

Grass and White Clover Varieties



Irish Recommended List 2019

CROP POLICY, EVALUATION AND CERTIFICATION DIVISION



**An Roinn Talmhaíochta,
Bia agus Mara**
Department of Agriculture,
Food and the Marine

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Notice to Publishers

The variety data presented may not be published unless the source is clearly acknowledged as the 'Grass and White Clover Recommended List Varieties for Ireland 2019' publication produced by Department of Agriculture, Food and the Marine.

Introduction

Perennial ryegrass, Italian ryegrass and White clover account for nearly all of the agricultural grass/clover seed sold in Ireland. Of these, perennial ryegrass is by far the most important. Other species of grass and clover are not commonly used. Individual varieties differ in performance characteristics depending on maturity group and ploidy. These differences may be further exaggerated by factors such as climate, soil type and system of farming. Increased demands on grassland with regard to early spring grass, mid-season production, extended grazing in the autumn etc., mean that care needs to be taken in the selection of suitable grass seed mixtures. All grass and clover varieties listed in this booklet have a proven record of performance over a period of years at a number of different locations, and are deemed most suitable for Irish conditions.

Growers should give preference to the Recommended List varieties unless there is strong evidence that some other variety is more suited to their conditions.

Variety Maturity Groupings

Perennial Ryegrass: - This grass species accounts for approximately 95% of forage grass seed sold in Ireland. Perennial ryegrass is grouped into three maturity groups (**early**, **intermediate** and **late**) on the basis of heading date (ear emergence).

Early varieties: - Head in the first half of May. Early perennials provide very good yields of early spring grazing and first cut silage. Stemmy re-growths in early summer can be a problem where long periods of uninterrupted growth are allowed to occur without grazing or cutting. In recent years, use of this group has declined in Ireland and sales are at a very low level.

Intermediate varieties: - Head in the second half of May and are ideal for producing high quality silage cuts in late May and mid-July. Although not bulking up as soon as early perennial varieties, overall silage yields are as good. Varieties from this group are suited to a broad range of management systems, and should be included in any seed mixture. In recent years spring growth has improved and they have better ground cover than the early varieties.

Late varieties: - Head in the first half of June and tend towards a prostrate growth habit. They are characterised by high tiller densities, exhibit good ground cover and are well suited to long term grazing pastures. Late varieties produce good quality silage cuts in early June and late July, are leafy in mid-summer and have good autumn growth. Generally their spring growth is not as good as for 'Intermediates'.

Under good grazing management, late perennials are very persistent and can survive very well for many years.

Italian ryegrass: - Are best suited to short-term leys of 2-3 years duration. They have early spring growth, but can be difficult to manage in mid-season because of stemmy regrowth. Italian varieties are suitable for intensive silage production and can also provide useful grazing in the spring and late autumn period. They tend to have low sward densities and are susceptible to poaching under adverse conditions.

Hybrid ryegrass: - These varieties represent the product of a cross between Italian and Perennial ryegrass types. In appearance they generally reflect one or other parental type. The Hybrid ryegrass varieties tend to yield higher than the Intermediate and Late groups of Perennial ryegrass, but lower than the Italians. Hybrids tend to be more stemmy in summer than the Intermediates and Lates, but less stemmy than the Italians.

White clovers: - Are included as a component in most grass seed mixtures for their nutritive value and their nitrogen fixing abilities. They are classified according to leaf size into very large, large, medium and small leaved types. Very large and large leaved varieties are relatively tolerant to nitrogen fertiliser usage and compete well with companion grasses, making them suitable for silage production. Medium leaved varieties are more suited to grazing, but can also be used in silage mixes. Small leaved varieties are suitable only for grazing.

Ploidy

Recently **diploid** varieties have tended to dominate mixtures in Ireland, but **tetraploid** varieties are an important component of grass seed mixtures. Compared to diploids they generally have higher quality, are more palatable to livestock (higher intake) and are more tolerant to drought. However, they generally have considerably lower tiller densities resulting in more open swards. Dry matter content also tends to be lower compared with diploids. On heavy soils subject to poaching, persistence may also suffer. Seeding rates for tetraploid grasses will need to be higher because of their larger seed size. In this publication, (T) denotes tetraploid varieties, all other varieties being diploid.

IMPORTANT NOTICE: - The Department of Agriculture, Food and the Marine (DAFM) has taken all due care in evaluating the performance in Ireland of the listed varieties, for yield, heading date, ground cover and other agronomic characters (for a minimum period of 3 years) over a range of locations, soils and environmental conditions. DAFM cannot, however accept responsibility for any loss or inconvenience arising from any future variation in absolute or relative varietal performance.

Protocol for Recommended List

Trials and trial sites

Varieties are evaluated over a minimum of two separate sowings, with each sowing being harvested for two years after the sowing year. Trials are conducted at Backweston Farm, Leixlip, Co. Kildare (Headquarters); Fermoy, Co. Cork; Raphoe, Co. Donegal; Athenry, Co. Galway, and Piltown, Co. Kilkenny. Trials are grown on good quality mineral soils in a manner conducive to selection of varieties most suited to good commercial farming practices.

Grasses

Perennial ryegrass (Early, Intermediate and Late heading groups), Italian ryegrass and Hybrid ryegrass trials are sown in April/May and establish during the remainder of that year. The Intermediate and Late trials are then assessed over the following two-year period under two different systems; a 6 cut system and an 8 to 10 cut system, using a trial-plot harvesting machine. Individual trials remain on one system for the two-year period.

The 6 cut system is referred to in this publication as the **General Purpose/2-Cut Silage** system and involves one spring grazing cut, followed by two silage cuts and then three grazing cuts. Results from the 2003 to 2016 sowings of this trial are presented in this publication (two silage cuts in main tables and 'additional cuts' in Appendix 3).

The 8 – 10 cut system is referred to in this publication as the **Simulated Grazing** (frequent cutting) system and involves that number of cuts taken at periods corresponding to normal commercial rotational grazing practice. This system was introduced by DAFM in its 2010 sowings. Its purpose is to provide variety performance data suitable for situations where grass is grazed throughout the growing season. Results from the 2010 to 2016 sowings of this trial are presented in this publication on the Main Tables.

White clover varieties are sown in a mixture with a late perennial ryegrass in May/June, and following an establishment year are assessed over the subsequent two years under a 6-7 cut system. White clovers are tested under a low fertiliser nitrogen input regime, where the total yearly application is 50kg Nitrogen per hectare (50kg N/ha) applied in the spring. Sheep grazing for one day immediately following cutting was introduced for the 2010 - 2014 sowings across two trial sites.

Heading date is based on the first heading date in spring. It is determined by examination of individual grass plants sown in the previous summer/autumn. It is carried out in dedicated trials over a number of years at different sites. Heading date indicates the earliness or lateness of a variety in reaching maturity in spring. Dates listed should be used as a guide only as actual heading date will vary with location, climate and date of the last grazing. Generally late heading date varieties have less of a tendency to head in mid-summer than earlier varieties. In rotational grazing systems, varieties having significantly later heading dates are generally less prone to produce seed heads in mid-summer than varieties having earlier heading dates. Mid-summer heading is most likely to occur in cases of drought and/or delayed grazing and causes deterioration in quality at this time. Use of later heading varieties reduces this risk.

Total yield (Simulated Grazing) for each variety can be calculated from the seasonal yields of spring, summer and autumn, which are presented in the main tables. The tables show the average yields in tonnes dry matter per hectare (t DM/ha) for the control varieties. Annual yield can vary considerably between years and trial sites, due mainly to differences in soil quality and climatic conditions. Where grass is commercially grown on lower quality land, considerably lower annual yields can be expected.

Ground Cover Score data (scale 1 -9) presented in the Main Tables indicates the degree of ground cover or sward density at the end of the second harvest year. It is based on visual assessment. A low figure indicates a very open sward, which may be prone to poaching or trafficability problems. However, since most varieties are sown as a mixture, the degree that this will influence the longevity of the sward can be minimised by including varieties with high ground cover scores.

High Ground Cover scores (at the end of the second harvest year) are generally considered very desirable, while low ground cover scores are generally considered a weakness in varieties. The size of those actual ground cover scores is not taken into account in the Pasture Profit Index (PPI) economic values. Instead, the PPI gives economic values relating to **persistence** which is based on each variety's change in ground cover score from the end of harvest year 1 to the end of harvest

year 2. More information on how persistency is calculated can be found in Appendix 1 of this publication.

Spring growth production figures are given for all ryegrass varieties. These figures are important indicators of early grass production. Spring growth data is based on the yield of cuts taken before mid-April. (These are cuts 1 and 2 in the Simulated Grazing (frequent cutting) system, depending on earliness of growth). Additional spring growth data for the General Purpose protocol is presented in Appendix 3 of this publication. Spring growth data is influenced by growing conditions during the period from the latest autumn cut in the previous harvest year. Yearly variations in those conditions can be considerable and can significantly influence varietal performance in individual years. Accordingly, particularly for this trait, an accurate assessment of performance requires use of data obtained over several harvest years.

Summer growth figures in the Simulated Grazing (frequent cutting) system indicate production differences between varieties in this period. Summer growth data is based on the combined yield of the cuts taken from mid-April to mid-August.

Autumn growth figures indicate production differences between varieties in this period. Autumn growth data is based on the combined yield of cuts taken from mid-August to late October.

First and Second Cut Silage growth figures in the General Purpose system indicate production differences between varieties when they are grown for this purpose. First Cut Silage is based on approximately six to seven weeks growth after an initial spring growth cut is taken in early April. Second Cut Silage is based on approximately six to seven weeks growth after the harvesting of the First Cut Silage. The figures are expressed on the main tables.

Grass Quality

Dry Matter Digestibility (DMD) is presented as a measure of grass quality. The results (presented on the Main Tables) are based on testing of plot samples from cuts taken during the growing season at one trial site. Forage will provide more energy to the animal if its DMD is high. High DMD forage increases the DM intake of animals where feeding is not restricted. This increase in intake has a big effect on animal performance. Actual DMD levels can vary considerably and are influenced by several factors including growth stage and climate. The economic values and average DMD from April – July are presented in the Main Tables, with the monthly values presented in Appendix 4 of this publication.

DAFM acknowledge the assistance of Teagasc, Grange, in carrying out laboratory analysis of grass samples for quality determinations.

Summary of all Recommended List Varieties 2019 of Italian Ryegrass, Hybrid Ryegrass and White Clover varieties in alphabetical order

Italian Ryegrass	Group	Breeder	Year 1st Listed
Davinci	Italian	ILVO	2011
Fabio (T)	Italian	DSV	1998
Nabucco (T)	Italian	DSV	2007

Hybrid Ryegrass	Group	Breeder	Year 1st Listed
Aberecho (T)	Hybrid	IBERS	2013
Alliance (T)	Hybrid	Limagrain	2011
Pirol	Hybrid	DSV	2009

White Clover	Group	Breeder	Year 1st Listed
Aberace	Small	IBERS	2016
Aberherald	Medium	IBERS	2003
Barblanca	Large	Barenbrug	2009
Buddy	Medium	Teagasc	2015
Chieftain	Medium	Teagasc	2005
Coolfin	Small	Teagasc	2017
Crusader	Medium	Barenbrug	2009
Dublin	Large	Teagasc	2018
Galway	Small	Teagasc	2017
Iona	Medium	Teagasc	2014

Note:

Breeder details can be found in Appendix 5 of this publication.

Summary of all Recommended List Varieties 2019 of Perennial ryegrass (Early, Intermediate and Late varieties) in alphabetical order

Variety Name	Maturity Group	Breeder	Year 1 st Listed
Aberbite (T)	Late	IBERS	2018
Aberchoice	Late	IBERS	2012
Aberclyde (T)	Intermediate	IBERS	2017
Abergain (T)	Late	IBERS	2013
Abergreen	Intermediate	IBERS	2018
Abermagic	Intermediate	IBERS	2010
Aberplentiful (T)	Late	IBERS	2014
Aberwolf	Intermediate	IBERS	2017
Alfonso (T)	Late	DSV	2016
Aspect (T)	Late	DLF	2014
Astonconqueror	Intermediate	DSV	2018
Astonenergy (T)	Late	DSV	2015
Astonking	Late	DSV	2019
Ballintoy (T)	Late	AFBI	2019
Briant (T)	Late	Barenbrug	2019
Clanrye	Late	AFBI	2014
Drumbo	Late	AFBI	2011
Dunluce (T)	Intermediate	AFBI	2007
Elysium (T)	Intermediate	Teagasc	2018
Fintona (T)	Intermediate	AFBI	2017
Genesis	Early	Teagasc	2012
Glenroyal	Late	Teagasc	2015
Gusto	Intermediate	DSV	2019
Kerry	Late	Teagasc	2016
Kintyre (T)	Late	Teagasc	2012
Majestic	Late	Teagasc	2012
Meiduno (T)	Late	DLF	2017
Moira	Intermediate	AFBI	2018
Moyola	Early	AFBI	2012
Nifty	Intermediate	DLF	2016
Oakpark	Late	Teagasc	2019
Rosetta	Intermediate	AFBI	2013
Seagoe (T)	Intermediate	AFBI	2014
Smile	Late	DLF	2019
Solas (T)	Late	Teagasc	2015
Triwarwic (T)	Late	DLF	2019
Xenon (T)	Late	DLF	2016

RECOMMENDED LIST 2019 MAIN TABLES

Appendices 1 – 5 provide supporting information.

Recommended Italian, Hybrid and Early Perennial Ryegrass Varieties 2019

General Purpose protocol (including 2 silage cuts) trial data is presented in the three Tables below.

Italian Ryegrass

Variety Name	Heading Date	Total Yield	Ground Cover 1-9	Spring Growth	Silage Yield	*DMD %	*WSC %
<i>Control Mean t DM/ha</i>		16.2	5.1	1.4	8.6	78.2	19.2
Fabio (T)	18-May	99	4.9	98	100	100.7	101
Nabucco (T)	20-May	101	5.1	100	101	100.1	100
Davinci	22-May	102	5.5	103	99	98.6	85

Hybrid Ryegrass

Variety Name	Heading Date	Total Yield	Ground Cover 1-9	Spring Growth	Silage Yield	*DMD %	*WSC %
<i>Control Mean t DM/ha</i>		16.0	5.3	1.2	8.6	79.2	18.9
Aberecho (T)	18-May	99	5.6	95	102	(104.7)	(129)
Alliance (T)	20-May	102	5.2	100	103	100.7	107
Pirol	22-May	103	5.6	98	105	(98.0)	(90)

() indicates provisional data.

Early Perennial Ryegrass

Variety Name	Heading Date	Total Yield	Ground Cover 1-9	Spring Growth	Autumn Growth	*DMD %	*WSC %
<i>Control Mean t DM/ha</i>		14.8	6.0	1.3	3.1	80.4	18.4
Moyola	11-May	105	6.4	109	107	100.0	102
Genesis	12-May	103	6.7	118	102	99.7	103

***DMD and WSC controls data is shown as g/100g on this Table.**

Italian, Hybrid and Early PRG variety descriptions can be found on Page 17.

Control varieties can be found in Appendix 2 Page 26.

Information note in relation to the data presented in the Intermediate and Late Perennial Ryegrass Tables 2019

Varieties presented in the main table on page 14 have been evaluated using the Teagasc **Pasture Profit Index** (PPI) model.

The PPI model for grass variety evaluation assigns economic values to the following traits:

1. Seasonal Dry Matter (DM) production, which is sub-divided into;
 - a. Spring DM Yield
 - b. Summer DM Yield
 - c. Autumn DM Yield
2. Grass Quality
3. Silage Dry Matter production
4. Varietal persistency

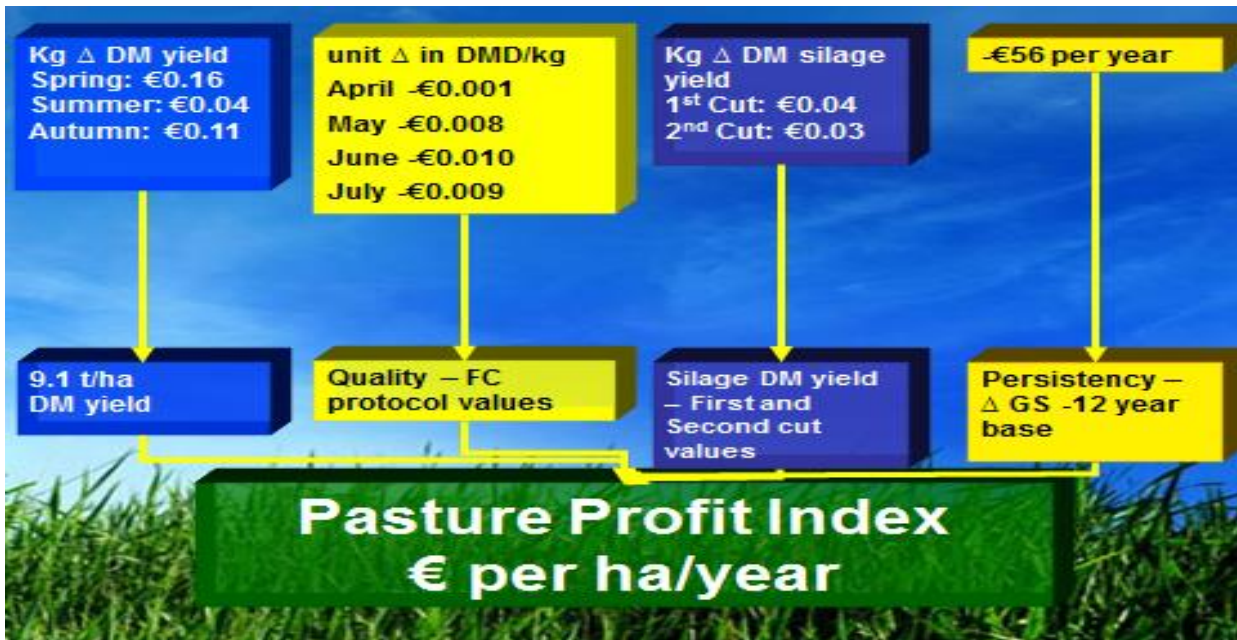
All agronomic trial data on which these tables are based comes from official DAFM trials. The PPI values have been presented with the agronomic data in these tables. These include data from the Simulated Grazing (frequent cutting) protocol for spring, summer and autumn dry matter yields, for quality (DMD) and ground cover. The silage data presented in these tables has been taken from cuts 2 and 3 (1st and 2nd cut silage respectively) of the General Purpose protocol. Data from the 2016 sowings, which includes harvest years 2017 and 2018, is also included in the evaluation of varieties on this years Recommended List.

For convenience, there is an alternative table on page 15, which categorises varieties by maturity and ploidy (i.e. according to their heading date and whether they are diploid or tetraploid).

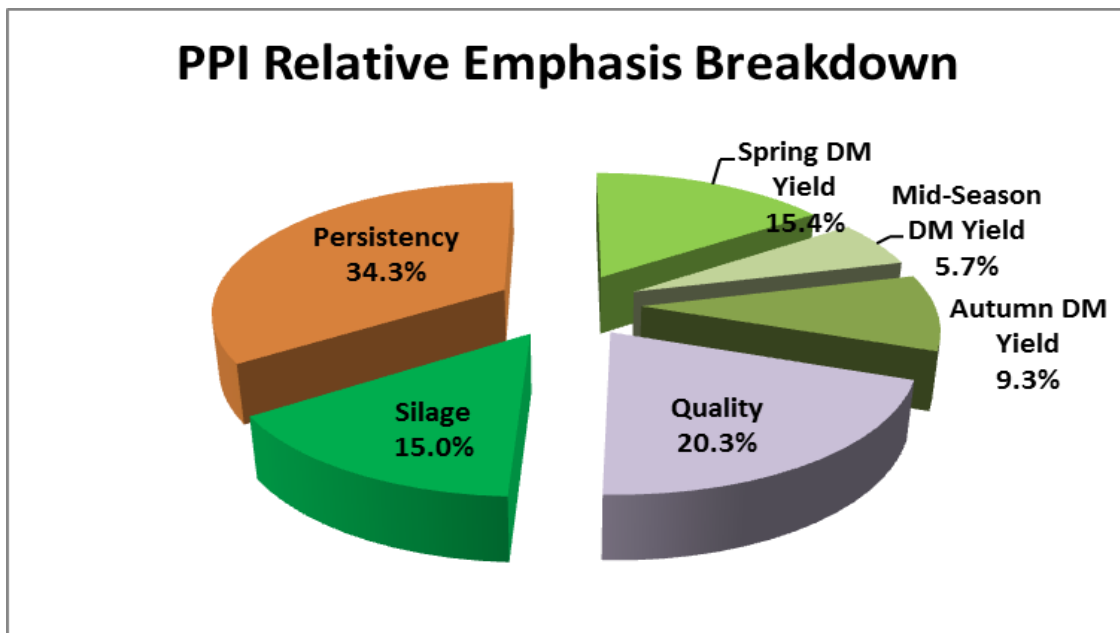
The following chart provides details of the PPI sub-indices (traits), including Base Values assigned to each trait.

PPI Sub-Indices

'Base Values'



A breakdown of the relative emphasis of the **PPI sub-indices** is given in the chart below, with further details of 'base values' included in Appendix 1 of this publication.



Please note that due consideration should be given to the **PPI sub-indices** when choosing a variety.

Recommended Intermediate & Late Perennial Ryegrass Varieties 2019

Variety Name	Ploidy	Heading Date	Pasture Profit Index Values € / Ha / Year							Spring	Summer	Autumn	Total Yield	Mean DMD	1st Cut Silage	2nd Cut Silage	Ground Cover
			Total PPI	Sub-Indices						(t DM/ha)	(t DM/ha)	(t DM/ha)	(t DM/ha)	(g/kg)	(t DM/ha)	(t DM/ha)	Score
				Spring Growth	Summer Growth	Autumn Growth	Quality	Silage	Persist.	1.13	7.02	2.32	10.46	840.8	4.60	4.01	6.0
Abergain	T	4-Jun	214	37	40	43	56	37	0	1.15	7.15	2.28	10.57	855.8	4.98	4.09	5.7
Aberclyde	T	25-May	205	54	43	34	44	30	0	1.30	7.23	2.21	10.74	853.4	5.10	3.68	5.5
Abermagic	D	29-May	197	44	46	70	19	17	0	1.25	7.32	2.54	11.11	846.6	4.68	3.83	6.3
Nifty	D	27-May	193	80	50	57	-23	29	0	1.64	7.26	2.32	11.24	837.5	4.08	3.80	6.5
Fintona	T	22-May	191	73	23	43	12	40	0	1.42	6.70	2.30	10.41	839.8	5.15	3.96	5.4
Aberchoice	D	9-Jun	189	32	45	51	47	15	0	1.10	7.25	2.33	10.68	850.9	4.30	4.27	6.1
Moira	D	24-May	187	118	21	49	-30	29	0	1.69	6.66	2.35	10.70	828.6	5.02	3.75	6.4
Abergreen	D	31-May	182	58	52	62	4	6	0	1.33	7.48	2.47	11.27	842.5	4.38	3.85	6.7
Aberplentiful	T	08-Jun	182	57	44	42	17	22	0	1.32	7.27	2.29	10.87	844.6	4.51	4.22	5.5
Elysium	T	25-May	171	73	30	26	19	22	0	1.42	6.89	2.15	10.45	845.3	4.80	3.82	6.1
Dunluce	T	29-May	170	31	39	45	25	31	0	1.17	7.11	2.31	10.59	846.3	4.68	4.27	5.4
Aberwolf	D	29-May	169	65	33	34	14	23	0	1.37	6.97	2.21	10.55	843.3	4.93	3.68	7.0
Meiduno	T	3-Jun	167	55	39	41	16	22	-5	1.30	7.12	2.27	10.70	845.0	4.70	3.97	5.2
Astonconqueror	D	25-May	165	79	29	34	-4	27	0	1.46	6.85	2.21	10.52	839.0	5.34	3.26	6.4
Gusto	D	30-May	161	67	31	55	15	-7	0	1.38	6.92	2.41	10.70	843.9	4.26	3.60	5.8
Briant	T	3-Jun	157	37	39	39	19	24	0	1.30	7.13	2.28	10.71	843.6	4.67	4.06	5.7
Rosetta	D	23-May	156	85	25	40	-16	22	0	1.49	6.75	2.27	10.51	834.8	5.04	3.50	6.3
Seagoe	T	26-May	155	45	35	36	-1	40	0	1.32	7.02	2.25	10.59	842.5	5.25	3.80	5.9
Aberbite	T	1-Jun	154	10	38	44	39	34	-11	1.03	7.11	2.31	10.44	850.4	4.87	4.15	5.7
Ballintoy	T	02-Jun	150	31	35	35	22	28	0	1.16	7.02	2.22	10.39	847.4	4.79	4.03	5.6
Triwarwic	T	02-Jun	139	42	34	23	13	27	0	1.33	7.01	2.14	10.48	844.8	4.80	3.98	5.9
Kintyre	T	6-Jun	134	25	33	50	5	22	0	1.14	6.98	2.37	10.48	839.6	4.48	4.25	5.9
Astonenergy	T	2-Jun	132	9	30	36	48	10	0	1.02	6.89	2.23	10.14	853.5	4.63	3.65	5.4
Solas	T	10-Jun	131	16	31	50	10	24	0	1.04	6.94	2.37	10.34	840.5	4.47	4.36	6.0
Xenon	T	8-Jun	128	18	31	30	29	20	0	1.08	6.91	2.17	10.16	848.4	4.25	4.51	6.3
Aspect	T	6-Jun	124	20	32	24	32	16	0	1.06	6.95	2.11	10.11	850.4	4.41	4.17	6.2
Oakpark	D	2-Jun	118	34	30	33	-8	28	0	1.18	6.90	2.21	10.28	837.3	4.61	4.29	6.8
Drumbo	D	7-Jun	117	29	27	34	24	3	0	1.12	6.82	2.21	10.14	843.5	4.26	3.93	6.4
Astonking	D	5-Jun	116	64	28	22	-15	17	0	1.37	6.83	2.11	10.29	833.8	4.67	3.85	5.8
Alfonso	T	1-Jun	113	7	30	34	34	8	0	1.01	6.89	2.21	10.11	850.0	4.62	3.60	5.9
Smile	D	5-Jun	101	24	25	43	-6	14	0	1.11	6.78	2.30	10.18	835.9	4.40	4.10	6.4
Kerry	D	2-Jun	98	42	31	35	-23	13	0	1.00	6.90	2.20	10.11	832.5	4.34	4.15	6.4
Glenroyal	D	4-Jun	96	25	32	40	-11	12	0	1.09	6.97	2.25	10.30	835.2	4.40	4.03	6.8
Clanrye	D	6-Jun	68	27	31	15	-30	25	0	1.09	6.91	2.04	10.04	830.0	4.51	4.31	6.8
Majestic	D	1-Jun	66	35	26	36	-38	7	0	1.18	6.79	2.23	10.20	828.2	4.52	3.69	6.8

D = Diploid, T = Tetraploid

*Denotes mean of the control varieties Abermagic, Dunluce, Glenveagh & Navan

Recommended Intermediate & Late Perennial Ryegrass Varieties 2019 (by maturity and ploidy)

Variety Name	Ploidy	Heading Date	Pasture Profit Index Values € / Ha / Year							Spring (t DM/ha)	Summer (t DM/ha)	Autumn (t DM/ha)	Total Yield (t DM/ha)	Mean DMD (g/kg)	1st Cut Silage (t DM/ha)	2nd Cut Silage (t DM/ha)	Ground Cover Score
			Total	Sub-Indices													
			PPI	Spring Growth	Summer Growth	Autumn Growth	Quality	Silage	Persist.								
Intermediates																	
Rosetta	D	23-May	156	85	25	40	-16	22	0	1.49	6.75	2.27	10.51	834.8	5.04	3.50	6.3
Moira	D	24-May	187	118	21	49	-30	29	0	1.69	6.66	2.35	10.70	828.6	5.02	3.75	6.4
Astonconqueror	D	25-May	165	79	29	34	-4	27	0	1.46	6.85	2.21	10.52	839.0	5.34	3.26	6.4
Nifty	D	27-May	193	80	50	57	-23	29	0	1.64	7.26	2.32	11.24	837.5	4.08	3.80	6.5
Abermagic	D	29-May	197	44	46	70	19	17	0	1.25	7.32	2.54	11.11	846.6	4.68	3.83	6.3
Aberwolf	D	29-May	169	65	33	34	14	23	0	1.37	6.97	2.21	10.55	843.3	4.93	3.68	7.0
Gusto	D	30-May	161	67	31	55	15	-7	0	1.38	6.92	2.41	10.70	843.9	4.26	3.60	5.8
Abergreen	D	31-May	182	58	52	62	4	6	0	1.33	7.48	2.47	11.27	842.5	4.38	3.85	6.7
Lates																	
Fintona	T	22-May	191	73	23	43	12	40	0	1.42	6.70	2.30	10.41	839.8	5.15	3.96	5.4
Aberclyde	T	25-May	205	54	43	34	44	30	0	1.30	7.23	2.21	10.74	853.4	5.10	3.68	5.5
Elysium	T	25-May	171	73	30	26	19	22	0	1.42	6.89	2.15	10.45	845.3	4.80	3.82	6.1
Seagoe	T	26-May	155	45	35	36	-1	40	0	1.32	7.02	2.25	10.59	842.5	5.25	3.80	5.9
Dunluce	T	29-May	170	31	39	45	25	31	0	1.17	7.11	2.31	10.59	846.3	4.68	4.27	5.4
Lates																	
Majestic	D	1-Jun	66	35	26	36	-38	7	0	1.18	6.79	2.23	10.20	828.2	4.52	3.69	6.8
Oakpark	D	2-Jun	118	34	30	33	-8	28	0	1.18	6.90	2.21	10.28	837.3	4.61	4.29	6.8
Kerry	D	2-Jun	98	42	31	35	-23	13	0	1.00	6.90	2.20	10.11	832.5	4.34	4.15	6.4
Glenroyal	D	4-Jun	96	25	32	40	-11	12	0	1.09	6.97	2.25	10.30	835.2	4.40	4.03	6.8
Astonking	D	5-Jun	116	64	28	22	-15	17	0	1.37	6.83	2.11	10.29	833.8	4.67	3.85	5.8
Smile	D	5-Jun	101	24	25	43	-6	14	0	1.11	6.78	2.30	10.18	835.9	4.40	4.10	6.4
Clanrye	D	6-Jun	68	27	31	15	-30	25	0	1.09	6.91	2.04	10.04	830.0	4.51	4.31	6.8
Drumbo	D	7-Jun	117	29	27	34	24	3	0	1.12	6.82	2.21	10.14	843.5	4.26	3.93	6.4
Aberchoice	D	9-Jun	189	32	45	51	47	15	0	1.10	7.25	2.33	10.68	850.9	4.30	4.27	6.1
Aberbite	T	1-Jun	154	10	38	44	39	34	-11	1.03	7.11	2.31	10.44	850.4	4.87	4.15	5.7
Alfonso	T	1-Jun	113	7	30	34	34	8	0	1.01	6.89	2.21	10.11	850.0	4.62	3.60	5.9
Ballintoy	T	2-Jun	150	31	35	35	22	28	0	1.16	7.02	2.22	10.39	847.4	4.79	4.03	5.6
Triwarwic	T	2-Jun	139	42	34	23	13	27	0	1.33	7.01	2.14	10.48	844.8	4.80	3.98	5.9
Astonenergy	T	2-Jun	132	9	30	36	48	10	0	1.02	6.89	2.23	10.14	853.5	4.63	3.65	5.4
Meiduno	T	3-Jun	167	55	39	41	16	22	-5	1.30	7.12	2.27	10.70	845.0	4.70	3.97	5.2
Briant	T	3-Jun	157	37	39	39	19	24	0	1.30	7.13	2.28	10.71	843.6	4.67	4.06	5.7
Abergain	T	4-Jun	214	37	40	43	56	37	0	1.15	7.15	2.28	10.57	855.8	4.98	4.09	5.7
Kintyre	T	6-Jun	134	25	33	50	5	22	0	1.14	6.98	2.37	10.48	839.6	4.48	4.25	5.9
Aspect	T	6-Jun	124	20	32	24	32	16	0	1.06	6.95	2.11	10.11	850.4	4.41	4.17	6.2
Aberplentiful	T	8-Jun	182	57	44	42	17	22	0	1.32	7.27	2.29	10.87	844.6	4.51	4.22	5.5
Xenon	T	8-Jun	128	18	31	30	29	20	0	1.08	6.91	2.17	10.16	848.4	4.25	4.51	6.3
Solas	T	10-Jun	131	16	31	50	10	24	0	1.04	6.94	2.37	10.34	840.5	4.47	4.36	6.0

D = Diploid, T = Tetraploid

*Denotes mean of the control varieties Abermagic, Dunluce, Glenveagh & Navan

GRASS VARIETY DESCRIPTIONS

Introduction

The variety descriptions in this booklet are based on the information provided in the Main Tables.

The descriptions are generally confined to pointing out cases where a variety's performance relative to other varieties in the same group differs considerably regarding a particular characteristic. The descriptions are not intended to give an overview of the value of a variety as regards all of its characteristics. All the varieties on the recommended list are those that performed best in trials conducted by the Department of Agriculture, Food and the Marine in Ireland and for which commercial quantities of seed have been produced by the seed industry. The trials included large numbers of varieties put forward by breeders from many countries.

In the descriptions below varieties are listed in heading date order within each category/group.

ITALIAN RYEGRASS:

Fabio (T):	A tetraploid variety. Dry matter digestibility is very good.
Nabucco (T):	A tetraploid variety with well-balanced production over the growing period.
Davinci:	Its annual yield and ground cover are the best of the Italian Group. Dry matter digestibility is moderate.

HYBRID RYEGRASS:

Aberecho (T):	Its quality results are promising but are provisional
Alliance (T):	Good annual yield. Ground cover is the poorest in the group. Spring growth is very good. Dry matter digestibility is good.
Pirol:	Good annual yield with very good silage yield. Its quality results are moderate but are provisional.

EARLY RYEGRASS:

Moyola:	Good annual yield and autumn growth.
Genesis:	Excellent spring growth.

INTERMEDIATE PERENNIAL RYEGRASS: DIPLOIDS

Rosetta:	Spring growth is very good. Moderate autumn growth. A moderate silage variety. Ground cover is good and variety is persistent.
Moira:	Excellent spring growth. The highest spring growth of all varieties. Silage yield is good. Ground cover is good and variety is persistent.
Aston-conqueror:	Very good spring growth. Good silage yield. Ground cover is good and variety is persistent.
Nifty:	Very good spring, summer and autumn growth. Good silage variety. Ground cover is good and variety is persistent.
Abermagic:	Excellent summer and autumn growth. Dry matter digestibility is very good and highest in this category. A good silage variety. Ground cover is good and variety is persistent.
Aberwolf:	Very good spring growth and good summer and autumn growth. Good Dry Matter Digestibility. A good silage variety. Ground cover is very good and the variety is persistent.
Gusto:	This is its first year on the Recommended List. Very good summer and autumn growth. Good Dry Matter Digestibility. Ground cover is moderate and the variety is persistent.
Abergreen:	Very good spring, summer and autumn growth. Ground cover is very good and the variety is persistent.

INTERMEDIATE PERENNIAL RYEGRASS: TETRAPLOIDS

Fintona:	Very good spring and autumn growth. Dry Matter Digestibility is moderate. Silage yield is very good. Ground cover is moderate and variety is persistent.
Aberclyde:	Good seasonal growth and good silage yield. Dry Matter Digestibility is excellent. Ground cover is moderate and variety is persistent.
Elysium:	Very good spring growth. Ground cover is good and variety is persistent.
Seagoe:	Good seasonal growth. Excellent silage yield, with highest in the intermediate tetraploid category. Ground cover is good and the variety is persistent.
Dunluce:	Good summer and autumn growth. Dry matter digestibility is very good and silage yield is good. It is the latest heading tetraploid variety in the intermediates group. Ground cover is moderate and variety is persistent.

LATE PERENNIAL RYEGRASS: DIPLOIDS

Majestic:	Moderate seasonal growth. Ground cover is very good and variety is persistent.
Oakpark	This is its first year on the Recommended List. Good spring, summer and autumn growth. Very good silage yield and is currently highest in this category. Ground cover is very good and the variety is persistent.
Kerry:	Good seasonal growth. Joint earliest heading date in the late diploid category. Ground cover is good and the variety is persistent.
Glenroyal:	Good summer and autumn growth. Ground cover is very good and variety is persistent.
Astonking:	This is its first year on the Recommended List. Very good spring growth. The variety is persistent.
Smile:	This is its first year on the Recommended List. Very good autumn growth. Ground cover is good and the variety is persistent.
Clanrye:	Good spring and summer growth. Very good second cut silage yield. Autumn growth is moderate. Ground cover is very good and variety is persistent.
Drumbo:	Good summer and autumn yield. Dry matter digestibility is very good. Ground cover is good.
Aberchoice:	Very good summer and autumn growth. Dry matter digestibility is excellent. Ground cover is good and the variety is persistent.

LATE PERENNIAL RYEGRASS: TETRAPLOIDS

Aberbite:	Very good summer and autumn growth. Excellent quality. Highest yielding in its category for silage yield. Ground cover score is moderate.
Alfonso:	Good summer and autumn growth. Dry matter digestibility is very good. Ground cover is good and the variety is persistent.
Ballintoy:	This is its first year on the Recommended List. Consistent growth across the year. Dry matter digestibility is good and silage yield is very good. Ground cover is moderate and the variety is persistent.
Triwarwic:	This is its first year on the Recommended List. Very good spring growth and silage yield is very good. Ground cover is good and the variety is persistent.
Astonenergy:	Good summer and autumn growth. Dry matter digestibility is excellent. Ground cover is moderate and the variety is persistent.
Meiduno:	Very good seasonal growth, especially in spring. Good silage yield. Ground cover moderate.
Briant:	This is its first year on the Recommended List. Good seasonal growth, consistent across the year.
Abergain:	Very good summer and autumn growth. Dry matter digestibility is excellent, being highest in its category. Very good silage yield. Ground cover is moderate.
Kintyre:	Good seasonal growth, with very good autumn growth. Dry matter digestibility is good. Ground cover is good.
Aspect:	Moderate seasonal growth. Dry matter digestibility is good. Ground cover is very good and the variety is persistent.
Aberplentiful:	Very good seasonal growth, especially spring and summer, highest in its category. Dry matter digestibility is good. Ground cover is moderate and the variety is persistent.
Xenon:	Good summer and autumn growth. Dry matter digestibility is very good. Ground cover is very good for a late tetraploid and the variety is persistent.

Solas:

Very good autumn growth. Dry matter digestibility and silage yield are good. Ground cover is good and the variety is persistent.

Recommended White Clover Varieties 2019

Variety Name	Total Yield	Leaf Size*	Clover %	Year 1 st Listed	Breeder
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¹Control Mean (t DM/ha): 9.8 t DM/ha

Barblanca	105	Large (0.76)	50	2009	Barenbrug
Dublin	102	Large (0.73)	50	2018	Teagasc

Chieftain	98	Medium (0.68)	47	2005	Teagasc
Buddy	100	Medium (0.58)	45	2015	Teagasc
Iona	94	Medium (0.56)	44	2014	Teagasc
Crusader	95	Medium (0.56)	42	2009	Barenbrug
Aberherald	97	Medium (0.55)	45	2003	IBERS

Coolfin	104	Small (0.51)	47	2017	Teagasc
Galway	95	Small (0.36)	38	2017	Teagasc
Aberace	95	Small (0.26)	33	2016	IBERS

¹Controls in 2014 Trial were Barblanca, Alice, Chieftain and Crusader.

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

Control varieties are shown in Appendix 2 on page 27.

WHITE CLOVER VARIETY DESCRIPTIONS

Barblanca:	A large leaved variety. Very good annual yield. Considered suitable for silage production and unsuitable for hard grazing.
Dublin:	Very good annual yield. Considered suitable for silage production and unsuitable for hard grazing.

Chieftain:	A medium leaved variety with good yield. It is the largest of the medium-leaved category. It competes well with the accompanying grass. Considered suitable for grazing.
Buddy:	A medium leaved variety with good yield. Considered suitable for grazing.
Iona:	A medium leaved variety. It competes well with the accompanying grass. Considered suitable for grazing.
Crusader:	A medium leaved variety. Considered suitable for grazing.
Aberherald:	A medium leaved variety. Considered suitable for grazing.

Coolfin:	A small leaved variety. Very good annual yield. It competes well with the accompanying grass. Considered suitable for grazing.
Galway	A small leaved variety. Considered suitable for grazing.
Aberace:	A small leaved variety and is currently the smallest on the Recommended List. Considered suitable for grazing.

Appendix 1 (RL 2019): Pasture Profit Index (PPI) 'Base Values'

Seasonal Dry Matter Production	Base Value	Kg Δ DM yield*
Spring	1.01 t DM/ha	€0.16
Mid-Season	6.1 t DM/ha	€0.04
Autumn	1.9 t DM/ha	€0.11

Grass Quality - DMD	Base Value	Unit Δ DMD/Kg*
April	853.6 g/kg	- €0.001
May	855.7 g/kg	- €0.008
June	826.3 g/kg	- €0.010
July	816.1 g/kg	- €0.009

Silage Dry Matter Production	Base Value	Kg Δ DM yield*
First Cut Silage	4.50 t DM/ha	€0.04
Second Cut Silage	3.50 t DM/ha	€0.03

* Δ (Delta) refers to 'change'

Persistency (-€56/year)

The economic value for persistency was determined based on a reseeding cost of **€672/ha** calculated from up to date costs and prices (Teagasc 2013).

The economic merit of each variety for persistency was determined by dividing the reseeding cost by the number of years a variety persists, with varieties surviving the yield threshold for **12 years** (Creighton et al, 2011) or longer getting a **value of €0** and all varieties having a shorter period having a negative economic value. The number of years in which a variety yielded greater than **6.5 t DM/ha** was quantified as the number of years for which that variety persisted.

Ground score (GS) is a visual estimation of the proportion of sward perennial ryegrass content (Camlin & Stewart, 1976). Ground score was estimated at the end of Year 1 and Year 2 in VCU trials. The difference in GS between these two years was defined as **ground score change (GSA)**. **For each one-unit loss in GS, a corresponding loss in DM yield of 1683 kg DM/ha was applied.** The rate of GSA post year 2 was assumed to be 0.54 of the rate of change between the first two years.

Reseeding was deemed necessary when a variety reached the 6.5 t DM/ha threshold yield within which the number of years a variety persisted was determined.

Appendix 2 (RL 2019): Control varieties - Grass

	EARLY PRG* Control Varieties
Trial Sown 2006	Anaconda (T), January
Trial Sown 2008	Anaconda (T), January

	INTERMEDIATE PRG* Control Varieties
Trial Sown 2010	Aberstar, Premium, Shandon, Magician (T), Malone (T), Trend (T)
Trial Sown 2011	Premium, Abermagic, Dunluce (T), Magician (T)
Trial Sown 2012	Premium, Abermagic, Dunluce (T), Magician (T)
Trial Sown 2013	Abermagic, Rosetta, Dunluce (T), Magician (T)
Trial Sown 2014, 2015 & 2016	Abermagic, Dunluce (T), Glenveagh (Late), Navan (T) (Late)

	LATE PRG* Control Varieties
Trial Sown 2010	Denver, Mezquita, Tyrella, Abercraigs (T), Delphin (T), Glencar (T)
Trial Sown 2011	Soriento, Tyrella Delphin (T), Navan (T)
Trial Sown 2012	Mesquita, Tyrella Delphin (T), Navan (T)
Trial Sown 2013	Glenveagh, Tyrella, Delphin (T), Navan (T)
Trial Sown 2014, 2015 & 2016	Abermagic (Inter.), Dunluce (T) (Inter.), Glenveagh, Navan (T)

	ITALIAN Control Varieties
Trial Sown 2007	Aberepic, Fabio (T), Nabucco (T)
Trial Sown 2009	Aberepic, Fabio (T), Nabucco (T)

	HYBRID Control Varieties
Trial Sown 2007	Alliance (T), Ligunda, Motivel (T)
Trial Sown 2009	Abereve (T), Marmota (T), Pirol, Redunca (T)

* 'PRG' is used to indicate 'Perennial Ryegrass'.

**Appendix 2 (RL 2019) continued: Control varieties –
White Clover**

	WHITE CLOVER Control Varieties
Trial Sown 2006	Aberherald, Alice, Aran, Avoca
Trial Sown 2008	Aberherald, Alice, Aran, Avoca
Trial Sown 2010	Aberherald, Alice, Aran, Avoca
Trial Sown 2012	Barblanca, Chieftain, Crusader, Alice
Trial Sown 2014	Barblanca, Chieftain, Crusader, Alice

Appendix 3 (RL 2019): General Purpose – Additional Cuts¹

Variety Name	Ploidy	Spring (t DM/ha)	Late Summer (t DM/ha)	Autumn (t DM/ha)	Total Yield (t DM/ha)
<i>Control Mean (t DM/ha)</i>		1.02	1.67	2.97	14.28

Intermediate PRG Group

Rosetta	D	1.36	1.79	2.92	14.61
Moira	D	1.51	1.69	3.02	14.99
Astonconqueror	D	1.32	1.72	2.80	14.43
Nifty	D	1.19	1.76	2.93	13.77
Abermagic	D	1.04	1.78	3.14	14.47
Aberwolf	D	1.36	1.77	2.71	14.45
Gusto	D	1.27	1.74	2.86	13.73
Abergreen	D	1.22	1.77	2.87	14.10
Fintona	T	1.24	1.72	2.75	14.82
Aberclyde	T	1.09	1.53	2.60	14.00
Elysium	T	1.28	1.58	2.78	14.26
Seagoe	T	1.22	1.67	2.83	14.77
Dunluce	T	1.10	1.72	2.99	14.76

Late PRG Group

Majestic	D	1.11	1.69	2.86	13.86
Oakpark	D	1.07	1.59	2.91	14.47
Kerry	D	1.36	1.55	2.79	14.20
Glenroyal	D	1.06	1.61	2.84	13.94
Astonking	D	1.39	1.75	2.98	14.63
Smile	D	1.18	1.66	2.80	14.15
Clanrye	D	1.05	1.49	2.66	14.03
Drumbo	D	1.03	1.67	2.80	13.70
Aberchoice	D	1.06	1.69	2.95	14.27
Aberbite	T	0.92	1.73	3.10	14.76
Alfonso	T	1.09	1.59	2.74	13.64
Ballintoy	T	1.21	1.81	2.92	14.75
Triwarwic	T	1.09	1.81	2.91	14.60
Astonenergy	T	1.06	1.78	2.85	13.97
Meiduno	T	1.29	1.72	2.94	14.62
Briant	T	1.19	1.83	2.91	14.67
Abergain	T	1.29	1.76	3.01	15.14
Kintyre	T	1.08	1.69	3.06	14.57
Aspect	T	1.16	1.63	2.87	14.24
Aberplentiful	T	1.09	1.72	3.06	14.60
Xenon	T	1.01	1.60	2.78	14.15
Solas	T	1.08	1.70	3.06	14.67

¹Silage yields relating to this table are included in the main RL tables on pages 14 & 15.

*Control varieties are Abermagic, Dunluce, Glenveagh and Navan.

Appendix 4 (RL 2019): Simulated Grazing (frequent cutting) - Dry Matter Digestibility (DMD) Data²

Variety Name	Ploidy	DMD 1 (April)	DMD 2 (May)	DMD 3 (June)	DMD 4 (July)
<i>Control Mean (g/kg)</i>		863.8	859.5	829.2	810.8
Intermediate PRG Group					
Rosetta	D	855.9	853.7	821.0	808.6
Moira	D	843.9	839.7	821.8	809.1
Astonconqueror	D	862.2	855.6	821.6	816.7
Nifty	D	864.1	851.1	815.8	819.0
Abermagic	D	872.3	862.8	827.7	823.5
Aberwolf	D	863.0	862.5	827.3	820.6
Gusto	D	864.3	858.1	828.7	824.5
Abergreen	D	868.8	862.1	823.0	816.2
Fintona	T	849.3	855.0	826.3	828.5
Aberclyde	T	876.8	864.0	829.9	843.1
Elysium	T	867.4	857.1	834.5	822.1
Seagoe	T	872.5	860.0	813.9	823.5
Dunluce	T	866.3	862.4	836.9	819.7
Late PRG Group					
Majestic	D	849.4	843.9	818.7	800.6
Oakpark	D	859.5	854.1	827.2	808.6
Kerry	D	852.7	854.4	821.4	801.6
Glenroyal	D	853.4	854.5	828.8	804.0
Astonking	D	851.1	850.4	827.3	806.3
Smile	D	851.5	855.2	835.6	801.4
Clanrye	D	848.9	851.9	824.8	794.3
Drumbo	D	855.5	862.5	843.0	813.1
Aberchoice	D	864.7	872.1	853.0	813.8
Aberbite	T	870.2	866.6	841.6	823.2
Alfonso	T	873.6	870.7	847.7	808.2
Ballintoy	T	872.8	865.8	834.2	816.7
Triwarwic	T	871.3	859.2	832.3	816.5
Astonenergy	T	873.4	875.7	846.9	817.8
Meiduno	T	869.2	866.3	837.9	806.6
Briant	T	860.0	860.4	836.9	817.2
Abergain	T	876.4	873.6	846.1	827.2
Kintyre	T	857.4	860.8	842.6	797.8
Aspect	T	875.9	873.2	843.1	809.3
Aberplentiful	T	866.5	863.3	837.1	811.4
Xenon	T	870.8	867.8	841.2	813.8
Solas	T	856.1	861.7	840.3	803.9

²Average DMD relating to the above four cuts is presented in the main RL tables on pages 14 & 15.

*Control varieties are Abermagic, Dunluce, Glenveagh and Navan.

Appendix 5 (RL 2019): Breeder's details³

Breeder	Country	Address
AFBI Agri-Food & Biosciences Institute	Northern Ireland	Manor House, Loughgall, Armagh, BT61 8 JB
Barenbrug	The Netherlands	Barenbrug Holland BV Postbus 1338 6501 BH Nijmegen
DLF Seeds A/S	Denmark	Højerupvej 31 DK 4660 Store Heddinge
DSV Deutsche Saatveredelung AG	Germany	Weissenburger Straße 5, 59557 Lippstadt
IBERS Institute of Biological, Environmental and Rural Sciences (Wales)	United Kingdom	Aberystwyth University (IBERS), Plas Gogerddan, Aberystwyth, Ceredigion SY23 3EE
ILVO Institute for Agricultural and Fisheries Research	Belgium	Dept. for Plant Breeding and Genetics, Caritasstraat 21, 9090 Melle,
Limagrain (UK)	United Kingdom	Limagrain UK Ltd., Rothwell, Market Rasen, Lincolnshire, LN7 6DT
NPZ Norddeutsche Pflanzenzucht	Germany	Norddeutsche Pflanzenzucht Hans-Georg Lembke KG Hohenlieth D-24363 Holtsee
Teagasc	Ireland	Oak Park Research Centre, Carlow

³Breeders details above are listed in alphabetical order and represent those breeders who have bred varieties of Grass and/or White Clover listed in this publication.



**An Roinn Talmhaíochta,
Bia agus Mara**
Department of Agriculture,
Food and the Marine

RECOMMENDED LISTS

Cereal Varieties

Grass and White Clover Varieties

Forage Maize Varieties

Winter Oilseed Rape Varieties

Spring Bean Varieties

CROP SCHEMES AND SERVICES

Seed Certification

Seed Testing

**The use of certified seed ensures a high level of varietal purity
and germination.**

Recommended Lists on the DAFM Website

www.agriculture.gov.ie

The Grass and White Clover Recommended List Varieties 2019 booklet is available on the Department of Agriculture, Food and the Marine website. Enter the website and click on Publications.