



# Recommended Grass and Clover Lists for England and Wales



2019/20



# 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 Hybu Cig Cymru).



Both the full list and Handbook are available at [www.britishgrassland.com/RGCL](http://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 eg 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 Diplomat	Kendal	Callan	Toddington	Dundrod	AberAvon	AstonKling	Dakpark	Romark	Glenarm
Recommended List status			PG	PG	G	PS	G	PS	PG	G	PG
Heading date		21 May	1 Jun	22 Jun	2 Jun	2 Jun	2 Jun	3 Jun	3 Jun	3 Jun	4 Jun
<b>Grazing: management</b>											
Grazing yield (1st cut 0.92t DM/ha)	100	97	97	103	95	102	99	99	102	96	98
Grazing DMUE	77	77	77	76	76	76	78	78	77	77	77
ME yield (of 123.5MJ/ha)	100	97	97	102	94	100	100	98	101	96	98
<b>Grazing: seasonal growth</b>											
Early grazing yield (% of 1.21t DM/ha)	100	92	99	114	89	99	101	107	91	92	101
Spring (% of 2.29t DM/ha)	100	93	101	108	92	98	98	106	93	92	98
Early summer (% of 3.70t DM/ha)	100	100	95	102	100	102	99	97	106	99	97
Late summer (% of 2.62t DM/ha)	100	98	96	100	94	103	97	98	102	97	97
Autumn (% of 1.48t DM/ha)	100	96	101	101	93	107	102	96	105	96	101
<b>Conservation: management</b>											
Total yield: year 1 (% of 12.7t DM/ha)	100	93	99	99	96	100	94	97	97	91	91
1st and 2nd cut 1st year	100	93	100	95	95	95	95	98	95	90	90
Total yield: year 2 (% of 11.4t DM/ha)	100	95	103	105	97	100	94	98	100	93	93
Total yield: mean (% of 15.4t DM/ha)	100	94	101	102	96	100	94	98	98	92	92

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

	M	V	L	K	C	T	D	A	A
<b>Agronomic characters</b>									
Ground cover % (2nd harvest year)	64	66	66	63	67	67	69	61	61
Ground cover % (1st harvest year)	59	61	59	60	61	60	67	59	59
Autumn ground cover (1-9, 1=poor 9=good)	6.3	6.5	6.6	6.3	6.6	6.5	7.2	6.2	6.2
Winter hardiness (1-9, 1=poor 9=good)	6.8	6.5	[6.5]	[6.9]	6.6	[6.9]	6.8	6.8	6.8
<b>Disease resistance</b>									
Crown rust (1-9, 1=poor 9=good)	6.2	6.4	6.1	6.1	6.1	7.7	7.8	6.2	6.2
Discreetness (1-9, 1=poor 9=good)	6.2	5.1	[7.4]		6.3	5.5	3.9	6.2	6.2
Mildew (1-9, 1=poor 9=good)	6.0	6.3	7.3	[7.6]	7.0	[7.3]	6.7	6.7	6.7
<b>Year First Listed</b>									
			2019	2018	2010	2019	2019	2019	2019
<b>Breeder</b>									
<b>UK Agent</b>									
<b>Number of trials for yields</b>									
1st harvest year			6	6	13				
2nd harvest year			6	6	14				
3rd harvest year			6	6					

## White Clover

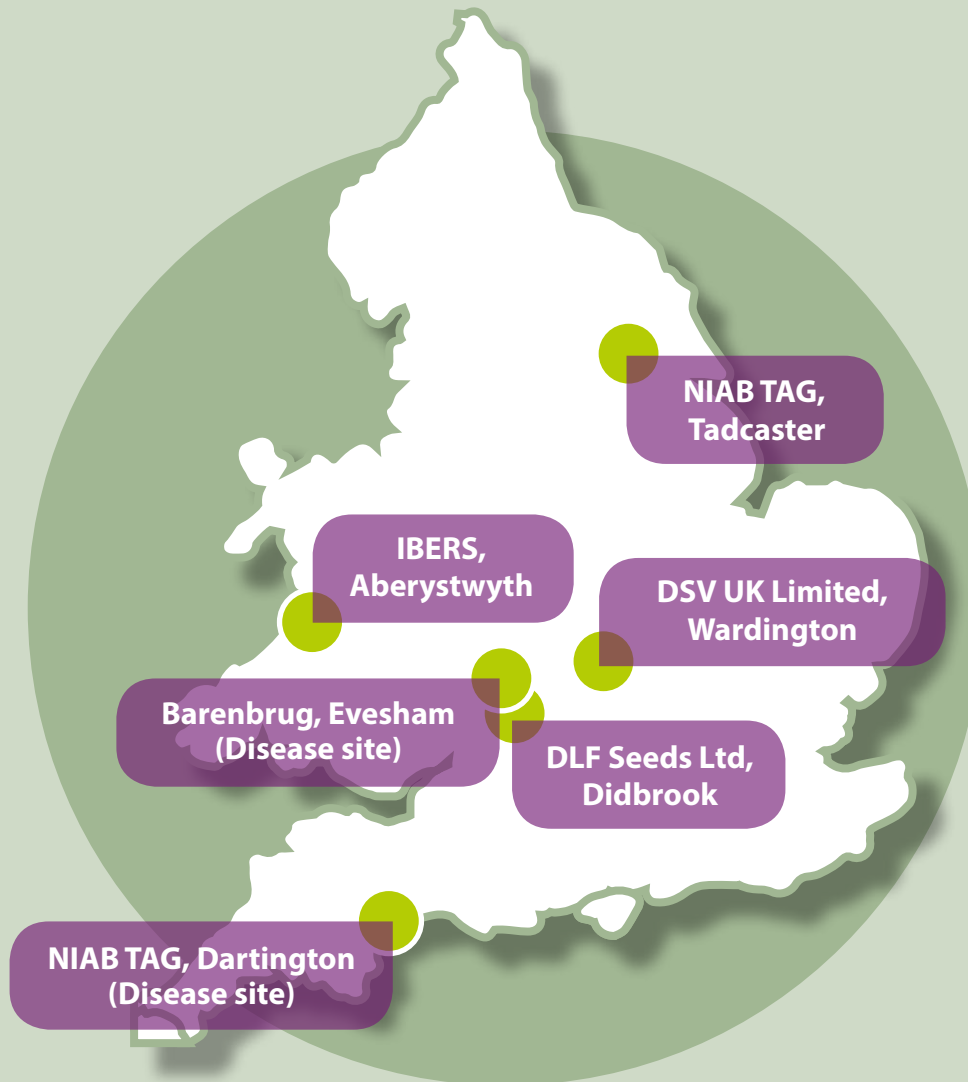
White clover varieties include additional or alternative measures including:

- 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 4.20t DM/ha) *	
Yield of grass + clover (% of 11.35t DM/ha) *	
% clover	
Clover yield: first cut (% of 0.59t DM/ha) *	
Clover yield: last cut (% of 0.42t 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
<b>Perennial ryegrass</b>	Diploid	25kg/ha
	Tetraploid	37kg/ha
<b>Italian and Hybrid ryegrasses, plus Festulolium</b>	Diploid	33kg/ha
	Tetraploid	50kg/ha
<b>Timothy</b>		16kg/ha
<b>White clover</b> (along with 18kg/ha of companion ryegrass)		3.5kg/ha
<b>Red clover</b>		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 stimulated 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.

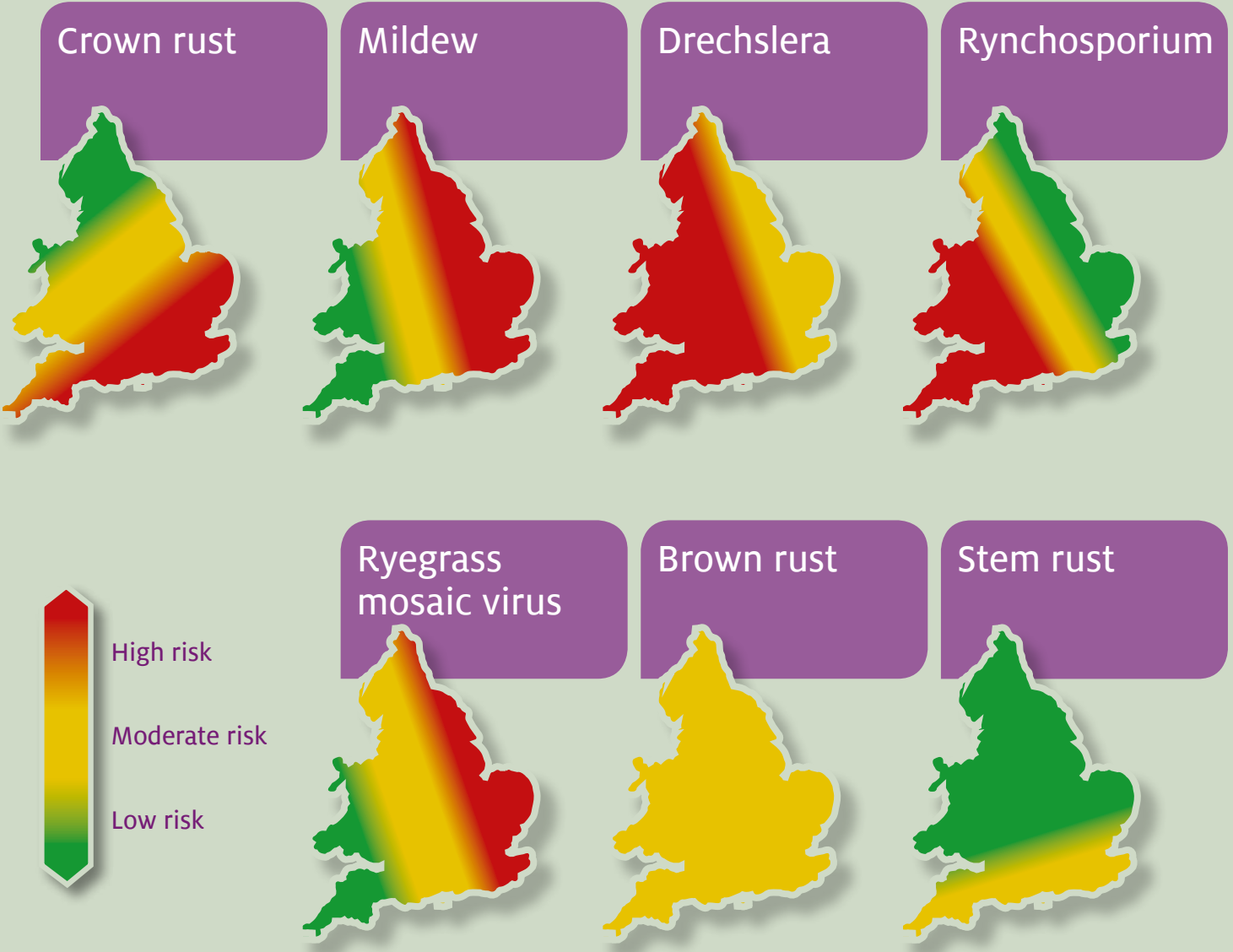
**Rule of thumb**  
1 D-value unit = ME of 0.16

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 2019/2020

		Diploids				Tetraploids			
	Mean of G Varieties	Early Diploid Mean	Genesis	Kilian	Glasker	Early Tetraploid Mean (=AberTorch)	AberTorch	Carraig	Cooky
<b>Recommended List status</b>			<b>G</b>	<b>PG</b>	<b>PG</b>		<b>G</b>	<b>S</b>	<b>PS</b>
<b>Heading date</b>			10 May	16 May	18 May		7 May	15 May	17 May
<b>Grazing: management</b>									
Grazing yield (% of 9.95t DM/ha)	100	100	98	98	99	99	97	100	99
Grazing D-value	77.1	76.3	76.4	76.9	77.1	77.1	77.1	77.1	77.1
ME yield (% of 123,000 MJ/ha)	100	98	97	97	98	99	97	100	99
<b>Grazing: seasonal growth</b>									
Early grazing yield (% of 1.21t DM/ha)	100	127	132	108	117	117	121	114	105
Spring (% of 2.20t DM/ha)	100	118	119	111	111	115	116	114	103
Early summer (% of 3.70t DM/ha)	100	86	86	86	89	91	89	93	94
Late summer (% of 2.62t DM/ha)	100	100	97	99	98	97	95	99	104
Autumn (% of 1.48t DM/ha)	100	104	101	104	107	96	93	100	99
<b>Conservation: management</b>									
Total yield: year 1 (% of 17.37t DM/ha)	100	104	104	99	102	103	103	103	102
1st and 2nd cut ME yield, first harvest year (% of 132,000 MJ/ha)	100	98	99	94	97	99	99	99	99
Total yield: year 3 (% of 13.16t DM/ha)	100	100	101	99	100	97	99	94	100
Total yield: mean (% of 15.41t DM/ha)	100	102	103	99	101	100	101	100	101
<b>Conservation: seasonal growth – Year 1</b>									
1st cut (% of 7.35t DM/ha)	100	98	98	87	92	92	93	90	90
1st cut D-value	72.2	70.5	70.2	72.8	73.1	73.7	72.7	74.7	74.8
2nd cut (% of 3.94t DM/ha)	100	103	105	106	106	111	109	112	110
2nd cut D-value	73.5	72.1	72.3	72.6	71.9	72.4	72.9	72.0	72.5
3rd cut (% of 3.03t DM/ha)	100	103	102	101	102	105	104	106	104
4th+ cut (% of 3.05t DM/ha)	100	115	114	110	118	115	112	119	115



	Mean of G Varieties	Diploids				Tetraploids			
		Early Diploid Mean	Genesis	Kilian	Glasker	Early Tetraploid Mean (=AberTorch)	AberTorch	Carraig	Cooky
<b>Agronomic characters</b>									
Ground cover % (2nd harvest year)	64	67	68	68	65	65	66	63	62
Ground cover % (3rd harvest year)	59	61	61	64	60	58	59	57	60
Autumn ground cover (1-9, 1=poor 9=good)	6.3	6.6	6.7	7.0	6.5	6.3	6.4	6.2	6.2
Winter hardiness (1-9, 1=poor 9=good)	6.8	7.0	7.0	6.9	7.1	7.0	7.1	6.9	[7.2]
<b>Disease resistance</b>									
Crown rust (1-9, 1=poor 9=good)	6.2	6.7	6.9	8.7	7.6	3.6	5.0	2.2	7.3
Drechslera (1-9, 1=poor 9=good)	6.2	5.1	5.8	[5.5]	-	7.2	6.5	7.8	9.0
Mildew (1-9, 1=poor 9=good)	6.8	6.6	5.0	[5.4]	[5.8]	3.9	3.5	4.2	[7.5]
<b>Year First Listed</b>			<b>2009</b>	<b>2016</b>	<b>2016</b>	<b>2000</b>	<b>2000</b>	<b>2013</b>	<b>2019</b>
<b>Breeder</b>			Teagasc, Eire	R2n, France	AFBI, UK		IBERS, Aberystwyth	Teagasc, Eire	R2n, France
<b>UK Agent</b>			DLF Seeds Ltd	RAGT Seeds Ltd	Barenbrug UK Ltd		Germinal	DLF Seeds Ltd	RAGT Seeds Ltd
<b>Number of trials for yields</b>									
1st harvest year			17	8	8	19	10	8	5
2nd harvest year			15	5	5	16	10	7	6
3rd harvest year			13	5	5	18	11	4	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.

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.

Grey shading = some data derived from intermediate trials.

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

# Recommended List of Intermediate Perennial Ryegrass Diploid Varieties 2019/2020

	Mean of G varieties	Int. Diploid Mean	Boyne	Galgorm	Aston Conqueror	Nifty	Moira	AberDart	Glenariff	AberZeus	AberWolf	AberMagic	Gosford	Elyria	Agaska	AberGreen
<b>Recommended List status</b>			<b>S</b>	<b>PG</b>	<b>PS</b>	<b>G</b>	<b>G</b>	<b>G</b>	<b>S</b>	<b>PG</b>	<b>G</b>	<b>S</b>	<b>PG</b>	<b>PG</b>	<b>PS</b>	<b>G</b>
<b>Heading date</b>			20 May	22 May	24 May	24 May	24 May	25 May	25 May	26 May	28 May	28 May	29 May	30 May	30 May	30 May
<b>Grazing: management</b>																
Grazing yield (% of 9.95t DM/ha)	100	103	102	108	103	104	102	101	103	107	102	105	102	100	104	105
Grazing D-value	77.1	76.7	75.3	77.9	76.9	77.4	76.2	78.0	75.3	77.6	78.1	77.3	77.1	76.6	76.6	77.8
ME yield (% of 123,000 MJ/ha)	100	102	99	109	102	104	101	101	100	107	103	104	102	99	103	106
<b>Grazing: seasonal growth</b>																
Early grazing yield (% of 1.21t DM/ha)	100	101	105	111	107	100	116	108	99	110	101	96	109	94	105	99
Spring (% of 2.20t DM/ha)	100	101	105	112	111	105	109	103	97	109	103	100	105	96	106	101
Early summer (% of 3.70t DM/ha)	100	99	99	102	99	100	95	94	101	104	98	101	100	100	102	103
Late summer (% of 2.62t DM/ha)	100	106	102	111	99	107	103	103	108	108	105	108	102	103	104	109
Autumn (% of 1.48t DM/ha)	100	109	103	111	107	108	108	110	106	111	106	114	106	103	107	112
<b>Conservation: management</b>																
Total yield: year 1 (% of 17.37t DM/ha)	100	101	105	107	100	102	102	96	102	102	103	100	100	98	101	102
1st and 2nd cut ME yield, first harvest year (% of 132,000 MJ/ha)	100	99	103	104	96	100	97	94	99	102	101	100	99	97	98	102
Total yield: year 3 (% of 13.16t DM/ha)	100	102	107	108	106	103	107	97	99	106	104	101	104	101	100	105
Total yield: mean (% of 15.41t DM/ha)	100	101	106	107	102	103	104	97	101	103	103	101	101	99	101	103
<b>Conservation: seasonal growth – Year 1</b>																
1st cut (% of 7.35t DM/ha)	100	100	110	105	104	104	104	96	101	102	101	97	99	98	96	99
1st cut D-value	72.2	71.8	68.9	71.6	68.7	71.0	70.0	71.3	71.5	72.4	71.7	73.4	72.7	71.9	71.9	73.6
2nd cut (% of 3.94t DM/ha)	100	98	102	97	85	94	87	92	95	97	102	100	96	95	102	101
2nd cut D-value	73.5	72.7	70.3	75.9	75.1	72.1	74.6	73.4	73.1	75.2	73.1	72.6	74.1	73.2	72.6	74.0
3rd cut (% of 3.03t DM/ha)	100	100	96	112	105	100	105	97	106	103	103	97	102	99	103	103
4th+ cut (% of 3.05t DM/ha)	100	102	99	112	99	105	110	96	104	102	103	104	99	94	105	105

	Mean of G varieties	Int. Dlploid Mean	Boyne	Galgorm	Aston Conqueror	Nifty	Moira	AberDart	Glenariff	AberZeus	AberWolf	AberMagic	Gosford	Elyria	Agaska	AberGreen
<b>Agronomic characters</b>																
Ground cover % (2nd harvest year)	64	68	66	63	69	65	64	72	67	70	70	64	67	69	64	69
Ground cover % (3rd harvest year)	59	62	60	60	62	62	57	65	60	68	65	63	59	63	61	64
Autumn ground cover (1-9, 1=poor 9=good)	6.3	6.8	6.5	6.3	6.9	6.6	6.1	7.3	6.6	7.4	7.2	6.5	6.6	6.9	6.4	7.0
Winter hardiness (1-9, 1=poor 9=good)	6.8	7.0	6.9	[7.1]	7.1	7.2	7.2	7.1	7.0	7.2	7.0	7.0	7.0	7.2	[7.1]	7.2
<b>Disease resistance</b>																
Crown rust (1-9, 1=poor 9=good)	6.2	7.6	7.6	7.6	4.2	7.1	6.8	6.7	8.2	8.0	6.2	8.0	7.5	7.8	8.3	7.7
Drechslera (1-9, 1=poor 9=good)	6.2	4.7	5.5	[5.2]	[6.1]	5.2	7.3	3.8	5.8	5.0	4.4	3.5	4.5	6.8	[5.8]	5.1
Mildew (1-9, 1=poor 9=good)	6.8	7.2	6.7	[7.0]		6.0	7.2	6.3	8.1	[6.5]	5.6	7.6	[8.7]	6.5	[7.4]	7.5
<b>Year First Listed</b>			2010	2018	2017	2014	2014	1999	2012	2016	2014	2008	2016	2015	2018	2011
<b>Breeder</b>			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
<b>UK Agent</b>			DLF Seeds Ltd	Barenbrug UK Ltd	DSV	DLF Seeds Ltd	Barenbrug UK Ltd	Germinal	Barenbrug UK Ltd	Germinal	Germinal	Germinal	Barenbrug UK Ltd	Limagrain UK	DLF Seeds Ltd	Germinal
<b>Number of trials for yields</b>																
1st harvest year			28	6	9	12	12	10	13	12	16	12	12	6.0	14	5
2nd harvest year			25	6	6	13	13	10	13	13	15	9	12	6	14	6
3rd harvest year			20	5	5	12	12	10	13	12	13	6	9	5	12	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.

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 2019/2020

	Mean of G varieties	Int. Tetraploid Mean	Fintona	Malone	Glenstal	Seagoe	Nolwen	AberClyde	Eurostar	AstonVision	AstonBonus	AberSpey	Dunluce	Caledon	Diwan	Montova	Triwarwic	Pensel	Federer	AstonEnergy
<b>Recommended List status</b>			G	G	G	G	PG	S	G	PS	PS	PG	G	PS	PS	G	PG	S	PG	S
<b>Heading date</b>			20 May	20 May	22 May	22 May	22 May	24 May	26 May	26 May	29 May	29 May	30 May	30 May	30 May	30 May	30 May	30 May	30 May	1 Jun
<b>Grazing: management</b>																				
Grazing yield (% of 9.95t DM/ha)	100	102	104	99	102	102	101	99	99	103	99	105	103	103	98	101	101	100	101	100
Grazing D-value	77.1	76.8	77.4	77.3	77.1	76.9	77.3	77.9	77.2	77.7	76.5	77.9	77.6	76.7	76.8	75.7	76.6	75.6	77.2	78.2
ME yield (% of 123,000 MJ/ha)	100	101	104	98	102	101	101	99	99	103	98	106	103	103	98	98	100	98	101	101
<b>Grazing: seasonal growth</b>																				
Early grazing yield (% of 1.21t DM/ha)	100	96	104	101	105	106	103	95	90	111	99	98	90	89	86	82	95	91	94	82
Spring (% of 2.20t DM/ha)	100	100	108	106	108	105	104	104	97	107	101	102	95	97	95	93	95	101	96	94
Early summer (% of 3.70t DM/ha)	100	103	101	93	100	100	97	99	100	95	98	105	106	109	99	105	105	102	101	101
Late summer (% of 2.62t DM/ha)	100	103	107	98	99	103	102	95	99	105	100	106	106	103	104	103	100	100	107	101
Autumn (% of 1.48t DM/ha)	100	100	104	102	102	99	101	96	101	109	98	110	103	99	94	97	102	95	102	102
<b>Conservation: management</b>																				
Total yield: year 1 (% of 17.37t DM/ha)	100	105	109	104	104	110	102	103	103	101	103	106	103	105	107	103	106	106	102	99
1st and 2nd cut ME yield, first harvest year (% of 132,000 MJ/ha)	100	105	106	103	105	110	101	106	104	100	104	106	104	106	110	102	108	108	102	101
Total yield: year 3 (% of 13.16t DM/ha)	100	104	107	100	102	107	104	99	101	98	97	99	105	103	102	105	106	103	103	96
Total yield: mean (% of 15.41t DM/ha)	100	105	108	102	103	108	103	101	102	100	100	104	104	104	105	104	106	105	103	98
<b>Conservation: seasonal growth – Year 1</b>																				
1st cut (% of 7.35t DM/ha)	100	104	110	108	107	115	101	106	103	98	105	101	96	104	107	99	105	105	99	95
1st cut D-value	72.2	72.6	70.5	70.6	72.0	70.7	72.8	73.1	72.3	72.6	72.9	74.5	75.0	72.6	73.2	72.8	72.8	72.8	73.5	74.7
2nd cut (% of 3.94t DM/ha)	100	105	100	95	100	102	99	105	106	99	100	104	110	109	109	108	108	116	104	99
2nd cut D-value	73.5	72.9	74.8	74.8	72.6	73.5	74.3	73.6	73.5	75.7	74.2	75.4	73.7	70.9	72.6	71.7	73.2	71.0	73.8	76.1
3rd cut (% of 3.03t DM/ha)	100	105	112	105	98	108	104	99	100	103	102	110	107	102	104	107	104	101	108	102
4th+ cut (% of 3.05t DM/ha)	100	101	107	101	100	103	101	94	97	105	101	111	105	100	101	96	101	94	98	100

	Mean of G varieties	Int. Tetraploid Mean	Fintona	Malone	Glenstal	Seagoe	Nolwen	AberClyde	Eurostar	AstonVision	AstonBonus	AberSpey	Dunluce	Caledon	Diwan	Montova	Triwarwic	Pensel	Federer	AstonEnergy
<b>Agronomic characters</b>																				
Ground cover % (2nd harvest year)	64	61	60	62	62	62	64	65	64	64	59	63	59	56	59	63	60	58	65	57
Ground cover % (3rd harvest year)	59	55	54	53	56	54	58	59	59	58	54	51	54	54	49	57	55	56	55	49
Autumn ground cover (1-9, 1=poor 9=good)	6.3	5.8	5.6	5.7	5.9	5.8	6.2	6.3	6.2	6.2	5.5	5.7	5.6	5.3	5.4	6.0	5.7	5.6	6.1	5.0
Winter hardiness (1-9, 1=poor 9=good)	6.8	6.9	7.2	6.8	7.1	6.7	7.1	6.9	7.1	[7.2]	6.6	7.3	6.9	6.6	6.9	6.7	6.9	6.9	[7.0]	6.7
<b>Disease resistance</b>																				
Crown rust (1-9, 1=poor 9=good)	6.2	5.2	3.7	4.2	3.5	7.8	9.0	8.0	6.1	8.3	7.7	7.4	3.8	7.6	8.5	5.6	8.1	7.8	8.2	8.2
Drechslera (1-9, 1=poor 9=good)	6.2	7.7	8.4	7.7	7.7	7.8	[8.2]	7.6	7.9	[7.3]	7.2	[7.7]	7.7	8.8	8.2	7.6	[6.6]	8.5		8.4
Mildew (1-9, 1=poor 9=good)	6.8	7.6	8.0	8.7	6.1	8.4		8.1	7.2	[4.3]	6.8		7.6	[6.4]	[8.3]	8.2		7.6		7.4
<b>Year First Listed</b>			2014	2006	2004	2011	2017	2013	2002	2018	2013	2017	2005	2015	2016	2004	2017	2013	2017	2006
<b>Breeder</b>			AFBI, UK	AFBI, UK	Teagasc, Eire	AFBI, UK	R2n, France	IBERS, Aberystwyth	DLF Seeds A/S	DSV, UK	DSV, UK	IBERS, Aberystwyth	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
<b>UK Agent</b>			Barenbrug UK Ltd	Barenbrug UK Ltd	DLF Seeds Ltd	Barenbrug UK Ltd	DLF Seeds Ltd	Germinal	Limagrain UK Ltd	DSV	DSV	Germinal	Barenbrug UK Ltd	Barenbrug UK Ltd	DLF Seeds Ltd	Limagrain UK Ltd	DLF Seeds Ltd	Limagrain UK Ltd	Limagrain UK Ltd	Germinal
<b>Number of trials for yields</b>																				
1st harvest year			12	13	16	14	9	14	10	6	14	9	26	12	12	11	9	14	6	12
2nd harvest year			13	12	13	14	6	13	10	6	13	6	24	12	9	12	6	13	6	11
3rd harvest year			12	12	11	12	5	13	10	5	13	5	21	9	6	11	5	13	5	11

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.

Shaded entries for Caledon indicate values derived from late trials.

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

# Recommended List of Late Perennial Ryegrass Diploid Varieties 2019/2020

	Mean of G varieties	Late Diploid Mean	Kendal	Callan	Toddington	Dundrod	AberAvon	AstonKing	Oakpark	Romark	Glenarm	Drumbo	Gleneagle	Clanrye	Cavendish	Timing	Smile	AberBann	AberLee	AberChoice	Cancan	Bowie
<b>Recommended List status</b>			PG	PG	G	PS	G	PS	PG	G	PG	G	PG	S	PS	PG	PG	PG	PG	S	G	PS
<b>Heading date</b>			31 May	1 Jun	2 Jun	2 Jun	2 Jun	3 Jun	3 Jun	3 Jun	4 Jun	4 Jun	5 Jun	5 Jun	5 Jun	5 Jun	6 Jun	6 Jun	7 Jun	9 Jun	11 Jun	17 Jun
<b>Grazing: management</b>																						
Grazing yield (% of 9.95t DM/ha)	100	97	97	103	95	102	99	99	102	96	98	97	100	96	96	98	98	108	100	103	99	102
Grazing D-value	77.1	76.8	76.5	76.2	76.0	76.1	77.8	75.9	76.6	76.7	77.0	77.5	76.6	75.4	75.5	75.6	77.7	77.8	78.9	77.3	76.2	75.9
ME yield (% of 123,000 MJ/ha)	100	97	97	102	94	100	100	98	101	96	98	98	100	94	94	96	99	109	102	103	99	101
<b>Grazing: seasonal growth</b>																						
Early grazing yield (% of 1.21t DM/ha)	100	92	99	114	89	99	101	107	91	92	101	97	90	87	91	81	86	100	80	99	82	86
Spring (% of 2.20t DM/ha)	100	92	101	108	92	98	98	106	93	92	98	95	91	87	91	86	89	103	89	99	84	82
Early summer (% of 3.70t DM/ha)	100	100	95	102	100	102	99	97	106	99	97	99	107	102	101	105	102	113	107	105	103	109
Late summer (% of 2.62t DM/ha)	100	98	96	100	94	103	97	98	102	97	97	97	100	96	91	98	100	106	100	102	105	106
Autumn (% of 1.48t DM/ha)	100	98	101	101	93	107	102	96	105	96	100	96	98	95	97	98	101	104	101	100	104	105
<b>Conservation: management</b>																						
Total yield: year 1 (% of 17.37t DM/ha)	100	93	99	99	96	100	94	97	97	91	100	93	98	99	97	96	98	100	93	98	93	94
1st and 2nd cut ME yield, first harvest year (% of 132,000 MJ/ha)	100	92	100	95	95	95	95	98	95	90	102	93	97	100	97	96	96	98	94	100	90	91
Total yield: year 3 (% of 13.16t DM/ha)	100	95	103	105	97	100	94	98	100	93	103	95	98	99	97	102	96	101	96	97	94	95
Total yield: mean (% of 15.41t DM/ha)	100	94	101	102	96	100	94	98	98	92	101	94	98	99	97	98	97	100	94	98	93	94
<b>Conservation: seasonal growth – Year 1</b>																						
1st cut (% of 7.35t DM/ha)	100	94	109	103	101	107	101	106	100	90	109	93	100	105	100	98	99	98	91	99	87	84
1st cut D-value	72.2	71.3	69.5	69.3	70.1	69.2	70.8	70.0	70.6	71.8	70.6	71.4	70.1	70.9	71.2	70.9	70.1	71.0	74.9	73.2	72.4	73.5
2nd cut (% of 3.94t DM/ha)	100	89	89	87	90	90	83	86	90	87	90	90	96	97	91	93	93	97	88	99	94	101
2nd cut D-value	73.5	74.3	73.5	73.3	72.8	73.6	74.6	73.5	73.0	74.9	74.6	75.4	72.9	71.2	73.8	72.8	74.4	73.0	76.2	72.8	73.6	72.2
3rd cut (% of 3.03t DM/ha)	100	96	92	102	95	95	92	94	99	97	94	97	96	95	96	95	100	102	96	97	100	102
4th+ cut (% of 3.05t DM/ha)	100	95	97	102	93	103	93	93	98	95	97	95	96	93	98	95	98	103	99	97	96	100

	Mean of G varieties	Late Diploid Mean	Kendal	Callan	Toddington	Dundrod	AberAvon	AstonKing	Oakpark	Romark	Glenarm	Drumbo	Gleneagle	Clanrye	Cavendish	Timing	Smile	AberBann	AberLee	AberChoice	Cancan	Bowie
<b>Agronomic characters</b>																						
Ground cover % (2nd harvest year)	64	66	68	63	67	67	69	61	66	64	64	62	67	63	68	66	63	66	68	62	65	66
Ground cover % (3rd harvest year)	59	61	59	60	61	60	67	56	61	60	58	57	59	61	62	57	59	57	65	56	61	58
Autumn ground cover (1-9, 1=poor 9=good)	6.3	6.5	6.6	6.3	6.6	6.5	7.2	5.9	6.6	6.3	6.3	6.0	6.5	6.3	6.8	6.4	6.2	6.3	7.0	6.0	6.5	6.4
Winter hardiness (1-9, 1=poor 9=good)	6.8	6.5	[6.5]	[6.9]	6.6	[6.9]	6.8	[6.9]	[6.6]	6.4	6.8	6.4	[6.7]	6.7	6.4	6.4	6.6	[6.8]	7.0	6.8	6.5	[6.4]
<b>Disease resistance</b>																						
Crown rust (1-9, 1=poor 9=good)	6.2	6.4	8.1	6.1	8.1	7.7	7.8	7.6	5.5	5.8	7.7	6.1	5.6	6.1	8.2	8.1	3.8	6.7	7.7	5.0	4.2	6.2
Drechslera (1-9, 1=poor 9=good)	6.2	5.1	[7.4]		6.3	5.5	3.9	[3.9]		4.7	3.9	5.1	[6.3]	6.1	4.5	5.5	[6.4]		[6.2]	3.0	5.3	
Mildew (1-9, 1=poor 9=good)	6.8	6.3	7.3	[7.6]	7.0	[7.3]	6.5	7.6	[7.1]	5.3	7.9	5.7	6.7	7.7	7.2	6.9		[7.0]		8.2	7.2	[7.6]
<b>Year First Listed</b>			2019	2018	2010	2019	2001		2018	2000	2015	2009	2019	2012	2015	2015	2017	2018	2017	2009	1998	2018
<b>Breeder</b>			R2n, France	AFBI, UK	DLF Seeds A/S	AFBI, UK	IBERS, Aberystwyth	DSV, UK	Teagasc, Eire	Innoseeds NL	AFBI, UK	AFBI, UK	Teagasc, Eire	AFBI, UK	DLF Seeds A/S	DLF Seeds A/S	Teagasc	IBERS, Aberystwyth	IBERS, Aberystwyth	IBERS, Aberystwyth	DLF Seeds A/S	DLF Seeds A/S
<b>UK Agent</b>			RAGT Seeds Ltd	Barenbrug UK Ltd	DLF Seeds Ltd	Barenbrug UK Ltd	Germinal	DSV	Goldcrop Ltd	DLF Seeds Ltd	Barenbrug UK Ltd	Barenbrug UK Ltd	Goldcrop Ltd	Barenbrug UK Ltd	DLF Seeds Ltd	Limagrain UK Ltd	DLF Seeds Ltd	Germinal	Germinal	Germinal	DLF Seeds Ltd	DLF Seeds Ltd
<b>Number of trials for yields</b>																						
1st harvest year			6	6	13	5	10	6	6	11	12	19	6	15	9	12	6	6	6	25	11	6
2nd harvest year			6	6	14	6	10	6	6	11	9	19	6	13	6	9	6	6	6	25	10	6
3rd harvest year			6	6	14	6	10	6	6	11	6	17	6	12	6	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.

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.

Grey shading = some data derived from late trials.

**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 2019/2020

	Mean of G Varieties	Late Tetraploid Mean	Ballintoy	Bijou	Alfonso	Weldone	Meiduno	Calao	Hurricane	Dundrum	Aspect	Novello	AberGain	Nashota	AberBite	Twymax	Aston Princess	Youpi	Thegn	Solas	Hopi
<b>Recommended List status</b>			PS	S	PS	PG	G	PG	PS	S	G	G	G	PG	G	G	G	PG	PG	PS	PG
<b>Heading date</b>			31 May	1 Jun	1 Jun	2 Jun	2 Jun	2 Jun	2 Jun	3 Jun	3 Jun	4 Jun	3 Jun	4 Jun	4 Jun	5 Jun	6 Jun	5 Jun	5 Jun	7 Jun	9 Jun
<b>Grazing: management</b>																					
Grazing yield (% of 9.95t DM/ha)	100	101	101	101	98	103	103	100	97	97	100	99	106	105	101	98	98	99	104	101	103
Grazing D-value	77.1	77.8	77.9	75.8	77.6	77.7	76.8	78.0	77.3	77.6	77.6	77.2	78.5	77.9	77.9	77.8	77.3	77.2	77.3	77.2	76.9
ME yield (% of 123,000 MJ/ha)	100	102	102	99	98	104	102	102	98	97	101	99	108	106	102	99	98	99	104	101	102
<b>Grazing: seasonal growth</b>																					
Early grazing yield (% of 1.21t DM/ha)	100	94	110	100	96	89	100	94	91	79	93	95	115	109	88	86	90	82	87	88	92
Spring (% of 2.20t DM/ha)	100	96	105	103	102	93	100	94	93	85	93	94	111	105	94	91	92	85	90	91	94
Early summer (% of 3.70t DM/ha)	100	106	101	103	101	111	105	104	101	103	106	103	105	110	104	109	107	105	109	106	110
Late summer (% of 2.62t DM/ha)	100	98	101	101	93	103	103	101	97	99	97	100	104	103	102	95	94	101	108	106	100
Autumn (% of 1.48t DM/ha)	100	97	96	93	95	98	100	98	96	95	101	95	104	94	99	88	92	98	102	95	102
<b>Conservation: management</b>																					
Total yield: year 1 (% of 17.37t DM/ha)	100	101	104	102	101	102	103	99	100	102	100	96	106	105	99	100	100	97	100	99	100
1st and 2nd cut ME yield, first harvest year (% of 132,000 MJ/ha)	100	105	104	105	105	105	106	100	102	103	103	96	111	108	100	105	105	98	100	99	101
Total yield: year 3 (% of 13.16t DM/ha)	100	101	106	104	98	100	102	108	104	103	101	96	108	106	100	100	98	100	102	101	100
Total yield: mean (% of 15.41t DM/ha)	100	101	105	103	100	101	102	102	102	102	101	96	107	105	100	100	99	98	101	100	100
<b>Conservation: seasonal growth – Year 1</b>																					
1st cut (% of 7.35t DM/ha)	100	105	109	111	113	105	107	101	108	106	104	94	114	110	99	104	103	95	98	97	99
1st cut D-value	72.2	72.5	70.3	69.8	71.3	72.7	72.4	71.7	70.5	71.4	72.5	72.3	71.6	72.0	72.7	72.8	73.1	72.8	73.7	72.2	72.2
2nd cut (% of 3.94t DM/ha)	100	101	99	100	92	103	100	96	96	99	98	98	104	103	98	102	103	102	100	100	102
2nd cut D-value	73.5	74.0	72.7	72.0	74.0	73.5	74.4	73.5	73.4	73.3	73.6	73.4	72.8	74.5	74.6	74.6	74.5	73.7	73.5	73.8	73.4
3rd cut (% of 3.03t DM/ha)	100	97	100	91	92	101	100	98	94	98	98	97	97	100	98	97	96	96	104	101	100
4th+ cut (% of 3.05t DM/ha)	100	96	100	93	96	95	99	97	93	98	94	95	100	102	103	91	91	95	101	102	97



	Mean of G Varieties	Late Tetraploid Mean	Ballintoy	Bijou	Alfonso	Weldone	Meiduno	Calao	Hurricane	Dundrum	Aspect	Novello	AberGain	Nashota	AberBite	Twymax	Aston Princess	Youpi	Thegn	Solas	Hopi
<b>Agronomic characters</b>																					
Ground cover % (2nd harvest year)	64	61	58	60	62	61	55	64	62	59	63	59	60	66	59	63	62	60	64	59	60
Ground cover % (3rd harvest year)	59	56	54	57	57	55	50	56	57	54	57	57	56	59	55	57	57	58	58	56	57
Autumn ground cover (1-9, 1=poor 9=good)	6.3	5.9	5.5	5.9	5.9	5.8	5.0	6.0	6.0	5.6	6.0	5.7	5.7	6.4	5.6	6.1	5.9	5.9	6.1	5.7	6
Winter hardiness (1-9, 1=poor 9=good)	6.8	6.8	6.9	6.9	6.9	[6.8]	6.7	6.8	6.7	6.7	6.9	7.0	6.9	[7.1]	6.9	6.6	6.9	6.7	[6.8]	6.6	[6.6]
<b>Disease resistance</b>																					
Crown rust (1-9, 1=poor 9=good)	6.2	6.4	3.9	8.4	7.8	7.4	7.2	8.0	7.9	3.5	5.5	7.2	7.7	7.7	7.3	5.5	5.9	8.9	7.4	2.3	8
Drechslera (1-9, 1=poor 9=good)	6.2	7.3	[6.2]	7.4	7.1	[8.5]	7.9	[7.2]	7.3	6.9	7.5	7.7	7.4		7.3	7.1	7.3	8.6		7.9	[8.2]
Mildew (1-9, 1=poor 9=good)	6.8	7.3		7.4	7.4	7.0	7.2		7.5	8.1	7.2	7.0	7.9	[6.8]	6.1	7.4	7.7	7.2	[6.4]	7.4	7
<b>Year First Listed</b>			2017	2014	2013	2019	2014	2017	2015	2010	2011	2010	2012	2018	2009	2004	2007	2015	2018	2014	2019
<b>Breeder</b>			AFBI	R2n, France	DSV, UK	DLF Seeds A/S	DLF Seeds A/S	Semences de France	Semences de France	AFBI, UK	DLF Seeds A/S	DLF Seeds A/S	IBERS, Aberystwyth	DLF Seeds A/S	IBERS, Aberystwyth	CPB Twyford	DSV, UK	R2n, France	DLF Seeds A/S	Teagasc, Eire	DLF Seeds A/S
<b>UK Agent</b>			Barenbrug UK Ltd	RAGT Seeds Ltd	DLF Seeds Ltd	Limagrain UK Ltd	Limagrain UK Ltd	Germinal	DSV	Barenbrug UK Ltd	Limagrain UK Ltd	Limagrain UK Ltd	Germinal	DLF Seeds Ltd	Germinal	Limagrain UK Ltd	Germinal	Barenbrug UK Ltd	DLF Seeds Ltd	Limagrain UK Ltd	DLF Seeds Ltd
<b>Number of trials for yields</b>																					
1st harvest year			9	8	14	6	13	9	13	12	14	12	15	6	26	32	11	13	6	13	6
2nd harvest year			6	7	13	6	13	6	12	13	13	13	14	6	26	31	11	12	6	12	6
3rd harvest year			6	6	13	6	12	6	9	16	14	16	13	6	24	31	12	9	6	12	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.

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 2019/2020

	Mean of G varieties	Diploid Mean	Shakira	Muriello	Fox	Meribel	Steel	Alamo	Abys	Melprimo	Belluna	Davinci	Javorio
Recommended List status			G	G	G	S	G	G	G	PG	G	G	G
Heading date			18 May	20 May	21 May	21 May	21 May	21 May	22 May	23 May	23 May	23 May	24 May
<b>Total annual yields</b>													
1st harvest year (% of 19.81t DM/ha)	100	100	100	99	99	101	99	102	99	101	100	102	101
2nd harvest year (% of 14.99t DM/ha)	100	100	100	101	102	95	98	99	101	100	100	102	97
Total yield: mean (% of 17.44t DM/ha)	100	100	100	100	100	98	99	100	100	101	100	102	99
Year of sowing (% of 2.16t DM/ha)	100	96	94	100	104	90	98	94	94	96	93	93	92
1st and 2nd cut ME yield, first harvest year (% of 127,000 MJ/ha)	100	99	100	95	96	99	99	100	98	96	98	100	101
<b>Seasonal growth – Year 1</b>													
Early spring growth (% of 1.73t DM/ha)	100	100	101	104	102	99	103	100	101	107	98	97	98
<b>Conservation: management</b>													
1st conservation cut (% of 6.72t DM/ha)	100	97	103	93	97	96	101	97	97	95	94	95	100
1st conservation cut D-value	71.0	71.0	70.7	71.5	70.1	72.2	70.1	71.3	70.9	70.2	72.0	71.4	71.1
2nd conservation cut (% of 4.64t DM/ha)	100	100	98	99	98	103	98	103	98	101	103	104	102
2nd conservation cut D-value	67.2	67.1	66.6	66.9	67.0	67.1	66.9	67.6	66.9	66.4	67.1	67.3	67.2
Monthly cuts (% of 6.61t DM/ha)	100	102	98	104	100	106	98	106	100	105	106	107	101

	Mean of G varieties	Diploid Mean	Shakira	Muriello	Fox	Meribel	Steel	Alamo	Abys	Melprimo	Belluna	Davinci	Javorio
<b>Agronomic characters</b>													
Ground cover % (1st harvest year)	53	54	52	53	53	51	54	57	54	56	54	53	52
Ground cover % (2nd harvest year)	51	51	47	52	52	48	51	55	52	53	53	53	47
Autumn ground cover (1-9, 1=poor 9=good)	3.9	3.9	3.5	4.0	4.0	3.6	3.9	4.3	4.0	4.2	4.1	4.1	3.5
Winter hardiness (1-9, 1=poor 9=good)	7.0	6.9	6.8	7.1	6.5	7.3	6.7	6.9	7.4	[7.3]	7.0	6.8	6.6
<b>Disease resistance</b>													
Ryegrass mosaic virus (1-9, 1=poor 9=good)	5.1	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)	6.9	7.0	6.6	7.4	6.9	6.8	6.6	7.1	7.6		7.4	6.9	6.9
Brown rust (1-9, 1=poor 9=good)	6.9	6.7	6.3	6.7	7.6	7.7	6.3	5.7	7.9	[7.2]	5.3	7.9	6.9
Crown rust (1-9, 1=poor 9=good)	7.6	7.4	7.6	7.0	7.9	2.0	8.3	7.1	7.8	8.0	7.6	7.2	6.3
<b>Year First Listed</b>			2012	2006	2004	1991	2009	2001	2004	2019	2005	2005	2013
<b>Breeder</b>			DSV, France	ILVO/DSV	Force Limagrain	ILVO	R2n, France	Innoseeds, NL	R2n, France	ILVO	ILVO	ILVO	DSV, Netherlands
<b>UK Agent</b>			DSV	Geminal	DLF Seeds Ltd	Limagrain UK Ltd	Barenbrug UK Ltd	DLF Seeds Ltd	Barenbrug UK Ltd	Limagrain UK Ltd	Limagrain UK Ltd	Limagrain UK Ltd	Barenbrug UK Ltd
<b>Number of trials for yields</b>													
Year of sowing			7	12	9	8	11	16	10	4	10	10	8
1st harvest year			13	18	12	11	14	22	10	6	12	13	14
2nd harvest year			13	17	11	10	14	19	10	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. 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 2019/2020

	Mean of G varieties	Tetraploid Mean	Itarzi	Udine	Hunter	Barmultra II	Kigezi 1	Gemini	Cazzano	Messina	Barimax	Danergo
Recommended List status			G	G	G	G	G	S	S	PG	PS	S
Heading date			17 May	18 May	19 May	20 May	20 May	20 May	20 May	21 May	21 May	23 May
<b>Total annual yields</b>												
1st harvest year (% of 19.81t DM/ha)	100	100	99	99	102	101	99	103	100	104	103	99
2nd harvest year (% of 14.99t DM/ha)	100	100	100	101	99	100	100	100	103	102	101	98
Total yield: mean (% of 17.44t DM/ha)	100	100	100	100	101	101	100	101	101	103	102	98
Year of sowing (% of 2.16t DM/ha)	100	108	106	112	103	108	109	99	101	110	96	105
1st and 2nd cut ME yield, first harvest year (% of 127,000 MJ/ha)	100	103	102	102	104	103	101	105	102	105	105	102
<b>Seasonal growth – Year 1</b>												
Early spring growth (% of 1.73t DM/ha)	100	99	97	96	102	102	99	101	98	108	96	91
<b>Conservation: management</b>												
1st conservation cut (% of 6.72t DM/ha)	100	105	104	106	104	105	105	100	100	104	106	101
1st conservation cut D-value	70.9	71.9	70.3	70.7	71.0	71.6	71.1	73.8	72.8	73.0	72.1	72.1
2nd conservation cut (% of 4.64t DM/ha)	100	100	99	97	103	101	98	105	100	101	103	102
2nd conservation cut D-value	67.5	67.6	67.6	67.9	67.2	67.5	67.1	68.0	68.5	68.0	67.1	67.4
Monthly cuts (% of 6.61t DM/ha)	100	96	95	93	99	97	96	105	101	104	102	96

	Mean of G varieties	Tetraploid Mean	Itarzi	Udine	Hunter	Barmultra II	Kigezi 1	Gemini	Cazzano	Messina	Barimax	Danergo
<b>Agronomic characters</b>												
Ground cover % (1st harvest year)	53	52	50	52	52	52	53	48	46	54	50	48
Ground cover % (2nd harvest year)	51	49	50	51	47	50	48	46	47	49	47	47
Autumn ground cover (1-9, 1=poor 9=good)	3.9	3.7	3.8	3.9	3.4	3.8	3.6	3.4	3.5	3.7	3.4	3.4
Winter hardiness (1-9, 1=poor 9=good)	7.0	7.1	7.0	7.3	7.3	7.1	6.9	7.0	6.8	[7.2]	[6.9]	6.9
<b>Disease resistance</b>												
Ryegrass mosaic virus (1-9, 1=poor 9=good)	5.1	5.0	5.5	6.0	5.2	4.1	4.4	3.8	[4.5]	[6.9]		5.1
Mildew (1-9, 1=poor 9=good)	6.9	6.7	6.2	7.5	7.0	6.2	6.6	7.4	8.1	7.0		6.7
Brown rust (1-9, 1=poor 9=good)	6.9	7.3	7.3	7.5	7.8	6.4	7.7	8.1	[7.1]	7.9	[5.3]	7.3
Crown rust (1-9, 1=poor 9=good)	7.6	7.9	8.1	8.1	6.1	8.5	8.5	1.0	3.2	8.9	7.8	1.2
<b>Year First Listed</b>			<b>2009</b>	<b>2012</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2000</b>	<b>2015</b>	<b>2017</b>	<b>2018</b>	<b>1994</b>
<b>Breeder</b>			DLF Seeds A/S	DLF Seeds A/S	DSV, Germany	Barenbrug, NL	DLF Seeds A/S	ILVO	DLF Seeds A/S	ILVO	Barenbrug, NL	DLF Seeds A/S
<b>UK Agent</b>			DLF Seeds Ltd	Limagrain UK Ltd	DLF Seeds Ltd	Barenbrug UK Ltd	DLF Seeds Ltd	Limagrain UK Ltd	DLF Seeds Ltd	Limagrain UK Ltd	Barenbrug UK Ltd	DLF Seeds Ltd
<b>Number of trials for yields</b>												
Year of sowing			11	7	8	11	12	10	7	6	4	24
1st harvest year			14	13	12	14	12	11	11	9	6	28
2nd harvest year			14	13	12	14	11	11	10	6	6	26

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. 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 2019/2020

			Diploids				Tetraploids											
	Mean of G varieties	Diploid Mean (= Barsilo)	Pirol	Barsilo	Barclamp	Tetraploid Mean	AberEcho	Solid	Aston Crusader	Bannfoot	Enduro	Tetragraze	Novial	AberNiche (Fest)	Kirial	Bahial	Amalgam	Perseus (Fest)
<b>Recommended List status</b>			<b>G</b>	<b>G</b>	<b>PG</b>		<b>G</b>	<b>S</b>	<b>G</b>	<b>PG</b>	<b>G</b>	<b>S</b>	<b>G</b>	<b>S</b>	<b>G</b>	<b>G</b>	<b>G</b>	<b>PG</b>
<b>Heading date</b>			21 May	25 May	25 May		16 May	17 May	19 May	20 May	20 May	20 May	21 May	22 May	22 May	23 May	24 May	24 May
<b>Total annual yields</b>																		
1st harvest year (% of 18.88t DM/ha)	100	106	106	106	105	98	104	96	101	96	97	96	97	102	99	96	95	97
2nd harvest year (% of 14.68t DM/ha)	100	96	100	93	99	101	101	97	102	103	101	101	103	99	101	101	100	102
3rd harvest year (% of 13.75t DM/ha)	100	95	97	93	88	102	100	97	102	105	103	100	100	100	104	102	101	104
Total yield: mean (% of 15.88t DM/ha)	100	99	101	97	98	100	102	97	102	101	100	99	100	100	101	100	99	101
Year of sowing (% of 1.95t DM/ha)	100	97	98	96	99	101	95	93	102	100	101	89	104	101	108	105	93	101
1st and 2nd cut ME yield, first harvest year (% of 126,000 MJ/ha)	100	101	101	101	102	100	106	98	100	99	98	99	98	99	101	96	99	101
<b>Seasonal growth – Year 1</b>																		
Early spring growth (% of 1.45t DM/ha)	100	115	115	115	112	95	103	81	108	73	96	76	97	114	98	96	81	93
<b>Conservation management</b>																		
1st conservation cut (% of 6.81t DM/ha)	100	97	97	96	98	101	101	104	103	106	101	107	102	94	102	99	103	103
1st conservation cut D-value	72.1	72.1	71.5	72.6	72.1	72.1	73.2	71.0	71.0	71.3	71.8	70.8	71.4	72.5	71.8	72.2	72.0	71.9
2nd conservation cut (% of 4.08t DM/ha)	100	113	116	111	115	96	110	88	96	85	93	89	90	113	98	92	90	99
2nd conservation cut D-value	70.7	67.7	66.6	68.9	67.3	71.8	72.0	72.3	71.1	72.9	71.5	71.4	71.9	67.2	71.8	71.5	71.9	69.4
Monthly cuts (% of 6.59t DM/ha)	100	108	106	110	104	97	105	95	100	97	96	94	96	102	97	97	93	90
<b>Agronomic characters</b>																		
Ground cover % (1st harvest year)	56	55	57	52	60	56	58	60	59	57	57	60	55	51	56	56	56	53
Ground cover % (2nd harvest year)	53	50	53	48	53	54	54	59	53	57	54	57	53	48	52	53	58	53
Ground cover % (3rd harvest year)	54	44	47	42	47	57	56	63	54	58	55	59	56	46	52	58	64	53
Autumn ground cover (1-9, 1=poor 9=good)	4.2	3.6	3.8	3.4	3.9	4.4	4.3	4.9	4.2	4.5	4.3	4.6	4.2	3.6	4.0	4.3	4.8	4.1
Winter hardiness (1-9, 1=poor 9=good)	7.1	7.2	7.4	7.0	[7.2]	7.1	7.0	7.1	7.1	[7.1]	7.1	7.1	7.2	7.1	7.1	7.0	7.0	[7.1]

			Diploids			Tetraploids												
	Mean of G varieties	Diploid Mean (= Barsilo)	Pirol	Barsilo	Barclamp	Tetraploid Mean	AberEcho	Solid	Aston Crusader	Bannfoot	Enduro	Tetragraze	Novial	AberNiche (Fest)	Kirial	Bahial	Amalgam	Perseus (Fest)
<b>Disease resistance</b>																		
Ryegrass mosaic virus (1-9, 1=poor 9=good)	6.3	3.8	3.9	3.7	[6.7]	7.2	5.7	7.4	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)	6.4	5.7	3.9	7.4	6.3	6.7	6.9	6.6	7.6	7.6	6.9	7.0	7.2	7.6	7.5	6.3	5.1	6.7
Brown rust (1-9, 1=poor 9=good)	6.8	5.0	6.6	3.4	[8.7]	7.3	4.1	8.7	[8.2]		8.2	8.4	7.6	7.3	7.9	7.3	8.9	
Crown rust (1-9, 1=poor 9=good)	6.7	5.5	6.6	4.3	7.4	7.1	3.8	7.4	6.5	6.5	8.2	3.3	7.9	6.1	7.5	7.5	7.7	9.0
<b>Year First Listed</b>			<b>2005</b>	<b>1998</b>	<b>2017</b>		<b>2002</b>	<b>1994</b>	<b>2014</b>	<b>2018</b>	<b>2005</b>	<b>2008</b>	<b>2010</b>	<b>2004</b>	<b>2012</b>	<b>2007</b>	<b>2009</b>	<b>2018</b>
<b>Breeder</b>			Steinach, Germany / DSV	Barenbrug, NL	Barenbrug, NL		IBERS, Aberystwyth	DLF Seeds A/S	DSV, UK	AFBI, UK	R2n, France	DLF Seeds A/S	R2n, France	IBERS, Aberystwyth	R2n, France	R2n, France	DLF Seeds A/S	DLF Seeds A/S
<b>UK Agent</b>			Germinal	Barenbrug UK Ltd	Barenbrug UK Ltd		Germinal	DLF Seeds Ltd	DSV	Barenbrug UK Ltd	Lim-agrain UK Ltd	DLF Seeds Ltd	Barenbrug UK Ltd	Germinal	RAGT Seeds Ltd	DLF Seeds Ltd	Lim-agrain UK Ltd	DLF Seeds Ltd
<b>Number of trials for yields</b>																		
Year of sowing			16	7	5		12	22	4	3	8	8	10	7	5	6	8	3
1st harvest year			21	11	9		21	26	13	6	13	12	11	11	13	12	12	6
2nd harvest year			19	11	6		18	25	13	6	13	12	10	11	13	12	12	6
3rd harvest year			19	11	6		18	27	12	6	12	11	12	12	12	11	12	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. 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 Timothy Varieties 2019/2020

	Mean of G varieties	Presto	Comer	Dolina	Promesse	Comtal	Winnetou	Moverdi	Motim
<b>Recommended List status</b>		<b>G</b>	<b>G</b>	<b>G</b>	<b>S</b>	<b>G</b>	<b>G</b>	<b>S</b>	<b>S</b>
<b>Heading date</b>		7 Jun	8 Jun	8 Jun	8 Jun	9 Jun	10 Jun	11 Jun	16 Jun
<b>Grazing: management</b>									
Grazing yield (% of 10.66t DM/ha)	100	101	103	101	95	101	96	101	96
Grazing D-value	73.3	73.9	72.2	72.2	74.0	72.8	74.5	73.6	73.2
ME yield (% of 125,000 MJ/ha)	100	102	101	100	96	100	97	101	96
<b>Grazing: seasonal growth</b>									
Early grazing yield (% of 1.15t DM/ha)	100	110	106	104	81	101	83	88	88
Spring (% of 2.34t DM/ha)	100	106	106	107	89	97	91	96	88
Early summer (% of 4.00t DM/ha)	100	100	100	98	98	103	97	98	100
Late summer (% of 2.98t DM/ha)	100	99	102	100	97	102	97	104	99
Autumn (% of 1.34t DM/ha)	100	97	107	103	92	100	95	109	93
<b>Conservation: management</b>									
Total yield: year 1 (% of 14.63t DM/ha)	100	101	102	101	97	98	99	98	97
ME yield of 1st+2nd cut year 1 (% of 98,000 MJ/ha)	100	100	102	100	100	97	100	98	99
Total yield: year 3 (% of 12.92t DM/ha)	100	100	104	101	94	98	98	98	97
Total yield: mean (% of 13.77t DM/ha)	100	101	103	101	96	98	99	98	97
<b>Conservation: seasonal growth – Year 1</b>									
1st cut (% of 6.22t DM/ha)	100	101	103	100	96	96	99	95	93
1st cut D-value	64.5	63.7	63.4	64.1	66.3	64.3	66.6	65.6	67.1
2nd cut (% of 3.38t DM/ha)	100	100	104	104	101	100	97	97	105
2nd cut D-value	65.9	66.2	65.2	64.8	66.0	65.5	66.6	67.0	65.6
3rd cut (% of 2.36t DM/ha)	100	102	100	105	96	98	100	99	93
4th+ cut (% of 2.67t DM/ha)	100	98	99	99	94	102	101	102	99



	Mean of G varieties	Presto	Comer	Dolina	Promesse	Comtal	Winnetou	Moverdi	Motim
<b>Agronomic characters</b>									
Ground cover % (2nd harvest year)	64	64	62	57	68	65	66	55	70
Ground cover % (3rd harvest year)	57	57	56	53	61	58	59	47	66
Autumn ground cover (1-9, 1=poor 9=good)	5.1	5.0	4.8	4.4	5.4	5.1	5.2	4.0	5.8
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	1974
<b>Breeder</b>		DSV, Netherlands	ILVO	ILVO	Innoseeds, NL	DLF Seeds A/S	DLF Seeds A/S	DLF Seeds A/S	DLF Seeds A/S
<b>UK Agent</b>		Geminal	Limagrain UK Ltd	DLF Seeds Ltd	DLF Seeds Ltd	Limagrain UK Ltd	DLF Seeds Ltd	Limagrain UK Ltd	Limagrain UK Ltd
<b>Number of trials for yields</b>									
1st harvest year		12	11	11	11	11	11	10	12
2nd harvest year		13	11	11	11	12	11	11	12
3rd harvest year		12	11	11	11	12	11	10	12

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.

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.

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

# Recommended List of White Clover Varieties 2019/2020

	Mean of G varieties	AberAce	Aber S.184	G Demand	Coolfin	Buddy	AberHerald	Iona	Crusader	G Bounty	AberDai	AberSwan	Dublin	Violin	Alice	Barblanca	Aran	Brianna	
Recommended List status		G	G	G	PG	G	G	G	G	G	G	PG	PG	G	G	G	G	PG	
Leaf area (length x breadth mm <sup>2</sup> )		379	602	758	773	803	809	809	827	883	886	901	1044	1049	1097	1111	1396	1499	
Light defoliation (cutting or rotational cattle grazing)																			
Total clover yield (% of 4.89t DM/ha) #	100	80	91	92	98	96	101	95	102	98	104	109	111	113	101	109	115	121	
Total yield: grass and clover (% of 11.69t DM/ha) #	100	94	99	97	99	98	100	100	101	100	101	102	102	106	100	101	103	105	
% clover	42	36	38	40	42	41	42	40	42	41	43	45	46	44	43	45	47	48	
Clover yield: first cut (% of 0.70t DM/ha) #	100	81	81	89	109	98	94	98	111	96	110	123	109	106	107	116	117	95	
Clover yield: last cut (% of 0.48t DM/ha) #	100	63	83	94	99	90	102	91	118	102	106	108	111	118	107	125	122	124	
3rd harvest year																			
Yield of clover (% of 4.20t DM/ha) #	100	77	80	86	101	103	115	97	90	93	100	119	112	116	102	113	108	117	
Yield of grass + clover (% of 11.35t DM/ha) #	100	95	95	96	100	100	102	98	98	100	100	104	103	106	100	102	102	104	
% clover	37	30	31	33	38	38	42	37	34	34	37	43	40	41	38	41	40	42	
Clover yield: first cut (% of 0.59t DM/ha) #	100	71	69	75	109	107	116	95	91	101	102	111	109	110	104	122	110	105	
Clover yield: last cut (% of 0.42t DM/ha) #	100	74	78	93	95	83	114	90	101	102	102	120	105	113	102	135	116	118	
Autumn ground cover																			
Light Defoliation	% cover (1st harvest year)	48	47	53	48	45	43	50	51	52	51	47	47	50	51	45	49	44	46
	% cover (2nd harvest year)	49	40	48	47	50	46	53	45	50	47	52	49	57	54	49	56	51	53
	% cover (3rd harvest year)	49	43	43	49	51	49	53	46	49	50	47	55	49	53	47	53	49	50
	Overall (1-9, 1=poor 9=good)	6.3	4.8	5.6	6.1	6.7	6.0	7.3	5.5	6.5	6.2	6.5	7.0	7.4	7.4	6.2	7.5	6.5	6.9

	Mean of G varieties	AberAce	Aber S.184	G Demand	Coolfin	Buddy	AberHerald	Iona	Crusader	G Bounty	AberDai	AberSwan	Dublin	Violin	Alice	Barblanca	Aran	Brianna	
<b>Autumn ground cover</b>																			
Hard Defoliation	% cover (1st harvest year)	57	62	64	62	61	57	52	59	56	60	55	52	57	62	52	55	47	51
	% cover (2nd harvest year)	57	62	65	56	63	60	52	58	57	63	55	59	56	58	50	57	46	53
	% cover (3rd harvest year)	54	58	57	55	54	59	50	57	51	59	52	54	48	58	48	53	46	49
	Overall (1-9, 1=poor 9=good)	7.0	8.0	8.1	7.0	7.6	7.8	5.9	7.5	6.7	8.2	6.5	7.1	6.3	7.5	5.6	6.8	4.9	6.0
<b>Spring ground cover</b>																			
Hard Defoliation	% cover (1st harvest year)	39	46	42	39	43	43	36	42	43	38	39	40	43	34	37	37	34	31
	% cover (2nd harvest year)	59	64	69	60	61	61	55	57	49	64	57	52	58	62	55	54	48	57
	% cover (3rd harvest year)	49	53	49	49	53	56	49	49	44	49	50	53	48	48	45	47	41	46
	Overall (1-9, 1=poor 9=good)	7.4	8.5	8.6	7.7	8.3	8.8	6.9	7.2	5.6	8.3	7.4	7.0	7.4	7.8	6.4	6.6	5.1	7.1
<b>Year First Listed</b>		2001	1969	1994		2013	1994	2011	2002	2003	1997	2018	2015	2009	1985	2001	1981	2015	
<b>Breeder</b>		IBERS, Aberystwyth	IBERS, Aberystwyth	AgResearch Ltd (New Zealand)	Teagasc, Eire	Teagasc, Eire	IBERS, Aberystwyth	Teagasc, Eire	AgResearch Ltd (New Zealand)	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	
<b>UK Agent</b>		Germinal	Barenbrug UK Ltd	Limagrain UK Ltd	Limagrain UK Ltd	DLF Seeds Ltd	Germinal	DLF Seeds Ltd	Barenbrug UK Ltd	Limagrain UK Ltd	Germinal	Germinal	DLF Seeds Ltd	Limagrain UK Ltd	Barenbrug UK Ltd	Barenbrug UK Ltd	Germinal	DLF Seeds Ltd	
<b>Number of trials for clover yields</b>																			
2nd harvest year		20	10	11	5	10	13	11	13	12	26	6	7	14	24	10	23	7	
3rd harvest year		21	10	11	5	9	13	9	14	12	25	6	6	13	24	11	22	6	

\* 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 2019/2020

		Diploids											Tetraploids			
	Mean of DL varieties	Merviot	Lemmon	AberClaret	AberChianti	Avisto	Harmonie	Metis	Discovery	Hegemon	Sinope	Fearga	Amos	Maro	Atlantis	Magellan
<b>Recommended List status</b>		S	G	G	S	G	G	G	G	G	PG	PG	G	G	G	G
<b>Conservation: management</b>																
Total yield: 1st harvest year (% of 12.27t DM/ha)	100	106	103	104	93	100	100	94	103	91	106	103	103	102	102	99
Total yield: 2nd harvest year (% of 13.07t DM/ha)	100	98	99	107	99	101	100	97	98	99	103	112	102	100	102	98
Total yield: 3rd harvest year (% of 9.35t DM/ha)	100	92	101	109	110	98	100	104	87	95	106	113	98	100	104	103
Total yield: mean (% of 11.83t DM/ha)	100	99	101	106	99	100	100	98	97	95	105	109	101	101	102	99
<b>Seasonal growth: 1st harvest year</b>																
1st cut (% of 5.08t DM/ha)	100	111	103	99	86	99	100	99	105	93	115	91	104	102	101	97
Protein content %: 1st cut	17.4	17.0	17.4	17.0	17.0	17.2	18.3	17.2	16.2	17.7	17.8	17.1	18.0	17.4	17.7	17.8
<b>Agronomic characters</b>																
Ground cover % (1st harvest year)	62	60	64	61	62	61	67	64	57	59	58	65	65	61	65	64
Ground cover % (2nd harvest year)	50	44	52	53	55	49	55	51	41	52	52	57	51	49	53	49
Ground cover % (3rd harvest year)	45	39	44	47	54	45	50	51	37	46	45	50	44	37	46	45
<b>Year First Listed</b>		1980	2003	2010	2011	2011	2012	2016	2016	2017	2018	2019	2005	2010	2011	2014
<b>Breeder</b>		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
<b>UK Agent</b>		Limagrain UK Ltd	Barenbrug UK Ltd	Germinal	Germinal	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
<b>Number of trials for yields</b>																
1st harvest year		18	14	14	14	14	13	8	8	7	5	5	18	14	14	12
2nd harvest year		18	12	11	12	12	11	7	7	6	5	5	18	11	12	9
3rd harvest year		15	7	7	7	7	7	6	6	6	5	5	15	7	7	5

# Descriptive List of Lucerne Varieties 2019/2020

	Mean of all varieties	Daisy	Diane	Marshall
<b>Conservation: management</b>				
Total yield: 1st harvest year (% of 12.50t DM/ha)	100	102	101	98
Total yield: 2nd harvest year (% of 15.45t DM/ha)	100	100	99	101
Total yield: mean (% of 13.98t DM/ha)	100	101	100	100
<b>Seasonal growth: 1st harvest year</b>				
1st cut (% of 4.63t DM/ha)	100	103	101	96
Protein content: 1st cut (%)	18.72	18.47	18.87	18.82
<b>Agronomic characters</b>				
Ground cover % (1st harvest year)	55	57	56	52
Ground cover % (2nd harvest year)	46	48	45	45
<b>Year First Listed</b>		2003	2003	2003
<b>Breeder</b>		DLF Seeds A/S	Innoseeds, NL	Limagrain
<b>UK Agent</b>		DLF Seeds Ltd	DLF Seeds Ltd	Limagrain UK Ltd
<b>Number of trials for yields</b>				
1st harvest year		8	8	8
2nd harvest year		8	8	8

# Descriptive List of Cocksfoot Varieties 2019/2020

	Mean of all varieties	Sparta	Lidacta
<b>Conservation management</b>			
Total yield 1st harvest year (% of 15.25t DM/ha)	100	98	102
Total yield 2nd harvest year (% of 14.73t DM/ha)	100	100	100
Total yield: mean (% of 14.99t DM/ha)	100	99	101
<b>Seasonal growth: 1st harvest year</b>			
1st cut (% of 4.94t DM/ha)	100	99	101
1st conservation cut D-Value (minus 65)	66.6	66.1	67.1
2nd cut (% of 2.97t DM/ha)	100	96	104
2nd conservation cut D-Value (minus 65)	68.6	68.8	68.4
3rd cut (% of 3.02t DM/ha)	100	98	102
4th+ cut (% of 4.33t DM/ha)	100	99	101
<b>Agronomic characters</b>			
Ground Cover % (2nd harvest year)	64.7	65.2	64.3
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)	5	5	6
Resistance to Yellow Rust (1-9, 9=good)	6	3	6
<b>Year First Listed</b>		<b>1982</b>	<b>1991</b>
<b>Breeder</b>		DLF Seeds A/S	DSV, Germany
<b>UK Agent</b>		DLF Seeds Ltd	DSV
<b>Number of trials for yields</b>			
1st harvest year		10	10
2nd harvest year		10	10

Yellow rust ratings and winter hardiness scores are based on 3 trials only.



## Useful Contacts

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

### New varieties

On the 2019/20 RGCL, ten varieties have been added – eight grasses and two clovers. 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
Cooky	Early PRG (Tet)	6–7
Kendal	Late PRG (Dip)	12–13
Dundrod	Late PRG (Dip)	12–13
AstonKing	Late PRG (Dip)	12–13
Gleneagle	Late PRG (Dip)	12–13
Weldone	Late PRG (Tet)	14–15
Hopi	Late PRG (Tet)	14–15
Melprimo	Italian RG (Dip)	16–17
Coolfin	White clover	24–25
Fearga	Red clover	26



# 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 Beef & Lamb, AHDB Dairy, Hybu Cig Cymru).

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)

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