied by its D-value x 0.16.

[] = Only 2 trials worth of data.

Recommended List of Intermediate Perennial Ryegrass Diploid Varieties 2020/2021

	Mean of G varieties	Int. Diploid Mean (G's only)	Boyne	Galgorm	Aston Conqueror	Nifty	Moira	AberDart	Glenariff	AberZeus	AberMagic	AberWolf	Gosford	Agaska	Elyria	AberGreen
Recommended List status			S	PG	PS	G	G	G	S	PG	G	G	PG	PS	PG	G
Heading date			21 May	22 May	24 May	24 May	24 May	25 May	25 May	27 May	28 May	28 May	29 May	30 May	30 May	30 May
Grazing: management																
Grazing yield (% of 9.87t DM/ha)	100	101	99	105	99	101	99	97	99	104	102	100	99	101	98	102
Grazing D-value	77.2	77.6	75.5	78.1	77.6	77.7	76.6	78.3	75.9	78.5	77.9	78.4	77.8	76.8	77.1	77.7
ME yield (% of 122,000 MJ/ha)	100	101	96	106	100	102	98	98	98	105	103	101	100	100	98	103
Conservation: management																
Total yield: year 1 (% of 17.32t DM/ha)	100	101	102	104	99	102	100	95	99	100	99	101	98	99	96	100
1st and 2nd cut ME yield, first harvest year (% of 132,000 MJ/ha)	100	99	101	101	95	100	95	94	97	101	98	99	98	96	96	101
Total yield: year 3 (% of 13.16t DM/ha)	100	102	105	106	104	101	104	95	97	105	101	101	102	98	98	102
Total yield: mean (% of 15.35t DM/ha)	100	101	104	105	100	101	102	95	98	102	100	101	100	99	97	101
Agonomic characters																
Ground cover % (2nd harvest year)	65	67	66	63	68	66	64	72	65	72	65	71	66	64	70	68
Ground cover % (3rd harvest year)	61	64	62	62	64	64	60	67	63	70	65	67	62	63	65	66
Autumn ground cover (1-9, 1=poor 9=good)	6.2	6.6	6.4	6.2	6.7	6.5	6.1	7.2	6.4	7.4	6.5	7.1	6.5	6.3	6.9	6.8
Grazing: seasonal growth																
Early grazing yield (% of 1.07t DM/ha)	100	103	101	110	108	99	116	103	94	106	94	99	104	103	92	99
Spring (% of 2.26t DM/ha)	100	105	105	112	110	105	109	103	98	109	103	105	105	106	98	103
Early summer (% of 3.78t DM/ha)	100	97	97	100	96	98	93	92	98	101	99	97	97	100	98	100
Late summer (% of 2.46t DM/ha)	100	101	97	107	94	102	97	97	102	102	104	100	96	98	98	104
Autumn (% of 1.50t DM/ha)	100	102	96	105	102	102	101	103	99	105	107	101	101	100	97	105

	Mean of G varieties	Int. Diploid Mean (G's only)	Boyne	Galgorm	Aston Conqueror	Nifty	Moira	AberDart	Glenariff	AberZeus	AberMagic	AberWolf	Gosford	Agaska	Elyria	AberGreen
Conservation: seasonal growth – Year 1																
1st cut (% of 7.34t DM/ha)	100	101	107	102	103	104	102	96	99	101	96	99	97	94	96	99
1st cut D-value	71.9	72.1	69.2	71.6	69.1	71.6	70.4	71.8	72.0	72.5	73.6	72.2	73.1	72.3	72.3	74.1
2nd cut (% of 3.93t DM/ha)	100	95	100	96	86	94	85	92	95	95	99	102	95	101	95	99
2nd cut D-value	73.2	73.1	69.9	75.4	74.3	71.8	74.2	72.9	73.1	74.7	72.1	72.6	73.8	72.2	72.8	73.6
3rd cut (% of 2.89t DM/ha)	100	101	95	110	103	100	104	96	103	101	96	101	101	101	96	100
4th+ cut (% of 3.03t DM/ha)	100	110	103	117	103	111	114	101	105	106	110	107	103	109	99	107
Agronomic characters																
Winter hardiness (1-9, 1=poor 9=good)	7.0	7.2	6.8	7.1	7.0	7.2	7.2	7.1	7.1	7.2	7.0	7.1	7.0	[7.1]	7.2	7.2
Disease resistance																
Crown rust (1-9, 1=poor 9=good)	6.1	7.2	8.0	7.5	4.6	7.3	6.8	6.4	8.3	8.0	8.1	6.7	7.6	8.4	8.2	7.8
Drechslera (1-9, 1=poor 9=good)	6.6	5.6	5.5	[5.3]	[6.3]	5.4	7.5	3.9	5.8	5.1	3.7	4.6	4.6	[5.9]	7.1	5.1
Mildew (1-9, 1=poor 9=good)	7.0	6.8	6.8	7.4	[5.8]	6.1	7.3	6.6	8.3	6.9	7.6	5.6	8.7	[7.6]	6.7	8.1
Year First Listed			2010	2018	2017	2014	2014	1999	2012	2016	2008	2014	2016	2018	2015	2011
Breeder			DLF Seeds A/S	AFBI, UK	DSV, UK	DLF Seeds A/S	AFBI, UK	IBERS, Aberystwyth	AFBI, UK	IBERS, Aberystwyth	IBERS, Aberystwyth	IBERS, Aberystwyth	AFBI, UK	DLF Seeds A/S	DLF Seeds A/S	IBERS, Aberystwyth
Agent			DLF Seeds Ltd	Barenbrug UK Ltd	DSV	DLF Seeds Ltd	Barenbrug UK Ltd	Germinal	Barenbrug UK Ltd	Germinal	Germinal	Germinal	Barenbrug UK Ltd	DLF Seeds Ltd	Limagrain UK	Germinal
Number of trials for yields																
1st harvest year			28	9	12	12	12	11	11	12	18	12	12	6	11	12
2nd harvest year			26	6	9	13	13	11	10	12	16	13	12	6	12	11
3rd harvest year			22	5	5	13	13	10	11	9	13	13	9	5	12	12

Note that the mean of G varieties include all those from early, intermediate and late maturity groups.

Yields are expressed as a percentage of the mean of all fully recommended PRG varieties in trials. Grazing yields are measured in year 2, Conservation yields in years 1 & 3.

D-values are expressed as D-value minus 65.

Grazing D-value is measured from a late-summer cut in year 2 and the Grazing ME yields are calculated as total yield multiplied by the D-value x 0.16.

Conservation D-value is measured from both the 1st and 2nd cuts in year 1.

Conservation ME yields are calculated as the first year first cut multiplied by its D-value x 0.16, plus the first year second cut yield multiplied by its D-value x 0.16.

[] = Only 2 trials worth of data.

Recommended List of Intermediate Perennial Ryegrass Tetraploid Varieties 2020/2021

	Mean of G varieties	Int. Tetraploid Mean	Fintona	Glenstal	Seagoe	Nolwen	AberClyde	AstonVision	Chatsworth	AberSpey	Convey	Dunluce	Caledon	Diwan	Triwarwic	Federer	Pensel	Montova	AstonEnergy
Recommended List status			G	G	G	PG	S	PS	PG	PG	PG	G	PS	PS	PG	PG	S	G	S
Heading date			20 May	22 May	22 May	22 May	25 May	26 May	27 May	29 May	29 May	30 May	30 May	30 May	30 May	31 May	31 May	31 May	1 Jun
Grazing: management																			
Grazing yield (% of 9.87t DM/ha)	100	99	101	98	100	97	96	100	103	103	102	100	100	96	97	98	97	97	97
Grazing D-value	77.2	77.1	77.5	77.2	77.3	77.4	77.9	77.9	78.5	78.5	77.1	77.8	76.4	76.9	76.7	77.5	75.2	75.7	78.5
ME yield (% of 122,000 MJ/ha)	100	99	102	99	100	98	97	101	104	105	102	101	99	95	96	99	95	95	98
Conservation: management																			
Total yield: year 1 (% of 17.32t DM/ha)	100	104	107	102	107	101	102	98	102	105	101	101	104	105	102	100	104	101	97
1st and 2nd cut ME yield, first harvest year (% of 132,000 MJ/ha)	100	104	104	103	108	101	105	98	103	105	101	102	105	108	105	101	107	101	99
Total yield: year 3 (% of 13.16t DM/ha)	100	103	105	100	105	102	98	96	100	97	101	102	101	100	104	101	101	102	95
Total yield: mean (% of 15.35t DM/ha)	100	103	106	101	106	101	100	98	101	102	101	102	102	103	103	100	103	101	96
Agronomic characters																			
Ground cover % (2nd harvest year)	65	61	61	61	63	65	65	65	62	63	61	60	57	59	61	65	60	63	58
Ground cover % (3rd harvest year)	61	58	56	59	58	60	60	60	61	54	62	56	56	52	57	57	57	59	52
Autumn ground cover (1-9, 1=poor 9=good)	6.2	5.7	5.6	5.9	5.8	6.2	6.2	6.2	6.1	5.8	6.1	5.5	5.3	5.3	5.7	6.0	5.6	6.0	5.1
Grazing: seasonal growth																			
Early grazing yield (% of 1.07t DM/ha)	100	94	101	101	103	100	94	110	96	99	94	86	86	83	88	90	89	77	81
Spring (% of 2.26t DM/ha)	100	102	107	107	107	104	106	108	106	105	102	95	99	95	95	96	100	92	95
Early summer (% of 3.78t DM/ha)	100	100	99	97	98	95	97	93	103	102	103	104	105	97	100	99	100	102	100
Late summer (% of 2.46t DM/ha)	100	99	102	94	98	96	88	100	100	103	100	102	97	98	94	102	94	99	95
Autumn (% of 1.50t DM/ha)	100	95	97	95	96	96	89	103	102	105	101	97	91	89	96	96	88	91	94

	Mean of G varieties	Int. Tetraploid Mean	Fintona	Glenstal	Seagoe	Nolwen	AberClyde	AstonVision	Chatsworth	AberSpey	Convey	Dunluce	Caledon	Diwan	Triwarwic	Federer	Pensel	Montova	AstonEnergy
Conservation: seasonal growth – Year 1																			
1st cut (% of 7.34t DM/ha)	100	104	108	106	114	101	105	96	101	100	100	95	104	106	103	97	104	97	95
1st cut D-value	71.9	72.4	70.5	72.2	70.8	73.0	73.3	73.4	73.2	74.7	72.7	75.1	72.9	73.3	73.1	74.0	73.1	73.3	74.8
2nd cut (% of 3.93t DM/ha)	100	103	100	98	99	98	104	96	104	104	100	109	107	107	104	104	116	107	96
2nd cut D-value	73.2	73.0	74.7	72.4	73.4	73.9	73.0	75.5	72.2	74.7	73.4	73.3	70.8	72.2	73.0	73.8	70.5	71.3	75.4
3rd cut (% of 2.89t DM/ha)	100	104	112	96	106	101	96	97	99	108	101	104	99	102	100	103	96	105	101
4th+ cut (% of 3.03t DM/ha)	100	106	112	104	106	105	101	111	107	115	106	108	107	105	102	103	98	100	104
Agronomic characters																			
Winter hardiness (1-9, 1=poor 9=good)	7.0	7.0	7.2	7.1	6.8	7.1	7.0	7.2	6.8	7.3	7.1	7.0	6.5	6.9	7.0	7.1	6.9	6.8	6.7
Disease resistance																			
Crown rust (1-9, 1=poor 9=good)	6.1	5.0	3.7	3.7	8.0	8.9	8.1	8.3	6.2	7.3	7.5	3.9	7.7	8.6	8.2	8.2	7.9	5.8	8.3
Drechslera (1-9, 1=poor 9=good)	6.6	7.8	8.5	7.6	7.9	[8.4]	7.7	[7.4]	[8.9]	[8.0]	[8.9]	7.6	8.8	8.2	6.9		8.5	7.6	8.5
Mildew (1-9, 1=poor 9=good)	7.0	7.7	8.1	6.4	8.5	[7.7]	8.3	5.3	7.2	[4.8]	6.8	7.5	6.0	8.1	[6.8]	[7.4]	7.8	8.3	7.3
Year First Listed			2014	2004	2011	2017	2013	2018		2017		2005	2015	2016	2017	2017	2013	2004	2006
Breeder			AFBI, UK	Teagasc, Eire	AFBI, UK	R2n, France	IBERS, Aberystwyth	DSV, UK	Teagasc, Eire	IBERS, Aberystwyth	DLF Seeds A/S	AFBI, UK	AFBI, UK	DLF Seeds A/S	DLF Seeds A/S	DLF Seeds A/S	DLF Seeds A/S	DLF Seeds A/S	DSV, UK
Agent			Barenbrug UK Ltd	DLF Seeds Ltd	Barenbrug UK Ltd	DLF Seeds Ltd	Germinal	DSV	Goldcrop Ltd	Germinal	DLF Seeds Ltd	Barenbrug UK Ltd	Barenbrug UK Ltd	DLF Seeds Ltd	DLF Seeds Ltd	Limagrain UK Ltd	Limagrain UK Ltd	Limagrain UK Ltd	Germinal
Number of trials for yields																			
1st harvest year			12	17	12	12	12	9	5	12	5	26	7	12	12	9	11	12	11
2nd harvest year			13	15	11	9	12	6	6	9	6	25	7	12	9	6	12	11	11
3rd harvest year			13	12	12	5	11	5	6	5	6	21	6	9	5	5	11	10	10

Note that the mean of G varieties include all those from early, intermediate and late maturity groups.

Yields are expressed as a percentage of the mean of all fully recommended PRG varieties in trials. Grazing yields are measured in year 2, Conservation yields in years 1 & 3.

D-values are expressed as D-value minus 65.

Grazing D-value is measured from a late-summer cut in year 2 and the Grazing ME yields are calculated as total yield multiplied by the D-value x 0.16.

Conservation D-value is measured from both the 1st and 2nd cuts in year 1.

Conservation ME yields are calculated as the first year first cut multiplied by its D-value x 0.16, plus the first year second cut yield multiplied by its D-value x 0.16.

[] = Only 2 trials worth of data.

Recommended List of Late Perennial Ryegrass Diploid Varieties 2020/2021

	Mean of G varieties	Late Diploid Mean (G's only)	Kendal	Callan	AberTest	Ballyvoy	Toddington	Dundrod	AberAvon	AstonKing	Oakpark	Romark	Drumbo	Glenarm	Gleneagle	Cavendish	Clanrye	Timing	Smile	AberBann	AberLee	Swan	AberChoice	Cancan	Bowie	
Recommended List status			PG	PG	PG	PG	G	PS	G	PS	PG	G	G	G	PG	PS	S	G	PG	PG	PG	PS	S	G	PS	
Heading date			31 May	2 Jun	2 Jun	2 Jun	2 Jun	2 Jun	3 Jun	3 Jun	4 Jun	4 Jun	4 Jun	4 Jun	5 Jun	5 Jun	5 Jun	5 Jun	6 Jun	7 Jun	7 Jun	8 Jun	10 Jun	12 Jun	18 Jun	
Grazing: management																										
Grazing yield (% of 9.87t DM/ha)	100	99	98	104	103	101	97	99	100	100	103	97	98	99	101	97	97	99	101	109	100	102	104	101	103	
Grazing D-value	77.2	76.9	76.4	76.1	79.7	77.4	76.0	76.4	78.0	75.8	76.6	76.9	77.4	76.9	76.5	75.6	75.8	75.4	77.4	77.8	79.3	74.9	77.2	76.2	75.9	
ME yield (% of 122,000 MJ/ha)	100	98	97	103	106	101	96	98	101	98	102	96	98	99	100	95	96	97	101	110	103	99	104	100	101	
Conservation: management																										
Total yield: year 1 (% of 17.32t DM/ha)	100	93	98	98	95	102	95	98	94	96	97	90	93	99	97	96	99	95	98	100	91	95	98	92	93	
1st and 2nd cut ME yield, first harvest year (% of 132,000 MJ/ha)	100	93	100	97	95	105	96	94	95	98	96	89	93	102	98	97	101	96	98	101	94	96	101	92	92	
Total yield: year 3 (% of 13.16t DM/ha)	100	94	103	105	97	102	96	98	94	98	99	93	95	102	98	96	97	100	96	100	96	97	98	93	94	
Total yield: mean (% of 15.35t DM/ha)	100	94	100	101	96	102	96	98	94	97	98	92	94	100	97	96	98	97	97	100	93	96	98	93	94	
Agronomic characters																										
Ground cover % (2nd harvest year)	65	67	70	65	70	69	68	68	69	63	68	65	64	66	69	71	64	69	66	68	72	71	64	67	68	
Ground cover % (3rd harvest year)	61	63	61	62	62	65	63	62	68	58	63	62	59	60	61	65	63	62	61	59	67	63	59	63	60	
Autumn ground cover (1-9, 1=poor 9=good)	6.2	6.5	6.6	6.3	6.7	6.8	6.6	6.5	7.0	5.9	6.6	6.3	6.1	6.3	6.6	7.0	6.3	6.6	6.4	6.3	7.3	6.8	6.0	6.5	6.4	
Grazing: seasonal growth																										
Early grazing yield (% of 1.07t DM/ha)	100	90	97	115	80	112	86	97	99	107	89	87	94	97	87	86	85	78	87	100	79	87	100	84	83	
Spring (% of 2.26t DM/ha)	100	90	98	105	94	102	90	98	97	103	90	88	90	94	88	87	85	83	89	100	85	89	98	84	80	
Early summer (% of 3.78t DM/ha)	100	101	97	104	105	98	101	100	101	99	107	100	100	99	108	103	104	106	104	115	108	107	107	104	110	
Late summer (% of 2.46t DM/ha)	100	102	98	103	109	100	99	97	99	100	106	99	101	101	103	94	98	102	106	109	101	102	107	110	110	
Autumn (% of 1.50t DM/ha)	100	101	104	104	103	109	96	101	104	99	108	98	99	104	101	100	98	102	105	107	102	106	104	107	108	

	Mean of G varieties	Late Diploid Mean (G's only)	Kendal	Callan	AberTest	Ballyvoy	Toddington	Dundrod	AberAvon	AstonKing	Oakpark	Romark	Drumbo	Glenarm	Gleneagle	Cavendish	Clanrye	Timing	Smile	AberBann	AberLee	Swan	AberChoice	Cancan	Bowie	
Conservation: seasonal growth – Year 1																										
1st cut (% of 7.34t DM/ha)	100	95	108	104	97	111	101	108	102	106	100	89	92	109	100	100	105	98	101	101	90	93	99	89	83	
1st cut D-value	71.9	70.9	69.2	69.0	71.7	69.5	69.7	69.1	70.1	69.7	70.1	71.4	71.1	69.9	69.8	70.7	70.6	71.0	69.8	71.3	74.9	71.2	72.8	72.3	73.7	
2nd cut (% of 3.93t DM/ha)	100	91	91	89	93	96	92	91	86	88	93	88	93	91	98	93	98	95	96	100	89	101	101	95	102	
2nd cut D-value	73.2	74.0	73.5	73.5	76.6	75.8	72.6	73.2	74.1	73.4	73.1	75.0	75.1	74.5	72.9	73.7	71.6	72.8	74.2	73.4	75.9	73.5	72.8	73.4	72.5	
3rd cut (% of 2.89t DM/ha)	100	97	93	99	99	98	95	96	94	94	101	98	97	94	97	97	97	95	101	102	95	100	97	98	102	
4th+ cut (% of 3.03t DM/ha)	100	87	89	92	109	92	85	107	86	85	90	86	88	88	88	90	85	87	90	95	91	89	89	88	94	
Agronomic characters																										
Winter hardiness (1-9, 1=poor 9=good)	7.0	6.8	[6.8]	7.1	7.0	7.4	6.9	[6.9]	7.0	[7.2]	6.9	6.7	6.7	7.1	[6.9]	6.7	6.9	6.7	6.9	7.1	7.2	7.1	7.0	6.8	6.8	
Disease resistance																										
Crown rust (1-9, 1=poor 9=good)	6.1	6.3	8.1	5.8	8.0	3.4	7.9	7.8	7.5	7.4	5.3	6.1	5.6	7.4	5.0	7.9	6.0	7.9	3.7	6.3	7.8	7.5	4.1	4.2	5.6	
Drechslera (1-9, 1=poor 9=good)	6.6	5.3	[7.8]	[3.7]	[6.0]	[4.4]	6.6	5.6	4.1	[4.2]	[6.8]	5.3	5.3	3.9	[6.7]	4.8	6.3	5.3	5.3	[6.4]	4.3	[6.7]	2.8	5.4	[4.5]	
Mildew (1-9, 1=poor 9=good)	7.0	6.6	7.6	7.9	7.6	[7.4]	7.1	[7.5]	6.8	7.9	7.2	5.5	6.2	8.1	7.0	7.4	7.8	6.9		7.4		[7.5]	8.3	7.4	8.0	
Year First Listed			2019	2018		2020	2010	2019	2001	2019	2018	2000	2009	2015	2019	2015	2012	2015	2017	2018	2017		2009	1998	2018	
Breeder		R2n, France	AFBI, UK	IBERS, Aberystwyth	AFBI, UK	DLF Seeds A/S	AFBI, UK	IBERS, Aberystwyth	DSV, UK	Teagasc, Eire	Innoseeds NL	AFBI, UK	AFBI, UK	Teagasc, Eire	DLF Seeds A/S	AFBI, UK	DLF Seeds A/S	Teagasc	IBERS, Aberystwyth	IBERS, Aberystwyth	DLF Seeds A/S	IBERS, Aberystwyth	DLF Seeds A/S	DLF Seeds A/S	DLF Seeds A/S	
Agent		RAGT Seeds Ltd	Barenbrug UK Ltd	Germinal	Barenbrug UK Ltd	DLF Seeds Ltd	Barenbrug UK Ltd	Germinal	DSV	Goldcrop Ltd	DLF Seeds Ltd	Barenbrug UK Ltd	Barenbrug UK Ltd	Goldcrop Ltd	DLF Seeds Ltd	Barenbrug UK Ltd	Limagrain UK Ltd	DLF Seeds Ltd	Germinal	Germinal	DLF Seeds Ltd	Germinal	DLF Seeds Ltd	DLF Seeds Ltd	DLF Seeds Ltd	
Number of trials for yields																										
1st harvest year			6	9	5	6	13	5	10	6	9	11	23	14	6	13	14	14	12	9	12	6	29	10	9	
2nd harvest year			6	6	6	6	12	6	10	6	6	11	20	13	6	12	12	13	9	6	9	6	26	10	6	
3rd harvest year			6	6	6	6	11	6	10	6	6	11	17	12	6	9	12	12	6	6	6	6	23	10	6	

Note that the mean of G varieties include all those from early, intermediate and late maturity groups.

Yields are expressed as a percentage of the mean of all fully recommended PRG varieties in trials. Grazing yields are measured in year 2, Conservation yields in years 1 & 3.

D-values are expressed as D-value minus 65.

Grazing D-value is measured from a late-summer cut in year 2 and the Grazing ME yields are calculated as total yield multiplied by the D-value x 0.16.

Conservation D-value is measured from both the 1st and 2nd cuts in year 1.

Conservation ME yields are calculated as the first year first cut multiplied by its D-value x 0.16, plus the first year second cut yield multiplied by its D-value x 0.16.

[] = Only 2 trials worth of data.

G General Use **S** Recommended for Specific Use **PG** Provisional General Use Recommendation **PS** Provisional Specific Use Recommendation

Recommended List of Late Perennial Ryegrass Tetraploid Varieties 2020/2021

	Mean of G Varieties	Late Tetraploid Mean (G's only)	Ballintoy	Bijou	Gracehill	Meiduno	Weldone	Hurricane	Calao	Aspect	AberGain	Nashota	AberBite	Twymax	Youpi	Thegn	Aston Princess	Xenon	Solas	Hopi
Recommended List status			PS	S	PG	G	PG	PS	PG	G	G	PG	G	G	PG	PG	G	S	PS	PG
Heading date			31 May	1 Jun	1 Jun	2 Jun	2 Jun	3 Jun	3 Jun	3 Jun	4 Jun	5 Jun	5 Jun	6 Jun	6 Jun	6 Jun	6 Jun	6 Jun	8 Jun	9 Jun
Grazing: management																				
Grazing yield (% of 9.87t DM/ha)	100	103	103	101	105	104	104	99	101	101	106	106	102	99	100	105	99	104	103	104
Grazing D-value	77.2	77.5	77.9	75.2	76.8	76.6	77.6	77.0	78.1	77.3	78.2	77.9	77.9	77.7	77.2	77.2	77.1	77.1	77.1	76.7
ME yield (% of 122,000 MJ/ha)	100	103	104	99	104	103	105	99	103	101	108	107	103	100	100	105	99	104	103	103
Conservation: management																				
Total yield: year 1 (% of 17.32t DM/ha)	100	101	105	101	106	103	101	100	99	99	106	104	99	99	96	98	100	96	97	99
1st and 2nd cut ME yield, first harvest year (% of 132,000 MJ/ha)	100	105	107	105	108	107	105	103	102	104	111	108	101	105	99	100	106	98	98	101
Total yield: year 3 (% of 13.16t DM/ha)	100	102	106	104	106	102	100	103	108	101	107	105	99	100	99	101	98	98	100	100
Total yield: mean (% of 15.35t DM/ha)	100	102	105	102	106	102	100	101	102	100	107	105	99	100	97	99	99	97	99	99
Agronomic characters																				
Ground cover % (2nd harvest year)	65	62	59	63	60	57	64	64	64	65	62	68	60	65	62	66	64	66	61	62
Ground cover % (3rd harvest year)	61	57	56	58	55	51	56	58	58	58	59	61	58	59	60	60	57	60	58	58
Autumn ground cover (1-9, 1=poor 9=good)	6.2	5.7	5.5	5.9	5.5	5.0	5.8	6.0	6.0	6.0	5.8	6.4	5.7	6.1	5.9	6.2	5.9	6.2	5.7	5.9
Grazing: seasonal growth																				
Early grazing yield (% of 1.07t DM/ha)	100	95	109	97	99	100	86	90	90	91	115	109	85	83	77	85	88	94	87	90
Spring (% of 2.26t DM/ha)	100	95	102	99	100	97	90	90	91	92	108	102	92	88	82	88	89	92	89	91
Early summer (% of 3.78t DM/ha)	100	107	103	103	104	106	112	102	106	107	105	111	106	110	107	110	108	110	108	111
Late summer (% of 2.46t DM/ha)	100	103	103	104	109	106	106	101	103	99	106	106	106	98	104	112	96	106	110	103
Autumn (% of 1.50t DM/ha)	100	102	100	95	105	102	102	100	103	105	107	98	103	92	101	105	96	99	100	105

	Mean of G Varieties	Late tetraploid Mean (G's only)	Ballintoy	Bijou	Gracehill	Meiduno	Weldone	Hurricane	Calao	Aspect	AberGain	Nashota	AberBite	Twymax	Youpi	Thegn	Aston Princess	Xenon	Solas	Hopi
Conservation: seasonal growth – Year 1																				
1st cut (% of 7.34t DM/ha)	100	106	113	111	113	108	104	108	105	105	114	109	99	105	95	96	104	95	95	99
1st cut D-value	71.9	71.9	69.9	69.5	70.0	71.9	72.4	70.4	71.2	71.8	71.2	71.5	72.3	72.2	72.6	73.5	72.7	72.1	71.8	71.8
2nd cut (% of 3.93t DM/ha)	100	102	102	101	103	101	105	97	97	100	106	105	100	102	104	102	104	101	101	104
2nd cut D-value	73.2	73.8	72.7	72.1	73.5	74.0	73.5	73.4	73.7	73.4	72.8	74.3	74.6	74.3	73.7	73.1	74.4	73.6	73.9	73.4
3rd cut (% of 2.89t DM/ha)	100	98	101	90	103	100	102	95	98	97	98	103	98	97	97	103	97	98	101	101
4th+ cut (% of 3.03t DM/ha)	100	90	92	85	96	92	87	85	89	85	94	93	96	83	87	91	84	90	93	89
Agronomic characters																				
Winter hardiness (1-9, 1=poor 9=good)	7.0	7.1	7.2	7.2	6.7	7.0	[7.1]	7.0	7.2	7.2	7.1	7.4	7.1	6.9	7.0	7.1	7.2	7.0	6.9	[6.9]
Disease resistance																				
Crown rust (1-9, 1=poor 9=good)	6.1	6.2	3.9	8.2	7.9	7.0	7.1	7.5	7.9	4.8	7.4	7.5	7.0	4.9	8.8	7.3	5.2	5.1	1.8	7.6
Drechslera (1-9, 1=poor 9=good)	6.6	8.0	7.3	8.1	[8.7]	8.6	[8.9]	8.1	7.7	8.0	7.8	[8.8]	8.0	7.6	8.9	[8.8]	8.0	8.0	8.5	[8.6]
Mildew (1-9, 1=poor 9=good)	7.0	7.5		7.7	[8.0]	7.5	7.3	7.5		7.7	8.1	7.3	6.5	7.7	7.4	6.9	7.7	6.8	7.7	7.4
Year First Listed			2017	2014	2020	2014	2019	2015	2017	2011	2012	2018	2009	2004	2015	2018	2007	2011	2014	2019
Breeder		AFBI	R2n, France	AFBI, UK	DLF Seeds A/S	DLF Seeds A/S	Semences de France	Semences de France	DLF Seeds A/S	IBERS, Aberystwyth	DLF Seeds A/S	IBERS, Aberystwyth	CPB Twyford	R2n, France	DLF Seeds A/S	DSV, UK	DLF Seeds A/S	Teagasc, Eire	DLF Seeds A/S	
Agent		Barenbrug UK Ltd	RAGT Seeds Ltd	Barenbrug UK Ltd	Limagrain UK Ltd	Limagrain UK Ltd	DSV	Germinal	Limagrain UK Ltd	Germinal	DLF Seeds Ltd	Germinal	Limagrain UK Ltd	Barenbrug UK Ltd	DLF Seeds Ltd	Germinal	Limagrain UK Ltd	Limagrain UK Ltd	DLF Seeds Ltd	
Number of trials for yields																				
1st harvest year		12	9	6	12	6	14	12	12	14	9	29	33	14	9	12	12	12	12	6
2nd harvest year		9	8	6	13	6	13	9	11	12	6	26	32	13	6	11	11	12	12	6
3rd harvest year		6	7	6	13	6	12	6	13	12	6	23	31	12	6	12	13	13	13	6

Note that the mean of G varieties include all those from early, intermediate and late maturity groups.

Yields are expressed as a percentage of the mean of all fully recommended PRG varieties in trials. Grazing yields are measured in year 2, Conservation yields in years 1 & 3.

D-values are expressed as D-value minus 65.

Grazing D-value is measured from a late-summer cut in year 2 and the Grazing ME yields are calculated as total yield multiplied by the D-value x 0.16.

Conservation D-value is measured from both the 1st and 2nd cuts in year 1.

Conservation ME yields are calculated as the first year first cut multiplied by its D-value x 0.16, plus the first year second cut yield multiplied by its D-value x 0.16.

[] = Only 2 trials worth of data.

Recommended List of Italian Ryegrass Diploid Varieties 2020/2021

	Mean of G varieties	Diploid Mean	Shakira	Syntilla	Muriello	Meribel	Fox	Steel	Alamo	Abys	Sendero	Melprimo	Belluna	Davinci	Javorio
Recommended List status			G	PS	G	S	G	G	G	G	PG	PG	G	G	G
Heading date			18 May	19 May	20 May	20 May	20 May	21 May	21 May	22 May	22 May	23 May	23 May	23 May	24 May
Total annual yields															
1st harvest year (% of 18.76t DM/ha)	100	100	100	99	99	101	99	99	102	99	102	101	100	102	101
2nd harvest year (% of 15.04t DM/ha)	100	100	99	101	100	95	101	99	99	102	103	100	100	102	98
Total yield: mean (% of 16.96t DM/ha)	100	100	99	100	100	98	100	99	101	100	103	101	100	102	99
Year of sowing (% of 2.09t DM/ha)	100	96	93	104	101	92	104	97	93	93	101	99	94	92	93
1st and 2nd cut ME yield, first harvest year (% of 123,000 MJ/ha)	100	99	100	96	96	99	97	98	101	98	102	96	98	101	101
Seasonal growth – Year 1															
Early spring growth (% of 1.70t DM/ha)	100	101	101	111	104	98	101	104	99	103	110	106	100	99	98
Conservation: management															
1st conservation cut (% of 6.61t DM/ha)	100	98	102	96	93	95	97	101	97	98	97	95	94	97	100
1st conservation cut D-value	71.4	71.4	71.1	71.0	71.9	72.6	70.6	70.4	71.7	71.5	71.9	70.6	72.3	72.1	71.4
2nd conservation cut (% of 4.32t DM/ha)	100	101	98	99	101	106	98	95	105	97	107	103	105	106	102
2nd conservation cut D-value	67.3	67.1	66.7	66.0	67.0	66.8	67.1	67.2	67.6	66.9	67.8	66.5	66.9	67.1	67.5
Monthly cuts (% of 6.18t DM/ha)	100	102	97	99	104	104	99	99	106	100	103	105	105	106	101

	Mean of G varieties	Diploid Mean	Shakira	Syntilla	Muriello	Meribel	Fox	Steel	Alamo	Abys	Sendero	Melprimo	Belluna	Davinci	Javorio
Agronomic characters															
Ground cover % (1st harvest year)	55	55	53	56	56	53	55	56	58	56	57	58	55	55	54
Ground cover % (2nd harvest year)	52	53	48	55	55	50	52	52	56	55	57	55	53	54	50
Autumn ground cover (1-9, 1=poor 9=good)	3.85	3.9	3.5	4.2	4.1	3.6	3.9	3.9	4.3	4.2	4.3	4.1	3.9	4.0	3.6
Winter hardiness (1-9, 1=poor 9=good)	7.0	7.0	6.9		7.2	7.2	6.6	6.8	7.1	7.4		[7.4]	7.1	6.9	6.7
Disease resistance															
Ryegrass mosaic virus (1-9, 1=poor 9=good)	5.0	5.1	6.2		3.3	3.8	3.8	7.4	4.6	3.8			5.7	5.4	5.5
Mildew (1-9, 1=poor 9=good)	7.0	7.1	6.8	[6.9]	7.1	6.8	7.3	6.5	7.5	7.7	[7.8]		7.5	6.9	7.0
Brown rust (1-9, 1=poor 9=good)	7.1	6.8	7.3		6.7	8.0	7.0	6.6	5.2	8.1		[7.4]	4.6	7.9	7.8
Crown rust (1-9, 1=poor 9=good)	7.7	7.5	7.6	8.4	7.1	1.5	8.0	8.5	7.1	8.0	8.3	8.0	7.7	7.3	6.2
Year First Listed			2012		2006	1991	2004	2009	2001	2004		2019	2005	2005	2013
Breeder			DSV, France	R2n, France	ILVO/DSV	ILVO	Force Limagrain	R2n, France	Innoseeds, NL	R2n, France	DSV	ILVO	ILVO	ILVO	DSV, Netherlands
Agent			DSV	RAGT Seeds Ltd	Germinal	Limagrain UK Ltd	DLF Seeds Ltd	Barenbrug UK Ltd	DLF Seeds Ltd	Barenbrug UK Ltd	DSV	Limagrain UK Ltd	Limagrain UK Ltd	Limagrain UK Ltd	Barenbrug UK Ltd
Number of trials for yields															
Year of sowing			8	3	14	7	8	12	16	9	3	6	10	10	9
1st harvest year			14	6	20	10	12	13	25	10	6	6	11	12	15
2nd harvest year			13	6	19	10	11	13	22	10	6	6	12	13	13

Yields are expressed as a percentage of the mean of all fully recommended Italian ryegrass varieties in trials.

Conservation D-value is measured from both the 2nd and 3rd cuts in year 1. D-values are expressed as D-value minus 65.

Conservation ME yields are calculated as the first year 2nd cut multiplied by its D-value x 0.16, plus the first year 3rd cut multiplied by its D-value x 0.16.

[] = Only 2 trials worth of data.

Recommended List of Italian Ryegrass Tetraploid Varieties 2020/2021

	Mean of G varieties	Tetraploid Mean	Itarzi	Udine	Hunter	ILVO166093	Barmutra II	Kigezi 1	Gemini	Messina	Arman	Cazzano	Barimax
Recommended List status			G	G	G	PS	G	G	S	PG	PS	S	PS
Heading date			17 May	18 May	19 May	20 May	20 May	20 May	20 May	20 May	20 May	21 May	21 May
Total annual yields													
1st harvest year (% of 18.761t DM/ha)	100	100	99	98	102	103	101	99	103	103	102	101	102
2nd harvest year (% of 15.04t DM/ha)	100	100	100	101	99	95	101	100	100	102	96	102	100
Total yield: mean (% of 16.96t DM/ha)	100	100	100	99	100	99	101	100	102	102	99	101	101
Year of sowing (% of 2.09t DM/ha)	100	108	107	113	103	106	109	108	100	111	106	101	99
1st and 2nd cut ME yield, first harvest year (% of 123,000 MJ/ha)	100	102	101	101	104	103	103	100	106	104	102	103	104
Seasonal growth – Year 1													
Early spring growth (% of 1.70t DM/ha)	100	98	96	95	99	104	102	99	99	109	105	96	91
Conservation: management													
1st conservation cut (% of 6.61t DM/ha)	100	104	104	104	105	99	105	104	101	103	102	100	105
1st conservation cut D-value	71.4	71.2	70.6	71.0	71.5	72.6	72.1	71.0	74.3	72.9	71.6	73.3	72.2
2nd conservation cut (% of 4.32t DM/ha)	100	99	97	98	103	107	100	95	107	101	101	101	103
2nd conservation cut D-value	67.3	67.7	68.2	67.9	67.2	67.1	67.6	67.6	68.2	68.1	68.0	68.7	67.1
Monthly cuts (% of 6.18t DM/ha)	100	96	97	93	99	104	97	97	104	102	103	101	101

	Mean of G varieties	Tetraploid Mean	Itarzi	Udine	Hunter	ILVO166093	Barmultra II	Kigezi 1	Gemini	Messina	Arman	Cazzano	Barimax
Agronomic characters													
Ground cover % (1st harvest year)	55	54	52	53	55	53	54	55	50	55	56	49	53
Ground cover % (2nd harvest year)	52	51	52	51	48	44	51	50	48	50	45	48	48
Autumn ground cover (1-9, 1=poor 9=good)	3.85	3.7	3.9	3.8	3.5	3.1	3.7	3.7	3.5	3.6	3.1	3.4	3.4
Winter hardiness (1-9, 1=poor 9=good)	7.0	7.1	7.1	7.3	7.2		7.2	7.0	7.1	7.3		6.9	7.0
Disease resistance													
Ryegrass mosaic virus (1-9, 1=poor 9=good)	5.0	5.0	5.5	6.0	5.2		4.1	4.4	3.8	[6.9]		[4.5]	
Mildew (1-9, 1=poor 9=good)	7.0	6.7	6.3	7.5	7.1	[7.9]	6.2	6.4	7.1	7.0	[7.6]	8.1	[6.7]
Brown rust (1-9, 1=poor 9=good)	7.1	7.5	7.6	7.4	8.0		6.8	8.0	8.3	8.3		[7.6]	6.0
Crown rust (1-9, 1=poor 9=good)	7.7	8.0	8.3	8.3	6.3	8.4	8.6	8.6	1.0	8.9	8.3	2.6	7.9
	Year First Listed		2009	2012	2008		2009	2010	2000	2017		2015	2018
	Breeder		DLF Seeds A/S	DLF Seeds A/S	DSV, Germany	ILVO	Barenbrug, NL	DLF Seeds A/S	ILVO	ILVO	DSV	DLF Seeds A/S	Barenbrug, NL
	Agent		DLF Seeds Ltd	Limagrain UK Ltd	DLF Seeds Ltd	DLF Seeds Ltd	Barenbrug UK Ltd	DLF Seeds Ltd	Limagrain UK Ltd	Limagrain UK Ltd	DSV	DLF Seeds Ltd	Barenbrug UK Ltd
Number of trials for yields													
Year of sowing			12	8	10	3	12	13	9	7	3	8	6
1st harvest year			13	14	14	6	13	11	11	12	6	12	9
2nd harvest year			13	13	11	6	13	11	11	9	6	11	6

Yields are expressed as a percentage of the mean of all fully recommended Italian ryegrass varieties in trials.

Conservation D-value is measured from both the 2nd and 3rd cuts in year 1. D-values are expressed as D-value minus 65.

Conservation ME yields are calculated as the first year 2nd cut multiplied by its D-value x 0.16, plus the first year 3rd cut multiplied by its D-value x 0.16.

[] = Only 2 trials worth of data.

Recommended List of Hybrid Ryegrass Varieties 2020/2021

	Mean of G varieties	Diploid Mean	Diploids				Tetraploids													
			Pirol	Barsilo	Barclamp	Tetraploid Mean	AberEcho	Aston Crusader	Bannfoot	Enduro	Tetragraze	Novial	Perkins	AberNiche (Fest)	Kirial	Bahial	Amalgam	Perseus (Fest)	AberImage	
Recommended List status			G	S	PG		G	G	PG	G	S	G	PG	S	G	G	G	PG	PS	
Heading date			21 May	25 May	26 May		16 May	19 May	20 May	20 May	20 May	21 May	21 May	22 May	23 May	23 May	24 May	25 May	26 May	
Total annual yields																				
1st harvest year (% of 18.63t DM/ha)	100	105	105	104	105	98	104	101	96	97	96	96	98	102	99	96	94	96	101	
2nd harvest year (% of 14.12t DM/ha)	100	96	99	94	98	101	102	102	103	100	102	102	104	100	102	102	100	102	107	
3rd harvest year (% of 13.38t DM/ha)	100	95	98	93	88	102	99	102	105	103	100	101	101	101	104	103	101	104	101	
Total yield: mean (% of 15.52t DM/ha)	100	99	101	97	99	100	102	101	100	100	99	100	101	101	101	100	98	100	103	
Year of sowing (% of 1.83t DM/ha)	100	95	95	95	89	102	93	102	97	105	91	102	92	94	113	104	94	108	82	
1st and 2nd cut ME yield, first harvest year (% of 124,000 MJ/ha)	100	101	101	100	102	100	105	100	98	98	100	97	97	100	100	97	97	99	101	
Seasonal growth – Year 1																				
Early spring growth (% of 1.63t DM/ha)	100	113	112	113	107	96	101	105	82	94	77	94	108	112	99	93	82	98	98	
Conservation management																				
1st conservation cut (% of 6.72t DM/ha)	100	96	97	95	98	101	100	103	103	101	107	102	97	95	102	99	101	101	99	
1st conservation cut D-value	71.9	72.1	71.7	72.5	72.3	71.8	73.1	71.3	71.9	71.5	71.3	71.4	72.8	72.3	71.6	72.2	72.0	71.8	72.9	
2nd conservation cut (% of 4.12t DM/ha)	100	113	116	111	115	96	109	95	85	94	89	89	93	114	98	93	89	98	105	
2nd conservation cut D-value	70.3	67.2	66.4	68.1	66.2	71.3	71.5	70.9	73.4	71.2	71.0	71.8	69.6	66.8	71.0	71.2	71.7	69.0	68.5	
Monthly cuts (% of 6.17t DM/ha)	100	106	106	107	104	98	105	100	98	97	93	95	100	99	98	97	92	89	100	
Agronomic characters																				
Ground cover % (1st harvest year)	58	58	60	56	62	58	60	61	59	58	62	57	59	54	58	58	58	56	55	
Ground cover % (2nd harvest year)	54	50	53	48	51	56	55	55	58	56	60	55	57	50	53	55	60	54	51	
Ground cover % (3rd harvest year)	53	44	46	43	47	56	55	52	57	55	58	57	60	48	52	57	63	53	55	
Autumn ground cover (1-9, 1=poor 9=good)	4.1	3.6	3.8	3.4	3.8	4.3	4.2	4.1	4.5	4.3	4.6	4.3	4.5	3.7	4.0	4.3	4.8	4.1	4.1	
Winter hardiness (1-9, 1=poor 9=good)	7.3	7.4	7.6	7.2	7.5	7.3	7.2	7.4	7.3	7.3	7.3	7.3	7.7	7.4	7.3	7.3	7.2	7.3	7.3	

	Mean of G varieties	Diploid Mean	Diploids				Tetraploids													
			Pirol	Barsilo	Barclamp	Tetraploid Mean	AberEcho	Aston Crusader	Bannfoot	Enduro	Tetragraze	Novial	Perkins	AberNiche (Fest)	Kirial	Bahial	Amalgam	Perseus (Fest)	AberImage	
Disease resistance																				
Ryegrass mosaic virus (1-9, 1=poor 9=good)	6.2	3.8	3.9	3.7	[6.7]	7.0	5.7	6.8	7.8	6.8	6.7	7.6		6.6	7.9	7.5	7.7	7.1		
Mildew (1-9, 1=poor 9=good)	7.2	6.3	4.4	8.2	6.5	7.5	7.4	8.1	7.9	7.6	7.6	7.5	8.8	7.8	8.1	6.9	6.5	7.2	7.9	
Brown rust (1-9, 1=poor 9=good)	6.7	4.6	6.2	2.9	9.0	7.4	3.5	[8.6]	[8.9]	8.2	8.4	7.7		7.7	7.7	6.9	9.0	[8.7]		
Crown rust (1-9, 1=poor 9=good)	6.7	5.5	6.8	4.3	7.6	7.1	3.5	6.9	6.9	8.4	3.9	8.2	7.4	6.4	7.8	7.7	7.9	9.0	2.4	
Year First Listed			2005	1998	2017		2002	2014	2018	2005	2008	2010		2011	2012	2007	2009	2018		
Breeder			Steinach, Germany / DSV	Barenburg, NL	Barenburg, NL		IBERS, Aberystwyth	DSV, UK	AFBI, UK	R2n, France	DLF Seeds A/S	R2n, France	DSV	IBERS, Aberystwyth	R2n, France	R2n, France	DLF Seeds A/S	DLF Seeds A/S	IBERS, Aberystwyth	
Agent			Germinal	Barenburg UK Ltd	Barenburg UK Ltd		Germinal	DSV	Barenbrug UK Ltd	Limagrain UK Ltd	DLF Seeds Ltd	Barenbrug UK Ltd	DSV	Germinal	RAGT Seeds Ltd	DLF Seeds Ltd	Limagrain UK Ltd	DLF Seeds Ltd	Germinal	
Number of trials for yields																				
Year of sowing			15	7	5		13	5	4	7	5	10	3	7	6	4	7	4	3	
1st harvest year			23	12	12		24	13	9	12	11	11	6	11	13	12	12	9	6	
2nd harvest year			22	12	9		22	13	6	12	11	11	6	11	12	11	12	6	6	
3rd harvest year			20	11	6		20	12	6	12	11	10	6	10	12	11	11	6	6	

Yields are expressed as a percentage of the mean of all fully recommended hybrid ryegrass varieties in trials.

Conservation D-value is measured from both the 2nd and 3rd cuts in year 1. D-values are expressed as D-value minus 65.

Conservation ME yields are calculated as the first year first cut multiplied by its D-value x 0.16, plus the first year second cut yield multiplied by its D-value x 0.16.

Hybrid diploids have more secondary heading than hybrid tetraploids.

[] = Only 2 trials worth of data.

Recommended List of Timothy Varieties 2020/2021

	Mean of G varieties	Presto	Comer	Dolina	Promesse	Comtal	Winnetou	Moverdi	Baronaise	Motim
Recommended List status		G	G	G	S	G	G	S	PG	S
Heading date		7 Jun	8 Jun	8 Jun	8 Jun	9 Jun	10 Jun	11 Jun	13 Jun	16 Jun
Grazing: management										
Grazing yield (% of 10.21t DM/ha)	100	101	102	101	95	101	95	101	101	95
Grazing D-value	72.8	73.5	72.0	72.0	73.7	72.4	74.2	73.5	74.7	72.8
ME yield (% of 119,000 MJ/ha)	100	102	101	100	96	101	97	102	104	95
Grazing: seasonal growth										
Early grazing yield (% of 1.16t DM/ha)	100	109	105	103	80	100	82	87	[109]	87
Spring (% of 2.15t DM/ha)	100	105	104	105	88	97	89	95	106	87
Early summer (% of 3.99t DM/ha)	100	100	100	99	99	103	98	99	98	99
Late summer (% of 2.84t DM/ha)	100	100	103	100	96	102	96	103	99	96
Autumn (% of 1.23t DM/ha)	100	98	104	105	90	99	95	110	109	94
Conservation: management										
Total yield: year 1 (% of 15.06t DM/ha)	100	100	101	102	95	98	99	97	97	96
ME yield of 1st+2nd cut year 1 (% of 101,000 MJ/ha)	100	100	101	101	98	97	101	98	103	99
Total yield: year 3 (% of 12.49t DM/ha)	100	100	103	102	95	97	97	97	102	97
Total yield: mean (% of 13.83 DM/ha)	100	100	102	102	95	98	98	97	100	96
Conservation: seasonal growth – Year 1										
1st cut (% of 6.10t DM/ha)	100	102	103	100	93	96	99	95	97	93
1st cut D-value	66.1	65.3	65.2	66.1	68.1	66.1	68.0	67.3	70.0	68.7
2nd cut (% of 3.73t DM/ha)	100	99	101	103	101	99	98	97	99	105
2nd cut D-value	64.6	65.3	64.0	63.8	64.8	64.7	65.4	65.6	67.0	64.5
3rd cut (% of 2.76t DM/ha)	100	100	99	104	95	97	99	99	86	92
4th+ cut (% of 2.47t DM/ha)	100	98	99	100	93	101	102	102	106	98

	Mean of G varieties	Presto	Comer	Dolina	Promesse	Comtal	Winnetou	Moverdi	Baronaise	Motim
Agronomic characters										
Ground cover % (2nd harvest year)	63	63	63	58	68	67	66	54	68	70
Ground cover % (3rd harvest year)	60	60	58	56	63	62	63	51	62	66
Autumn ground cover (1-9, 1=poor 9=good)	4.9	4.9	4.8	4.4	5.3	5.2	5.2	4.0	5.3	5.6
Winter hardiness (1-9, 1=poor 9=good)	7.1	7.2	7.2	7.2	6.9	7.0	6.7	6.6		6.8
Year First Listed		2005	2001	2003	1990	1989	2003	2005		1974
Breeder		DSV, Netherlands	ILVO	ILVO	Innoseeds, NL	DLF Seeds A/S	DLF Seeds A/S	DLF Seeds A/S	Barenbrug, NL	DLF Seeds A/S
Agent		Geminal	Limagrain UK Ltd	DLF Seeds Ltd	DLF Seeds Ltd	Limagrain UK Ltd	DLF Seeds Ltd	Limagrain UK Ltd	Barenbrug UK Ltd	Limagrain UK Ltd
Number of trials for yields										
1st harvest year		12	16	11	12	11	11	11	6	17
2nd harvest year		12	15	11	12	12	11	11	6	16
3rd harvest year		12	14	10	10	11	10	10	6	15

Yields are expressed as a percentage of the mean of all fully recommended Timothy varieties in trials. Grazing yields are measured in year 2, Conservation yields in years 1 & 3.

D-values are expressed as D-value minus 65.

Grazing D-value is measured from a late-summer cut in year 2 and the Grazing ME yields are calculated as total yield multiplied by the D-value x 0.16.

Conservation D-value is measured from both the 1st and 2nd cuts in year 1.

Conservation ME yields are calculated as the first year first cut multiplied by its D-value x 0.16, plus the first year second cut yield multiplied by its D-value x 0.16.

[] = Only 2 trials worth of data.

Recommended List of White Clover Varieties 2020/2021

	Mean of G varieties	AberAce	Aber S.184	Coolfin	AberHerald	Buddy	Iona	G Bounty	AberDai	AberSwan	Dublin	Violin	Alice	Barblanca	Aran	Brianna	
Recommended List status		G	G	PG	G	G	G	G	G	PG	G	G	G	G	G	G	
Leaf area (length x breadth mm²)	953	423	640	820	827	848	869	938	957	959	1092	1097	1155	1174	1470	1591	
Light defoliation (cutting or rotational cattle grazing)																	
2nd harvest year																	
Total clover yield (% of 4.92t DM/ha) #	100	81	91	99	101	96	98	96	104	108	109	111	100	108	115	118	
Total yield: grass and clover (% of 11.44t DM/ha) #	100	93	99	98	100	97	100	100	101	102	102	105	99	101	103	104	
% clover	43	37	40	43	43	42	42	41	44	46	46	45	43	46	48	49	
Clover yield: first cut (% of 0.68t DM/ha) #	100	81	81	107	94	96	97	96	110	122	104	104	103	124	116	92	
Clover yield: last cut (% of 0.47t DM/ha) #	100	62	82	100	104	90	97	99	107	109	111	118	107	119	121	124	
3rd harvest year																	
Yield of clover (% of 4.02t DM/ha) #	100	77	82	101	115	99	100	92	99	120	112	115	105	111	109	118	
Yield of grass + clover (% of 10.71t DM/ha) #	100	94	97	99	103	99	98	100	100	103	104	105	100	100	102	104	
% clover	38	31	32	38	42	38	38	35	37	44	40	41	39	41	40	43	
Clover yield: first cut (% of 0.55t DM/ha) #	100	70	75	110	116	103	96	94	100	111	111	110	107	118	114	119	
Clover yield: last cut (% of 0.40t DM/ha) #	100	76	80	96	112	83	93	96	101	124	105	111	107	125	115	122	
Autumn ground cover																	
Light Defoliation	% cover (1st harvest year)	49	46	52	46	51	43	53	51	48	49	51	52	46	52	46	45
	% cover (2nd harvest year)	49	40	48	50	53	46	44	46	52	49	55	54	48	55	49	51
	% cover (3rd harvest year)	48	42	45	51	54	46	47	47	47	54	47	52	48	51	49	51
	Overall (1-9, 1=poor 9=good)	6.4	4.7	5.9	6.8	7.5	5.8	5.8	6.0	6.5	7.1	7.1	7.3	6.3	7.4	6.5	7.0

	Mean of G varieties	AberAce	Aber S.184	Coolfin	AberHerald	Buddy	Iona	G Bounty	AberDai	AberSwan	Dublin	Violin	Alice	Barblanca	Aran	Brianna	
Autumn ground cover																	
Hard Defoliation	% cover (1st harvest year)	57	62	63	62	52	56	57	61	57	55	57	62	54	57	50	52
	% cover (2nd harvest year)	57	63	65	63	53	61	59	63	55	59	55	59	50	58	46	52
	% cover (3rd harvest year)	52	55	53	51	49	53	52	59	49	51	52	56	47	54	42	50
	Overall (1-9, 1=poor 9=good)	6.9	7.9	7.9	7.5	6.1	7.5	7.2	8.4	6.4	7.0	6.8	7.6	5.7	7.2	4.8	6.2
Spring ground cover																	
Hard Defoliation	% cover (1st harvest year)	38	46	42	43	36	41	42	38	40	40	41	34	37	36	34	31
	% cover (2nd harvest year)	57	61	68	58	53	59	56	62	55	50	54	60	53	53	46	52
	% cover (3rd harvest year)	46	50	44	51	48	52	48	46	47	49	46	45	43	44	39	46
	Overall (1-9, 1=poor 9=good)	7.4	8.6	8.7	8.3	7.2	8.6	7.6	8.2	7.3	6.9	7.1	7.7	6.4	6.6	5.0	6.9
Year First Listed		2001	1969	2019	1994	2013	2011	2003	1997	2018	2015	2009	1985	2001	1981	2015	
Breeder		IBERS, Aberystwyth	IBERS, Aberystwyth	Teagasc, Eire	IBERS, Aberystwyth	Teagasc, Eire	Teagasc, Eire	AgResearch Ltd (New Zealand)	IBERS, Aberystwyth	IBERS, Aberystwyth	Teagasc, Eire	DLF Seeds A/S	IBERS, Aberystwyth	AgResearch Ltd (New Zealand)	Teagasc, Eire	DLF Seeds A/S	
Agent		Germinal	Barenbrug UK Ltd	Limagrain UK Ltd	Germinal	DLF Seeds Ltd	DLF Seeds Ltd	Limagrain UK Ltd	Germinal	Germinal	DLF Seeds Ltd	Limagrain UK Ltd	Barenbrug UK Ltd	Barenbrug UK Ltd	Germinal	DLF Seeds Ltd	
Number of trials for clover yields																	
2nd harvest year		20	11	5	14	11	11	12	26	6	8	15	24	10	23	8	
3rd harvest year		20	10	5	13	10	10	11	25	6	7	14	25	10	22	7	

* Clover yields transformed

Yields are expressed as a percentage of the mean of all fully recommended white clover varieties in trials.

G General Use **S** Recommended for Specific Use **PG** Provisional General Use Recommendation **PS** Provisional Specific Use Recommendation

Recommended List of Red Clover Varieties 2020/2021

	Mean of G varieties	Diploids											Tetraploids			
		Merviot	Lemmon	AberClaret	AberChianti	Avisto	Harmonie	Metis	Discovery	Hegemon	Sinope	Fearga	Amos	Maro	Atlantis	Magellan
Recommended List status		S	G	G	S	G	G	G	G	G	PG	PG	G	G	G	G
Conservation: management																
Total yield: 1st harvest year (% of 12.37t DM/ha)	100	105	102	104	92	100	99	93	104	91	105	101	102	101	103	99
Total yield: 2nd harvest year (% of 12.77t DM/ha)	100	98	100	106	98	101	100	95	101	93	103	111	103	100	103	99
Total yield: 3rd harvest year (% of 9.31t DM/ha)	100	89	102	111	111	98	100	97	92	94	104	112	97	98	105	105
Total yield: mean (% of 11.69t DM/ha)	100	98	101	106	99	100	100	95	100	92	104	107	101	100	104	100
Seasonal growth: 1st harvest year																
1st cut (% of 5.01t DM/ha)	100	111	102	99	86	97	100	99	106	92	115	90	103	100	103	97
Protein content %: 1st cut	17.6	17.1	17.5	17.0	17.1	17.5	18.2	17.4	16.2	17.6	17.9	17.1	18.1	17.9	17.8	18.0
Agronomic characters																
Ground cover % (1st harvest year)	64	61	65	62	63	62	69	67	58	59	58	59	66	63	66	66
Ground cover % (2nd harvest year)	53	43	57	53	57	55	59	57	43	50	53	58	53	49	56	55
Ground cover % (3rd harvest year)	46	35	49	50	58	46	51	45	38	45	44	50	44	38	50	50
Year First Listed		1980	2003	2010	2011	2011	2012	2016	2016	2017	2018	2018	2005	2010	2011	2014
Breeder		ILVO	ILVO	IBERS, Aberystwyth	IBERS, Aberystwyth	ILVO	Nord. Pflanz/DSV	DLF Seeds A/S	INRA	DLF Seeds A/S	DLF Seeds A/S	Teagasc, Eire	Slechtitelská stanice, The Czech Republic	LSPB	Nord. Pflanz/DSV	Nord. Pflanz/DSV
Agent		Limagrain UK Ltd	Barenbrug UK Ltd	Geminal	Geminal	Barenbrug UK Ltd	DSV	DLF Seeds Ltd	Barenbrug UK Ltd	DLF Seeds Ltd	DLF Seeds Ltd	Goldcrop Ltd	DLF Seeds Ltd	Limagrain UK Ltd	DSV	DLF Seeds Ltd
Number of trials for yields																
1st harvest year		20	16	16	16	16	16	11	11	10	5	8	20	16	16	14
2nd harvest year		17	13	13	13	13	13	8	8	7	5	5	17	13	13	11
3rd harvest year		16	10	10	10	10	10	7	7	6	5	5	16	10	10	8

Descriptive List of Lucerne Varieties 2020/2021

	Mean of all varieties	Daisy	Marshall
Conservation: management			
Total yield: 1st harvest year (% of 12.42t DM/ha)	100	101	98
Total yield: 2nd harvest year (% of 15.45t DM/ha)	101	100	101
Total yield: mean (% of 13.85t DM/ha)	100	101	99
Seasonal growth: 1st harvest year			
1st cut (% of 4.63t DM/ha)	99	102	96
Protein content: 1st cut (%)	18.3	18.2	18.4
Agronomic characters			
Ground cover % (1st harvest year)	55	57	53
Ground cover % (2nd harvest year)	47	48	45
Year First Listed		2003	2003
Breeder		DLF Seeds A/S	Limagrain
Agent		DLF Seeds Ltd	Limagrain UK Ltd
Number of trials for yields			
1st harvest year		9	9
2nd harvest year		8	8

Descriptive List of Cocksfoot Varieties 2020/2021

	Mean of all varieties	Sparta	Lidacta
Conservation management			
Total yield 1st harvest year (% of 15.68t DM/ha)	100	98	102
Total yield 2nd harvest year (% of 15.11t DM/ha)	100	100	100
Total yield: mean (% of 15.41t DM/ha)	100	99	101
Seasonal growth: 1st harvest year			
1st cut (% of 4.77t DM/ha)	100	99	101
1st conservation cut D-Value	67.1	66.7	67.4
2nd cut (% of 3.16t DM/ha)	100	97	103
2nd conservation cut D-Value	68.0	68.3	67.7
3rd cut (% of 3.06t DM/ha)	100	97	103
4th+ cut (% of 4.68t DM/ha)	100	99	101
Agronomic characters			
Ground Cover % (2nd harvest year)	60.5	60.6	60.4
Winter Hardiness (1-9, 9=good)	5.8	6.1	5.4
Disease resistance			
Resistance to Mildew (1-9, 9=good)	7	7	7
Resistance to Mastigosporium (1-9, 9=good)	5	5	6
Resistance to Yellow Rust (1-9, 9=good)	6	3	6
Year First Listed		1982	1991
Breeder		DLF Seeds A/S	DSV, Germany
Agent		DLF Seeds Ltd	DSV
Number of trials for yields			
1st harvest year		10	10
2nd harvest year		9	9



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What's different in this year's RGCL?

New varieties

On the 2020/21 RGCL, thirteen new grass varieties have been added. The challenge with new varieties is that seed availability may not be high enough for them to be in many mixtures, but they are ones to watch.

Name	Type	Page
Chatsworth	Intermediate PRG (Tet)	10-11
Convey	Intermediate PRG (Tet)	10-11
Swan	Late PRG (Dip)	12-13
Ballyvoy	Late PRG (Dip)	12-13
AberTest	Late PRG (Dip)	12-13
Gracehill	Late PRG (Tet)	14-15
Sendero	Italian RG (Dip)	16-17
Syntilla	Italian RG (Dip)	16-17
Arman	Italian RG (Tet)	18-19
ILVO166093	Italian RG (Tet)	18-19
AberImage	Hybrid (Tet)	20-21
Perkins	Hybrid (Tet)	20-21
Baronaise	Timothy	22-23



What do I want?



Field name: _____

For: Beef Sheep Dairy Mixed grazing

It is likely to be:

Grazed only Silaged once Silaged 2-3 times

Needs to last:

1 year 2 years 3-4 years 5 years 10 years is for overseeding only

My soil pH is: 5 - 5.5 6 - 6.5 6.5+

P and K indexes are: P: _____ K: _____

Nitrogen use: None Low Medium High

My priority is: Yield Quality Balance of both

I wish to include varieties for:

Early spring growth Mainly mid-season growth
 Late autumn grazing Extended spring and autumn grazing

Crown rust resistance is:

Very important Moderately important Not important

Other diseases I am concerned about include: _____

Species must include:

White clover Red Clover High digestibility grasses Timothy

Other _____

Other requirements: _____

Complying with latest spray legislation at a glance

These measures now apply to grassland weedkillers

- Demonstrate Integrated Pest Management (IPM) is followed on your farm
- The sprayer operator on your farm must hold a Recognised Certificate; Grandfather rights are no longer valid
- All pesticide application equipment (excluding handheld equipment) in use must have a valid National Sprayer Testing Scheme (NSTS) Certificate.

These measures are a legal requirements for the UK and its farmers through the UK's Sustainable Use Regulations. Non-compliance could lead to prosecution and threaten your Single Farm Payment. They will also feature in Red Tractor standards.

H2OK? Think Water – Keep it Clean

Many grassland weedkillers are detected in drinking water sources, take extra care to protect water when filling and washing the sprayer and avoid over-spraying ditches and streams.

For more advice visit www.voluntaryinitiative.org.uk



Recommended Grass and Clover Lists are funded by plant breeders through the British Society of Plant Breeders and the ruminant levy boards (AHDB & HCC).

The full Lists can be found at www.britishgrassland.com/rgcl

Detailed descriptions of each variety are available from NIAB-TAG. They are listed within their Forage Variety Advantage publication, which can be purchased by non-members from www.niab.com

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