Grass and White Clover Varieties

Irish Recommended List 2022

CROP POLICY, EVALUATION AND CERTIFICATION DIVISION

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

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Department of Agriculture, Food and the Marine (DAFM)
Crop Policy, Evaluation and Certification Division
Backweston Farm,
Leixlip,
Co. Kildare

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The variety data presented may not be published unless the source is clearly acknowledged as the 'Grass and White Clover Recommended List Varieties for Ireland 2022' publication produced by Department of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 presented in this publication includes data from the 2019 sowing year (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 2019 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 90kg Nitrogen per hectare (90kg N/ha) applied in three different applications in the spring. Sheep grazing for one day immediately following cutting was introduced for the 2010 - 2018 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 of 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 **persistency** 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 and Teagasc Moorepark in carrying out laboratory analysis of grass samples for quality determinations.

Summary of all Recommended List Varieties 2022 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
Aberpearl	Small	IBERS	2022
Aberswan	Medium	IBERS	2022
Alice	Large	Barenbrug	1995
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
Violin	Large	DLF/Limagrain	2020

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

Summary of all Recommended List Varieties 2022 of Perennial ryegrass (Early, Intermediate and Late varieties) in alphabetical order

Variety Name	Maturity Group	Breeder	Year 1st Listed
Aberbann	Late	IBERS	2022
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
Aspect (T)	Late	DLF	2014
Astonconqueror	Intermediate	DSV	2018
Astonenergy (T)	Late	DSV	2015
Astonking	Late	DSV	2019
Ballintoy (T)	Late	AFBI	2019
Ballyvoy	Late	AFBI	2021
Barwave (T)	Inter	Barenbrug	2022
Bowie	Late	DLF	2021
Briant (T)	Late	Barenbrug	2019
Callan	Late	AFBI	2020
Drumbo	Late	AFBI	2011
Dunluce (T)	Intermediate	AFBI	2007
Elysium (T)	Intermediate	Teagasc	2018
Fintona (T)	Intermediate	AFBI	2017
Genesis	Early	Teagasc	2012
Glenfield (T)	Late	Teagasc	2021
Gracehill (T)	Late	AFBI	2021
Gusto	Intermediate	DSV	2019
Meiduno (T)	Late	DLF	2017
Moira	Intermediate	AFBI	2018
Moyola	Early	AFBI	2012
Nashota (T)	Late	DLF	2020
Nifty	Intermediate	DLF	2016
Oakpark	Late	Teagasc	2019
Solas (T)	Late	Teagasc	2015
Triwarwic (T)	Late	DLF	2019
Xenon (T)	Late	DLF	2016

RECOMMENDED LIST 2022 MAIN TABLES

Appendices 1 – 5 provide supporting information.

Recommended Italian, Hybrid and Early Perennial Ryegrass Varieties 2022

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 %
Control Mean t DM/ha		*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 %
Control Mean t DM/ha		*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 %
Control Mean t DM/ha		*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 Pages 27 & 28.

Information note in relation to the data presented in the Intermediate and Late Perennial Ryegrass Tables 2022

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 most up-to-date sowings is also included in the evaluation of varieties on this years Recommended List.

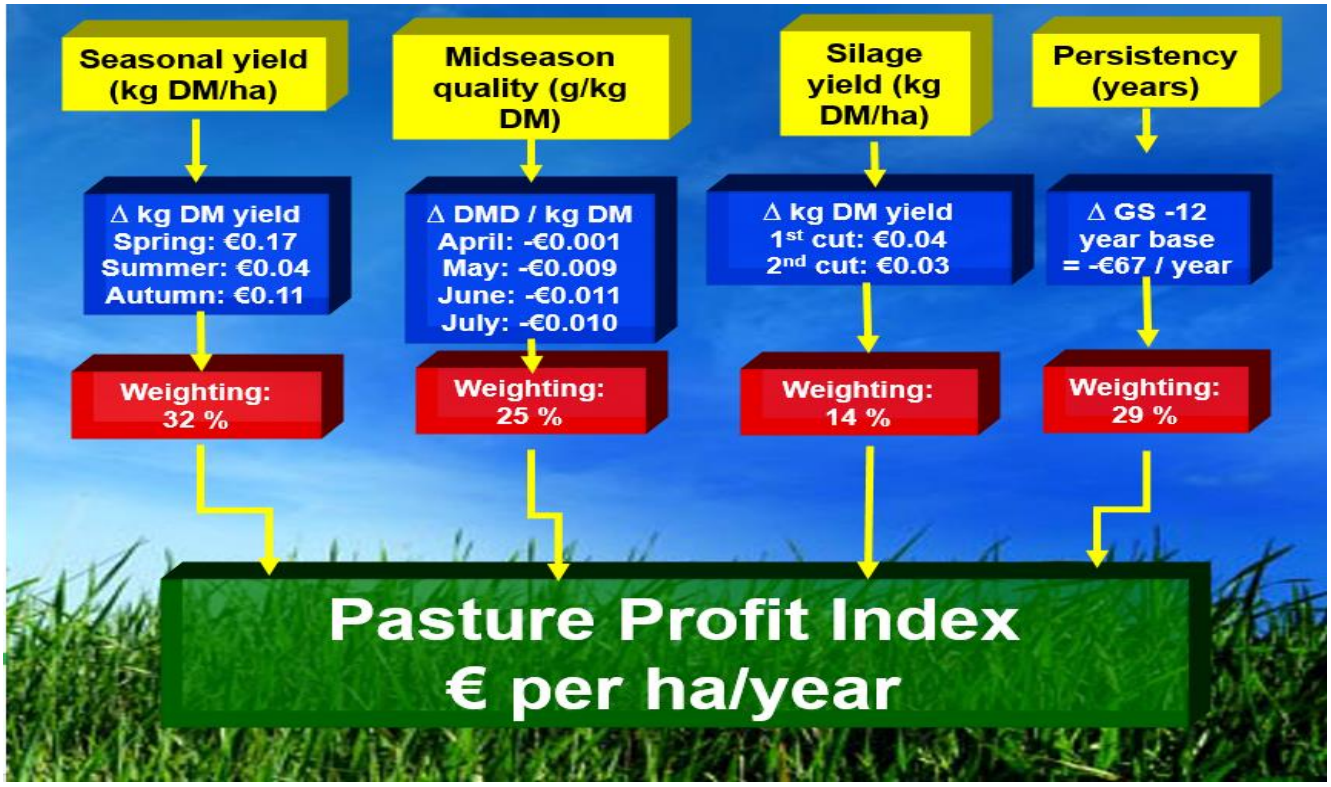
A provisional 'Grazing Utilisation Trait' is included in the main tables. This data, represented by a star rating from 1 – 5, has been generated from Teagasc grazing studies in Moorepark, Fermoy, Co. Cork and is from one site only. Data presented in the tables for this trait has more than one years' grazing. For further information please refer to Appendix 1 of this publication.

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.

Pasture Profit Index (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 2022

Variety		Heading	Pasture Profit Index Values € / Ha / Year							[1]Teagasc Grazing Utilisation	Spring	Summer	Autumn	Total Yield	Mean DMD	1st Cut Silage	2nd Cut Silage	Ground Cover
			Total	Sub-Indices						Trait	(t DM/ha)	(t DM/ha)	(t DM/ha)	(t DM/ha)	(g/kg)	(t DM/ha)	(t DM/ha)	Score
Name	Ploidy	Date	PPI	Spring Growth	Summer Growth	Autumn Growth	Quality	Silage	Persist.	Rating 1- 5	*1.12*	*7.60*	*2.46*	*11.2*	*843.6*	*4.40*	*4.62*	*5.8*
Aberclyde	T	25-May	253	51	66	46	44	46	0	****	1.31	7.74	2.32	11.38	852.0	5.23	4.04	5.6
Barwave	T	22-May	244	93	61	59	-20	50	0	-	1.56	7.62	2.45	11.64	836.0	4.98	4.51	4.9
Abergain	T	4-Jun	241	34	61	50	47	49	0	****	1.20	7.63	2.37	11.20	852.0	4.91	4.56	5.6
Gracehill	T	4-Jun	241	46	60	58	10	67	0	**	1.28	7.60	2.44	11.31	840.9	5.35	4.56	5.6
Abermagic	D	28-May	215	31	64	78	18	24	0	***	1.19	7.69	2.62	11.51	844.9	4.64	4.09	6.2
Nashota	T	3-Jun	214	53	57	39	28	38	0	-	1.32	7.51	2.26	11.09	845.7	4.68	4.54	6.0
Aberwolf	D	30-May	209	54	54	48	11	43	0	**	1.33	7.45	2.35	11.12	840.9	4.85	4.45	6.7
Moira	D	26-May	209	108	39	57	-32	36	0	***	1.65	7.08	2.43	11.17	826.8	4.89	4.16	6.1
Glenfield	T	3-Jun	207	59	63	40	3	41	0	-	1.36	7.68	2.28	11.31	841.1	4.74	4.55	5.7
Astonconqueror	D	27-May	206	75	52	48	-10	42	0	****	1.46	7.39	2.34	11.19	835.7	5.21	3.93	6.2
Aberplentiful	T	8-Jun	204	59	63	50	11	26	-6	**	1.36	7.67	2.37	11.40	842.1	4.27	4.69	5.5
Ballintoy	T	4-Jun	195	36	60	43	23	32	0	****	1.22	7.59	2.30	11.11	846.6	4.59	4.44	5.4
Meiduno	T	3-Jun	195	45	56	46	27	21	0	****	1.27	7.50	2.33	11.10	848.8	4.41	4.31	5.2
Abergreen	D	31-May	193	38	69	70	5	11	0	*	1.23	7.82	2.55	11.60	842.2	4.31	4.13	6.5
Aberchoice	D	11-Jun	190	15	65	58	22	30	0	***	1.09	7.73	2.44	11.26	844.8	4.18	4.93	6.0
Aberbann	D	10-Jun	190	5	81	75	-25	54	0	***	1.03	8.11	2.59	11.74	832.2	4.46	5.36	5.9
Fintona	T	24-May	190	49	52	49	-5	45	0	*****	1.30	7.40	2.35	11.05	839.1	5.22	4.01	5.4
Ballyvoy	D	3-Jun	186	65	46	47	19	10	0	*	1.39	7.24	2.34	10.97	843.1	4.14	4.32	6.2
Dunluce	T	29-May	184	23	58	52	24	34	-6	****	1.14	7.54	2.38	11.05	845.6	4.52	4.62	5.4
Gusto	D	31-May	176	50	51	64	2	9	0	****	1.30	7.37	2.50	11.18	838.9	4.32	4.04	5.8
Aberbite	T	1-Jun	175	-2	56	53	32	36	0	*****	0.99	7.49	2.39	10.87	849.5	4.55	4.62	5.8
Elysium	T	27-May	170	43	52	32	12	32	0	-	1.26	7.39	2.20	10.86	844.4	4.74	4.25	6.0
Bowie	D	16-Jun	170	19	53	54	28	16	0	-	1.11	7.43	2.40	10.94	838.7	3.63	5.22	6.4
Briant	T	3-Jun	156	10	58	46	13	29	0	***	1.06	7.54	2.33	10.93	841.2	4.51	4.47	5.5
Solas	T	10-Jun	153	10	48	55	1	39	0	***	1.06	7.29	2.41	10.76	837.8	4.31	5.07	5.8
Astonenergy	T	1-Jun	151	5	47	43	49	6	0	*****	1.03	7.27	2.30	10.60	854.1	4.33	3.95	5.5
Oakpark	D	2-Jun	149	32	52	52	-12	25	0	*	1.19	7.40	2.38	10.98	833.3	4.33	4.55	6.5
Drumbo	D	5-Jun	146	23	44	42	24	13	0	*	1.14	7.19	2.29	10.62	842.6	4.19	4.36	6.2
Nifty	D	28-May	145	38	61	57	-37	26	0	**	1.23	7.62	2.43	11.30	831.2	4.65	4.14	6.3
Xenon	T	7-Jun	143	12	49	35	29	17	0	*****	1.08	7.33	2.23	10.64	846.1	3.98	4.77	6.2
Triwarwic	T	2-Jun	141	20	53	30	7	32	0	-	1.12	7.42	2.18	10.72	842.5	4.63	4.39	5.8
Astonking	D	5-Jun	141	61	50	36	-25	18	0	***	1.37	7.34	2.24	10.95	828.3	4.36	4.29	5.8
Aspect	T	3-Jun	136	11	50	30	27	23	-6	*****	1.07	7.36	2.19	10.61	848.5	4.13	4.77	6.0
Callan	D	3-Jun	126	71	39	35	-35	16	0	****	1.43	7.08	2.23	10.74	830.1	4.55	3.96	6.2

Notes: D - Diploid, T = Tetraploid

[1]Teagasc Grazing Utilisation Trait - see Appendix 1

Values in italics above denote the mean of the control varieties in Appendix 2

Recommended Intermediate & Late Perennial Ryegrass Varieties 2022 (by maturity and ploidy)

Variety		Heading	Pasture Profit Index Values € / Ha / Year							[1]Teagasc Grazing Utilisation	Spring	Summer	Autumn	Total Yield	Mean DMD	1st Cut Silage	2nd Cut Silage	Ground Cover
			Total	Sub-Indices						Trait	(t DM/ha)	(t DM/ha)	(t DM/ha)	(t DM/ha)	(g/kg)	(t DM/ha)	(t DM/ha)	Score
Name	Ploidy	Date	PPI	Spring Growth	Summer Growth	Autumn Growth	Quality	Silage	Persist.	Rating 1-5	*1.17*	*7.54*	*2.44*	*11.2*	*843.6*	*4.55*	*4.38*	*5.8*
Intermediates																		
Moira	D	26-May	209	108	39	57	-32	36	0	***	1.65	7.08	2.43	11.17	826.8	4.89	4.16	6.1
Astonconqueror	D	27-May	206	75	52	48	-10	42	0	****	1.46	7.39	2.34	11.19	835.7	5.21	3.93	6.2
Abermagic	D	28-May	215	31	64	78	18	24	0	***	1.19	7.69	2.62	11.51	844.9	4.64	4.09	6.2
Nifty	D	28-May	145	38	61	57	-37	26	0	**	1.23	7.62	2.43	11.30	831.2	4.65	4.14	6.3
Aberwolf	D	30-May	209	54	54	48	11	43	0	**	1.33	7.45	2.35	11.12	840.9	4.85	4.45	6.7
Abergreen	D	31-May	193	38	69	70	5	11	0	*	1.23	7.82	2.55	11.60	842.2	4.31	4.13	6.5
Gusto	D	31-May	176	50	51	64	2	9	0	****	1.30	7.37	2.50	11.18	838.9	4.32	4.04	5.8
Barwave	T	22-May	244	93	61	59	-20	50	0	-	1.56	7.62	2.45	11.64	836.0	4.98	4.51	4.9
Fintona	T	24-May	190	49	52	49	-5	45	0	*****	1.30	7.40	2.35	11.05	839.1	5.22	4.01	5.4
Aberclyde	T	25-May	253	51	66	46	44	46	0	****	1.31	7.74	2.32	11.38	852.0	5.23	4.04	5.6
Elysium	T	27-May	170	43	52	32	12	32	0	-	1.26	7.39	2.20	10.86	844.4	4.74	4.25	6.0
Dunluce	T	29-May	184	23	58	52	24	34	-6	****	1.14	7.54	2.38	11.05	845.6	4.52	4.62	5.4
Lates																		
Oakpark	D	2-Jun	149	32	52	52	-12	25	0	*	1.19	7.40	2.38	10.98	833.3	4.33	4.55	6.5
Ballyvoy	D	3-Jun	186	65	46	47	19	10	0	*	1.39	7.24	2.34	10.97	843.1	4.14	4.32	6.2
Callan	D	3-Jun	126	71	39	35	-35	16	0	****	1.43	7.08	2.23	10.74	830.1	4.55	3.96	6.2
Drumbo	D	5-Jun	146	23	44	42	24	13	0	*	1.14	7.19	2.29	10.62	842.6	4.19	4.36	6.2
Astonking	D	5-Jun	141	61	50	36	-25	18	0	***	1.37	7.34	2.24	10.95	828.3	4.36	4.29	5.8
Aberbann	D	10-Jun	190	5	81	75	-25	54	0	***	1.03	8.11	2.59	11.74	832.2	4.46	5.36	5.9
Aberchoice	D	11-Jun	190	15	65	58	22	30	0	***	1.09	7.73	2.44	11.26	844.8	4.18	4.93	6.0
Bowie	D	16-Jun	170	19	53	54	28	16	0	-	1.11	7.43	2.40	10.94	838.7	3.63	5.22	6.4
Aberbite	T	1-Jun	175	-2	56	53	32	36	0	*****	0.99	7.49	2.39	10.87	849.5	4.55	4.62	5.8
Astonenergy	T	1-Jun	151	5	47	43	49	6	0	*****	1.03	7.27	2.30	10.60	854.1	4.33	3.95	5.5
Triwarwic	T	2-Jun	141	20	53	30	7	32	0	-	1.12	7.42	2.18	10.72	842.5	4.63	4.39	5.8
Nashota	T	3-Jun	214	53	57	39	28	38	0	-	1.32	7.51	2.26	11.09	845.7	4.68	4.54	6.0
Glenfield	T	3-Jun	207	59	63	40	3	41	0	-	1.36	7.68	2.28	11.31	841.1	4.74	4.55	5.7
Meiduno	T	3-Jun	195	45	56	46	27	21	0	****	1.27	7.50	2.33	11.10	848.8	4.41	4.31	5.2
Briant	T	3-Jun	156	10	58	46	13	29	0	***	1.06	7.54	2.33	10.93	841.2	4.51	4.47	5.5
Aspect	T	3-Jun	136	11	50	30	27	23	-6	*****	1.07	7.36	2.19	10.61	848.5	4.13	4.77	6.0
Abergain	T	4-Jun	241	34	61	50	47	49	0	****	1.20	7.63	2.37	11.20	852.0	4.91	4.56	5.6
Gracehill	T	4-Jun	241	46	60	58	10	67	0	**	1.28	7.60	2.44	11.31	840.9	5.35	4.56	5.6
Ballintoy	T	4-Jun	195	36	60	43	23	32	0	****	1.22	7.59	2.30	11.11	846.6	4.59	4.44	5.4
Xenon	T	7-Jun	143	12	49	35	29	17	0	*****	1.08	7.33	2.23	10.64	846.1	3.98	4.77	6.2
Aberplentiful	T	8-Jun	204	59	63	50	11	26	-6	**	1.36	7.67	2.37	11.40	842.1	4.27	4.69	5.5
Solas	T	10-Jun	153	10	48	55	1	39	0	***	1.06	7.29	2.41	10.76	837.8	4.31	5.07	5.8

Notes: D - Diploid, T = Tetraploid

[1]Teagasc Grazing Utilisation Trait - see Appendix 1

Values in italics above denote the mean of the control varieties in Appendix 2

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

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.
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.
Nifty:	Good spring, summer and autumn growth. Good silage variety. Ground cover is good and variety is persistent.
Aberwolf:	Good spring, summer and autumn growth. Good Dry Matter Digestibility. A good silage variety. Ground cover is very good and the variety is persistent.
Abergreen:	Very good summer and autumn growth. Ground cover is very good and the variety is persistent.
Gusto:	Very good autumn growth. Good Dry Matter Digestibility. Ground cover is moderate and the variety is persistent.

INTERMEDIATE PERENNIAL RYEGRASS: TETRAPLOIDS

Barwave:	This is the first year on the Recommended List. Excellent spring and autumn growth. Dry Matter Digestibility is moderate. It is the earliest heading tetraploid variety in its category. Silage yield is very good, highest in its category. Ground cover is moderate and variety is persistent.
Fintona:	Good spring and autumn growth. Dry Matter Digestibility is moderate. Silage yield is 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:	Good spring growth. Ground cover is good and 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.

LATE PERENNIAL RYEGRASS: DIPLOIDS

Oakpark:	Good spring, summer and autumn growth. Very good silage yield. Ground cover is very good and the variety is persistent.
Ballyvoy:	Very good spring growth and good summer and autumn growth. Dry matter digestibility is good. Ground cover is good and the variety is persistent.
Callan:	Excellent spring growth, highest in the late category. Ground cover is good and the variety is persistent.
Drumbo:	Good summer and autumn yield. Dry matter digestibility is very good. Ground cover is good.
Astonking:	Very good spring growth. Good silage yield. The variety is persistent.
Aberbann:	This is the first year on the Recommended List. Excellent summer and autumn growth. Excellent silage yield. Dry matter digestibility is moderate. The variety is persistent.
Aberchoice:	Very good summer and autumn growth. Dry matter digestibility is excellent. Ground cover is good and the variety is persistent.
Bowie:	Very good summer and autumn growth. Dry matter digestibility is very good. Ground cover is good and the variety is persistent.

LATE PERENNIAL RYEGRASS: TETRAPLOIDS

Aberbite:	Very good summer and autumn growth. Very good quality. Very good silage yield. Ground cover score is moderate.
Astonenergy:	Good summer and autumn growth. Dry matter digestibility is excellent. Ground cover is moderate and the variety is persistent.
Triwarwic:	Good summer and autumn growth and silage yield is very good. Ground cover is good and the variety is persistent.
Nashota:	Very good spring, summer and autumn growth. Dry matter digestibility is good. Silage yield is very good. Ground cover is good and the variety is persistent.
Glenfield	Very good spring, summer and autumn growth. Dry matter digestibility is good. Silage yield is good. Ground cover is good and the variety is persistent.
Meiduno:	Very good seasonal growth. Good silage yield. Ground cover moderate and the variety is persistent.
Briant:	Summer and autumn growth is good. Ground cover is moderate and the variety is persistent.
Aspect:	Moderate seasonal growth. Dry matter digestibility is good. Ground cover is very good and the variety is persistent.
Gracehill	Excellent autumn growth and excellent silage yield, being highest in its category. Ground cover is good and the variety id persistent.
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 and the variety is persistent.
Ballintoy:	Good summer and autumn growth. Dry matter digestibility is good and silage yield 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.

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 autumn growth, with joint highest of the late tetraploids. Dry matter digestibility is moderate and silage yield is good. Ground cover is good and the variety is persistent.

Recommended White Clover Varieties 2022

Variety Name	Total Yield	Leaf Size*	Clover %	Year 1st Listed	Breeder
[1]*Control Mean (t DM/ha): 9.6 t DM/Ha*					
Barblanca	104.7	Large (0.76)	49.3	2009	Barenbrug
Violin	101.2	Large (0.75)	45.9	2020	DLF
Alice	100.0	Large (0.73)	49.0	1995	Barenbrug
Dublin	101.8	Large (0.73)	49.0	2018	Teagasc
Chieftain	97.2	Medium (0.68)	44.7	2005	Teagasc
Aberswan	94.3	Medium (0.65)	49.1	2022	IBERS
Buddy	98.4	Medium 0.58	46.1	2015	Teagasc
Iona	95.4	Medium (0.56)	43.3	2014	Teagasc
Crusader	96.4	Medium (0.56)	44.1	2009	Barenbrug
Aberherald	97.7	Medium (0.56)	44.8	2003	IBERS
Coolfin	103.8	Small (0.51)	46.3	2017	Teagasc
Aberpearl	99.6	Small [0.51]	44.7	2022	IBERS
Galway	95.4	Small (0.36)	37.2	2017	Teagasc
Aberace	95.1	Small (0.26)	32.8	2016	IBERS

[1]Controls in 2018 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. Data in square brackets [ ] provisional.**

Control varieties are shown in Appendix 2 on page 28.

WHITE CLOVER VARIETY DESCRIPTIONS

Barblanca:	A large leaved variety. Very good annual yield. Considered suitable for silage production and unsuitable for hard grazing.
Violin:	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.
Alice:	A large leaved variety. 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.
Aberswan:	Recommended for the first time this year. A medium leaved variety. 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.
Aberpearl:	Recommended for the first time this year. A small leaved variety and is currently the smallest on the Recommended List. 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 2022): Pasture Profit Index (PPI) 'Base Values'

Seasonal Dry Matter Production	Base Value	Kg Δ DM yield*
Spring	1.01 t DM/ha	€0.17
Mid-Season	6.1 t DM/ha	€0.04
Autumn	1.9 t DM/ha	€0.11

Grass Quality - DMD	[1]Base Value	Unit Δ DMD/Kg*
April	876.1 g/kg	- €0.001
May	842.3 g/kg	- €0.009
June	816.2 g/kg	- €0.011
July	828.0 g/kg	- €0.010

[1]Base DMD values updated in 2022

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 (-€67/year)

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 (GSΔ). For each one-unit loss in GS, a corresponding loss in DM yield of 1683 kg DM/ha was applied**. The rate of GSΔ 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 1 (RL 2022): continued

Grazing Utilisation – This is a Provisional Trait for RL 2022

Explanation provided by Teagasc Moorepark

Varieties that display improved ability to be grazed by dairy cows allow for increased utilisation pasture leading to productivity increases on farm. Variety grazing assessments have been conducted at Teagasc Moorepark in plot grazing studies since 2017. Variety grazing efficiency differences are expressed as *Residual Grazed Height.*

The Residual Grazed Height of a variety is the difference between observed post-grazing sward height (measured with a rising plate meter) and its predicted post-grazing sward height. Predicted post-grazing sward height is derived from the pre-grazing sward height of a variety.

Where a variety's observed post-grazing sward height is greater than its predicted, the resulting residual grazed value is positive which is indicative of poorer grazing efficiency, i.e. *the variety was grazed to a higher post-grazing sward height than expected*. If a varieties observed post-grazing sward height is lower than its predicted, the resulting residual grazed height is negative, indicative of better grazing performance (i.e. better clean out). Post grazing sward height data from the on-farm variety evaluation trial supports the variety plot grazing results.

The utilisation potential of varieties is expressed using the 'Utilisation Star Rating'. The Table below displays the corresponding range in utilisation values for each star rating.

Utilisation Star Ratings

Star rating	Grazing Utilisation range
*	Moderate
**	
***	
****	
*****	Excellent

Where varieties are represented by a hyphen (-), there is currently no grazing data available.

Appendix 2 (RL 2022): Control varieties - Grass

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

	INTERMEDIATE PRG* Control Varieties
Trial Sown 2010	Aberstar, Premium, Shandon, Magician (T), Malone (T), Trend (T)
Trial Sown 2011 & 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)
Trial Sown 2017	Abermagic, Dunluce (T), Glenroyal (Late), Kintyre (T) (Late)
Trial Sown 2018	Abermagic, Dunluce (T), Aberchoice (Late), Kintyre (T) (Late)
Trial Sown 2019	Abermagic, Dunluce (T), Aberchoice (Late), Kintyre (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)
Trial Sown 2017	Abermagic (Inter), Dunluce (T) (Inter), Glenroyal, Kintyre (T)
Trial Sown 2018	Abermagic (Inter), Dunluce (T) (Inter), Aberchoice, Kintyre (T)
Trial Sown 2019	Abermagic, Dunluce (T), Aberchoice (Late), Kintyre (T) (Late)

Appendix 2 (RL 2022) continued:

	ITALIAN Control Varieties
Trial Sown 2007 & 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'.

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
Trial Sown 2016	Barblanca, Chieftain, Crusader, Alice
Trial Sown 2018	Barblanca, Chieftain, Crusader, Alice

Appendix 3 (RL 2022): General Purpose – Additional Data[1]

Variety Name	Ploidy	Spring (t DM/ha)	Late Summer (t DM/ha)	Autumn (t DM/ha)
Control Mean (t DM/ha)		*1.08*	*1.67*	*2.87*
Intermediate PRG Group				
Moira	D	1.53	1.62	2.91
Astonconqueror	D	1.25	1.63	2.69
Abermagic	D	1.03	1.75	3.02
Nifty	D	1.15	1.67	2.84
Aberwolf	D	1.34	1.69	2.75
AberGreen	D	1.28	1.71	2.85
Gusto	D	1.31	1.67	2.89
Barwave	T	1.97	1.71	3.08
Fintona	T	1.26	1.62	2.82
Aberclyde	T	1.03	1.46	2.48
Elysium	T	1.28	1.50	2.69
Dunluce	T	1.10	1.64	2.80
Late PRG Group				
Oakpark	D	1.11	1.60	2.75
Ballyvoy	D	1.20	1.60	2.77
Callan	D	1.38	1.63	2.70
Drumbo	D	1.03	1.63	2.64
AstonKing	D	1.29	1.61	2.73
Aberchoice	D	1.09	1.67	2.83
Bowie	D	0.98	1.62	2.67
AberBann	D	1.04	1.76	2.85
AberBite	T	0.95	1.69	2.96
AstonEnergy	T	1.06	1.68	2.70
Triwarwic	T	1.09	1.74	2.77
Nashota	T	1.33	1.67	2.73
Glenfield	T	1.14	1.57	2.67
Meiduno	T	1.34	1.69	2.77
Briant	T	1.19	1.76	2.77
Aspect	T	1.16	1.56	2.72
Abergain	T	1.30	1.70	2.84
Gracehill	T	1.41	1.67	2.91
Ballintoy	T	1.24	1.73	2.72
Xenon	T	1.01	1.59	2.63
Aberplentiful	T	1.09	1.64	2.89
Solas	T	1.08	1.64	2.91

[1]Silage yields are included in the main RL tables on pages 14 & 15 for corresponding PPI values. *2019 Control varieties are listed in Appendix 2.

Appendix 4 (RL 2022): Simulated Grazing (frequent cutting) - Dry Matter Digestibility (DMD) Data[2]

Variety Name	Ploidy	DMD 1 (April)	DMD 2 (May)	DMD 3 (June)	DMD 4 (July)
Control Mean (g/kg)		*873.1**	*846.5**	*824.2**	*830.5**
Intermediate PRG Group					
Moira	D	848.3	824.8	809.3	824.9
Astonconqueror	D	864.5	836.1	809.4	832.6
Abermagic	D	877.0	844.5	817.4	840.9
Nifty	D	871.9	830.1	800.7	822.2
Aberwolf	D	865.4	847.8	814.4	836.1
Abergreen	D	877.2	847.5	812.0	832.2
Gusto	D	866.3	841.2	812.3	836.0
Barwave	T	877.7	824.7	813.0	828.6
Fintona	T	874.9	834.6	814.5	832.6
Aberclyde	T	881.8	849.9	825.4	850.9
Elysium	T	881.7	842.6	820.4	833.1
Dunluce	T	874.6	845.8	825.0	837.0
Late PRG Group					
Oakpark	D	855.5	836.4	813.9	827.4
Ballyvoy	D	868.2	845.0	821.2	838.1
Callan	D	865.5	830.0	806.0	819.0
Drumbo	D	861.3	844.9	831.0	833.4
Astonking	D	847.8	829.3	812.0	824.3
Aberbann	D	865.0	835.7	817.7	810.4
Aberchoice	D	872.0	854.1	829.2	823.9
Bowie	D	842.2	840.0	843.0	829.8
Aberbite	T	882.6	847.8	826.6	840.9
Astonenergy	T	885.3	857.8	833.2	840.2
Triwarwic	T	877.7	840.8	818.4	832.9
Nashota	T	872.3	844.7	836.3	829.5
Glenfield	T	875.5	840.5	821.2	827.1
Meiduno	T	884.8	850.5	823.7	836.4
Briant	T	866.4	842.0	823.0	833.6
Aspect	T	883.3	855.4	829.7	825.6
Abergain	T	878.8	852.8	832.6	844.0
Gracehill	T	867.8	842.5	827.9	825.3
Ballintoy	T	879.5	843.8	825.4	837.8
Xenon	T	871.3	848.3	831.0	833.6
Aberplentiful	T	872.9	840.1	825.7	829.6
Solas	T	863.5	843.1	825.6	819.0

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

*2019 Control varieties are listed in Appendix 2.

Appendix 5 (RL 2022): Breeder's details[3]

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

[3]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.

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

gov.ie - Crops (www.gov.ie)

The Grass and White Clover Recommended List Varieties 2022 booklet is available on the Department of Agriculture, Food and the Marine website. Enter the website and click on Publications.