

# Grass and White Clover Varieties



## Irish Recommended List 2017

CROPS EVALUATION AND CERTIFICATION DIVISION



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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The variety data presented may not be published unless the source is clearly acknowledged as the 'Grass and White Clover Recommended List Varieties for Ireland 2017' publication produced by Department of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. Generally their spring growth is not as good as for early perennials, but ground cover is better.

**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 and are leafy in mid-summer. 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 May/August and establish during the remainder of that year. (In recent years, all the sowings were carried out in the May period). The 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 2014 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 2014 sowings of this trial are presented in this publication on the Main Tables.

**White clover** varieties are sown in a mixture with an intermediate perennial ryegrass in May/August, 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 sowings onwards 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 2017 of Italian Ryegrass, Hybrid Ryegrass and White Clover varieties in alphabetical order

Italian Ryegrass	Group	Breeder	Year 1 <sup>st</sup> Listed
<b>Davinci</b>	Italian	ILVO	2011
<b>Fabio (T)</b>	Italian	DSV	1998
<b>Nabucco (T)</b>	Italian	DSV	2007

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

White Clover	Group	Breeder	Year 1 <sup>st</sup> Listed
<b>Aberace</b>	Small	IBERS	2016
<b>Aberherald</b>	Medium	IBERS	2003
<b>Alice</b>	Large	IBERS	1995
<b>Avoca</b>	Medium	Teagasc	1995
<b>Barblanca</b>	Large	Barenbrug	2009
<b>Buddy</b>	Medium	Teagasc	2015
<b>Chieftain</b>	Medium	Teagasc	2005
<b>Coolfin</b>	Small	Teagasc	2017
<b>Crusader</b>	Medium	Barenbrug	2009
<b>Galway</b>	Small	Teagasc	2017
<b>Iona</b>	Medium	Teagasc	2014

Note:

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

**Summary of all Recommended List Varieties 2017 of Perennial ryegrass (Early, Intermediate and Late varieties) in alphabetical order**

<b>Variety Name</b>	<b>Maturity Group</b>	<b>Breeder</b>	<b>Year 1<sup>st</sup> Listed</b>
<b>Aberchoice</b>	Late	IBERS	2012
<b>Aberclyde (T)</b>	Intermediate	IBERS	2017
<b>Abergain (T)</b>	Late	IBERS	2013
<b>Abermagic</b>	Intermediate	IBERS	2010
<b>Aberplentiful (T)</b>	Late	IBERS	2014
<b>Aberwolf</b>	Intermediate	IBERS	2017
<b>Alfonso (T)</b>	Late	DSV	2016
<b>Aspect (T)</b>	Late	DLF	2014
<b>Astonenergy (T)</b>	Late	DSV	2015
<b>Boyne</b>	Intermediate	DLF	2013
<b>Carraig (T)</b>	Intermediate	Teagasc	2012
<b>Clanrye</b>	Late	AFBI	2014
<b>Delphin (T)</b>	Late	NPZ	2002
<b>Drumbo</b>	Late	AFBI	2011
<b>Dunluce (T)</b>	Intermediate	AFBI	2007
<b>Fintona (T)</b>	Intermediate	AFBI	2017
<b>Genesis</b>	Early	Teagasc	2012
<b>Glenroyal</b>	Late	Teagasc	2015
<b>Glenveagh</b>	Late	Teagasc	2012
<b>Kerry</b>	Late	Teagasc	2016
<b>Kintyre (T)</b>	Late	Teagasc	2012
<b>Magician (T)</b>	Intermediate	Teagasc	1999
<b>Majestic</b>	Late	Teagasc	2012
<b>Meiduno (T)</b>	Late	DLF	2017
<b>Moyola</b>	Early	AFBI	2012
<b>Navan (T)</b>	Late	AFBI	1999
<b>Nifty</b>	Intermediate	DLF	2016
<b>Piccadilly</b>	Late	DSV	2012
<b>Rosetta</b>	Intermediate	AFBI	2013
<b>Seagoe (T)</b>	Intermediate	AFBI	2014
<b>Solas (T)</b>	Late	Teagasc	2015
<b>Solomon</b>	Intermediate	Teagasc	2011
<b>Stefani</b>	Late	DLF	2012
<b>Tyrella</b>	Late	AFBI	2008
<b>Xenon (T)</b>	Late	DLF	2016

## RECOMMENDED LIST 2017 MAIN TABLES

Appendices 1 – 5 provide supporting information.

### Recommended Italian, Hybrid and Early Perennial Ryegrass Varieties 2017

**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
<b>Fabio (T)</b>	18-May	<b>99</b>	4.9	98	100	100.7	101
<b>Nabucco (T)</b>	20-May	<b>101</b>	5.1	100	101	100.1	100
<b>Davinci</b>	22-May	<b>102</b>	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
<b>Aberecho (T)</b>	18-May	<b>99</b>	5.6	95	102	(104.7)	(129)
<b>Alliance (T)</b>	20-May	<b>102</b>	5.2	100	103	100.7	107
<b>Pirol</b>	22-May	<b>103</b>	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
<b>Moyola</b>	11-May	<b>105</b>	6.4	109	107	100.0	102
<b>Genesis</b>	12-May	<b>103</b>	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 25.

## Information note in relation to the data presented in the Intermediate and Late Perennial Ryegrass Tables 2017

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

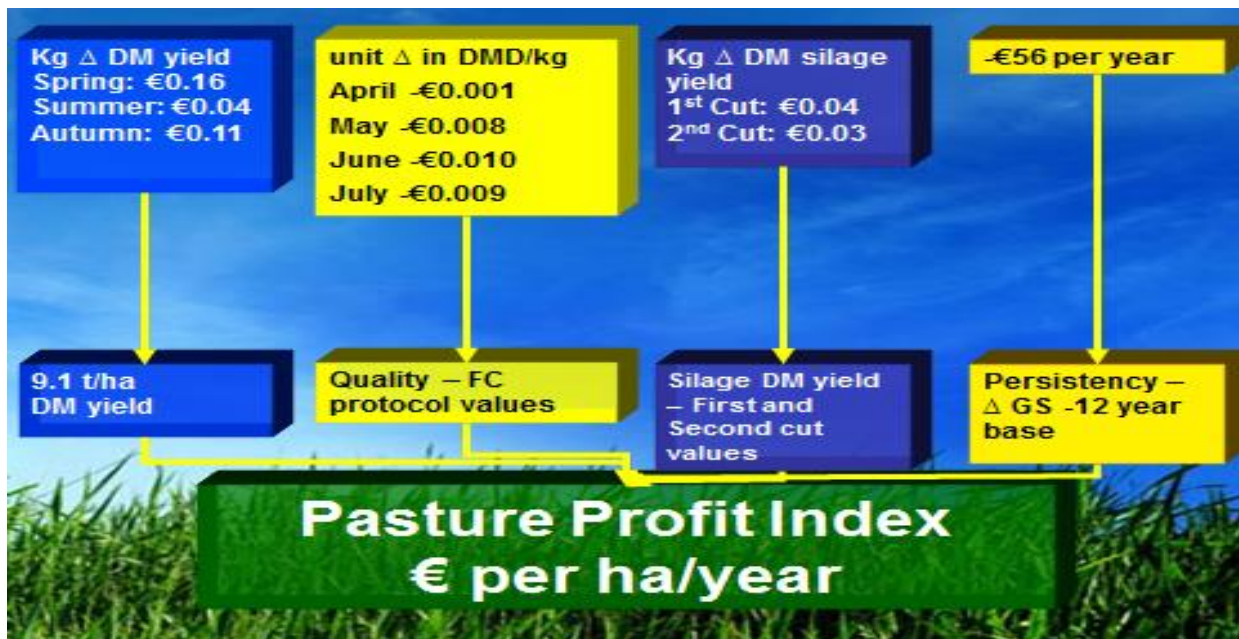
All agronomic trial data on which these tables are based comes from official DAFM trials. The PPI values have been presented with the agronomic data in these tables. These include data from the Simulated Grazing (frequent cutting) protocol for spring, summer and autumn dry matter yields, for quality (DMD) and ground cover. The silage data presented in these tables has been taken from cuts 2 and 3 (1<sup>st</sup> and 2<sup>nd</sup> cut silage respectively) of the General Purpose protocol. Data from the 2014 sowings, which includes harvest years 2015 and 2016, 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).

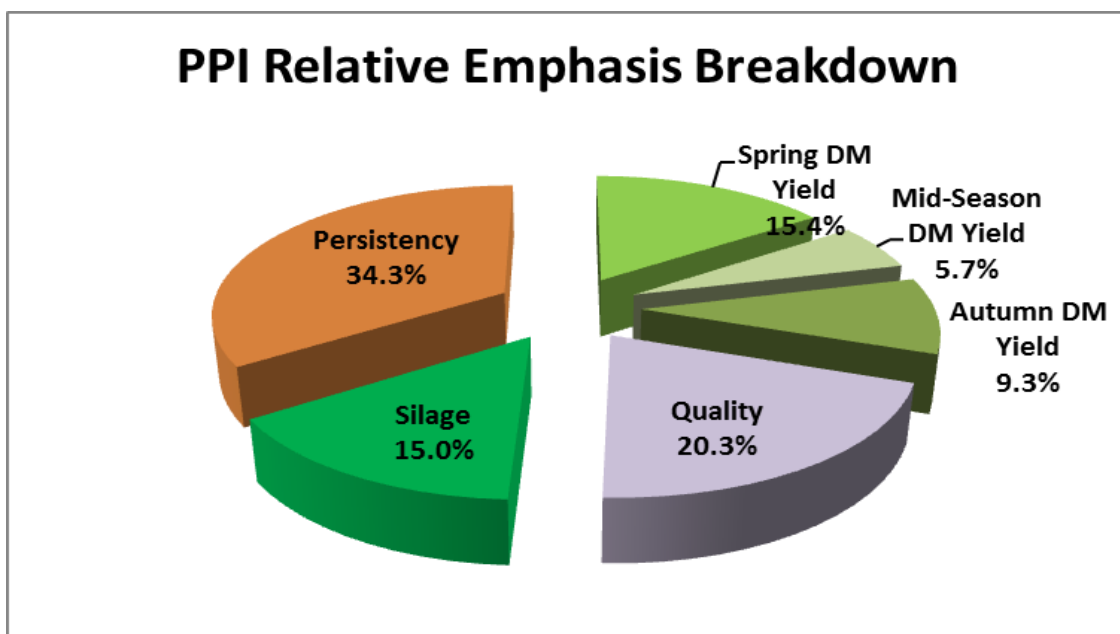
The following chart provides details of the PPI sub-indices (traits), including Base Values assigned to each trait.

## 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 2017

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	Sub-Indices						(t DM/ha)	(t DM/ha)	(t DM/ha)	(t DM/ha)	(g/kg)	(t DM/ha)	(t DM/ha)	Score
			PPI	Spring	Summer	Autumn	Quality	Silage	Persist.	1.08*	7.18*	2.33*	10.59*	844.9*	4.24*	4.16*	6.2*
Aberclyde	T	26-May	206	44	49	34	59	19	0	1.27	7.39	2.22	10.88	857.0	4.71	3.85	5.6
Abermagic	D	31-May	199	36	51	68	33	11	0	1.22	7.43	2.53	11.19	849.6	4.46	3.94	6.3
Nifty	D	27-May	191	70	53	57	-7	16	0	1.43	7.50	2.43	11.37	838.6	4.74	3.71	6.4
Fintona	T	22-May	178	58	39	50	11	21	0	1.36	7.12	2.36	10.84	842.0	4.97	3.55	5.8
Aberchoice	D	09-Jun	175	11	49	47	63	6	0	1.07	7.40	2.33	10.80	855.4	3.98	4.40	6.3
Aberwolf	D	31-May	171	58	39	34	29	12	0	1.36	7.11	2.22	10.69	846.9	4.54	3.86	7.0
Rosetta	D	24-May	170	89	29	40	2	11	0	1.55	6.86	2.27	10.68	838.7	4.68	3.60	6.4
Abergain	T	05-Jun	169	17	44	42	64	20	-19	1.10	7.26	2.29	10.66	858.0	4.49	4.19	5.9
Aberplentiful	T	09-Jun	167	39	50	40	29	9	0	1.24	7.42	2.28	10.94	847.5	4.11	4.34	5.7
Seagoe	T	28-May	167	33	40	43	19	33	0	1.20	7.15	2.30	10.66	845.5	4.94	3.98	6.1
Dunluce	T	30-May	165	17	44	46	41	17	0	1.11	7.25	2.33	10.68	849.8	4.23	4.45	5.6
Meiduno	T	06-Jun	163	43	45	41	32	12	-11	1.27	7.29	2.29	10.84	848.7	4.34	4.12	5.2
Solas	T	10-Jun	151	8	43	55	30	15	0	1.05	7.23	2.41	10.69	846.0	3.92	4.78	6.0
Magician	T	22-May	141	46	33	33	6	23	0	1.29	6.96	2.21	10.46	841.0	4.73	3.94	5.7
Astonenergy	T	02-Jun	131	-9	36	38	61	5	0	0.95	7.06	2.26	10.26	857.2	4.38	3.85	5.3
Xenon	T	11-Jun	130	7	37	30	45	10	0	1.04	7.08	2.19	10.31	852.1	3.90	4.66	6.4
Kintyre	T	07-Jun	126	10	37	53	32	6	-11	1.06	7.06	2.39	10.51	846.0	4.03	4.36	6.0
Solomon	D	21-May	125	65	30	31	-24	22	0	1.40	6.89	2.19	10.48	834.2	4.98	3.58	6.5
Alfonso	T	04-Jun	113	-5	36	34	50	-2	0	0.97	7.06	2.22	10.24	853.8	4.28	3.73	6.0
Aspect	T	06-Jun	110	6	40	24	37	5	0	1.04	7.14	2.13	10.30	851.8	4.05	4.27	6.3
Boyne	D	22-May	107	55	31	26	-39	34	0	1.34	6.92	2.15	10.41	828.9	4.99	3.97	6.5
Carraig	T	24-May	105	37	39	32	-12	9	0	1.23	7.13	2.20	10.56	838.8	4.81	3.38	6.1
Navan	T	06-Jun	98	-6	38	48	20	3	-5	0.96	7.09	2.35	10.40	844.9	3.99	4.31	5.8
Drumbo	D	07-Jun	96	13	33	32	43	-6	-19	1.08	6.96	2.20	10.24	847.7	4.02	3.94	6.5
Kerry	D	01-Jun	93	19	40	39	-1	2	-5	1.11	7.15	2.26	10.52	837.8	4.04	4.20	6.2
Glenroyal	D	05-Jun	92	11	39	39	2	2	0	1.07	7.11	2.26	10.45	838.2	4.05	4.18	6.9
Delphin	T	02-Jun	91	2	39	25	16	15	-5	1.01	7.12	2.14	10.27	844.6	4.43	4.10	5.3
Clanrye	D	06-Jun	76	21	39	15	-10	11	0	1.13	7.13	2.05	10.31	834.9	4.08	4.44	7.0
Majestic	D	02-Jun	65	22	30	37	-16	-8	0	1.14	6.89	2.25	10.27	833.0	4.20	3.64	6.9
Glenveagh	D	02-Jun	51	8	32	20	-12	3	0	1.05	6.95	2.10	10.09	835.3	4.26	3.94	6.9
Stefani	D	02-Jun	50	4	25	21	-3	3	0	1.03	6.76	2.10	9.89	837.4	4.29	3.88	6.5
Piccadilly	D	03-Jun	46	10	29	16	-24	15	0	1.06	6.86	2.06	9.98	831.1	4.65	3.79	6.7
Tyrella	D	04-Jun	23	24	17	14	2	-7	-28	1.15	6.55	2.04	9.74	839.9	4.26	3.61	6.4

*D = Diploid, T = Tetraploid*

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

## Recommended Intermediate & Late Perennial Ryegrass Varieties 2017 (by maturity and ploidy)

Variety Name			Pasture Profit Index Values € / Ha / Year							Spring	Summer	Autumn	Total Yield	Mean DMD	1st Cut Silage	2nd Cut Silage	Ground Cover
			Total	Sub-Indices						(t DM/ha)	(t DM/ha)	(t DM/ha)	(t DM/ha)	(g/kg)	(t DM/ha)	(t DM/ha)	Score
				PPI	Spring	Summer	Autumn	Quality	Silage	Persist.	1.08*	7.18*	2.33*	10.59*	844.9*	4.24*	4.16*
Intermediates:																	
Solomon	D	21-May	125	65	30	31	-24	22	0	1.40	6.89	2.19	10.48	834.2	4.98	3.58	6.5
Boyne	D	22-May	107	55	31	26	-39	34	0	1.34	6.92	2.15	10.41	828.9	4.99	3.97	6.5
Rosetta	D	24-May	170	89	29	40	2	11	0	1.55	6.86	2.27	10.68	838.7	4.68	3.60	6.4
Nifty	D	27-May	191	70	53	57	-7	16	0	1.43	7.50	2.43	11.37	838.6	4.74	3.71	6.4
Abermagic	D	31-May	199	36	51	68	33	11	0	1.22	7.43	2.53	11.19	849.6	4.46	3.94	6.3
Aberwolf	D	31-May	171	58	39	34	29	12	0	1.36	7.11	2.22	10.69	846.9	4.54	3.86	7.0
Fintona	T	22-May	178	58	39	50	11	21	0	1.36	7.12	2.36	10.84	842.0	4.97	3.55	5.8
Magician	T	22-May	141	46	33	33	6	23	0	1.29	6.96	2.21	10.46	841.0	4.73	3.94	5.7
Carraig	T	24-May	105	37	39	32	-12	9	0	1.23	7.13	2.20	10.56	838.8	4.81	3.38	6.1
Aberclyde	T	26-May	206	44	49	34	59	19	0	1.27	7.39	2.22	10.88	857.0	4.71	3.85	5.6
Seagoe	T	28-May	167	33	40	43	19	33	0	1.20	7.15	2.30	10.66	845.5	4.94	3.98	6.1
Dunluce	T	30-May	165	17	44	46	41	17	0	1.11	7.25	2.33	10.68	849.8	4.23	4.45	5.6
Lates:																	
Kerry	D	01-Jun	93	19	40	39	-1	2	-5	1.11	7.15	2.26	10.52	837.8	4.04	4.20	6.2
Glenveagh	D	02-Jun	51	8	32	20	-12	3	0	1.05	6.95	2.10	10.09	835.3	4.26	3.94	6.9
Majestic	D	02-Jun	65	22	30	37	-16	-8	0	1.14	6.89	2.25	10.27	833.0	4.20	3.64	6.9
Stefani	D	02-Jun	50	4	25	21	-3	3	0	1.03	6.76	2.10	9.89	837.4	4.29	3.88	6.5
Piccadilly	D	03-Jun	46	10	29	16	-24	15	0	1.06	6.86	2.06	9.98	831.1	4.65	3.79	6.7
Tyrella	D	04-Jun	23	24	17	14	2	-7	-28	1.15	6.55	2.04	9.74	839.9	4.26	3.61	6.4
Glenroyal	D	05-Jun	92	11	39	39	2	2	0	1.07	7.11	2.26	10.45	838.2	4.05	4.18	6.9
Clanrye	D	06-Jun	76	21	39	15	-10	11	0	1.13	7.13	2.05	10.31	834.9	4.08	4.44	7.0
Drumbo	D	07-Jun	96	13	33	32	43	-6	-19	1.08	6.96	2.20	10.24	847.7	4.02	3.94	6.5
Aberchoice	D	09-Jun	175	11	49	47	63	6	0	1.07	7.40	2.33	10.80	855.4	3.98	4.40	6.3
Astonenergy	T	02-Jun	131	-9	36	38	61	5	0	0.95	7.06	2.26	10.26	857.2	4.38	3.85	5.3
Delphin	T	02-Jun	91	2	39	25	16	15	-5	1.01	7.12	2.14	10.27	844.6	4.43	4.10	5.3
Alfonso	T	04-Jun	113	-5	36	34	50	-2	0	0.97	7.06	2.22	10.24	853.8	4.28	3.73	6.0
Abergain	T	05-Jun	169	17	44	42	64	20	-19	1.10	7.26	2.29	10.66	858.0	4.49	4.19	5.9
Meiduno	T	06-Jun	163	43	45	41	32	12	-11	1.27	7.29	2.29	10.84	848.7	4.34	4.12	5.2
Aspect	T	06-Jun	110	6	40	24	37	5	0	1.04	7.14	2.13	10.30	851.8	4.05	4.27	6.3
Navan	T	06-Jun	98	-6	38	48	20	3	-5	0.96	7.09	2.35	10.40	844.9	3.99	4.31	5.8
Kintyre	T	07-Jun	126	10	37	53	32	6	-11	1.06	7.06	2.39	10.51	846.0	4.03	4.36	6.0
Aberplentiful	T	09-Jun	167	39	50	40	29	9	0	1.24	7.42	2.28	10.94	847.5	4.11	4.34	5.7
Solas	T	10-Jun	151	8	43	55	30	15	0	1.05	7.23	2.41	10.69	846.0	3.92	4.78	6.0
Xenon	T	11-Jun	130	7	37	30	45	10	0	1.04	7.08	2.19	10.31	852.1	3.90	4.66	6.4

D = Diploid, T = Tetraploid

\*Denotes the 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:

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

### HYBRID RYEGRASS:

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

### EARLY RYEGRASS:

<b>Moyola:</b>	Good annual yield and autumn growth.
<b>Genesis:</b>	Excellent spring growth.

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## INTERMEDIATE PERENNIAL RYEGRASS: DIPLOIDS

**Solomon:** Spring growth is very good. Silage yield is very good. Ground cover is good and variety is persistent.

**Boyne:** Highest silage yield of all the varieties, especially first cut silage yield. Ground cover is good and variety is persistent.

**Rosetta:** The highest spring growth of all varieties. Moderate autumn growth. A moderate silage variety. Ground cover is good and variety is persistent.

**Nifty:** Excellent spring, summer and autumn growth. Moderate 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 moderate silage variety. Ground cover is good and variety is persistent.

**Aberwolf:** This is its first year on the Recommended List. Very good spring growth and good summer and autumn growth. Good Dry Matter Digestibility. A moderate silage variety. Ground cover is excellent and variety is persistent.

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## INTERMEDIATE PERENNIAL RYEGRASS: TETRAPLOIDS

**Fintona:** This is its first year on the Recommended List. Very good spring and autumn growth. Dry Matter Digestibility is moderate. Silage yield, especially first cut, is good. Ground cover is moderate and variety is persistent.

**Magician:** Spring growth is good. Dry Matter Digestibility is moderate. Silage yield is good. Ground cover is moderate and variety is persistent.

**Carraig:** Moderate seasonal growth and silage yield. Ground cover is among the best of the intermediate tetraploids and the variety is persistent.

**Aberclyde:** This is its first year on the Recommended List. Good seasonal growth and good silage yield. Dry Matter Digestibility is excellent. Ground cover is moderate and variety is persistent.

**Seagoe:** Good seasonal growth. Excellent silage yield, with highest in the intermediate tetraploids. 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 moderate. It is the latest heading tetraploid variety in the intermediates group. Ground cover is moderate and variety is persistent.

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## LATE PERENNIAL RYEGRASS: DIPLOIDS

**Kerry:** Good seasonal growth. Earliest heading date in the late diploid category. Ground cover is good.

**Glenveagh:** Moderate seasonal growth. Ground cover is excellent and variety is persistent.

**Majestic:** Moderate seasonal growth. Ground cover good and variety is persistent.

**Stefani:** Moderate summer and autumn growth. Good ground cover and variety is persistent.

**Piccadilly:** Moderate seasonal growth. Silage yield is good. Ground cover is good and variety is persistent.

**Tyrella:** Good spring growth. Summer and autumn growth is moderate. Ground cover is good.

**Glenroyal:** Good summer and autumn growth. Ground cover is very good and variety is persistent.

**Clanrye:** Good spring and summer growth. Very good second cut silage yield. Autumn growth is moderate. Ground cover is excellent 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.

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## LATE PERENNIAL RYEGRASS: TETRAPLOIDS

**Astonenergy:** Good summer and autumn growth. Dry matter digestibility is excellent. Ground cover is moderate and the variety is persistent.

**Delphin:** Good summer and autumn growth. Ground cover is moderate.

**Alfonso:** Good summer and autumn growth. Dry matter digestibility is very good. Ground cover is good and the variety is persistent.

**Abergain:** Very good summer and autumn growth. Dry matter digestibility is excellent. Very good silage yield. Ground cover is moderate.

**Meiduno:** First year on the Recommended List. Very good seasonal growth. Moderate silage yield. Ground cover moderate.

**Aspect:** Moderate seasonal growth. Dry matter digestibility is good. Ground cover is very good and the variety is persistent.

**Navan:** Good summer and autumn growth. Dry matter digestibility is good. Ground cover is moderate.

**Kintyre:** Good seasonal growth, with very good autumn growth. Dry matter digestibility is good. Ground cover is good.

**Aberplentiful:** Very good seasonal growth, especially spring and summer. Dry matter digestibility is good. Ground cover is moderate and the variety is persistent.

**Solas:** Very good summer and autumn growth. Dry matter digestibility and silage yield are good. Ground cover is good 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. The variety is persistent.

## Recommended White Clover Varieties 2017

Variety Name	Total Yield	Leaf Size*	Clover %	Year 1 <sup>st</sup> Listed	Breeder
<i>Control Mean: (t DM/ha)</i>	<i>9.8</i>				
<b>Barblanca</b>	<b>105</b>	Large (0.76)	50	2009	Barenbrug
<b>Alice</b>	<b>99</b>	Large (0.73)	50	1995	IBERS
<b>Chieftain</b>	<b>98</b>	Medium (0.68)	47	2005	Teagasc
<b>Buddy</b>	<b>100</b>	Medium (0.58)	45	2015	Teagasc
<b>Avoca</b>	<b>103</b>	Medium (0.58)	47	1995	Teagasc
<b>Iona</b>	<b>94</b>	Medium (0.56)	44	2014	Teagasc
<b>Crusader</b>	<b>95</b>	Medium (0.56)	42	2009	Barenbrug
<b>Aberherald</b>	<b>98</b>	Medium (0.55)	45	2003	IBERS
<b>Coolfin</b>	<b>104</b>	Small (0.51)	47	2017	Teagasc
<b>Galway</b>	<b>95</b>	Small (0.36)	38	2017	Teagasc
<b>Aberace</b>	<b>99</b>	Small (0.26)	33	2016	IBERS

In the table above varieties are listed in order of decreasing leaf size.

\*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 26.

## WHITE CLOVER VARIETY DESCRIPTIONS

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

**Alice:** A large leaved variety. 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. Considered suitable for grazing.

**Buddy:** A medium leaved variety with good yield. Considered suitable for grazing.

**Avoca:** A medium leaved variety with very good yield. It competes well with the accompanying grass. 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. First year on the Recommended List. Very good annual yield. It competes well with the accompanying grass. Considered suitable for grazing.

**Galway** A small leaved variety. First year on the Recommended List. 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 2017): Pasture Profit Index (PPI) 'Base Values'

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

\*  $\Delta$  (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 2017): Control varieties - Grass

	<b>EARLY PRG* Control Varieties</b>
Trial Sown 2006	Anaconda (T), January
Trial Sown 2008	Anaconda (T), January

	<b>INTERMEDIATE PRG* Control Varieties</b>
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	Abermagic, Dunluce (T), Glenveagh (Late), Navan (T) (Late)

	<b>LATE PRG* Control Varieties</b>
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	Abermagic (Inter.), Dunluce (T) (Inter.), Glenveagh, (Navan (T)

	<b>ITALIAN Control Varieties</b>
Trial Sown 2007	Aberepic, Fabio (T), Nabucco (T)
Trial Sown 2009	Aberepic, Fabio (T), Nabucco (T)

	<b>HYBRID Control Varieties</b>
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 2017) continued: Control varieties – White Clover

	<b>WHITE CLOVER Control Varieties</b>
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

## Appendix 3 (RL 2017): General Purpose – Additional Cuts<sup>1</sup>

Variety Name		Spring (t DM/ha)	Late Summer (t DM/ha)	Autumn (t DM/ha)	Total Yield (t DM/ha)
<b>Control Mean (t DM/ha)</b>		<i>0.90</i>	<i>1.87</i>	<i>3.03</i>	<i>14.01</i>

### **Intermediate PRG Group**

Solomon	D	1.25	1.84	2.87	14.35
Boyne	D	1.23	1.87	2.91	14.79
Rosetta	D	1.25	2.02	2.98	14.35
Nifty	D	1.08	1.91	3.03	14.30
Abermagic*	D	0.92	1.93	3.21	14.30
Aberwolf	D	1.23	1.98	2.80	14.22
Fintona	T	1.23	1.88	3.07	14.53
Magician	T	1.14	1.86	2.82	14.26
Carraig	T	1.17	1.84	2.87	13.90
Aberclyde	T	0.96	1.73	2.69	13.75
Seagoe	T	1.10	1.92	2.85	14.57
Dunluce*	T	0.96	1.98	3.04	14.43

### **Late PRG Group**

Kerry	D	1.18	1.91	3.01	14.14
Glenveagh*	D	0.87	1.71	2.79	13.42
Majestic	D	1.13	2.05	2.92	13.75
Stefani	D	1.05	1.73	2.69	13.45
Piccadilly	D	1.06	1.80	2.76	13.96
Tyrella	D	1.10	1.77	2.67	13.22
Glenroyal	D	0.91	1.82	2.90	13.68
Clanrye	D	0.94	1.72	2.74	13.72
Drumbo	D	0.90	1.83	2.70	13.20
Aberchoice	D	0.93	1.85	3.01	14.00
Astonenergy	T	0.86	1.98	2.93	13.80
Delphin	T	1.02	1.82	2.90	14.10
Alfonso	T	0.96	1.81	2.81	13.39
Abergain	T	1.18	1.98	3.06	14.71
Meiduno	T	1.16	1.95	3.02	14.38
Aspect	T	1.00	1.82	2.94	13.90
Navan*	T	0.87	1.84	3.06	13.87
Kintyre	T	1.02	1.90	3.11	14.20
Aberplentiful	T	0.96	1.94	3.11	14.26
Solas	T	0.97	1.92	3.13	14.33
Xenon	T	0.88	1.82	2.85	13.92

<sup>1</sup>Silage 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 2017): Simulated Grazing (frequent cutting) - Dry Matter Digestibility (DMD) Data<sup>2</sup>

Variety Name		DMD 1 (April)	DMD 2 (May)	DMD 3 (June)	DMD 4 (July)
<i>Control Mean (g/kg)</i>		864.8	857.4	834.6	822.9

### Intermediate PRG Group

Solomon	D	861.1	842.6	812.8	820.2
Boyne	D	853.4	848.5	814.7	798.9
Rosetta	D	855.8	852.8	827.4	818.7
Nifty	D	863.6	849.5	819.3	822.0
Abermagic*	D	872.4	860.9	833.9	831.4
Aberwolf	D	864.1	860.8	831.7	831.2
Fintona	T	861.9	845.8	827.8	832.4
Magician	T	861.3	853.6	826.2	822.7
Carraig	T	868.4	850.1	809.6	826.9
Aberclyde	T	878.0	862.6	834.0	853.3
Seagoe	T	868.0	858.5	827.5	828.2
Dunluce*	T	866.3	858.9	842.5	831.5

### Late PRG Group

Kerry	D	854.4	857.5	834.5	804.9
Glenveagh*	D	855.1	850.3	823.6	812.3
Majestic	D	849.8	843.4	826.2	812.5
Stefani	D	854.3	850.2	825.6	819.4
Piccadilly	D	849.0	847.5	827.2	800.7
Tyrella	D	860.4	857.4	830.6	811.4
Glenroyal	D	854.0	853.1	832.6	812.9
Clanrye	D	851.4	851.1	829.0	808.1
Drumbo	D	855.3	861.9	853.4	820.2
Aberchoice	D	868.2	874.5	860.0	818.9
Astonenergy	T	877.4	876.3	850.1	825.0
Delphin	T	867.2	863.2	837.6	810.3
Alfonso	T	874.5	869.6	852.3	818.9
Abergain	T	877.4	874.5	849.2	831.1
Meiduno	T	869.9	864.9	842.5	817.6
Aspect	T	877.2	873.0	839.8	817.3
Navan*	T	865.3	859.5	838.3	816.6
Kintyre	T	858.2	863.1	847.0	815.7
Aberplentiful	T	867.5	860.3	839.2	823.1
Solas	T	859.7	858.7	840.4	825.2
Xenon	T	871.5	866.4	845.8	824.8

<sup>2</sup>Average 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 2017): Breeder's details<sup>3</sup>

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

<sup>3</sup>Breeders 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.

# DEPARTMENT OF AGRICULTURE, FOOD AND THE MARINE AN ROINN TALMHAÍOCHTA, BIA AGUS MARA

## **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](http://www.agriculture.gov.ie)

The Grass and White Clover Recommended List Varieties 2017 is available on the Department of Agriculture, Food and the Marine website. Enter the website and click on Publications.