



# Recommended Grass and Clover Lists for England and Wales



2021/22



# 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/publications](http://www.britishgrassland.com/publications)



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

# Contents

How To Use This Guide	1
Frequently Asked Questions	2
Regional Disease Information	4
<b>Recommended Lists:</b>	
Early Perennial Ryegrass Varieties	6
Intermediate Perennial Ryegrass Diploid Varieties	8
Intermediate Perennial Ryegrass Tetraploid Varieties	10
Late Perennial Ryegrass Diploid Varieties	12
Late Perennial Ryegrass Tetraploid Varieties	14
Italian Ryegrass Diploid Varieties	16
Italian Ryegrass Tetraploid Varieties	18
Hybrid Ryegrass Varieties	20
Timothy Varieties	22
White Clover Varieties	24
Red Clover Varieties	26
<b>Descriptive Lists:</b>	
Lucerne Varieties	27
Cocksfoot Varieties	28
List of Breeders	Inside Back Cover
What's different in this year's RGCL?	Inside Back Cover
What do I want?	Back Cover

# 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 6 varieties	Late Diploid Mean (G's only)	Kendal	Wetherby	Callan	AberTest	Ballyvoy	Toddington	Dundrod
<b>Recommended List status</b>			PG	PG	PG	PG	PG	G	P
<b>Heading date</b>			31 May	1 May	2 Jun	2 Jun	2 Jun	2 Jun	2 Jun
<b>Grazing: management</b>									
Grazing yield (% of 2.51t DM/ha)	100	98	97	102	102	102	100	96	
Grazing DVE (g)	77.0	76.5	76.2	77.7	75.8	79.5	77.4	75.9	
ME yield (% of 1.41 MJ/ha)	100	98	96	103	102	105	101	95	
<b>Conservation: management</b>									
Total yield: year 1 (% of 16.92t DM/ha)	100	95	97	100	97	95	102	95	
1st and 2nd cut ME yield: first harvest year (% of 128.00 MJ/ha)	100	96	101	103	97	93	105	9	
Total yield: year 1 (% of 13.00t DM/ha)	100	97	103	104	105	95	102		
Total yield: mean (% of 15.05t DM/ha)	100	96	99	102	100	95	102		
<b>Agronomic characters</b>									
Ground cover % (2nd harvest year)	66	68	71	68	68	70	69		
Ground cover % (3rd harvest year)	63	64	64	68	65	65	67		
Autumn ground cover (1-9, 1=poor 9=good)	6.3	6.5	6.7	6.8	6.6	6.7	6		
Winter hardiness (1-9, 1=poor 9=good)	7.0	6.8	[6.8]	7.1	7.0				
<b>Disease resistance</b>									
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					
<b>Year First Listed</b>									
			2019	2019					
<b>Number of trials for yields</b>									
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

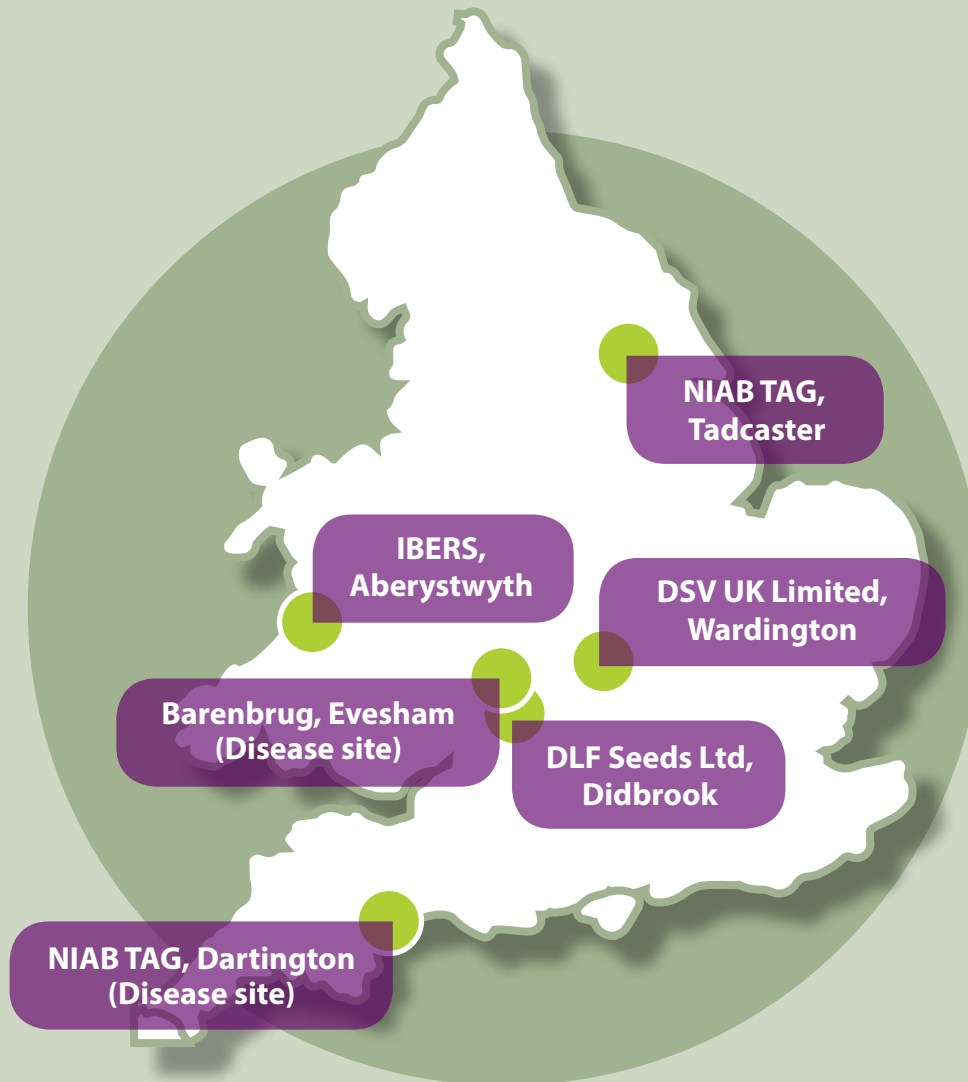
White clover varieties include additional or alternative measures including:

- 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.

<b>3rd harvest year</b>	
	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) *
<b>Autumn ground cover</b>	
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 25kg/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.

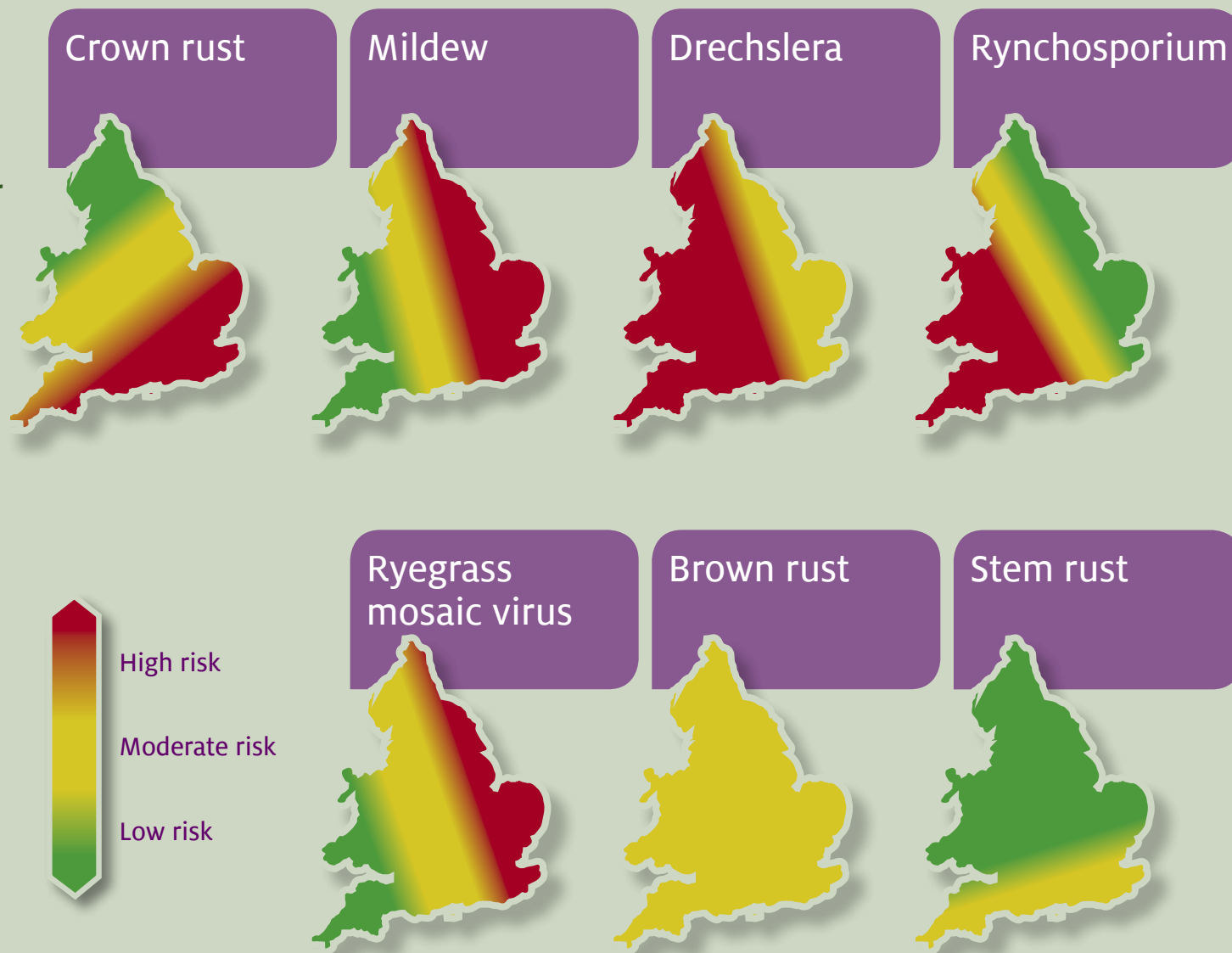
**Rule of thumb**  
1 D-value unit = ME of 0.16

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 2021/2022

		Diploids				Tetraploids			
	Mean of G Varieties	Early Diploid Mean (G's only)	Genesis	Moyola	Kilian	Glasker	Early Tetraploid Mean (G and S)	AberTorch	Cooky
Recommended List status			G	G	PG	PG		G	PS
Heading date			10 May	13 May	16 May	18 May		8 May	17 May
<b>Grazing: management</b>									
Grazing yield (% of 9.81t DM/ha)	100	100	98	101	97	99	100	97	96
Grazing D-value	77.0	76.3	76.4	76.1	76.8	77.1	76.9	76.9	77.2
ME yield (% of 121,000 MJ/ha)	100	99	98	101	97	99	100	97	96
<b>Conservation: management</b>									
Total yield: year 1 (% of 16.92t DM/ha)	100	106	106	106	99	103	103	103	101
1st and 2nd cut ME yield, first harvest year (% of 128,000 MJ/ha)	100	100	101	100	93	99	99	100	98
Total yield: year 3 (% of 13.00t DM/ha)	100	101	102	101	98	99	98	99	98
Total yield: mean (% of 15.05t DM/ha)	100	104	104	104	98	102	101	101	100
<b>Agronomic characters</b>									
Ground cover % (2nd harvest year)	66	68	68	68	68	65	68	68	64
Ground cover % (3rd harvest year)	63	69	69	69	69	68	65	65	64
Autumn ground cover (1-9, 1=poor 9=good)	6.3	6.8	6.9	6.8	6.9	6.5	6.6	6.6	6.2
<b>Grazing: seasonal growth</b>									
Early grazing yield (% of 1.18t DM/ha)	100	130	132	128	111	119	116	120	104
Spring (% of 2.24t DM/ha)	100	117	117	118	109	110	113	114	100
Early summer (% of 3.56t DM/ha)	100	90	90	90	89	91	96	91	92
Late summer (% of 2.54t DM/ha)	100	98	94	101	97	97	97	94	98
Autumn (% of 1.49t DM/ha)	100	102	100	104	102	106	96	93	94



	Diploids						Tetraploids		
	Mean of G Varieties	Early Diploid Mean (G's only)	Genesis	Moyola	Kilian	Glasker	Early Tetraploid Mean (G and S)	AberTorch	Cooky
<b>Conservation: seasonal growth – Year 1</b>									
1st cut (% of 7.13t DM/ha)	100	95	95	96	81	89	87	90	81
1st cut D-value	71.8	70.4	70.0	70.7	72.5	73.4	73.8	72.8	75.7
2nd cut (% of 3.76t DM/ha)	100	101	103	99	103	101	106	104	103
2nd cut D-value	72.9	70.7	70.8	70.6	71.1	72.3	71.1	71.8	72.5
3rd cut (% of 2.86t DM/ha)	100	108	107	109	104	107	110	107	107
4th+ cut (% of 2.99t DM/ha)	100	106	105	107	101	108	105	101	102
<b>Agronomic characters</b>									
Winter hardiness (1-9, 1=poor 9=good)	7.1	7.3	7.3	7.2	7.2	7.4	7.4		
<b>Disease resistance</b>									
Crown rust (1-9, 1=poor 9=good)	5.3	6.1	6.2	6.0	6.9	5.3	3.4	4.7	5.3
Drechslera (1-9, 1=poor 9=good)	5.5	5.7	6.0	5.4	[5.7]	-	7.0	6.5	7.2
Mildew (1-9, 1=poor 9=good)	6.4	6.7	5.2	8.2	5.3	5.4	4.6	4.4	6.6
<b>Year First Listed</b>			2009	2009	2016	2016		2000	2019
<b>Breeder</b>			Teagasc, Eire	AFBI, UK	R2n, France	AFBI, UK		IBERS, Aberystwyth	R2n, France
<b>Agent</b>			DLF Seeds Ltd	Barenbrug UK Ltd	RAGT Seeds Ltd	Barenbrug UK Ltd		Germinal	RAGT Seeds Ltd
<b>Number of trials for yields</b>									
1st harvest year			19	11	14	11		21	5
2nd harvest year			16	11	11	8		18	6
3rd harvest year			15	11	8	8		17	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 2021/2022

	Mean of G varieties	Int. Diploid Mean (G's only)	Boyne	Galgorm	Aston Conqueror	Nifty	Moira	Glenariff	AberZeus	AberMagic	AberWolf	Gosford	Agaska	Elyria	AberGreen
<b>Recommended List status</b>			S	PG	PS	G	G	S	PG	G	G	PG	PS	PG	G
<b>Heading date</b>			21 May	22 May	24 May	24 May	24 May	25 May	27 May	28 May	28 May	29 May	30 May	30 May	30 May
<b>Grazing: management</b>															
Grazing yield (% of 9.81t DM/ha)	100	101	98	105	98	101	99	98	103	101	99	99	100	97	103
Grazing D-value	77.0	77.5	75.3	77.9	77.4	77.6	76.4	75.4	78.2	77.8	78.3	77.5	76.6	76.8	77.7
ME yield (% of 121,000 MJ/ha)	100	101	96	106	100	101	99	97	105	102	100	99	100	97	102
<b>Conservation: management</b>															
Total yield: year 1 (% of 16.92t DM/ha)	100	100	102	103	98	101	100	98	100	99	100	98	98	96	100
1st and 2nd cut ME yield, first harvest year (% of 128,000 MJ/ha)	100	98	100	99	92	98	94	95	99	98	98	97	94	95	99
Total yield: year 3 (% of 13.00t DM/ha)	100	100	103	104	101	99	102	95	102	99	99	99	97	95	101
Total yield: mean (% of 15.05t DM/ha)	100	100	103	103	99	100	101	97	101	99	99	99	98	95	100
<b>Agronomic characters</b>															
Ground cover % (2nd harvest year)	66	67	67	63	68	66	64	66	73	66	71	67	65	71	69
Ground cover % (3rd harvest year)	63	66	64	65	65	66	61	66	69	66	68	64	65	67	69
Autumn ground cover (1-9, 1=poor 9=good)	6.3	6.6	6.4	6.1	6.7	6.4	5.9	6.5	7.3	6.5	7.0	6.4	6.3	6.9	7.0
<b>Grazing: seasonal growth</b>															
Early grazing yield (% of 1.18t DM/ha)	100	104	102	113	104	103	119	95	107	98	102	106	104	94	100
Spring (% of 2.24t DM/ha)	100	103	102	111	104	103	109	95	107	101	101	103	103	95	100
Early summer (% of 3.56t DM/ha)	100	97	97	99	94	98	94	98	102	98	96	97	100	98	101
Late summer (% of 2.54t DM/ha)	100	101	96	107	95	102	97	101	102	104	99	96	98	97	104
Autumn (% of 1.49t DM/ha)	100	104	98	107	102	103	102	100	106	106	100	102	101	98	108

	Mean of G varieties	Int. Diploid Mean (G's only)	Boyne	Galgorm	Aston Conqueror	Nifty	Moira	Glenariff	AberZeus	AberMagic	AberWolf	Gosford	Agaska	Elyria	AberGreen
<b>Conservation: seasonal growth – Year 1</b>															
1st cut (% of 7.13t DM/ha)	100	102	110	103	103	105	104	99	102	99	100	99	95	98	100
1st cut D-value	71.8	72.1	68.9	71.7	69.0	71.2	70.3	71.9	72.5	73.6	71.7	73.2	72.2	72.3	73.7
2nd cut (% of 3.76t DM/ha)	100	94	98	93	83	93	84	92	93	97	100	94	98	93	98
2nd cut D-value	72.9	72.7	69.7	74.8	73.9	71.8	74.2	72.8	74.3	72.0	72.3	73.6	71.8	72.4	73.3
3rd cut (% of 2.86t DM/ha)	100	99	95	106	103	99	103	103	102	96	99	101	100	96	100
4th+ cut (% of 2.99t DM/ha)	100	103	96	111	96	105	107	98	100	103	99	97	102	92	100
<b>Agronomic characters</b>															
Winter hardiness (1-9, 1=poor 9=good)	7.1	7.1	6.8	7.2	7.1	7.2	7.2	7.1	7.2	7.0	7.0	7.0	[7.1]	7.2	7.2
<b>Disease resistance</b>															
Crown rust (1-9, 1=poor 9=good)	5.3	5.3	5.9	5.2	2.6	5.2	4.6	6.2	6.3	6.1	4.9	5.7	7.0	6.2	5.6
Drechslera (1-9, 1=poor 9=good)	5.5	4.6	4.4	4.4	4.8	4.6	5.8	4.9	4.6	3.5	4.1	4.2	[4.9]	6.0	4.8
Mildew (1-9, 1=poor 9=good)	6.4	6.0	5.9	6.3	[5.2]	5.4	6.3	7.2	6.0	6.4	5.1	8.3	[6.4]	5.8	7.0
<b>Year First Listed</b>			2010	2018	2017	2014	2014	2012	2016	2008	2014	2016	2018	2015	2011
<b>Breeder</b>			DLF Seeds A/S	AFBI, UK	DSV, UK	DLF Seeds A/S	AFBI, UK	AFBI, UK	IBERS, Aberystwyth	IBERS, Aberystwyth	IBERS, Aberystwyth	AFBI, UK	DLF Seeds A/S	DLF Seeds A/S	IBERS, Aberystwyth
<b>Agent</b>			DLF Seeds Ltd	Barenbrug UK Ltd	DSV	DLF Seeds Ltd	Barenbrug UK Ltd	Barenbrug UK Ltd	Germinal	Germinal	Germinal	Barenbrug UK Ltd	DLF Seeds Ltd	Limagrain UK	Germinal
<b>Number of trials for yields</b>															
1st harvest year			28	9	12	12	12	11	12	18	12	12	6	11	12
2nd harvest year			26	6	9	13	13	10	12	16	13	12	6	12	11
3rd harvest year			22	5	5	13	13	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 2021/2022

	Mean of G varieties	Int. Tetraploid Mean (G's only)	Fintona	Glenstal	Seagoe	Nolwen	AberRoot (Fest)	AberClyde	Ritchie	AstonVision	Chatsworth	AberSpey	Convey	Dunluce	Caledon	Diwan	Triwarwic	Federer	Pensel	Montova	AstonEnergy
<b>Recommended List status</b>			S	S	G	PG	PG	S	PG	PS	PG	PG	PG	S	PS	PS	PG	PG	S	G	S
<b>Heading date</b>			20 May	22 May	22 May	22 May	22 May	25 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
<b>Grazing: management</b>																					
Grazing yield (% of 9.87t DM/ha)	100	98	101	98	99	97	98	94	102	99	102	104	101	100	100	95	95	98	96	96	96
Grazing D-value	77.0	77.1	77.3	76.8	77.1	77.2	79.3	77.5	76.2	77.8	78.3	78.7	76.9	77.5	76.5	76.7	76.5	77.0	75.2	75.3	78.1
ME yield (% of 122,000 MJ/ha)	100	98	101	98	99	97	100	94	101	100	103	105	101	101	98	95	96	98	94	94	97
<b>Conservation: management</b>																					
Total yield: year 1 (% of 17.32t DM/ha)	100	102	106	101	107	100	99	101	103	99	101	104	100	100	103	105	102	99	103	100	98
1st and 2nd cut ME yield, first harvest year (% of 132,000 MJ/ha)	100	102	102	101	106	100	101	102	101	97	101	103	99	100	103	106	104	99	103	98	98
Total yield: year 3 (% of 13.16t DM/ha)	100	100	103	99	104	101	101	97	101	95	98	99	99	100	99	98	101	99	100	100	93
Total yield: mean (% of 15.35t DM/ha)	100	101	104	100	105	101	100	99	102	97	100	102	100	100	102	102	102	99	101	100	95
<b>Agronomic characters</b>																					
Ground cover % (2nd harvest year)	66	61	60	62	63	65	56	64	70	65	63	64	62	61	58	60	62	66	60	63	60
Ground cover % (3rd harvest year)	63	59	58	62	60	63	57	62	65	62	64	58	64	59	58	55	59	59	60	63	54
Autumn ground cover (1-9, 1=poor 9=good)	6.3	5.6	5.4	5.9	5.9	6.3	5.0	6.0	6.7	6.2	6.1	5.8	6.0	5.5	5.2	5.2	5.7	6.1	5.5	6.0	5.1
<b>Grazing: seasonal growth</b>																					
Early grazing yield (% of 1.07t DM/ha)	100	94	102	101	104	103	93	94	94	111	97	105	96	89	90	86	87	89	92	78	86
Spring (% of 2.26t DM/ha)	100	99	104	104	105	103	104	102	103	103	103	105	98	93	97	92	91	92	98	88	94
Early summer (% of 3.78t DM/ha)	100	99	99	98	98	95	96	96	102	93	103	103	103	105	106	98	99	100	100	102	99
Late summer (% of 2.46t DM/ha)	100	96	102	94	97	94	98	87	102	100	99	104	99	101	98	97	91	100	93	98	93
Autumn (% of 1.50t DM/ha)	100	94	98	97	96	98	92	89	102	103	103	106	103	99	94	90	97	97	90	92	95

	Mean of G varieties	Int. Tetraploid Mean (G's only)	Fintona	Glenstal	Seagoe	Nolwen	AberRoot (Fest)	AberClyde	Ritchie	AstonVision	Chatsworth	AberSpey	Convey	Dunluce	Caledon	Diwan	Triwarwic	Federer	Pensel	Montova	AstonEnergy
<b>Conservation: seasonal growth – Year 1</b>																					
1st cut (% of 7.34t DM/ha)	100	104	108	108	115	103	101	106	101	99	102	101	101	95	104	107	106	97	104	97	98
1st cut D-value	71.8	72.9	70.6	72.2	70.7	72.9	73.4	72.8	72.3	73.1	73.2	74.4	72.7	75.0	73.2	73.3	73.1	74.0	73.4	72.6	74.7
2nd cut (% of 3.93t DM/ha)	100	101	97	95	97	95	99	99	108	94	102	101	98	106	105	105	102	101	111	106	94
2nd cut D-value	72.9	73.0	74.3	72.0	73.1	73.3	73.5	72.6	70.1	74.8	72.4	74.3	73.1	72.9	70.7	71.8	72.5	73.4	70.1	71.1	75.1
3rd cut (% of 2.89t DM/ha)	100	103	113	96	106	101	97	96	97	96	99	108	101	105	99	103	100	104	97	106	101
4th+ cut (% of 3.03t DM/ha)	100	98	104	97	99	98	95	93	103	104	100	109	99	101	101	99	95	97	93	93	97
<b>Agronomic characters</b>																					
Winter hardiness (1-9, 1=poor 9=good)	7.1	6.9	7.2	7.0	6.8	7.1	6.7	7.0	6.8	7.2	6.8	7.3	7.1	7.0	6.4	6.9	7.0	7.1	6.9	6.8	6.7
<b>Disease resistance</b>																					
Crown rust (1-9, 1=poor 9=good)	5.3	4.9	2.2	2.2	6.1	8.6	4.2	6.4	5.8	6.4	4.2	5.1	5.5	2.3	5.9	7.5	6.4	6.4	5.9	4.2	6.6
Drechslera (1-9, 1=poor 9=good)	5.5	6.9	7.2	6.4	6.0	6.9	[6.8]	6.5	[7.4]	5.5	[8.2]	6.5	[7.9]	6.8	8.4	6.9	5.4	[6.1]	7.6	6.5	7.2
Mildew (1-9, 1=poor 9=good)	6.4	6.8	7.0	5.6	7.6	[6.6]	[6.1]	7.3	[6.6]	4.9	6.2	[4.6]	5.9	6.4	5.3	7.2	[5.9]	6.4	6.6	7.3	6.3
<b>Year First Listed</b>			2014	2004	2011	2017		2013		2018		2017		2005	2015	2016	2017	2017	2013	2004	2006
<b>Breeder</b>		AFBI, UK	Teagasc, Eire	AFBI, UK	R2n, France	IBERS, Aberystwyth	IBERS, Aberystwyth	DLF Seeds A/S	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	DLF Seeds A/S	DSV, UK
<b>Agent</b>		Barenbrug UK Ltd	DLF Seeds Ltd	Barenbrug UK Ltd	DLF Seeds Ltd	Germinal	Germinal	Limagrain UK Ltd	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	Limagrain UK Ltd	Germinal
<b>Number of trials for yields</b>																					
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 2021/2022

	Mean of G varieties	Late Diploid Mean (G's only)	Kendal	Wetherby	Callan	AberTest	Ballyvoy	Toddington	Dundrod	AberAvon	AstonKing	Oakpark	Romark	Drumbo	Glenarm	Gleneagle	Cavendish	Clanrye	Timing	Smile	Zorgue	AberBann	AberLee	Swan	Delika	AberChoice	Cancan	Bowie	
<b>Recommended List status</b>			PG	PG	PG	PG	PG	G	PS	G	PS	PG	G	G	G	PG	PS	S	G	PG	PG	PG	PG	PS	PG	S	G	PS	
<b>Heading date</b>			31 May	31 May	2 Jun	2 Jun	2 Jun	2 Jun	2 Jun	3 Jun	3 Jun	4 Jun	4 Jun	4 Jun	4 Jun	4 Jun	5 Jun	5 Jun	5 Jun	5 Jun	6 Jun	6 Jun	7 Jun	7 Jun	8 Jun	8 Jun	10 Jun	12 Jun	18 Jun
<b>Grazing: management</b>																													
Grazing yield (% of 9.81t DM/ha)	100	98	97	102	102	102	100	96	98	99	99	100	96	97	98	100	96	96	98	100	97	107	98	101	102	103	101	102	
Grazing D-value	77.0	76.5	76.2	77.7	75.8	79.5	77.4	75.9	76.2	77.7	75.6	76.6	76.8	77.3	76.9	76.3	75.4	75.9	75.5	77.2	76.6	77.8	79.1	74.8	76.9	77.0	75.9	75.9	
ME yield (% of 121,000 MJ/ha)	100	98	96	103	102	105	101	95	97	101	97	101	96	98	98	100	94	95	96	100	97	109	102	99	102	104	99	101	
<b>Conservation: management</b>																													
Total yield: year 1 (% of 16.92t DM/ha)	100	95	97	100	97	95	102	95	98	94	96	97	89	92	98	96	96	98	95	98	94	99	91	95	94	97	92	93	
1st and 2nd cut ME yield, first harvest year (% of 128,000 MJ/ha)	100	96	101	103	97	93	105	97	92	96	99	97	90	94	103	98	98	102	97	98	99	102	94	96	95	101	92	92	
Total yield: year 3 (% of 13.00t DM/ha)	100	97	103	104	105	95	102	96	96	95	98	100	93	95	102	98	95	97	99	96	96	101	93	97	99	99	94	95	
Total yield: mean (% of 15.05t DM/ha)	100	96	99	102	100	95	102	96	97	95	97	98	91	94	100	97	96	98	97	97	95	100	92	96	97	98	93	93	
<b>Agronomic characters</b>																													
Ground cover % (2nd harvest year)	66	68	71	68	68	70	69	69	68	71	64	68	66	66	67	70	72	65	70	67	74	69	73	72	66	65	68	70	
Ground cover % (3rd harvest year)	63	64	64	68	65	65	67	65	64	68	61	66	65	61	62	64	67	65	64	64	70	62	69	65	65	61	64	63	
Autumn ground cover (1-9, 1=poor 9=good)	6.3	6.5	6.7	6.8	6.6	6.7	6.8	6.6	6.5	7.0	6.0	6.7	6.4	6.1	6.3	6.7	7.0	6.3	6.6	6.4	7.4	6.4	7.3	6.9	6.4	6.0	6.5	6.6	
<b>Grazing: seasonal growth</b>																													
Early grazing yield (% of 1.18t DM/ha)	100	87	94	94	110	83	107	83	98	95	102	82	82	90	93	85	84	82	75	87	75	93	76	84	85	95	82	82	
Spring (% of 2.24t DM/ha)	100	90	99	103	105	91	104	90	95	98	104	89	87	91	95	88	87	86	84	90	83	98	84	90	88	97	85	81	
Early summer (% of 3.56t DM/ha)	100	102	97	101	102	105	98	101	100	101	99	106	100	101	99	109	104	105	106	105	107	113	107	108	109	107	106	112	
Late summer (% of 2.54t DM/ha)	100	100	96	103	100	107	98	97	97	98	98	100	98	99	98	100	93	95	99	103	97	107	99	100	106	104	107	106	
Autumn (% of 1.49t DM/ha)	100	98	100	102	101	104	105	92	102	100	95	103	95	96	100	97	96	94	98	100	96	105	100	102	100	100	101	104	

	Mean of G varieties	Late Diploid Mean (G's only)	Kendal	Wetherby	Callan	AberTest	Ballyvoy	Toddington	Dundrod	AberAvon	AstonKing	Oakpark	Romark	Drumbo	Glenarm	Gleneagle	Cavendish	Clanrye	Timing	Smile	Zorgue	AberBann	AberLee	Swan	Delika	AberChoice	Cancan	Bowie
<b>Conservation: seasonal growth – Year 1</b>																												
1st cut (% of 7.13t DM/ha)	100	99	109	107	104	97	110	101	112	102	106	101	88	92	110	98	100	104	98	100	101	100	90	92	92	99	90	82
1st cut D-value	71.8	70.8	69.1	71.1	69.4	71.7	69.7	69.8	68.1	70.1	69.6	69.9	71.4	71.4	70.0	70.3	71.1	71.0	71.0	70.0	72.5	71.7	75.1	71.4	71.6	72.8	72.3	73.9
2nd cut (% of 3.76t DM/ha)	100	96	93	97	94	97	100	96	93	91	92	98	92	97	94	102	96	104	99	100	94	105	94	105	100	106	99	109
2nd cut D-value	72.9	73.4	73.4	73.3	73.3	76.4	75.4	72.2	72.8	74.0	72.8	72.8	74.8	74.8	73.9	71.9	73.4	71.4	72.5	73.5	74.5	72.6	75.3	73.1	73.7	72.4	73.1	71.7
3rd cut (% of 2.86t DM/ha)	100	96	92	98	98	101	99	96	92	96	95	101	98	98	94	96	97	97	95	102	95	102	96	100	104	98	100	100
4th+ cut (% of 2.99t DM/ha)	100	95	94	106	100	102	100	94	98	94	92	97	95	95	96	96	98	93	94	98	93	103	98	97	96	97	96	104
<b>Agronomic characters</b>																												
Winter hardiness (1-9, 1=poor 9=good)	7.1	6.9	7.0	7.4	7.1	6.9	7.5	6.9	6.9	7.0	7.1	6.8	6.7	6.7	7.1	6.8	6.7	6.9	6.7	6.9	7.2	7.2	7.2	7.1	6.9	7.1	6.9	6.9
<b>Disease resistance</b>																												
Crown rust (1-9, 1=poor 9=good)	5.3	5.8	7.1	7.6	4.4	6.5	3.1	6.8	6.4	6.1	6.3	4.6	5.7	4.9	6.3	4.4	6.6	5.1	6.8	3.4	7.3	4.9	6.4	6.5	8.3	3.8	4.2	4.4
Drechslera (1-9, 1=poor 9=good)	5.5	4.6	[6.5]	[5.5]	[3.7]	[6.3]	[4.3]	5.5	5.8	4.1	[4.2]	[5.6]	4.7	4.8	4.0	[5.6]	4.5	5.3	4.8	4.8	[6.3]	[5.3]	4.2	[5.6]	[5.5]	3.0	4.8	[4.3]
Mildew (1-9, 1=poor 9=good)	6.4	6.4	6.7		7.1	5.1	[6.7]	6.4	[4.7]	6.2	7.0	6.5	5.5	5.8	7.2	6.4	6.6	7.0	6.3			6.7		[6.7]		7.4	6.6	7.1
<b>Year First Listed</b>			2019	2021	2018	2020	2020	2010	2019	2001	2019	2018	2000	2009	2015	2019	2015	2012	2015	2017	2021	2018	2017	2020	2021	2009	1998	2018
<b>Breeder</b>			R2n, France	DLF Seeds A/S	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	DLF Seeds A/S	IBERS, Aberystwyth	IBERS, Aberystwyth	DLF Seeds A/S	GIE Grass	IBERS, Aberystwyth	DLF Seeds A/S	DLF Seeds A/S
<b>Agent</b>			RAGT Seeds Ltd	DLF Seeds Ltd	Barenbrug UK Ltd	Germinal	Barenbrug UK Ltd	DLF Seeds Ltd	Barenbrug UK Ltd	Germinal	DSV Ltd	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	DLF Seeds Ltd	Germinal	Germinal	DLF Seeds Ltd	Germinal	Germinal	DLF Seeds Ltd	DLF Seeds Ltd
<b>Number of trials for yields</b>																												
1st harvest year			9	6	12	5	6	14	8	10	9	12	11	25	15	9	14	15	15	13	6	12	13	6	6	31	11	12
2nd harvest year			6	6	9	6	6	13	6	10	6	9	11	23	14	6	13	13	14	12	6	9	12	6	6	29	10	9
3rd harvest year			6	6	6	6	6	12	6	10	6	6	11	20	13	6	12	13	13	9	6	6	9	6	6	26	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.

# Recommended List of Late Perennial Ryegrass Tetraploid Varieties 2021/2022

	Mean of G Varieties	Late Tetraploid Mean (G's only)	Ballintoy	Bijou	Gracehill	Meiduno	Weldone	Hurricane	Calao	Aspect	AberGain	Nashota	AberBite	Twymax	Youpi	Thegn	Hopi
<b>Recommended List status</b>			PS	S	PG	G	PG	PS	PG	G	G	PG	G	G	PG	PG	PG
<b>Heading date</b>			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	9 Jun
<b>Grazing: management</b>																	
Grazing yield (% of 9.81t DM/ha)	100	103	103	100	104	103	103	97	100	100	106	105	102	98	98	103	103
Grazing D-value	77.0	77.4	77.3	75.1	76.8	76.6	77.4	76.8	77.4	77.1	78.0	77.6	77.7	77.5	77.1	77.2	76.6
ME yield (% of 121,000 MJ/ha)	100	103	103	98	104	102	104	98	102	101	107	106	103	99	99	104	102
<b>Conservation: management</b>																	
Total yield: year 1 (% of 16.92t DM/ha)	100	101	104	101	106	103	100	99	99	99	106	105	98	99	95	98	97
1st and 2nd cut ME yield, first harvest year (% of 128,000 MJ/ha)	100	106	108	106	109	108	106	104	103	105	112	109	101	106	100	101	102
Total yield: year 3 (% of 13.00t DM/ha)	100	103	106	104	105	103	100	103	106	101	107	106	100	99	99	101	100
Total yield: mean (% of 15.05t DM/ha)	100	102	105	103	106	103	100	101	102	100	106	105	99	99	97	99	98
<b>Agronomic characters</b>																	
Ground cover % (2nd harvest year)	66	62	61	64	61	59	65	65	64	66	63	67	62	66	63	66	63
Ground cover % (3rd harvest year)	63	59	58	61	58	56	60	61	60	60	61	64	61	61	62	63	62
Autumn ground cover (1-9, 1=poor 9=good)	6.3	5.7	5.5	5.9	5.5	5.1	5.9	6.0	5.9	6.0	5.9	6.4	5.7	6.1	6.0	6.2	5.9
<b>Grazing: seasonal growth</b>																	
Early grazing yield (% of 1.18t DM/ha)	100	96	107	94	96	100	84	87	85	90	110	109	84	80	75	82	87
Spring (% of 2.24t DM/ha)	100	99	105	99	101	100	90	91	91	93	108	106	93	89	82	87	92
Early summer (% of 3.56t DM/ha)	100	107	104	104	105	107	113	102	106	107	106	111	107	110	108	110	112
Late summer (% of 2.54t DM/ha)	100	102	102	100	106	103	103	98	100	96	104	103	104	95	101	108	100
Autumn (% of 1.49t DM/ha)	100	101	97	91	101	99	98	96	97	100	105	94	100	88	97	100	101



	Mean of G Varieties	Late Tetraploid Mean (G's only)	Ballintoy	Bijou	Gracehill	Meiduno	Weldone	Hurricane	Calao	Aspect	AberGain	Nashota	AberBite	Twymax	Youpi	Thegn	Hopi
<b>Conservation: seasonal growth – Year 1</b>																	
1st cut (% of 7.13t DM/ha)	100	106	112	113	113	110	104	108	104	104	113	110	98	104	94	97	98
1st cut D-value	71.8	72.1	70.2	69.9	70.2	72.2	72.2	70.7	71.4	72.0	71.6	71.6	72.5	72.5	72.9	73.5	72.1
2nd cut (% of 3.76t DM/ha)	100	107	107	105	107	106	107	103	101	105	112	112	104	106	109	109	106
2nd cut D-value	72.9	73.5	72.4	71.6	73.1	73.6	73.5	72.9	73.3	73.2	72.8	74.2	74.3	73.9	73.5	72.8	72.3
3rd cut (% of 2.86t DM/ha)	100	99	101	91	103	100	102	95	98	97	99	103	99	98	97	104	101
4th+ cut (% of 2.99t DM/ha)	100	100	100	94	103	100	94	93	98	94	102	101	104	92	95	98	96
<b>Agronomic characters</b>																	
Winter hardiness (1-9, 1=poor 9=good)	7.1	7.1	7.3	7.2	6.7	7.0	7.1	7.0	7.2	7.2	7.1	7.4	7.2	7.0	7.0	7.1	6.9
<b>Disease resistance</b>																	
Crown rust (1-9, 1=poor 9=good)	5.3	5.7	3.7	7.2	7.0	6.0	6.3	6.6	6.8	4.5	6.2	6.6	6.1	4.7	7.9	6.4	6.7
Drechslera (1-9, 1=poor 9=good)	5.5	6.9	6.1	6.9	[9.0]	7.6	[8.3]	6.9	6.4	6.7	6.5	[7.7]	6.7	6.4	8.5	[7.7]	7.7
Mildew (1-9, 1=poor 9=good)	6.4	6.7		6.9	[7.1]	6.7	6.5	6.7		6.8	7.2	6.6	6.0	6.8	6.6	6.3	6.7
<b>Year First Listed</b>			2017	2014		2014	2019	2015	2017	2011	2012	2018	2009	2004	2015	2018	2019
<b>Breeder</b>			AFBI, UK	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	DLF Seeds A/S
<b>Agent</b>			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	RAGT Seeds Ltd	DLF Seeds Ltd	DLF Seeds Ltd
<b>Number of trials for yields</b>																	
1st harvest year			13	10	6	13	9	15	13	13	15	12	31	35	15	12	9
2nd harvest year			12	9	6	12	6	14	12	12	13	9	29	33	14	9	6
3rd harvest year			9	8	6	11	6	13	9	11	13	6	26	31	13	6	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 2021/2022

	Mean of G varieties	Diploid Mean	Shakira	Syntilla	Muriello	Meribel	Fox	Pinaco	Steel	Alamo	Abys	Sendero	Melprimo	Belluna	Davinci	Javorio
Recommended List status			G	PG	G	S	G	PG	G	G	G	PG	PG	G	G	G
Heading date			18 May	19 May	20 May	20 May	20 May	21 May	21 May	21 May	22 May	22 May	23 May	23 May	23 May	24 May
<b>Total annual yields</b>																
1st harvest year (% of 18.53t DM/ha)	100	100	100	99	99	101	99	101	99	102	99	103	100	100	103	100
2nd harvest year (% of 14.47t DM/ha)	100	100	99	102	100	95	100	102	98	99	102	104	100	99	102	98
Total yield: mean (% of 16.53t DM/ha)	100	100	99	100	100	98	100	102	99	101	100	104	100	100	102	99
Year of sowing (% of 2.08t DM/ha)	100	95	93	104	100	93	104	[91]	97	94	93	100	99	94	92	93
1st and 2nd cut ME yield, first harvest year (% of 121,000 MJ/ha)	100	99	101	97	97	99	97	102	99	100	98	102	96	98	101	100
<b>Seasonal growth – Year 1</b>																
Early spring growth (% of 1.69t DM/ha)	100	101	101	112	102	98	104	93	103	99	103	111	106	100	101	97
<b>Conservation: management</b>																
1st conservation cut (% of 6.60t DM/ha)	100	98	103	97	94	95	98	99	101	97	97	98	95	94	97	99
1st conservation cut D-value	71.4	71.5	71.3	71.1	72.1	72.7	70.6	71.9	71.9	71.8	71.4	72.0	70.7	72.5	72.1	71.7
2nd conservation cut (% of 4.20t DM/ha)	100	101	98	98	101	106	98	106	95	105	97	107	102	104	106	102
2nd conservation cut D-value	65.8	65.7	65.3	64.6	65.5	65.1	65.9	65.8	65.6	66.1	65.4	66.4	64.4	65.6	65.7	66.2
Monthly cuts (% of 6.07t DM/ha)	100	102	98	99	104	104	99	103	99	107	100	103	103	104	108	101

	Mean of G varieties	Diploid Mean	Shakira	Syntilla	Muriello	Meribel	Fox	Pinaco	Steel	Alamo	Abys	Sendero	Melprimo	Belluna	Davinci	Javorio
<b>Agronomic characters</b>																
Ground cover % (1st harvest year)	57	58	57	59	58	55	57	61	58	61	58	60	61	58	57	58
Ground cover % (2nd harvest year)	53	54	49	55	55	52	54	56	54	57	58	57	55	54	55	52
Autumn ground cover (1-9, 1=poor 9=good)	3.8	3.9	3.5	4.1	4.0	3.8	4.0	4.1	3.9	4.2	4.3	4.2	4.1	3.9	4.0	3.8
Winter hardiness (1-9, 1=poor 9=good)	7.1	7.0	6.9		7.2	7.2	6.6		6.9	7.1	7.4		7.5	7.1	6.9	6.8
<b>Disease resistance</b>																
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)	6.6	6.7	6.5	[6.6]	6.7	6.5	6.8	[7.0]	6.3	7.0	7.1	[7.2]		6.9	6.6	6.6
Brown rust (1-9, 1=poor 9=good)	6.2	5.9	6.1		5.7	7.0	5.7		5.7	5.0	7.3		6.5	4.4	6.8	6.4
Crown rust (1-9, 1=poor 9=good)	6.8	6.7	6.7	7.6	6.4	2.5	7.1	6.2	7.7	6.4	7.1	7.5	7.2	6.8	6.5	5.5
<b>Year First Listed</b>			2012	2020	2006	1991	2004	2021	2009	2001	2004	2020	2019	2005	2005	2013
<b>Breeder</b>			DSV, France	R2n, France	ILVO/DSV	ILVO	Force Limagrain	DSV	R2n, France	Innoseeds, NL	R2n, France	DSV	ILVO	ILVO	ILVO	DSV, Netherlands
<b>Agent</b>			DSV	RAGT Seeds Ltd	Germinal	Limagrain UK Ltd	DLF Seeds Ltd	DSV	Barenbrug UK Ltd	DLF Seeds Ltd	Barenbrug UK Ltd	DSV	Limagrain UK Ltd	Limagrain UK Ltd	Limagrain UK Ltd	Barenbrug UK Ltd
<b>Number of trials for yields</b>																
Year of sowing			8	3	14	7	8	2	12	16	9	3	6	10	10	9
1st harvest year			14	6	22	10	11	6	12	27	11	6	9	11	11	14
2nd harvest year			14	6	20	10	11	6	12	25	10	6	6	12	12	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 2021/2022

	Mean of G varieties	Tetraploid Mean	Itarzi	Udine	Hunter	Melitra	Barmutra II	Kigezi 1	Gemini	Messina	Arman	Cazzano	Barimax
<b>Recommended List status</b>			G	G	G	PS	G	G	S	PG	PS	S	PS
<b>Heading date</b>			17 May	18 May	19 May	20 May	20 May	20 May	20 May	20 May	20 May	21 May	21 May
<b>Total annual yields</b>													
1st harvest year (% of 18.53t DM/ha)	100	100	99	98	101	103	101	100	103	102	103	101	102
2nd harvest year (% of 14.47t DM/ha)	100	100	102	101	98	96	100	102	100	102	97	102	100
Total yield: mean (% of 16.53t DM/ha)	100	100	100	99	100	100	101	101	102	102	100	101	101
Year of sowing (% of 2.08t DM/ha)	100	108	107	113	102	106	109	109	101	111	105	102	99
1st and 2nd cut ME yield, first harvest year (% of 121,000 MJ/ha)	100	102	101	100	104	103	103	100	106	103	102	103	104
<b>Seasonal growth – Year 1</b>													
Early spring growth (% of 1.69t DM/ha)	100	98	95	94	98	105	104	99	97	108	106	96	90
<b>Conservation: management</b>													
1st conservation cut (% of 6.60t DM/ha)	100	104	104	103	105	100	104	104	102	102	103	100	104
1st conservation cut D-value	71.4	71.2	70.5	70.9	71.6	72.7	71.9	70.9	74.0	72.9	71.7	73.2	72.4
2nd conservation cut (% of 4.20t DM/ha)	100	99	97	98	103	106	100	96	107	100	100	102	104
2nd conservation cut D-value	65.8	66.1	66.7	66.2	65.3	65.6	66.5	65.8	66.5	66.5	66.6	66.9	65.5
Monthly cuts (% of 6.07t DM/ha)	100	96	96	93	97	104	97	97	104	101	103	102	102

	Mean of G varieties	Tetraploid Mean	Itarzi	Udine	Hunter	Melsitra	Barmultra II	Kigezi 1	Gemini	Messina	Arman	Cazzano	Barimax
<b>Agronomic characters</b>													
Ground cover % (1st harvest year)	57	55	54	55	56	56	56	55	53	57	58	51	56
Ground cover % (2nd harvest year)	53	51	52	52	49	45	52	51	48	51	45	49	46
Autumn ground cover (1-9, 1=poor 9=good)	3.8	3.7	3.7	3.8	3.5	3.1	3.8	3.6	3.4	3.7	3.1	3.5	3.2
Winter hardiness (1-9, 1=poor 9=good)	7.1	7.2	7.1	7.3	7.2		7.2	7.0	7.1	7.3		6.9	7.2
<b>Disease resistance</b>													
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)	6.6	6.5	6.2	7.0	6.7	[7.3]	6.2	6.3	6.7	6.6	[7.0]	7.4	[6.4]
Brown rust (1-9, 1=poor 9=good)	6.2	6.6	6.7	6.6	6.9		6.0	7.1	7.4	6.9		6.7	5.2
Crown rust (1-9, 1=poor 9=good)	6.8	7.1	6.8	7.5	5.6	7.6	7.7	7.7	1.0	7.6	7.5	3.9	7.1
	<b>Year First Listed</b>		<b>2009</b>	<b>2012</b>	<b>2008</b>	<b>2020</b>	<b>2009</b>	<b>2010</b>	<b>2000</b>	<b>2017</b>	<b>2020</b>	<b>2015</b>	<b>2018</b>
	<b>Breeder</b>		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
	<b>Agent</b>		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
<b>Number of trials for yields</b>													
Year of sowing			12	8	10	3	12	13	9	7	3	8	6
1st harvest year			12	14	16	6	12	10	10	13	6	13	12
2nd harvest year			12	14	14	6	12	10	11	12	6	12	9

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 2021/2022

	Mean of G varieties	Diploid Mean	Diploids				Tetraploids														
			Pirol	Barsilo	Barclamp	Tetraploid Mean	AberSheen	AberEcho	Aston Crusader	Bannfoot	Enduro	Tetragraze	Novial	Perkins	RGT Cordial	AberNiche (Fest)	Kirial	Bahial	Amalgam	Perseus (Fest)	AberImage
<b>Recommended List status</b>			G	S	PG		PS	G	G	PG	G	S	G	PG	PG	S	G	G	G	PG	PS
<b>Heading date</b>			21 May	25 May	26 May		13 May	16 May	19 May	20 May	20 May	20 May	21 May	21 May	22 May	22 May	23 May	23 May	24 May	25 May	26 May
<b>Total annual yields</b>																					
1st harvest year (% of 18.03t DM/ha)	100	105	105	105	105	99	105	104	102	97	98	98	97	99	102	103	100	97	94	97	101
2nd harvest year (% of 13.98t DM/ha)	100	95	98	91	97	100	105	100	101	101	100	101	102	102	103	99	101	102	99	100	105
3rd harvest year (% of 13.11t DM/ha)	100	94	96	92	86	101	106	98	101	104	102	98	100	101	103	101	103	102	100	103	100
Total yield: mean (% of 15.16t DM/ha)	100	98	100	96	97	100	106	101	101	100	100	99	100	101	103	101	101	100	98	100	102
Year of sowing (% of 1.84t DM/ha)	100	95	95	95	88	101	70	93	101	97	104	91	101	92	98	93	113	103	93	107	82
1st and 2nd cut ME yield, first harvest year (% of 120,000 MJ/ha)	100	101	101	101	102	100	102	105	100	99	99	101	97	96	99	100	100	98	98	99	101
<b>Seasonal growth – Year 1</b>																					
Early spring growth (% of 1.52t DM/ha)	100	114	117	112	109	97	98	101	109	82	95	79	95	110	93	115	101	96	82	101	99
<b>Conservation management</b>																					
1st conservation cut (% of 6.66t DM/ha)	100	96	97	95	97	101	98	99	102	102	101	108	100	96	98	94	101	99	101	99	98
1st conservation cut D-value	71.7	72.1	71.6	72.7	72.3	71.8	70.9	73.2	71.3	71.6	71.8	71.2	70.9	72.6	72.3	72.3	71.2	72.3	72.1	72.0	72.8
2nd conservation cut (% of 3.74t DM/ha)	100	116	117	115	117	97	112	110	97	89	94	90	91	94	98	117	99	94	91	101	107
2nd conservation cut D-value	69.6	66.4	65.7	67.1	65.5	70.2	68.2	70.5	69.8	71.9	69.9	70.1	70.5	68.7	70.3	66.1	70.0	70.2	70.5	67.7	67.6
Monthly cuts (% of 6.14t DM/ha)	100	107	105	108	106	99	111	105	103	101	98	95	96	102	109	102	99	97	92	92	101
<b>Agronomic characters</b>																					
Ground cover % (2nd harvest year)	59	54	58	51	57	59	53	58	59	62	59	63	59	62	63	53	57	58	62	57	55
Ground cover % (3rd harvest year)	55	45	45	45	45	57	47	56	54	58	57	60	56	60	62	49	53	59	65	54	56
Autumn ground cover (1-9, 1=poor 9=good)	4	4	4	3	4	4	4	4	4	5	4	5	4	5	5	4	4	4	5	4	4
Winter hardiness (1-9, 1=poor 9=good)	7.4	7.5	7.7	7.3	7.6	7.4	[7.3]	7.3	7.4	7.5	7.4	7.4	7.4	7.8	[7.6]	7.5	7.4	7.4	7.3	7.5	7.4

	Mean of G varieties	Diploid Mean	Diploids				Tetraploids															
			Pirol	Barsilo	Barclamp	Tetraploid Mean	AberSheen	AberEcho	Aston Crusader	Bannfoot	Enduro	Tetragraze	Novial	Perkins	RGT Cordial	AberNiche (Fest)	Kirial	Bahial	Amalgam	Perseus (Fest)	AberImage	
<b>Disease resistance</b>																						
Ryegrass mosaic virus (1-9, 1=poor 9=good)	6.6	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)	6.2	5.8	4.4	7.2	5.6	6.5	8.2	6.2	7.2	7.0	6.5	6.6	6.5	8.3	5.9	6.7	7.2	6.0	5.5	6.1	6.8	
Brown rust (1-9, 1=poor 9=good)	6.5	4.5	5.3	3.8	7.9	6.7		3.5	7.5	7.5	7.2	7.3	6.7			6.7	6.6	5.7	9.0	7.5		
Crown rust (1-9, 1=poor 9=good)	6.1	4.8	5.9	3.7	6.4	6.2	3.2	3.5	6.0	6.1	7.1	4.2	7.0	6.2	6.9	5.6	6.6	6.4	6.8	7.8	2.6	
<b>Year First Listed</b>			2005	1998	2017			2002	2014	2018	2005	2008	2010	2020	2021	2011	2012	2007	2009	2018	2020	
<b>Breeder</b>			Steinach, Germany / DSV	Barenburg, NL	Barenburg, NL		IBERS, Aberystwyth	IBERS, Aberystwyth	DSV, UK	AFBI, UK	R2n, France	DLF Seeds A/S	R2n, France	DSV	R2n, France	IBERS, Aberystwyth	R2n, France	R2n, France	DLF Seeds A/S	DLF Seeds A/S	IBERS, Aberystwyth	
<b>Agent</b>			Germinal	Barenburg UK Ltd	Barenburg UK Ltd		Germinal	Germinal	DSV	Barenbrug UK Ltd	Limagrain UK Ltd	DLF Seeds Ltd	Barenbrug UK Ltd	DSV	RAGT Seeds Ltd	Germinal	RAGT Seeds Ltd	DLF Seeds Ltd	Limagrain UK Ltd	DLF Seeds Ltd	Germinal	
<b>Number of trials for yields</b>																						
Year of sowing			15	7	5			13	5	4	7	5	10	3	3	7	6	4	7	4	3	
1st harvest year			23	12	12			24	13	9	12	11	11	6	6	11	13	12	12	9	6	
2nd harvest year			22	12	9			22	13	6	12	11	11	6	6	11	12	11	12	6	6	
3rd harvest year			20	11	6			20	12	6	12	11	10	6	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 2021/2022

	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
<b>Grazing: management</b>										
Grazing yield (% of 10.21t DM/ha)	100	100	102	102	95	100	96	101	101	96
Grazing D-value	72.6	73.3	71.7	71.8	73.5	72.3	74.1	73.1	74.5	72.5
ME yield (% of 119,000 MJ/ha)	100	101	101	101	96	99	98	101	104	96
<b>Grazing: seasonal growth</b>										
Early grazing yield (% of 1.16t DM/ha)	100	110	104	105	78	96	85	86	[109]	88
Spring (% of 2.15t DM/ha)	100	103	103	106	90	95	93	95	105	87
Early summer (% of 3.99t DM/ha)	100	100	101	99	98	103	98	99	98	101
Late summer (% of 2.84t DM/ha)	100	100	102	101	96	101	97	103	98	96
Autumn (% of 1.23t DM/ha)	100	97	104	107	90	97	95	111	111	94
<b>Conservation: management</b>										
Total yield: year 1 (% of 15.06t DM/ha)	100	99	101	103	95	97	100	98	96	97
ME yield of 1st+2nd cut year 1 (% of 101,000 MJ/ha)	100	100	100	102	97	97	101	98	102	99
Total yield: year 3 (% of 12.49t DM/ha)	100	99	103	102	96	98	97	97	101	96
Total yield: mean (% of 13.83 DM/ha)	100	99	102	103	95	98	99	98	99	97
<b>Conservation: seasonal growth – Year 1</b>										
1st cut (% of 6.10t DM/ha)	100	100	103	102	93	96	99	95	97	94
1st cut D-value	66.4	66.0	65.4	66.1	68.4	66.4	68.2	67.8	70.3	69.0
2nd cut (% of 3.73t DM/ha)	100	99	100	104	100	98	98	98	98	103
2nd cut D-value	64.9	65.1	64.5	64.3	65.0	64.8	65.9	65.9	67.3	64.6
3rd cut (% of 2.76t DM/ha)	100	99	99	106	95	97	99	100	85	93
4th+ cut (% of 2.47t DM/ha)	100	97	99	101	92	100	103	102	106	98



	Mean of G varieties	Presto	Comer	Dolina	Promesse	Comtal	Winnetou	Moverdi	Baronaise	Motim
<b>Agronomic characters</b>										
Ground cover % (2nd harvest year)	65	64	64	62	67	68	67	54	69	70
Ground cover % (3rd harvest year)	61	62	59	58	64	63	65	53	63	67
Autumn ground cover (1-9, 1=poor 9=good)	4.9	4.9	4.7	4.5	5.2	5.2	5.3	3.8	5.2	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
<b>Year First Listed</b>		2005	2001	2003	1990	1989	2003	2005	2020	1974
<b>Breeder</b>		DSV, Netherlands	ILVO	ILVO	Innoseeds, NL	DLF Seeds A/S	DLF Seeds A/S	DLF Seeds A/S	Barenbrug, NL	DLF Seeds A/S
<b>Agent</b>		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
<b>Number of trials for yields</b>										
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 2021/2022

	AberAce	Aber S.184	Coolfin	AberHerald	Buddy	Iona	G Bounty	AberDai	AberSwan	AberSirius	Dublin	Violin	Alice	Barblanca	Aran	Brianna	
<b>Recommended List status</b>	<b>G</b>	<b>G</b>	<b>PG</b>	<b>G</b>	<b>G</b>	<b>G</b>	<b>G</b>	<b>G</b>	<b>PG</b>	<b>PS</b>	<b>G</b>	<b>G</b>	<b>G</b>	<b>G</b>	<b>G</b>	<b>G</b>	
<b>Leaf area (length x breadth mm<sup>2</sup>)</b>	423	640	820	827	848	869	938	957	959	1078	1092	1097	1155	1174	1470	1591	
<b>Light defoliation (cutting or rotational cattle grazing)</b>																	
<b>2nd harvest year</b>																	
Total clover yield (% of 4.80t DM/ha) #	78	85	95	99	90	94	98	102	107	107	109	109	99	105	113	116	
Total yield: grass and clover (% of 10.92 DM/ha) #	92	97	98	99	97	99	100	101	101	103	102	104	99	101	103	103	
% clover	37	38	43	44	41	42	43	44	46	46	47	46	44	46	48	49	
Clover yield: first cut (% of 0.62t DM/ha) #	77	78	106	91	90	98	106	111	116	109	111	104	102	121	114	102	
Clover yield: last cut (% of 0.50t DM/ha) #	62	65	97	99	84	91	102	103	112	111	115	116	106	118	124	127	
<b>3rd harvest year</b>																	
Yield of clover (% of 4.25t DM/ha) #	73	80	98	114	93	97	91	95	116	124	110	113	102	112	109	115	
Yield of grass + clover (% of 10.62t DM/ha) #	92	95	98	104	97	96	99	99	102	110	104	104	100	102	102	103	
% clover	32	34	40	44	38	40	37	38	45	45	42	43	41	44	43	45	
Clover yield: first cut (% of 0.60t DM/ha) #	67	73	107	113	100	96	93	97	108	145	110	107	105	115	116	117	
Clover yield: last cut (% of 0.41t DM/ha) #	71	75	91	114	77	92	98	94	118	127	105	111	100	128	115	122	
<b>Autumn ground cover</b>																	
Light Defoliation	% cover (1st harvest year)	46	54	49	51	45	55	53	49	50	58	52	53	47	51	47	47
	% cover (2nd harvest year)	39	45	51	55	44	44	51	52	52	53	56	57	50	60	52	54
	% cover (3rd harvest year)	42	47	51	55	47	49	50	47	55	53	49	53	49	54	51	52
	<b>Overall (1-9, 1=poor 9=good)</b>	<b>4.8</b>	<b>5.8</b>	<b>6.6</b>	<b>7.3</b>	<b>5.6</b>	<b>5.9</b>	<b>6.5</b>	<b>6.4</b>	<b>6.9</b>	<b>7.0</b>	<b>6.9</b>	<b>7.3</b>	<b>6.3</b>	<b>7.5</b>	<b>6.7</b>	<b>7.0</b>

	AberAce	Aber S.184	Coolfn	AberHerald	Buddy	Iona	G Bounty	AberDai	AberSwan	AberSirius	Dublin	Violin	Alice	Barblanca	Aran	Brianna	
<b>Autumn ground cover</b>																	
Hard Defoliation	% cover (1st harvest year)	61	64	65	54	56	58	61	57	55	42	57	63	56	60	52	53
	% cover (2nd harvest year)	65	65	67	57	62	59	67	57	60	48	59	63	54	63	51	56
	% cover (3rd harvest year)	56	54	52	48	52	51	59	49	51	45	52	55	48	58	42	48
	<b>Overall (1-9, 1=poor 9=good)</b>	<b>7.9</b>	<b>7.6</b>	<b>7.5</b>	<b>6.2</b>	<b>7.1</b>	<b>6.7</b>	<b>8.3</b>	<b>6.3</b>	<b>7.0</b>	<b>5.0</b>	<b>6.9</b>	<b>7.5</b>	<b>5.9</b>	<b>7.8</b>	<b>4.9</b>	<b>6.3</b>
<b>Spring ground cover</b>																	
Hard Defoliation	% cover (1st harvest year)	46	41	42	35	41	41	36	39	39	36	40	33	36	35	33	30
	% cover (2nd harvest year)	62	69	60	54	60	57	62	56	53	43	55	61	54	55	50	50
	% cover (3rd harvest year)	52	46	52	49	51	49	48	47	49	44	49	47	44	46	40	48
	<b>Overall (1-9, 1=poor 9=good)</b>	<b>8.9</b>	<b>8.8</b>	<b>8.4</b>	<b>7.0</b>	<b>8.3</b>	<b>7.6</b>	<b>8.1</b>	<b>7.2</b>	<b>7.1</b>	<b>4.6</b>	<b>7.3</b>	<b>7.8</b>	<b>6.4</b>	<b>6.8</b>	<b>5.3</b>	<b>6.5</b>
<b>Year First Listed</b>																	
	2001	1969	2019	1994	2013	2011	2003	1997	2018	2021	2015	2009	1985	2001	1981	2015	
<b>Breeder</b>	IBERS, Aberystwyth	IBERS, Aberystwyth	Teagasc, Eire	IBERS, Aberystwyth	Teagasc, Eire	Teagasc, Eire	AgResearch Ltd (New Zealand)	IBERS, Aberystwyth	IBERS, Aberystwyth	IBERS, Aberystwyth	Teagasc, Eire	DLF Seeds A/S	IBERS, Aberystwyth	AgResearch Ltd (New Zealand)	Teagasc, Eire	DLF Seeds A/S	
<b>Agent</b>	Geminal	Barenbrug UK Ltd	Limagrain UK Ltd	Geminal	DLF Seeds Ltd	DLF Seeds Ltd	Limagrain UK Ltd	Geminal	Geminal	Geminal	DLF Seeds Ltd	Limagrain UK Ltd	Barenbrug UK Ltd	Barenbrug UK Ltd	Geminal	DLF Seeds Ltd	
<b>Number of trials for clover yields</b>																	
2nd harvest year	23	10	5	13	11	11	11	26	9	5	11	16	26	10	23	11	
3rd harvest year	21	10	5	13	10	10	12	25	6	5	8	15	23	10	22	8	

\* 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 2021/2022

	Mean of G varieties	Diploids									Tetraploids			
		Merviot	Lemmon	AberClaret	AberChianti	Harmonie	Metis	Discovery	Sinope	Fearga	Amos	Maro	Atlantis	Magellan
<b>Recommended List status</b>		S	G	G	S	G	G	G	PG	PG	G	G	G	G
<b>Conservation: management</b>														
Total yield: 1st harvest year (% of 12.34t DM/ha)	100	105	100	103	92	99	92	103	101	103	103	102	103	99
Total yield: 2nd harvest year (% of 13.07t DM/ha)	100	98	98	105	97	99	94	101	101	108	102	99	103	100
Total yield: 3rd harvest year (% of 9.73t DM/ha)	100	87	101	109	109	101	96	94	102	109	96	96	105	106
Total yield: mean (% of 11.91t DM/ha)	100	97	100	105	99	100	94	100	101	106	101	99	104	101
<b>Seasonal growth: 1st harvest year</b>														
1st cut (% of 5.06t DM/ha)	100	112	101	99	85	100	95	105	110	95	105	102	103	98
Protein content %: 1st cut	17.8	17.1	17.5	17.0	17.1	18.2	17.4	16.2	17.9	17.1	18.1	17.9	17.8	18.0
<b>Agronomic characters</b>														
Ground cover % (1st harvest year)	68	66	68	66	68	71	69	62	63	64	70	66	70	69
Ground cover % (2nd harvest year)	56	45	57	56	60	60	58	46	55	59	56	50	57	57
Ground cover % (3rd harvest year)	49	35	52	51	60	55	50	41	46	51	45	38	51	53
<b>Year First Listed</b>		1980	2003	2010	2011	2012	2016	2016	2018	2018	2005	2010	2011	2014
<b>Breeder</b>		ILVO	ILVO	IBERS, Aberystwyth	IBERS, Aberystwyth	Nord. Pflän/ DSV	DLF Seeds A/S	INRA	DLF Seeds A/S	Teagasc, Eire	Slechtitelská stanice, The Czech Republic	LSPB	Nord. Pflän/ DSV	Nord. Pflän/ DSV
<b>Agent</b>		Limagrain UK Ltd	Barenbrug UK Ltd	Germinal	Germinal	DSV	DLF Seeds Ltd	Barenbrug UK Ltd	DLF Seeds Ltd	Goldcrop Ltd	DLF Seeds Ltd	Limagrain UK Ltd	DSV	DLF Seeds Ltd
<b>Number of trials for yields</b>														
1st harvest year		19	17	17	17	17	12	12	6	9	19	17	17	17
2nd harvest year		20	16	16	16	16	11	11	5	8	20	16	16	14
3rd harvest year		17	13	13	13	13	8	8	5	5	17	13	13	11

# Descriptive List of Lucerne Varieties 2021/2022

	Mean of all varieties	Daisy	Marshall
<b>Conservation: management</b>			
Total yield: 1st harvest year (% of 12.42t DM/ha)	100	102	98
Total yield: 2nd harvest year (% of 15.45t DM/ha)	100	100	100
Total yield: mean (% of 13.85t DM/ha)	100	101	99
<b>Seasonal growth: 1st harvest year</b>			
1st cut (% of 4.63t DM/ha)	100	103	97
Protein content: 1st cut (%)	18.3	18.2	18.4
<b>Agronomic characters</b>			
Ground cover % (1st harvest year)	55	57	53
Ground cover % (2nd harvest year)	47	49	46
<b>Year First Listed</b>		2003	2003
<b>Breeder</b>		DLF Seeds A/S	Limagrain
<b>Agent</b>		DLF Seeds Ltd	Limagrain UK Ltd
<b>Number of trials for yields</b>			
1st harvest year		9	9
2nd harvest year		9	9

# Descriptive List of Cocksfoot Varieties 2021/2022

	Mean of all varieties	Sparta	Lidacta	RGT Lovely
<b>Conservation management</b>				
Total yield 1st harvest year (% of 15.68t DM/ha)	100	98	102	106
Total yield 2nd harvest year (% of 15.11t DM/ha)	100	99	101	114
Total yield: mean (% of 15.41t DM/ha)	100	99	102	110
<b>Seasonal growth: 1st harvest year</b>				
1st cut (% of 4.77t DM/ha)	100	99	101	101
1st conservation cut D-Value	66.1	65.8	66.5	66.8
2nd cut (% of 3.16t DM/ha)	100	97	103	105
2nd conservation cut D-Value	2.1	2.7	1.5	2.5
3rd cut (% of 3.06t DM/ha)	100	96	104	105
4th+ cut (% of 4.68t DM/ha)	100	98	102	113
<b>Agronomic characters</b>				
Ground Cover % (2nd harvest year)	6.5	6.5	6.5	5.8
Winter Hardiness (1-9, 9=good)	5.8	6.1	5.4	
<b>Disease resistance</b>				
Resistance to Mildew (1-9, 9=good)	7	7	7	
Resistance to Mastigosporium (1-9, 9=good)	6	6	5	2
Resistance to Yellow Rust (1-9, 9=good)	5	3	6	
<b>Year First Listed</b>		<b>1982</b>	<b>1991</b>	<b>2021</b>
<b>Breeder</b>		DLF Seeds A/S	DSV, Germany	R2n, France
<b>Agent</b>		DLF Seeds Ltd	DSV	RAGT Seeds Ltd
<b>Number of trials for yields</b>				
1st harvest year		5	5	2
2nd harvest year		5	5	2



## Useful Contacts

**Aberystwyth University (IBERS)**  
Gogerddan  
Aberystwyth  
Ceredigion  
SY23 3EE  
01970 823000

**Agri-Food and Biosciences Institute**  
Manor House  
Loughgall  
Co Armagh  
Northern Ireland  
BT61 8JA  
02838 892344

**Barenbrug UK Ltd**  
33 Perkins Road  
Rougham Industrial Estate  
Bury St Edmunds  
Suffolk  
IP30 9ND  
01359 272000

**Semences de France**  
Activité fourragère et gazon  
62 rue Léon Beauchamp  
59930 La chapelle  
d'Armentières  
France  
0033 320 48 41 41

**Goldcrop Ltd**  
Carrigtwohill  
Co. Cork  
Ireland  
T45 F685  
00353 214882800

**Germinal GB Ltd**  
Camp Road  
Witham St Hughs  
Lincolnshire  
LN6 9QJ  
01522 868714

**DLF Seeds Ltd**  
10, Westerton Road  
East Mains Industrial Estate  
Broxburn  
West Lothian  
EH52 5AU  
01506 674800

**DSV**  
Wardington Road  
Wardington  
Banbury  
Oxfordshire  
OX17 1FE  
01295 758800

**Grasslanz Technology Ltd**  
Grasslands Research Centre  
Tennent Drive  
Private Bag 11008  
Palmerston North 4442  
New Zealand  
0064 6 351 8255

**ILVO Plant**  
Caritasstraat 39  
9090 Melle  
Belgium  
0032 9 272 28 59

**INRA Chez Agri-Obtentions S.A.**  
Chemin de la Petite Minière  
78280 Guyancourt  
France  
0033 130482300

**Limagrain UK Ltd**  
Rothwell  
Market Rasen  
Lincolnshire  
LN7 6DT  
01472 371471

**RAGT Seeds Ltd**  
Grange Road  
Ickleton  
Essex  
CB10 1TA  
01799 533700

**Teagasc**  
Crops Research Centre  
Oak Park  
Carlow  
Co. Carlow  
R93 XE12  
Ireland  
00353 599170200

**NIAB**  
Headley Hall  
Spennithorne Lane  
Tadcaster  
North Yorkshire  
LS24 9NT

## What's different in this year's RGCL?

### New varieties

On the 2020/21 RGCL, nine new 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
AberRoot	Intermediate perennial ryegrass	10
Ritchie	Intermediate perennial ryegrass	10
Wetherby	Late perennial ryegrass	12
Zorgue	Late perennial ryegrass	12
Delika	Late perennial ryegrass	12
Pinaco	Italian Ryegrass	16
AberSheen	Hybrid Ryegrass	20
RGT Cordial	Hybrid Ryegrass	20
Abersirius	White clover	24



# 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](http://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](http://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](http://www.niab.com)

### Licence to publicise content

To publicise information from the Recommended Grass and Clover Lists for England & Wales a licence must first be obtained.

"Publication" includes any means by which the materials are reproduced, displayed, used or otherwise made available to any person, including non-exhaustively in print, by projection and by electronic means.

To obtain a free licence please contact BSPB directly.

Email: [enquiries@bspb.co.uk](mailto:enquiries@bspb.co.uk)

Phone: 01353 653200

