

Grass and Clover



Recommended Varieties
for Northern Ireland
2013/14



Department of
**Agriculture and
Rural Development**
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Agri-Food and
Biosciences Institute

Recommended Booklet

This booklet provides information on the grass and clover varieties currently recommended by DARD for use in Northern Ireland.

The Agri-Food and Biosciences Institute at the Plant Testing Station in Crossnacreevy conducts these recommended list variety trials on behalf of the Department of Agriculture and Rural Development.

The booklet is designed to act as a variety selection tool for farmers when planning to reseed, as an information source to assist seeds merchants compile and develop their seeds mixtures in response to the latest advances in plant breeding and as a technical document to assist DARD extension staff.

These recommendations are also available on-line at
<http://www.afbini.gov.uk/recommendedlists>

The recommendations are reviewed and published annually.

Acknowledgements

The plant breeders, merchants and maintainers who supplied seed of the varieties tested, are thanked for their assistance.

Cover photograph

Different varieties of hybrid ryegrass, sown in plots, in their first year of trials at the Plant Testing Station, AFBI Crossnacreevy. Behind the hybrids are recently cut plots of intermediate perennial ryegrass with uncut late perennials in the background nearest the hedge. Photo date 24.05.13.

<p>A large print version of this booklet can be supplied on request.</p>
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GRASS AND CLOVER VARIETIES FOR 2013-14

T J GILLILAND BSc BAgr PhD and E J MEEHAN BSc MSc PhD

Agri-Food and Biosciences Institute, Plant Testing Station, Crossnacreevy
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HOW TO USE THIS BOOKLET

This booklet can be used to provide:

- ◆ A quick reference to which varieties are recommended by scanning the name lists in **Summary of Recommended Varieties.**
- ◆ A guide to variety performance and classification by examining the main yields in the **Performance Tables for Recommended Varieties.**
- ◆ A resource for comparing the seasonal growth patterns of varieties in **'Seasonal Yields' on the Performance Tables for Recommended Varieties.**
- ◆ A description of the main agronomic features of varieties in **Indexed Lists of Variety Descriptions.**
- ◆ A merchant's reference to breeder and UK agent details as listed in **Key Contacts and Services.**
- ◆ As a guide to DARD services and contacts in **Key Contacts and Services.**

Summary of Recommended Varieties

This section lists the names of the recommended grass and clover varieties for 2013/14 and indicates their recommended status.

Recommendation Categories

As varieties progress through the DARD recommended list testing programme and more information is gained on their performance over years, so the varieties can advance through a rising scale of recommended list categories. These recommendation categories are awarded and indicated as follows:

<u>Indicator</u>	<u>Stipulation</u>
'BOLD TYPE'	- Varieties that have been tested in at least 5 separate trials and found to maintain very high performance levels
'Plain Type'	- Varieties that may be very high performing but have as yet completed less than 5 separate trials
	- Varieties which have consistently performed well in 5 or more trials but not with quite as high a performance as the 'Bold Type' varieties
(S)	- Varieties recommended for a SPECIFIC USE as detailed in the text
(P)	- Varieties which, as yet, have completed only 3 trials and are PROVISIONALLY RECOMMENDED pending further data (Seed may be in short supply)
(O)	- Varieties which are BECOMING OUTCLASSSED

The following summary table lists all the currently recommended varieties and indicates their current recommended status. Varieties are listed in heading date or leaf size order in each category. Red clover is listed in order of three year average yield. (T = Tetraploid)

Recommended Grass and White Clover Varieties 2013/14

Perennial Ryegrass				
Early Diploid		Intermediate Diploid		Late Diploid
Genesis		Solomon	(S) AberDart	(S) AberZest Majestic
Moyola		Boyne	(S) Bahima 1	AberAvon Denver
Kilrea		AberStar	Bree	(S) Pastour Glenveagh
Kimber		AberMagic	Gandalf	Mateon1 Tyrella
		AberGreen	Copeland	Drumbo Foxtrot
		(S) Spelga	(P) Lineker	AberChoice Clanrye
		Gerrison	(P) Glenariff	(O) Twytop
Early Tetraploid		Intermediate Tetraploid		Late Tetraploid
AberTorch		Niagara	Glenstal	(S) Delphin (S) Glencar
(P) Carraig		Malone	Seagoe	AberCraigs Navan
		(S) Trintella	(P) AberClyde	Dundrum AberGain
		Magician	(O) AberGlyn	AberBite Dunloy
		Eurostar		Twymax (S) Tivoli
		Dunluce		AstonPrincess (P) Aspect
		AstonEnergy		Kintyre (O) Elgon
				(O) Fornido

Italian Ryegrass	Hybrid Ryegrass		Timothy	
Hunter (T)	AberEcho (HT)	AberEve (HT)	Early	Intermediate
Barmultra II (T)	Ligunda (HD)	Foyle (HT)	Presto Comer Dolina Promesse Erecta Comtal	Narnia
Meribel	Pirol (HD)	Amalgam (HT)		Motim
Fox	AberExcel (HT)	Scapino (HT)		Late
Shakira	Drumlin (HT)	Barsilo (HD)		(S) Aber S48
Dorike (T)	Hymer (HT)	(P) Kirial (HT)		
Litonio (T)				
(P) Bartrento (T)				

White Clover			Red Clover
Small Leaved	Medium Leaved	Large & Very Large Leaved	
AberAce	Crusader	AberHerald	Atlantis (T) Maro (T)
Gr. Demand	Gr. Bounty	Gr. Huia	Lemmon Gr. Sensation
	Avoca	AberVantage	Merviot Rotra (T)
	AberDai	(P) Iona	Amos (T) Mercury
	Chieftain		AberClaret (P) Milvus
			Avisto (P) AberChianti
			(O) Harmonie

Key: (S) - Specific Use (P) - Provisional (O) - Outclassed (HD, HT) - Hybrid Diploid or Tetraploid

Note: Varieties listed in heading date or leaf size order in each recommendation category.

Red clover is in order of three year average yield.

Testing Procedures

Variety trials are sown annually at the Plant Testing Station, Crossnacreevy in mid-summer, and evaluated over three growing seasons.

Perennial Ryegrass trials are grazed with cattle in the first year and measurements are taken during the second and third years to assess long-term potential. **Perennial Ryegrass** and **Timothy** varieties are assessed under both a simulated rotational grazing management with 320 kg/ha nitrogen applied per annum and under a 3-cut silage management with backend simulated grazing, with 350 kg/ha nitrogen applied per annum.

Hybrid Ryegrass, being best suited to medium-term use, is assessed over three harvest years under a 3-cut silage management with spring and backend simulated grazing, at 425 kg/ha nitrogen applied per annum.

Italian Ryegrass, being best suited to short-term conservation use, is assessed in both first and second harvest years under a silage management with spring plus backend simulated grazing, at 425 kg/ha nitrogen applied per annum.

White Clover, sown with Premium perennial ryegrass, is assessed in the second and third harvest years. Reaction to rotational cattle grazing is assessed using either 50 kg/ha nitrogen applied in spring (Low N) or 200 kg/ha nitrogen applied throughout the season (High N). Yield potential is measured separately in a simulated rotational grazing trial at 'High N'.

Red Clover, normally sown as a high yielding, high protein conservation crop with or without companion perennial or hybrid ryegrasses. It is regarded as a short term ley, normally for three years but not longer than five years.

Key to Performance Tables:

The recommended varieties are grouped into tables according to species and maturity and are listed within each category in order of heading date or leaf size and within red clovers according to the three year average yield.

Therefore, the variety at the top of a list is not necessarily the best.

The parameters recorded in the tables are as follows:

Heading Date: Indicates the relative maturity of varieties, recorded when half of a set of individual indicator plants of each variety produce seed heads in an average season at Crossnacreevy. Dates are about 4-6 days earlier than ear emergence in swards and **are not the date of the first silage cut**.

Leaf Size: Indicates the relative leaf size of clover varieties as a percentage of Grasslands Huia.

Total Yield: Total annual dry matter yields (t/ha DM) as a percentage of the bold type diploid varieties in each table. The tetraploid perennials are expressed as a percentage of the diploid perennial controls and for Italian ryegrasses, yields are given as a percentage of the first year control yield.

Spring Growth: The yield in t/ha DM available by the end of April at Crossnacreevy.

2-Cut Silage Yield: The combined yield from the first two silage cuts as a percentage of the mean of the bold type diploid varieties.

2-Cut Digest Yield: The total yield of digestible material produced in the first two silage cuts.

Grazing Grass Quality: The D-value of leafy grazing swards in August (differences of less than 2% should be treated as not significant).

Sward Density: Assessed at the end of a harvest year on a 0-9 scale of increasing density. Ratings above 6.0 for diploid and 5.0 for tetraploid ryegrasses indicate a high level of persistence.

Grazing Density: Indicates the relative tolerance of white clover to grazing on a 0-9 scale. High values represent good persistence and a potential to proliferate under a suitable management.

The data in the tables are an accumulation from a large over-years data matrix from different trials at Crossnacreevy. The number of years of data representing each variety depends on its stage in the testing programme (see 'Recommended Categories' on page 2).

Performance Tables for Recommended Varieties

This section presents, as an over-years average, the main production and sward density or persistency results for varieties.

RECOMMENDED PERENNIAL RYEGRASS VARIETIES

Perennial Ryegrass Maturity Groups:

Perennial ryegrass varieties are grouped into three heading date classes, mainly for ease of management of trials. When comparing varieties for farming use, they are best regarded as existing in a continuum that currently extends from the earliest maturing variety, Genesis, to the latest maturing Twytop.

It is vital to realise that the latest maturing varieties in one group may be of a similar type to the earliest maturing in the next. For example, in terms of maturity, there is a greater difference between the intermediate varieties Solomon and AberGreen (12 days), than between AberGreen and the 'late' variety Denver (1 day). Consequently, the perennial ryegrass varieties have been listed in one table to assist growers to compare across the maturity groups and avoid excluding varieties simply because of their classification label.

Throughout this continuum, however, there is an expected progression of higher spring yields associated with earlier heading dates and the development of secondary mid-season heading being lower the later the maturity. Similarly, the rate of stem development and yield accumulation prior to the first silage cut should show a progressive delay from the earliest to the latest maturing variety. Varieties that outperform these conventions, based on their position in the maturity continuum, can be regarded as elite performers.

Recommendation changes for 2013/14:

Early Perennial Ryegrass

Three variety changes have been made to the recommended list this year. The diploid varieties January and Donard have been removed from the list as they are no longer commercially available. Carraig has been added to the tetraploids as a new provisional variety.

Intermediate Perennial Ryegrass

Seven varieties had their recommended list status changed. In the diploids, one new provisional recommendation, Lineker, was added to the list. Spelga has been given 'S' status in the 'Plain Types'. AberGreen was moved up to 'Bold Type'. Betty, having been outclassed last year was removed from the list. In the tetraploids, Trintella has been given 'S' status and AberGlyn was moved down to 'outclassed'. AberClyde has been added to the tetraploids as a new provisional variety.

Late Perennial Ryegrass

Eighteen varieties had their recommended status changed. In the diploids, Denver and Tyrella have moved down from 'Bold Type' to 'Plain Type' whereas Majestic, Glenveagh and Clanrye have moved up from provisional to 'Plain Type'. Pastour was given 'S' status and AberChoice had its 'S' status removed. Twytop was moved down to outclassed and Portstewart, having been outclassed last year was removed from the list. In the tetraploids, Glencar and Tivoli has been given 'S' status in the 'Plain Types' and AberGain has moved up from provisional to 'Plain Type'. Dundrum has moved up to 'Bold Type' and Dunloy has moved down from 'Bold Type'. Elgon and Fornido have moved down to outclassed. Millennium has been removed from the list as it is no longer commercially available and Aspect has been brought on to the list as a new provisional recommendation.

Diploid Perennial Ryegrass Varieties

These varieties comprise the majority of the seed sold in Northern Ireland either as 'straights' or in mixtures. They are long lived and form swards of good density, giving them a high damage resistance. They are well suited to a wide range of enterprises as the diverse selection of varieties is capable of producing high silage yields or maintaining high grazing outputs throughout the growing season.

	VARIETY	Heading Date	Total Yield 16.2*	Silage 2-Cut Yield		Total Yield 12.0*	Grazing Grass Quality D-Value	Sward Density
				Total 10.4*	Digest 7.7*			
			%	%	%	%	%D	(0-9)
	Genesis	8 May	106	103	100	106	73.3	6.2
	Moyola	10 May	105	101	100	108	73.1	6.0
	Kilrea	12 May	94	88	92	97	73.6	6.6
	Kimber	14 May	93	91	92	96	74.2	6.3
	Solomon	16 May	104	105	106	100	73.2	6.3
	Boyne	18 May	107	110	108	103	73.5	6.4
	AberStar	24 May	96	94	99	101	76.1	6.4
	AberMagic	26 May	105	102	100	107	74.1	6.3
	AberGreen	28 May	101	100	111	109	74.6	6.5
(S)	AberZest	29 May	105	107	98	102	75.9	5.9
	AberAvon	31 May	98	99	103	97	75.6	6.2
(S)	Pastour	2 Jun	100	103	105	96	74.5	6.1
	Mateon 1	3 Jun	100	103	104	94	75.7	6.6
	Drumbo	3 Jun	97	97	102	98	75.7	6.3
	AberChoice	8 Jun	99	100	105	104	75.1	6.0
(S)	Spelga	17 May	101	103	99	99	72.0	6.4
	Gerrison	22 May	101	102	101	101	72.8	6.2
(S)	AberDart	22 May	94	92	95	96	76.5	6.7
(S)	Bahima 1	22 May	107	110	109	101	71.1	5.9
	Bree	23 May	99	99	98	96	73.6	6.5
	Gandalf	24 May	97	96	96	96	74.0	6.8
	Copeland	26 May	102	101	102	99	73.0	6.7
	Majestic	28 May	101	103	101	98	74.2	6.6
	Denver	29 May	100	105	100	96	72.7	6.7
	Glenveagh	30 May	99	101	102	96	74.5	6.6
	Tyrella	1 Jun	101	106	99	96	74.1	6.4
	Foxtrot	2 Jun	95	96	98	97	74.7	6.3
	Clanrye	2 Jun	104	106	103	97	74.0	6.3
(P)	Lineker	19 May	104	106	108	99	73.3	6.2
(P)	Glenariff	24 May	102	102	107	101	73.3	6.4
(O)	Twytop	13 Jun	93	93	97	100	73.3	6.3

* = Control yield as average of 'Bold Type' diploid varieties in t/ha DM

Seasonal Yields of Diploid Perennial Ryegrass

The seasonal yield distribution of these varieties shows a progression of increasing early season yields from the latest to the earliest varieties and increasing summer production with later heading. The varieties all undergo the same cycle of simulated rotational grazing cuts with 'Spring' growth up to the end of April, 'Early Summer' growth to the end of July, 'Late Summer' to the end of September and the 'Autumn' period ending in early November. The first silage cuts are normally completed by mid-May for the early, the end of May for the intermediate and during early June for the late varieties. This gives a three to four week spread in most years, which is maintained to the end of the third cut, resulting in different periods of 'Aftermath'.

Seasonal Silage Yields				Seasonal Grazing Yields				Maturity Class
1 st Cut 6.9*	2 nd Cut 3.5*	3 rd Cut 3.4*	Aftermath Grazing 2.4*	Spring 2.5*	Early Summer 4.6*	Late Summer 3.2*	Autumn 1.7*	
%	%	%	%	%	%	%	%	
103	100	106	119	127	99	104	101	Early
102	98	106	122	126	97	110	106	Early
82	102	98	110	108	93	95	95	Early
86	100	90	105	106	91	94	93	Early
106	102	107	93	108	98	98	96	Inter
109	112	103	99	110	101	102	97	Inter
89	103	99	104	95	104	100	105	Inter
96	112	113	107	99	108	111	111	Inter
88	122	101	106	110	107	111	110	Inter
114	97	100	96	96	103	104	108	Late
103	90	93	98	81	103	100	104	Late
106	96	100	86	86	101	97	101	Late
102	105	100	88	77	100	96	95	Late
94	101	100	89	87	103	98	102	Late
92	115	101	94	88	112	104	107	Late
103	102	100	88	107	94	99	99	Inter
100	105	103	90	105	100	100	95	Inter
88	100	95	98	96	98	94	96	Inter
113	104	102	101	107	99	101	97	Inter
93	109	104	93	93	99	97	95	Inter
94	101	101	92	93	99	94	90	Inter
96	108	107	99	104	97	99	99	Inter
107	93	102	88	87	103	99	101	Late
112	92	97	83	80	105	96	92	Late
104	94	101	84	87	101	96	92	Late
115	90	95	86	95	96	96	96	Late
99	90	99	84	81	103	100	99	Late
107	106	106	89	81	107	99	94	Late
111	99	100	93	104	101	97	93	Inter
101	101	109	97	101	99	104	105	Inter
80	117	95	91	75	111	103	101	Late

* = Control yield as average of 'Bold Type' diploid varieties in t/ha DM

Tetraploid Perennial Ryegrass Varieties

These varieties tend to have high sugar contents and a tall upright growth habit that promotes high intakes when grazed. They also contain some of the highest yielding perennial ryegrass varieties. Although equally long lived, they are more open growing than the diploid varieties with which they are normally mixed in order to increase sward density and damage resistance.

	VARIETY	Heading Date	Total Yield 16.2*	Silage		Total Yield 12.0*	Grazing	
				2-Cut Yield Total 10.4*	Digest 7.7*		Grass Quality D-Value	Sward Density
			%	%	%	%	%D	(0-9)
	AberTorch(T)	6 May	94	93	98	99	75.2	5.7
	Niagara(T)	16 May	102	101	105	100	77.1	6.3
	Malone(T)	17 May	109	108	113	102	75.8	5.3
(S)	Trintella(T)	17 May	104	105	111	98	75.1	5.5
	Magician(T)	18 May	104	108	112	102	75.6	5.6
	Eurostar(T)	23 May	104	104	103	101	75.5	6.0
	Dunluce(T)	28 May	104	100	108	106	76.2	5.6
	AstonEnergy(T)	30 May	102	98	106	104	78.4	5.4
(S)	Delphin(T)	31 May	105	109	112	100	75.3	5.2
	AberCraigs(T)	31 May	104	108	107	98	77.9	5.9
	Dundrum(T)	1 Jun	105	111	110	99	77.0	5.6
	AberBite(T)	3 Jun	108	110	110	104	78.3	5.7
	Twymax(T)	4 Jun	104	107	110	100	75.4	6.1
	AstonPrincess(T)	4 Jun	102	105	110	98	76.4	6.1
	Kintyre(T)	5 Jun	104	107	109	101	75.9	5.8
	Glenstal(T)	19 May	105	107	107	102	73.4	5.7
	Seagoe(T)	20 May	106	107	114	107	74.5	5.5
(S)	Glencar(T)	30 May	104	110	108	96	74.5	6.0
	Navan(T)	2 Jun	103	103	105	99	76.9	5.6
	AberGain(T)	2 Jun	111	116	117	110	77.0	5.4
	Dunloy(T)	6 Jun	101	102	107	98	76.8	6.1
(S)	Tivoli(T)	7 Jun	103	104	107	95	77.2	5.6
(P)	Carraig(T)	13 May	99	100	99	104	75.4	6.2
(P)	AberClyde(T)	22 May	108	109	104	104	76.9	5.7
(P)	Aspect(T)	2 Jun	104	108	107	100	77.3	5.9
(O)	AberGlyn(T)	18 May	101	105	104	96	74.2	5.6
(O)	Elgon(T)	31 May	99	100	103	97	77.2	5.6
(O)	Fornido(T)	5 Jun	103	105	105	96	76.3	6.2

* = Control yield as average of 'Bold Type' diploid varieties in t/ha D

Seasonal Yields of Tetraploid Perennial Ryegrass

The yielding pattern of these varieties shows the same progression of seasonal yields as the diploid varieties. The same cycle of simulated rotational grazing cuts is used, with 'Spring' growth up to the end of April, 'Early Summer' growth to the end of July, 'Late Summer' to the end of September and the 'Autumn' period ending in early November. The same silage system is also used to give a '1ST cut' by mid-May for the early, by the end of May for the intermediate and during early June for the late varieties. This three to four week spread in most years means that the 'Aftermath Grazing' begins in mid-August for the early, late August for the intermediate and early September for the late varieties.

Seasonal Silage Yields				Seasonal Grazing Yields				Maturity Class
1 st Cut 6.9*	2 nd Cut 3.5*	3 rd Cut 3.4*	Aftermath Grazing 2.4*	Spring 2.5*	Early Summer 4.6*	Late Summer 3.2*	Autumn 1.7*	
%	%	%	%	%	%	%	%	
91	96	95	98	122	91	96	92	Early
98	106	110	97	106	97	99	98	Inter
107	110	118	97	117	97	100	98	Inter
104	106	106	92	108	96	98	92	Inter
107	111	98	93	112	100	103	95	Inter
103	105	109	92	107	102	98	98	Inter
85	127	116	101	102	108	107	102	Inter
88	119	110	103	97	106	107	104	Inter
114	101	98	93	100	99	100	101	Late
111	105	102	86	95	100	97	95	Late
114	106	98	86	85	107	97	99	Late
109	111	109	98	89	108	105	111	Late
111	102	103	86	92	108	97	95	Late
108	99	100	87	91	106	95	92	Late
106	109	105	90	91	104	101	105	Late
105	114	106	90	110	100	101	96	Inter
105	111	104	98	113	102	112	104	Inter
115	100	101	84	95	99	94	91	Late
101	105	115	85	84	103	104	102	Late
120	106	109	94	109	111	112	106	Late
100	106	106	91	88	106	96	99	Late
101	109	112	84	80	104	93	97	Late
95	108	100	102	108	102	109	98	Early
109	110	113	93	113	103	105	95	Inter
107	112	98	88	92	104	99	100	Late
107	103	98	86	114	94	93	86	Inter
105	90	106	81	93	99	99	97	Late
104	106	109	86	84	103	99	93	Late

* = Control yield as average of 'Bold Type' diploid varieties in t/ha D

Recommended Hybrid Ryegrass Varieties

Hybrid Ryegrass Types:

Hybrid ryegrass varieties are a cross between perennial and Italian ryegrass and some strongly express the perennial or Italian parentage. 'Italian-like' hybrids have the highest yields but lowest sward densities, whereas 'perennial-like' hybrids are expected to live longer, potentially up to five years if carefully managed. Varieties achieving both high yield and density can be regarded as elite performers.

Recommendation changes for 2013/14:

Two hybrid ryegrass varieties have had their recommended list status changed this year.

Kirial (HT) has been added to the list as a new provisional and Amalgam (HT) has been moved up from provisional to 'Plain Type'.

VARIETY	Heading Date	Silage Yields			Sward Density
		1 st Year 19.7*	2 nd Year 17.9*	3 rd Year 16.9*	
		%	%	%	(0-9)
AberEcho(HT)	14 May	99	99	98	5.0
Ligunda(HD)	17 May	101	101	101	4.7
Pirol(HD)	19 May	99	100	101	5.3
AberExcel(HT)	17 May	91	88	90	4.9
Drumlin(HT)	18 May	91	88	92	5.0
Hymer(HT)	19 May	91	93	92	4.6
AberEve(HT)	19 May	94	93	94	5.0
Foyle(HT)	20 May	89	89	90	5.0
Amalgam(HT)	21 May	90	88	91	5.5
Scapino(HT)	21 May	93	92	94	4.8
Barsilo(HD)	23 May	97	98	97	4.6
(P) Kirial(HT)	20 May	92	91	95	4.9

* = Average yield of 'Bold Type' varieties in t/ha DM (HD, HT) Hybrid diploid or tetraploid

Seasonal Yields of Hybrid Ryegrass

The seasonal yield distribution of these varieties is strongly influenced by the differing seasonal growth characteristics of their Italian and perennial parentage. The very high early spring performance of some varieties by the end of March is an Italian ryegrass derived feature. All these varieties continue growing strongly after the two silage cuts are completed by mid-July, to provide substantial aftermath outputs.

VARIETY	Seasonal Yields			
	Spring Grazing 2.0 *	1 st Cut Silage 5.6 *	2 nd Cut Silage 4.2 *	Aftermath Grazing 6.4 *
	%	%	%	%
AberEcho(HT)	99	107	91	97
Ligunda(HD)	103	96	103	103
Pirol(HD)	98	97	106	100
AberExcel(HT)	78	103	82	88
Drumlin(HT)	64	110	76	92
Hymer(HT)	83	108	82	88
AberEve(HT)	74	104	85	95
Foyle(HT)	56	108	77	93
Amalgam(HT)	69	107	79	88
Scapino(HT)	85	110	79	90
Barsilo(HD)	91	93	98	103
(P) Kirial(HT)	75	108	78	94

* = Average yield of 'Bold Type' varieties in t/ha DM (HD, HT) Hybrid diploid or tetraploid

Recommended Italian Ryegrass Varieties

Italian Ryegrass Performance:

Italian ryegrass is the highest yielding of all recommended grasses but is short lived and best utilised for silage. Higher density varieties may be more damage resistant but none form dense soles. Second year yields are shown as a percentage of the first year control yield, to highlight the difference in annual outputs.

Recommendation changes for 2013/14:

Six Italian ryegrass varieties have had their recommended list status changed this year. Bartrento (T) has been added as a new provisional and Shakira has been moved up from provisional to 'Plain Type'. Barmultra II (T), Fox and Hunter (T) have been moved up into 'Bold Type'. Meryl has been removed from the list as it is no longer commercially available.

VARIETY	Heading Date	Silage Yields		Early Spring Growth	Sward Density
		1 st Year 20.2*	2 nd Year 20.2*		
		%	%	(t/ha DM)	(0-9)
Hunter(T)	15 May	99	90	2.3	4.4
Barmultra II(T)	17 May	100	89	2.3	4.3
Meribel	18 May	100	89	2.1	4.9
Fox	18 May	99	89	2.2	4.7
Shakira	14 May	102	85	2.4	4.4
Dorike(T)	14 May	99	88	2.2	4.3
Litonio(T)	18 May	99	87	2.1	4.5
(P) Bartrento(T)	16 May	101	86	2.2	4.7

* = Average first year yield of 'Bold Type' varieties in t/ha DM

Seasonal Yields of Italian Ryegrass

The seasonal yield distribution of these varieties comprises a very high output by the end of March ('Spring Grazing') followed by two excellent yielding silage cuts, completed by mid-July, to leave the option of further cuts or a very substantial aftermath grazing performance as indicated below.

VARIETY	Spring Grazing 2.2*	Seasonal Yields		Aftermath Grazing 7.1*
		1 st Cut Silage 5.5*	2 nd Cut Silage 4.4*	
	%	%	%	%
Hunter(T)	105	102	101	94
Barmultra II(T)	107	107	96	94
Meribel	96	100	101	101
Fox	103	103	96	95
Shakira	110	106	100	94
Dorike(T)	102	106	96	94
Litonio(T)	98	102	96	95
(P) Bartrento(T)	104	107	97	96

* = Average yield of 'Bold Type' varieties in t/ha DM

Recommended Timothy Varieties

Timothy Maturity Types:

The overall yield potential of Timothy is less than perennial ryegrass but can be more productive in cold springs or can maintain density and growth on heavy, less fertile soils. 'EARLY' maturing varieties are generally erect and highly productive in spring and 'LATER' maturing varieties are more dense growing pasture-types.

Recommendation changes for 2013/14:

There have been no changes to the recommended list status of Timothy varieties this year.

VARIETY	Heading Date	Silage		Grazing		Maturity Class
		Total Yield 14.3*	2-Cut Silage 9.1*	Total Yield 11.5*	Sward Density (0-9)	
		%	%	%		
Presto	8 Jun	102	100	103	5.6	Early
Comer	9 Jun	105	105	104	5.3	Early
Dolina	9 Jun	103	100	104	5.5	Early
Narnia	16 Jun	100	101	99	7.1	Inter
Motim	17 Jun	97	98	99	6.1	Inter
(S) Aber S 48	23 Jun	93	96	91	7.0	Late
Promesse	10 Jun	91	89	98	5.8	Early
Erecta	10 Jun	95	92	101	5.5	Early
Comtal	10 Jun	93	90	101	5.1	Early

* = Average yield of 'Bold Type' varieties in t/ha DM

Seasonal Yields of Timothy

There is normally a sharp distinction between the early season performance of early Timothy varieties and the summer production of the late varieties, particularly under a silage management. The grazing and silage systems used on all these varieties were as used for the intermediate perennial ryegrasses.

VARIETY	Seasonal Silage Yields				Seasonal Grazing Yields			
	1 st Cut	2 nd Cut	3 rd Cut	Autumn Grazing	Spring	Early Summer	Late Summer	Autumn
	5.3*	3.9*	2.9*	2.3*	2.6*	4.2*	3.4*	1.2*
	%	%	%	%	%	%	%	%
Presto	113	82	110	99	115	96	102	98
Comer	117	88	111	99	122	90	105	105
Dolina	111	86	115	97	119	97	104	102
Narnia	89	117	96	103	90	101	101	106
Motim	97	100	95	95	100	101	98	97
(S) Aber S 48	73	127	73	107	54	113	89	92
Promesse	100	73	96	96	105	97	100	88
Erecta	102	78	107	96	107	97	102	98
Comtal	102	75	99	100	105	98	101	103

* = Average yield of 'Bold Type' varieties in t/ha DM

Recommended White Clover Varieties

White Clover Leaf Classification:

As variety leaf size increases yield should rise and grazing persistence decrease. Large leaved varieties tend to be the most tolerant of tall grass stands but least tolerant of close defoliation. Varieties achieving yield and persistency above the expected leaf size trend are elite performers.

Recommendation changes for 2013/14:

One new provisional variety, Iona, has been added this year and all other varieties have remained with the same recommended list status.

VARIETY	Relative leaf size (% Gr. Huia)	Grazing Yield Potential			Grazing Persistence	
		Total 12.8*	Clover 4.3*	Grass 8.5*	Low N	High N
	%	%	%	%	(0-9)	(0-9)
AberAce	45	92	66	104	6.2	4.4
Grasslands Demand	82	98	86	103	6.1	4.9
Crusader	94	99	96	101	5.7	5.0
Grasslands Bounty	99	100	98	101	5.8	4.6
Avoca	105	101	102	101	6.0	5.0
AberDai	106	100	106	97	5.4	4.6
Chieftain	116	103	118	96	5.2	4.3
Alice	130	103	113	98	5.1	4.1
Barblanca	138	103	115	98	5.6	4.5
AberHerald	94	99	102	98	5.1	4.6
Grasslands Huia	100	98	86	103	5.7	4.6
AberVantage	110	102	103	101	5.1	3.7
Triffid	139	101	103	100	5.1	3.9
Aran	176	101	119	93	4.3	3.4
(P) Iona	99	102	106	100	5.6	5.1

* = Average yield of 'Bold Type' varieties in t/ha DM

Production and Sward Content of White Clover

Total yield (grass + clover) of grass/clover swards depends on the clover contributing nitrogen to enhance grass growth, but the nutritional value of the sward is enhanced by higher clover contents. All clovers were grown with Premium (perennial ryegrass) at 200 kg/ha N.

VARIETY	Clover Content	Seasonal Clover Yields				Leaf Size Class
		Spring 0.5*	Early Summer 1.3*	Late Summer 1.5*	Autumn 0.9*	
	%	%	%	%	%	
AberAce	24	54	80	69	42	Small
Gr. Demand	29	79	87	90	82	Small
Crusader	32	120	88	86	111	Medium
Gr. Bounty	33	110	95	97	100	Medium
Avoca	34	91	103	104	107	Medium
AberDai	35	101	111	108	100	Medium
Chieftain	38	112	114	120	122	Medium
Alice	37	108	112	118	107	Large
Barblanca	37	126	110	108	129	Large
AberHerald	34	83	101	110	100	Medium
Gr. Huia	29	74	84	92	79	Medium
AberVantage	34	101	101	109	100	Medium
Triffid	34	108	101	100	108	V. Large
Aran	39	106	108	124	134	V. Large
Iona	35	106	116	101	97	Medium

* = Average yield of 'Bold Type' varieties in t/ha DM

(P)

Recommended Red Clover Varieties

Red Clover Classification:

These yields were achieved without nitrogen fertiliser, but required up to 100 -150kg/ha of phosphate (P_2O_5) and 250-300kg/ha potash (K_2O) (depending on soil indices). In comparison, the top yielding (Italian-type) hybrid ryegrass varieties can produce up to 20, 18 and 17 t/ha DM in the first, second and third harvest years, respectively, but require over 400 kg/ha of nitrogen per annum. Similarly, recommended perennial ryegrass varieties, given 350 kg/ha nitrogen, produce total silage yields of around 17 t/ha DM in their first harvest year, falling to around 15 t/ha DM by the third year. Red clover will perform best on well-drained, fertile soils with a pH of 6.0–6.5 and supplies its own nitrogen. Ewes are kept off red clover for 6 weeks either side of “tupping”.

The varieties are listed in order of three year average yield within a ‘Bold Type’ group and a ‘Plain Type’ group.

Recommendation changes for 2013/14: There have been three changes to the list this year: two new provisional varieties, Milvus and AberChianti have been added to the list and Harmonie has been moved down to outclassed.

VARIETY	Three Year Average		Harvest Year 1		Harvest Year 2		Harvest Year 3	
	DM Yield 16.8	Rel. Pers.	DM Yield 18.6	Rel. Pers.	DM Yield 18.1	Rel. Pers.	DM Yield 13.7	Rel. Pers.
	%	(0-9)	%	(0-9)	%	(0-9)	%	(0-9)
Atlantis (T)	102	4.3	103	4.9	98	4.2	104	3.8
Lemmon	102	4.6	102	5.1	100	4.4	104	4.2
Merviot	100	4.5	101	5.2	102	4.3	96	4.0
Amos (T)	100	4.0	100	4.6	98	3.8	102	3.6
AberClaret	99	4.6	97	5.2	102	4.6	98	4.1
Avisto	98	4.4	97	5.0	100	4.4	96	4.0
Maro (T)	100	3.7	100	4.1	97	3.6	104	3.5
Gr. Sensation	98	4.2	95	4.7	100	3.9	99	4.0
Rotra (T)	98	3.7	97	4.0	97	3.4	101	3.6
Mercury	96	4.2	96	4.6	97	4.1	93	4.1
(P) Milvus	100	4.9	99	5.0	102	4.5	100	5.0
(P) AberChianti	97	5.1	94	5.3	98	5.3	101	4.7
(O) Harmonie	93	4.6	94	5.4	94	4.4	92	4.1

* = Control yield as average of ‘Bold Type’ diploid varieties in t/ha DM

Rel. Pers. = Relative Persistence (0-9 high)

Indexed Lists of Variety Descriptions

This section provides outline descriptions of the main agronomic features of each variety.

Varieties are listed in alphabetical order within each category

Variety Descriptions:

Variety descriptions provide an overview of the main agronomic characteristics of each variety, highlighting the main strengths and specific uses as appropriate. These overall performance descriptions should assist farmers and grassland specialists compare varieties and select those that best suit a particular enterprise. By referring back to the preceding tables, varieties that are flexible and multipurpose and those that tend to optimise performance when grazed or ensiled can be identified and the performance potential of seeds mixtures containing these varieties can be assessed.

Diploid Perennial Ryegrass

Early Diploids

Genesis This variety provides extremely high total silage and total grazing yields, has the highest spring yields of all varieties as well as very high production after the second silage cut.

Kilrea Although a late maturing member of the early group, it provides very high spring grazing yields and creates good grass quality from swards of a high grazing density. Silage productivity is notably high in the second and third cuts, followed by an impressive aftermath performance.

Kimber At the very late end of the early group, it produces high second cut silage yields. It will also deliver very high spring grazing yields and maintain a very high grazing grass quality for an early diploid.

Moyola This variety has similarly very high total silage and grazing yields. It has extremely high spring yields, excellent aftermath grazing and if required delivers a high third silage cut from erect growing swards.

Intermediate Diploids

AberDart (S) Specifically recommended for producing good annual grazing yields of very high quality grass at a high sugar content for a diploid. It has a similarly high grazing production ranking throughout the growing season and forms erect but dense swards.

AberGreen This variety has very high grazing yields and an exceptionally high 2-cut digestible yield driven by a very high second cut.

AberMagic This variety has impressively high total grazing and silage yields, plus superb production across the main summer months and into the autumn, under both management systems.

- AberStar** Capable of producing notably high grazing yields throughout the summer/autumn season at a high digestibility, high sugar level. It also delivers high digestible yields over the first two silage cuts and has an erect growth habit.
- Bahima 1 (S)** Specifically recommended as it produces very high total silage yields, a high 2-cut digestible yield and has an excellent first cut silage yield, plus spring growth is high for an erect growing intermediate variety.
- Boyne** This variety has exceptionally high total and two-cut silage yields, which are driven by an impressively high first cut. Total grazing yields are also extremely high, most notably in spring, are of high quality and are delivered from dense growing swards.
- Bree** Produces high annual grazing yields, especially in the main summer growing period; high total annual and 2-cut digestible silage yields, and has an erect though dense growth habit.
- Copeland** This variety produces similarly high silage and grazing yields. It forms dense grazing swards that are very highly productive in spring and from late summer to the end of the growing season.
- Gandalf** High two-cut silage yields boosted by its second cut performance, plus good grazing production that is maintained through the summer from very dense grazing swards.
- Gerrison** This variety has high silage yields that deliver notably high two-cut digestible yields. It delivers very high grazing production in spring and from late summer to the end of the growing season.
- Glenariff (P)** A provisional recommendation with similarly high silage and grazing yields. It forms dense grazing swards that are very highly productive in spring and from late summer to the end of the growing season.
- Lineker (P)** This new provisional variety produces very high 2-cut digestible yields with an excellent first cut silage yield. Its high grazing yield has a strong performance through spring and into early summer.
- Solomon** A variety with remarkably high 2-cut digestible yields that is still capable of a very high third cut, if required. Its high grazing yields comprise uncharacteristically high spring yields for its maturity, followed by a consistently strong performance to the end of the grazing season.
- Spelga (S)** An early member of the intermediate group specifically recommended for its notably high silage yields, featuring a very high first cut performance and an erect growth habit, plus high grazing yields in spring and for later season grazing.

Late Diploids

AberAvon Its high annual grazing yield at a very high digestibility level and high sugar content reaches optimal production during early summer to autumn. Its high silage yields are enhanced by its high quality characteristic giving excellent 2-cut digestible yields from an erect open growth habit.

AberChoice This variety delivers excellently high 2-cut digestible silage yields, driven by a very high second cut. Its total grazing yields are similarly excellent, providing high quantities of highly digestible grass from early summer.

AberZest (S) Produces very high total silage yields particularly in the first two cuts plus a high grazing yield and digestibility with excellent late summer and autumn growth. Specifically recommended for mixtures that balance its open growth habit.

Clanrye This variety combines an excellent 2 cut digestible yield with a high grazing yield especially in early summer from erect growing swards.

Denver Produces very high 2-cut total and digestible silage yields. Grazing performance is best during the main summer growing period and forms swards of good density.

Drumbo This variety provides impressively high 2-cut digestible silage yields and high total grazing yields of highly digestible grass. It also offers a high third silage cut, if required, and as a late variety has its highest seasonal grazing performance from early summer onwards.

Foxtrot A high yielding diploid variety when grazed, with a high grazing digestibility, and is particularly productive during the main summer growth period. Produces very good 2-cut digestible silage yields and forms tall erect growing swards.

Glenveagh This variety gives high 2-cut digestible silage yields, shows good digestibility from grazed swards that peak in production during the main summer periods, and maintains a high level of sward density.

Majestic This variety produces high total silage and grazing yields, a very high 2 cut digestible yield and its dense swards maintain excellent grazing performance from early summer into autumn.

Mateon 1 Produces high total silage yields that are at their greatest during the first two highly digestible silage cuts. It also produces excellent quality grazing grass from dense swards that peak in production in early summer.

Pastour (S) Forms erect swards and is specifically recommended for its high silage yields and high 2 cut digestible yield. Its high total annual grazing yields are strongest during the main summer growth period, which is typical of a late maturing variety.

Twytap (O) This, the latest maturing diploid variety, has excellent grazing yields and superior summer production but has now become outclassed.

Tyrella Has high total annual silage yields with an exceptional first cut silage yield for a late maturing variety and may benefit from earlier cutting to raise the 2-cut digestible yield. Its high annual grazing yields are distributed relatively evenly across the growing season and it has a sward density typical of a dual-purpose type variety.



Two plots of different varieties of perennial ryegrass

Tetraploid Perennial Ryegrass

Early Tetraploids

AberTorch A very early heading variety with an erect open growth habit and extremely high spring grazing yields at a high grazing digestibility with excellent aftermath grazing.

Carraig (P) This new provisional early tetraploid is high yielding for silage and performs even better under grazing. It forms erect swards with a particularly good second silage cut or early summer grazing yield.

Intermediate Tetraploids

AberClyde (P) This new provisional variety is a very high yielding grass under both grazing and silage managements with notably good grazing quality and a high 2-cut digestible silage yield.

AberGlyn (O) Produces excellent 2-cut silage yields comprising of an enormous first cut, and it has a good grazing yield but has now become outclassed.

AstonEnergy Produces excellent grazing yields with the highest measured quality of any perennial ryegrass on the list. This quality characteristic is also apparent in the very high 2-cut digestible silage yields. Second cut silage yield is very high plus excellent aftermath and late summer growth.

Dunluce Creates a very high total grazing yield and has a very high silage production output, retaining its high productivity potential late into the season and maintains a high herbage quality in both management systems.

Eurostar A very dense variety for a tetraploid, with large annual and spring grazing yields and high silage production in all categories. Silage production is very high and consistent across all three silage cuts plus it has good herbage quality characteristics.

Glenstal Excellent production of a large 2-cut bulk of grass for silage or very high total grazing yields, though digestibility levels offset some of this advantage. Typical of its maturity, grazing yields are particularly high in spring and it has a classic tetraploid sward structure.

Magician High total silage yields that are enhanced greatly when digestibility over two cuts is considered. Grazing yield is also high in combination with good grazing quality and very high spring growth, from classically erect tetraploid swards.

Malone Impressively high silage productivity in all categories from the classically tall open tetraploid-type swards. The high grazing yields comprise excellent spring growth, with high performance in late summer and a high grass D-value.

Niagara The high silage productivity is enhanced when 2-cut digestible yield is calculated. The good grazing yields comprise of very high quality herbage from impressively dense swards for a tetraploid.

Seagoe This variety produces an extremely high 2-cut digestible silage yield and a very high total grazing yield of good quality grass with excellent spring growth.

Trintella (S) Specifically recommended for its impressively high 2-cut total and digestible silage yields from typical tall open tetraploid-type swards. The good grazing yields of good quality grass include notably high spring yields typical of an earlier member of the intermediate maturing varieties.

Late Tetraploids

AberBite This variety has impressively high total and 2-cut silage yields that continue to bulk into the third cut. Grazing quality is superbly high, with excellent total yields that are delivered most strongly from early summer to an extended high autumn productivity.

AberCraigs Excellent 2-cut silage total and digestible yields plus a good sward density for its type. Grazing output is maintained at a high level throughout the main summer growing period, with an impressively high grass quality.

AberGain This variety produces the highest total grazing yield, highest total silage yield, highest 2 cut yield and highest 2 cut digestible yield of any perennial ryegrass variety on the list.

Aspect (P) This new provisional variety provides an impressively high 2-cut digestible yield and very high grazing quality with a strong 2nd cut of silage or early summer grazing.

AstonPrincess This late maturing variety produces excellently high 2-cut digestible silage yields from swards of high density for a tetraploid. Grazing production is also high particularly in early summer.

Delphin (S) Specifically recommended as one of the highest yielding late tetraploid varieties for silage in all categories and very high 2 cut digestibility, plus a high grazing performance. It gives its strongest grazing performances in mid-season and forms tall erect open tetraploid swards.

Dundrum This variety has an excellent 2-cut silage yield, that is maintained when herbage digestibility is measured. It also maintains an impressively high grass quality for grazing combined with a notably high early summer grazing yield.

Dunloy This variety has excellent 2-cut digestible yields that comprise an impressively high second cut and, if required, high third cut. The very dense grazing swards, for a tetraploid, have high grazing digestibility and are at their highest productivity levels in early summer.

Elgon (O) Produces strong total annual grazing and silage yields which are enhanced by its high grass quality characteristics but has now become outclassed.

- Fornido (O)** Although this variety has a consistently high yielding silage performance in the 'total', '2-cut' and '2-cut digestible' categories and forms highly dense swards for a tetraploid it is now outclassed.
- Glencar (S)** This variety is specifically recommended for having one of the highest total silage yielding varieties for 2-cut bulk yield. It also has high grazing yields throughout the summer from swards of a good density. Such excellent high productivity is partially offset when digestibility is considered.
- Kintyre** A variety with excellent 2-cut silage performances, which will continue to a high third cut, if required. The good grazing yields are at their strongest after spring is over with particularly good autumn productivity for extending the grazing season.
- Navan** High yielding under both sward managements, it maintains its high productivity across all three silage cuts. Grazing performance is at an optimum during the main summer season and into the autumn while the grass quality is maintained at a very high D-value.
- Tivoli (S)** Specifically recommended for having a good total silage yield which is greatly enhanced by its quality of production to give an excellent 2-cut digestible yield. The quality of the grazing grass is also high with productivity maintained through summer from a typically bold growing tetraploid-type sward.
- Twymax** Another variety with very high 2-cut digestible silage yields that are similarly highly performing in both cuts. Grazing yields are high, particularly in early summer and forms very dense swards for a tetraploid.

Hybrid Ryegrass

- AberEcho (HT)** Produces high total yields consistently over three years with a spring growth and first silage cut performance typical of an 'Italian type' hybrid, yet develops a good sward density similar to the 'perennial type' hybrids.
- AberEve (HT)** This variety has a dense sward typical of a perennial-type hybrid, average total annual yields plus a strong first cut yield all typical of a balanced Italian-perennial combination.
- AberExcel (HT)** Has performance characteristics typical of a 'perennial-type' hybrid having a high sward density relative to its yield performance, though with a good first cut of silage for its type.
- Amalgam (HT)** This recommendation has a perennial type growth habit forming dense swards, average total annual yields and a strong first cut of silage.
- Barsilo (HD)** A diploid variety and the latest maturing of all the recommended hybrids. It provides good total annual yields in all harvest years, seasonal yields distributed towards excellent late season outputs and has an open 'Italian-type' sward structure.
- Drumlin (HT)** A very 'perennial-type' variety that has a sward structure similar to a perennial tetraploid and a lower tendency to produce secondary seed heads than the 'Italian-types'. It is slow to awaken in spring but produces one of the highest first cut silage yields.
- Foyle (HT)** Another particularly 'perennial-type' recommendation that has very similar characteristics to Drumlin, being slow in spring, highly productive at the first silage cut and giving a good sward structure and reduced mid-season heading.
- Hymer (HT)** Produces good total yields and retains its performance relative to other varieties in the second and third years from swards that are more typical of an 'Italian-type' hybrid.
- Kirial (HT) (P)** This new provisional recommendation maintains good yields and persistence over three years and a very good first cut of silage.
- Ligunda (HD)** This diploid 'Italian-type' hybrid ryegrass has the typical open bold growth habit, yet maintains excellently high yields into the third year and features exceptional spring, second cut and autumn productivity.
- Pirol (HD)** This diploid variety produces exceptionally high total yields in all three harvest years, yet is also very dense. Seasonal performance comprises of high spring vigour and strongest silage performance delivered in the second cut.
- Scapino (HT)** This variety produces high total yields and a good sward density relative to other perennial-type varieties and also has an excellent first cut silage yield.

Italian Ryegrass

Barmultra II (T) This recommendation is for a variety with first and second year yields similar to Meribel but with a higher early spring growth and an exceptionally high first silage cut. The sward density is typical of a tetraploid variety.

Bartrento (T) (P) A new provisional recommendation which gives a very high first year DM yield consisting of exceptional spring grazing performance and first cut silage whilst also maintaining good persistence.

Dorike (T) This tetraploid variety gives a good total silage yield in both first and second year and has an exceptional first cut silage yield with an open sward density typical of a tetraploid Italian ryegrass.

Fox This is a high performing diploid variety with good spring growth and density, but with a notably high first cut silage yield and high total annual yields in both years.

Hunter (T) Good spring grazing and first and second year yields typical of other tetraploids, it also has a high sward density for a tetraploid variety.

Litonio (T) This variety has a good first year yield and first silage cut and is very dense for a tetraploid.

Meribel One of the more dense Italian ryegrasses with a high yield ranking in both harvest years. Seasonal production is distributed more towards the latter part of the growing season.

Shakira This diploid variety produces the highest first year yield of any grass on the list and maintains exceptionally high spring grazing and first cut silage yields.



Italian ryegrass in its first year after sowing - view from edge of plot

Timothy

Early

Comer Notably high total annual grazing and silage yields, produces very high spring grazing yields and excellent 2-cut silage yields from swards of a typical erect type for an early Timothy.

Comtal Delivers high total annual yields under the grazing management from erect growing swards. Seasonal grazing growth is best in spring and again towards late summer and autumn. First and third silage cuts produce high yields and there is a high aftermath grazing in autumn.

Dolina Creates a combination of high grazing and silage yields. It has a sward structure similar to Comer and its seasonal grazing yield distribution remains very high throughout most of the growing year.

Erecta A reliable variety for many years, it is capable of achieving good yield performances for grazing production from erect growing swards. Silage and grazing production peaks in spring and again in the late summer period.

Presto A consistently high yielding variety under both management systems, it forms swards of a higher density than most other early varieties and its spring grazing yield performance is also very high.

Promesse Forms swards of a very high density for an early maturing variety, produces good grazing yields that are most productive during the spring and early summer.

Intermediate & Late

Aberystwyth S48 (S) A specialist very late maturing variety, with very dense prostrate growth, that provides average annual yields but displays an excellent early summer grazing performance and a very high second silage cut and high aftermath grazing.

Motim An intermediate maturing variety that achieves good annual yields under both management systems and forms a compact dense sward. Seasonal grazing yields feature a consistently high performance throughout and high second cut silage productivity.

Narnia Similar in maturity to Motim, but with a much higher silage yield performance, including an exceptional second cut productivity. It has similar grazing yields to Motim, though with greater productivity in the late grazing season plus a sward density similar to Aber S48.

White Clover

Small Leaved

AberAce The smallest recommended variety, it has very high grazing persistency at low nitrogen levels and while having the low yield potential expected of such a very small clover variety, it supports a high grass yield.

Grasslands Demand With a leaf size at the upper end of the small group, it produces a predictably excellent grazing persistency at low nitrogen levels and a higher than expected performance at high-N plus good yields for its leaf size.

Medium Leaved:

AberDai Produces very high clover yields, is at its most vigorous in the main summer periods and maintains a good persistency rating for its leaf size.

AberHerald Its good clover yield performance supports a good overall sward production, maintains good clover persistence and retains high clover content throughout the season but particularly in late summer period.

AberVantage Achieves a high output of grass and clover and a similarly high total sward output, supported by a good clover content and good grazing persistence, though survives best when applied nitrogen levels are low.

Avoca This variety has a very high grazing persistency for its leaf size. Given its medium leaf size, it also has high clover and total herbage yields, plus it maintains a high clover content in the grazing diet.

Chieftain Production results comprising the highest clover yield total yield and overall clover content in the medium group. Clover persistency scores are consistent with its leaf size.

Crusader This variety produces very high yields with a dense, highly persistent growth under both nitrogen levels plus an exceptional spring vigour for a medium-leaf variety.

Grasslands Bounty This variety supports very high grass yields and also high total yields of grass and clover. It has good persistency for its leaf size and has good spring productivity.

Grasslands Huia Known as 'New Zealand White Clover', it produces moderate clover yields but supports a good grass yield with a good grazing persistence.

Iona (P) This new provisional recommendation can produce a high white clover and total grass and clover yield and also exhibits good persistence especially under higher nitrogen levels.

Large Leaved

Alice Produces high total sward and excellent clover yields, which are maintained at a high level throughout the growing season. It also achieves a high clover content and has a high grazing persistency given its large leaf size.

Barblanca Achieves very high clover yield performance results typical of its large leaf size, with highest productivity in spring and again in autumn, plus its grazing persistence scores are atypically high for such a large leaved variety.

Very Large Leaved

Aran A very high yielding variety that maintains notably high clover productivity throughout the late summer and autumn, although not highly persistent when tightly grazed, it is excellent for conservation use as it has a high tolerance of tall grass canopy competition.

Triffid This very large leaved variety produces an impressively high spring yield and performs consistently well throughout the remainder of the season whilst maintaining a relatively high persistence for its leaf size.



White clover growing with perennial ryegrass

Red Clover

AberChianti (P) A new provisional variety which produces good yields especially in the second and third years and maintains the highest average persistence over the three year period.

AberClaret This variety maintains good persistence with the highest yield production of all tested varieties in the second year.

Amos (T) This tetraploid variety has very good yields each year and has a good average persistence when taken over the three years.

Atlantis (T) This tetraploid has the highest average yield over three years and the highest third year yield while maintaining strong persistence.

Avisto This variety produces good yields and is strong in the second year maintaining good persistence throughout.

Grasslands Sensation Produces a stronger yield in second and third year with a good three year average yield and persistence.

Harmonie (O) This variety maintains good persistence and yield over three years but is now outclassed

Lemmon This diploid variety produces one of the highest three year average yields and one of the highest yields in the third year with a good average persistence.

Maro (T) This tetraploid variety maintains consistently good yields over three years and has the highest of all the varieties' third year yields.

Mercury Produces good yields with good persistence over a three year period with stronger production in the first two years.

Merviot This diploid variety is one of the consistently high yielding good persistence varieties with best performances in the first two years.

Milvus (P) This new provisional recommendation has an impressive performance throughout the three years in terms of both persistence and yield.

Rotra (T) A tetraploid variety with good yields in first and second year and one of the highest third year yields.

KEY CONTACTS and SERVICES

This section provides contact information for merchants and growers.

Breeder and UK Agent Details:

The breeder, country of origin and UK Agent of each variety is presented below. These are normally not retail outlets to growers but are provided to assist local merchants in procuring supplies of seed to meet the market needs in Northern Ireland. *(Addresses of UK agents are listed overleaf)*

Variety	Breeder (country)	UK Agent	Variety	Breeder (country)	UK Agent
ITALIAN RYEGRASS			HYBRID RYEGRASS		
Barmultra II (T)	Barenbrug BV (NL)	Bar	AberEcho (HT)	IBERS (UK)	BSH
Bartrento (T) (P)	Barenbrug BV (NL)	Bar	AberEve (HT)	IBERS (UK)	BSH
Dorike (T)	Euro Grass (NL)	BSH	AberExcel (HT)	IBERS (UK)	BSH
Fox	Limagrain (FR)	DLF	Amalgam (HT) (P)	DLF Trifolium (DK)	LG
Hunter (T)	Euro Grass (D)	DLF	Barsilo (HD)	Barenbrug BV (NL)	Bar
Litonio (T)	Euro Grass (D)	EG	Drumlin (HT)	DARD (UK)	Bar
Meribel	ILVO (B)	LG	Foyle (HT)	DARD (UK)	Bar
Shakira	Euro Grass (FR)	EG	Hymen (HT)	ILVO (B)	LG
			Kirial (HT) (P)	R2N (FR)	RAGT
			Ligunda (HD)	BfAL (A)	DLF
			Pirol (HD)	Saatzucht Steinach (D)	BSH
			Scapino (HT)	DLF Trifolium (DK)	LG
WHITE CLOVER VARIETIES			TIMOTHY VARIETIES		
AberAce	IBERS (UK)	BSH	Aber S48 (S)	IBERS (UK)	BSH
AberDai	IBERS (UK)	BSH	Comer	ILVO (B)	LG
AberHerald	IBERS (UK)	BSH	Comtal	DLF Trifolium (DK)	LG
AberVantage	IBERS (UK)	BSH	Dolina	ILVO (B)	DLF
Alice	IBERS (UK)	Bar	Erecta	ILVO (B)	LG
Aran	Teagasc (Rol)	BSH	Motim	DLF Trifolium (DK)	LG
Avoca	Teagasc (Rol)	DLF	Narnia	DLF Trifolium (DK)	DLF
Barblanca	AgResearch (NZ)	Bar	Presto	Euro Grass (NL)	BSH
Chieftain	Teagasc (Rol)	DLF	Promesse	Cebeco Seeds BV (NL)	DLF
Crusader	AgResearch (NZ)	Bar	RED CLOVER VARIETIES		
*Gr. Bounty	Wrightson (NZ)	LG	AberChianti (P)	IBERS (UK)	BSH
Gr. Demand	AgResearch (NZ)	LG	AberClaret	IBERS (UK)	BSH
Gr. Huia	AgResearch (NZ)	Open	Amos (T)	Šlechtitelská stanice (CZ)	DLF
Iona (P)	Teagasc (Rol)	DLF	Atlantis (T)	NPZ (D)	LSPB
Triffid	AgResearch (NZ)	Bar	Avisto	ILVO (B)	Bar
			Gr. Sensation	AgResearch (NZ)	LG
			Harmonie	Nord Pflanz. (D)	LSPB
			Lemmon	ILVO (B)	Bar
			Maro (T)	NPZ (D)	LG
			Mercury	ILVO (B)	Car*
			Merviot	ILVO (B)	LG
			Milvus (P)	Euro Grass (NL)	BSH
			Rotra (T)	ILVO (B)	ILVO*

*Gr. = Grasslands

Variety	Breeder (country)	UK Agent	Variety	Breeder (country)	UK Agent
DIPLOID PERENNIAL RYEGRASS			TETRAPLOID PERENNIAL RYEGRASS		
AberAvon	IBERS (UK)	BSH	AberBite	IBERS (UK)	BSH
AberChoice (S)	IBERS (UK)	BSH	AberClyde (P)	IBERS (UK)	BSH
AberDart (S)	IBERS (UK)	BSH	AberCraigs	IBERS (UK)	BSH
AberGreen	IBERS (UK)	BSH	AberGain (P)	IBERS (UK)	BSH
AberMagic	IBERS (UK)	BSH	AberGlyn (S)	IBERS (UK)	BSH
AberStar	IBERS (UK)	BSH	AberTorch	IBERS (UK)	BSH
AberZest (S)	IBERS (UK)	BSH	Aspect (P)	DLF Trifolium (DK)	LG
Bahima 1 (S)	Cebeco Seeds BV (NL)	DLF	AstonEnergy	Euro Grass (UK)	EG
Boyne	DLF Trifolium (DK)		AstonPrincess	Euro Grass (UK)	EG
Bree	Cebeco Seeds BV (NL)	DLF	Carraig (P)	Teagasc (Rol)	DLF
Clanrye (P)	DARD (UK)	Bar	Delphin (S)	NPZ Lembke (D)	DLF
Copeland	DARD (UK)	Bar	Dundrum	DARD (UK)	Bar
Denver	DLF Trifolium (DK)	LG	Dunloy	DARD (UK)	Bar
Drumbo	DARD (UK)	Bar	Dunluce	DARD (UK)	Bar
Foxtrot	Limagrain Genetics (NL)	DLF	Elgon	DLF Trifolium (DK)	LG
Gandalf	DLF Trifolium (DK)	LG	Eurostar	DLF Trifolium (DK)	LG
Genesis	Teagasc (Rol)	DLF	Fornido	Euro Grass (NL)	EG
Gerrison	DLF Trifolium (DK)	DLF	Glencair	Teagasc (Rol)	DLF
Glenariff (P)	DARD (UK)	Bar	Glenstal	Teagasc (Rol)	DLF
Glenveagh (P)	Teagasc (Rol)	DLF	Kintyre	Teagasc (Rol)	DLF
Kilrea	DARD (UK)	Bar	Magician	Teagasc (Rol)	DLF
Kimber	DLF Trifolium (DK)	DLF	Malone	DARD (UK)	Bar
Lineker (P)	DLF Trifolium (DK)	DLF	Navan	DARD (UK)	Bar
Majestic (P)	Teagasc (Rol)	DLF	Niagara	DLF Trifolium (DK)	LG
Mateon 1	Cebeco Seeds BV (NL)	DLF	Seagoe	DARD (UK)	Bar
Moyola	DARD (UK)	Bar	Tivoli	DLF Trifolium (DK)	DLF
Pastour	Limagrain Genetics (NL)	DLF	Trintella	DLF Trifolium (DK)	LG
Solomon	Teagasc (Rol)	DLF	Twymax	DLF Trifolium (DK)	LG
Spelga	DARD (UK)	Bar			
Twyttop (S)	Advanta Seeds BV (NL)	DLF			
Tyrella	DARD (UK)	Bar			
			Country Codes A - Austria; B Belgium; CZ - Czech Republic; D - Germany; DK - Denmark; FR - France; NL - Netherlands; NZ - New Zealand; Rol - Ireland; UK - United Kingdom.		

Addresses of UK (and non UK*) Agents/ Maintainers:

- **Bar** Barenbrug UK Ltd 33 Perkins Road, Rougham industrial Estate, Rougham, Bury St Edmunds, Suffolk IP30 9NW
- **BSH**, British Seed Houses Ltd, Portview Road, Avonmouth, Bristol BS11 9JH
- **Car***, SA Carneau Freres Eurogazon, 21 ZAC Carrière Dorée, BP No 2008, 59358 Orchies, France
- **DLF**, DLF Trifolium UK & N. Ireland Ltd, 9-14 Bellevue Mansions, Bellevue Road, Clevedon, N. Somerset BS21 7NU
- **EG**, Eurograss Unit 1 Apple Tree Business Park, Appletree, Nr. Daventree, Northants, NN11 6UG
- **ILVO***, ILVO Plant (Applied Genetics +Breeding) Caritasstraat 21, 9090 Melle, Belgium
- **LG**, Limagrain UK Ltd, Rothwell, Market Rasen, Lincs, LN7 6DT
- **LSPB**, LS Plant Breeding, North Barn, Manor Farm, Milton Road Cambridge CB24 9NF
- **RAGT** Grange Road, Icketon, Essex, CB10 1TA

AFBI Crossnacreevy CONTACTS and SERVICES

The Plant Testing Station produces the following variety performance booklets:
Cereals - Recommended Varieties for Northern Ireland
Forage Maize - Recommended Varieties for Northern Ireland
Potatoes - Varieties for Northern Ireland

Online copies of all these lists produced by AFBI-Crossnacreevy are available at
www.afbini.gov.uk/recommendedlists

Farmers and growers wanting guidance on selection and use of varieties from these lists should contact CAFRE Technology & Business Division Services, Tel: 028 9442 6770

Plant breeders, merchants and other specialists requiring technical data on trials, testing procedures and variety details should contact:

Agri-Food and Biosciences Institute
Plant Testing Station,
Crossnacreevy
Castlereagh
Belfast BT6 9SH

Tel: +44 (0) (28 90) 548000
Fax: +44 (0) (28 90) 548001
Email: info@afbini.gov.uk
eamonn.meehan@afbini.gov.uk

Applied Plant Science and Biometrics Division: An extensive range of technical services is available on request to farmers, growers, public sector bodies and industry. The main services include:

Seed germination, purity and wild oat check
Variety performance and identity testing
Cereal Take-all test
Pest and disease identification and control
Potato cyst nematode (PCN) service
Mushroom compost and casing analyses

The DARD Grass and Clover Recommended List varieties are selected by a committee consisting of:

T. Gilliland (AFBI) (Chair)
E. Meehan (AFBI)
A. Johnston (Senior Grass Technologist, CAFRE, DARD)
M. Mulholland (Senior Dairying Technologist, CAFRE, DARD)

Agri-Food and Biosciences Institute

AFBI's mission:

“Supporting government policy and industry innovation across the agri-food and rural sector through the provision of high quality scientific services, advice and expertise”

AFBI provides research and development, analytical and diagnostic services, and scientific advice in agriculture, food, animal and plant health, marine and fresh water ecosystem management and the agri-environment.

AFBI's expertise includes:

Veterinary diagnostics; animal health and welfare; food science; crop and livestock systems; biometric traceability; plant breeding; biometrics and statistics; agricultural economics; renewable energy and non-food crop agronomy; oceanography; aquatic and land based ecosystem management of natural resources.

Technologies include:

Molecular technologies; light and electron microscopy; mass spectrometry; pathogenesis studies; biosensor technology; seabed mapping and minimal processing technologies.

If you have a problem in agri-food or biosciences, AFBI offers a high quality, cost-effective solution.

To find out what AFBI can do for your business, contact:

AFBI Innovations

AFBI Headquarters, Newforge Lane, Malone Upper,
Belfast BT9 5PX, Northern Ireland, UK.

Tel: +44 (0)28 90 255051

Fax: +44 (0)28 90 255035

Email: info@afbini.gov.uk

www.afbini.gov.uk

Key DARD Contacts: Farmers, growers and processors requiring guidance on variety selection and use should contact their local CAFRE Development Adviser on 0845 30 44 503.

New DARD telephone numbers:

Animal Health & Welfare and Veterinary Public Health	0300 200 7840
Cattle Registration line	0300 200 7855
Education and Training	0300 200 7841
Environment	0300 200 7842
Farming	0300 200 7843
Fisheries	0300 200 7844
Flood Defence and Drainage	0300 200 7845
Food	0300 200 7846
Forests	0300 200 7847
Grants and Funding	0300 200 7878
Rural Development	0300 200 7849
DARD Corporate Services	0300 200 7850
Textphone	0300 200 7851
Calls from non-UK numbers or networks/	
International Calls	+44(0)28 9037 8418

Farmers, growers and processors requiring more specialist information on crops should contact:

CAFRE Development Service, Greenmount College Tel: 028 9442 6770
Fax: 028 9442 6777



Department of

**Agriculture and
Rural Development**

www.dardni.gov.uk

AN ROINN

**Talmhaíochta agus
Forbartha Tuaithe**

MÁNNYSTRIE O

**Fairms an
Kintra Fordèrin**

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