Grass and **Clover**

Recommended Varieties for Northern Ireland 2009/10

Department of
Agriculture and
Rural Development
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Recommended Booklet

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

The Agri-Food Bioscience 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 www.afbini.gov.uk

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
Red clover flowers and leaves – There is increasing interest in Northern Ireland in the use of red clover for short term high yielding silage swards without the use of inorganic nitrogen.

A large print version of this booklet can be supplied on request.

GRASS AND CLOVER VARIETIES FOR 2009-10

T J GILLILAND BSc BAgr PhD
Agri-Food 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 merchants 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 2009/10 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:

Indicator		Stipulation
'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 OUTCLASSED

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. (T = Tetraploid)

Recommended Grass and White Clover Varieties 2009/10

Perennial Ryegrass

Early Diploid	Intermediate Diploid		Late Diploid	
Moy	**Spelga**	Cashel	**Denver**	Mateon1
Donard	**(S) AberDart**	(S) Betty	**(S) AberZest**	Portstewart
Kilrea	**Bree**	(P) Solomon	**AberAvon**	Matiz
Kimber	**AberStar**	(P) AberMagic	**Foxtrot**	(S) Twytop
(S) January	**Gandalf**		**Pastour**	(PS) AberChoice
(P) Moyola			(S) Gilford	(P) Drumbo
(P) Genesis			Tyrella	

Early Tetraploid	Intermediate Tetraploid		Late Tetraploid	
AberTorch	**Malone**	Trintella	**Glencar**	Fornido
Tetramax	**Niagara**	Garibaldi	**Delphin**	Dunloy
	Magician	Greengold	**Loporello**	Tivoli
	AberGlyn	Astonenergy	**AberCraigs**	Astonprincess
	Glenstal		**Navan**	(P) AberBite
	Eurostar		**Millennium**	(P) Kintyre
	Dunluce		Elgon	(O) Cooper
			Twymax	

Italian Ryegrass	Hybrid Ryegrass		Timothy	
Meribel	**AberEcho (HT)**	Drumlin (HT)	Early	Intermediate
Meryl	**Ligunda (HD)**	AberExcel (HT)	**Comer**	**Motim**
AberEpic	**Pirol (HD)**	Hymer (HT)	**Dolina**	
Fox	Belleek (HT)	AberEve (HT)	**Presto**	Late
Ligrande	Twyblade (HT)	Foyle (HT)	Promesse	**(S) Aber S48**
AberMario		Barsilo (HD)	Comtal	
(P) Litonio (T)			Erecta	
			Narnia	

White Clover

Small Leaved	Medium Leaved		Large Leaved	
AberAce	**Crusader**	AberGuard	**Alice**	
Glds. Demand	**Avoca**	AberHerald	**Barblanca**	
	AberDai	Glds. Bounty		
	Chieftain	Glds. Huia	Very Large Leaved	
		Menna	Triffid	
		AberVantage	Aran	

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

Testing Procedures

Variety trials are sown annually at the Plant Testing Station, Crossnacreevy in mid-summer, and evaluated over three growing seasons.
Perennial Ryegrass and Timothy trials are grazed with cattle in the first year and measurements taken during the second and third years to assess long-term potential. 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 Fennema 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'.

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.

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 varieties in the preceding year. The tetraploid perennials are expressed as a percentage of the diploid perennial controls and for Italian ryegrass, all yields are given as a percentage of the first year control yield.
Early Spring Growth: The yield in t/ha DM available by the end of March at Crossnacreevy.
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 Moy 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 Spelga and AberMagic, than between AberMagic and the 'late' variety Denver. 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 2009/10:

One early variety, January had its recommended status changed from a new diploid provisional recommendation to a fully recommended 'Plain Type' status. All other varieties remained in the highest 'Bold Type' classification.

Nine intermediate varieties had their recommended status changed. In the diploids, two new provisional recommendations, AberMagic and Solomon were added to the list whereas Corbet and Glen were removed from 'Outclassed'. In the tetraploids, Malone and Niagara were upgraded from 'Plain Type' to 'Bold Type', two varieties, Garibaldi and Greengold were downgraded to 'Plain Type' and Fornax was removed from the list having been 'Outclassed' in the previous publication

Eight late varieties had their recommended status changed. Two diploid varieties, AberChoice and Drumbo were added to the list as new provisional recommendations. In the tetraploids, three varieties, Dunloy, Fornido and Twymax were upgraded to fully recommended 'Plain Type' status, two new provisional recommendations, AberBite and Kintyre were added to the list and Cooper was downgraded to Outclassed.

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	Silage			Grazing		
			Total Yield 15.1*	2-Cut Yields Total 9.7*	2-Cut Yields Digestible 7.3*	Total Yield 12.1*	Grass Quality D-Value	Sward Density
			%	%	%	%	%D	(0-9)
	Moy	**5 May**	**100**	**97**	**95**	**98**	**70.6**	**6.8**
	Donard	**8 May**	**104**	**99**	**95**	**104**	**71.6**	**6.1**
	Kilrea	**13 May**	**99**	**92**	**93**	**100**	**72.5**	**6.6**
	Kimber	**15 May**	**98**	**95**	**95**	**98**	**73.0**	**6.3**
	Spelga	**17 May**	**102**	**104**	**102**	**99**	**69.2**	**6.2**
(S)	**AberDart**	**23 May**	**94**	**93**	**99**	**97**	**75.2**	**6.6**
	Bree	**24 May**	**98**	**99**	**99**	**100**	**72.1**	**6.5**
	AberStar	**24 May**	**99**	**97**	**103**	**104**	**75.0**	**6.3**
	Gandalf	**25 May**	**99**	**100**	**99**	**98**	**72.3**	**6.7**
	Denver	**30 May**	**101**	**105**	**104**	**98**	**71.1**	**6.6**
(S)	**AberZest**	**30 May**	**105**	**108**	**100**	**103**	**74.4**	**5.8**
	AberAvon	**1 Jun**	**100**	**103**	**107**	**101**	**74.2**	**6.1**
	Foxtrot	**3 Jun**	**100**	**102**	**104**	**104**	**73.6**	**6.3**
	Pastour	**4 Jun**	**104**	**107**	**110**	**102**	**72.5**	**6.1**
(S)	January	10 May	105	102	93	98	71.5	5.9
	Cashel	18 May	97	97	97	97	71.1	6.7
(S)	Betty	22 May	99	94	98	93	72.7	6.4
(S)	Gilford	1 Jun	96	100	107	94	72.9	6.8
	Tyrella	2 Jun	102	109	90	99	72.6	6.4
	Mateon 1	4 Jun	102	106	105	96	73.5	6.6
	Portstewart	4 Jun	100	102	103	99	71.3	6.1
(S)	Twytop	15 Jun	95	97	103	105	71.3	6.2
(P)	Moyola	11 May	107	100	97	107	72.0	6.0
(P)	Genesis	9 May	111	105	94	106	72.7	6.3
(P)	Solomon	17 May	102	103	112	102	72.7	6.4
(P)	AberMagic	28 May	108	106	104	110	73.7	6.4
(P)	Matiz	11 Jun	100	103	102	100	74.1	6.6
(PS)	AberChoice	9 Jun	104	104	110	107	73.8	5.8
(P)	Drumbo	4 Jun	100	102	111	100	74.3	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
1ST Cut 6.5*	2ND Cut 3.2*	3RD Cut 3.1*	Aftermath Grazing 2.3*	Spring 2.3*	Early Summer 4.7*	Late Summer 3.2*	Autumn 1.8*	
%	%	%	%	%	%	%	%	
101	**89**	**101**	**112**	**115**	**91**	**95**	**98**	**Early**
101	**95**	**104**	**122**	**124**	**96**	**99**	**106**	**Early**
88	**101**	**109**	**116**	**113**	**95**	**98**	**99**	**Early**
92	**101**	**96**	**110**	**111**	**92**	**97**	**98**	**Early**
108	**97**	**100**	**94**	**103**	**95**	**100**	**101**	**Inter**
89	**101**	**91**	**103**	**95**	**96**	**98**	**100**	**Inter**
98	**101**	**98**	**94**	**95**	**102**	**101**	**98**	**Inter**
94	**104**	**95**	**110**	**95**	**107**	**104**	**110**	**Inter**
98	**103**	**97**	**96**	**94**	**102**	**98**	**95**	**Inter**
108	**101**	**100**	**82**	**81**	**106**	**100**	**94**	**Late**
109	**105**	**105**	**93**	**95**	**102**	**105**	**108**	**Late**
104	**101**	**95**	**95**	**90**	**106**	**103**	**103**	**Late**
103	**100**	**104**	**84**	**88**	**110**	**107**	**101**	**Late**
108	**106**	**105**	**85**	**92**	**108**	**103**	**98**	**Late**
109	90	109	111	112	93	96	97	Early
95	101	99	92	92	99	97	97	Inter
82	117	115	101	86	99	93	86	Inter
99	101	96	80	85	102	87	95	Late
115	96	97	80	97	100	100	96	Late
102	115	101	86	75	104	101	96	Late
99	108	107	82	85	105	103	93	Late
79	133	96	89	77	116	110	100	Late
100	100	116	122	128	98	106	106	Early
107	102	124	116	128	100	101	102	Early
105	100	104	100	113	99	100	99	Inter
102	114	111	114	97	110	114	115	Inter
99	112	107	80	73	107	104	103	Late
93	127	112	93	80	115	106	108	Late
100	107	109	80	85	105	102	103	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	Silage			Grazing		
			Total Yield 15.1*	2-Cut Yields Total 9.7*	2-Cut Yields Digestible 7.3*	Total Yield 12.1*	Grass Quality D-Value	Sward Density
			%	%	%	%	%D	(0-9)
	AberTorch(T)	**6 May**	**102**	**100**	**98**	**102**	**74.7**	**5.5**
	Tetramax (T)	**14 May**	**100**	**99**	**102**	**99**	**73.5**	**5.7**
	Malone (T)	**17 May**	**112**	**114**	**117**	**105**	**74.6**	**5.3**
	Niagara (T)	**17 May**	**105**	**105**	**111**	**103**	**76.2**	**6.3**
	Magician (T)	**18 May**	**106**	**110**	**117**	**104**	**73.8**	**5.5**
	AberGlyn (T)	**18 May**	**105**	**110**	**108**	**100**	**72.5**	**5.5**
	Glenstal (T)	**19 May**	**108**	**111**	**109**	**105**	**71.7**	**5.5**
	Eurostar (T)	**23 May**	**105**	**106**	**107**	**103**	**74.1**	**6.1**
	Dunluce (T)	**29 May**	**108**	**105**	**115**	**109**	**75.0**	**5.6**
	Glencar (T)	**30 May**	**109**	**117**	**113**	**100**	**73.1**	**5.8**
	Delphin (T)	**31 May**	**112**	**120**	**117**	**105**	**73.5**	**5.1**
	Loporello (T)	**2 Jun**	**101**	**105**	**104**	**95**	**72.8**	**6.4**
	AberCraigs (T)	**2 Jun**	**107**	**114**	**111**	**102**	**76.6**	**5.7**
	Navan (T)	**3 Jun**	**108**	**109**	**110**	**105**	**75.8**	**5.4**
	Millennium (T)	**10 Jun**	**104**	**105**	**102**	**102**	**74.2**	**5.8**
	Trintella (T)	19 May	108	111	123	102	74.5	5.4
	Garibaldi (T)	26 May	102	103	110	99	73.8	5.8
	Greengold (T)	28 May	104	102	105	104	74.9	5.7
	Astonenergy (T)	31 May	104	101	111	107	77.6	5.3
	Elgon (T)	2 Jun	104	107	107	103	75.5	5.7
	Twymax (T)	5 Jun	103	106	110	103	73.4	5.9
	Fornido (T)	7 Jun	105	108	104	99	74.4	6.0
	Dunloy (T)	7 Jun	104	105	112	102	75.4	6.0
	Tivoli (T)	9 Jun	105	107	112	100	75.5	5.6
(P)	Astonprincess(T)	5 Jun	104	108	115	102	74.0	5.8
(P)	AberBite (T)	5 Jun	113	117	108	108	76.3	5.4
(P)	Kintyre (T)	6 Jun	108	113	112	103	73.8	5.6
(O)	Cooper (T)	5 Jun	102	102	101	108	72.7	5.5

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

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
1st Cut 6.5*	2nd Cut 3.2*	3rd Cut 3.1*	Aftermath Grazing 2.3*	Spring 2.3*	Early Summer 4.7*	Late Summer 3.2*	Autumn 1.8*	
%	%	%	%	%	%	%	%	
103	**93**	**105**	**112**	**125**	**94**	**99**	**98**	**Early**
94	**111**	**97**	**106**	**111**	**97**	**97**	**90**	**Early**
116	**109**	**116**	**102**	**121**	**99**	**104**	**102**	**Inter**
106	**106**	**104**	**100**	**108**	**99**	**103**	**103**	**Inter**
108	**117**	**98**	**96**	**110**	**101**	**105**	**99**	**Inter**
114	**103**	**96**	**93**	**119**	**96**	**97**	**92**	**Inter**
110	**115**	**103**	**96**	**115**	**102**	**105**	**101**	**Inter**
107	**106**	**106**	**96**	**109**	**103**	**101**	**98**	**Inter**
94	**130**	**113**	**109**	**107**	**109**	**110**	**108**	**Inter**
119	**112**	**105**	**82**	**98**	**103**	**102**	**94**	**Late**
123	**114**	**103**	**87**	**104**	**108**	**108**	**98**	**Late**
104	**109**	**100**	**82**	**84**	**103**	**95**	**91**	**Late**
114	**113**	**103**	**83**	**98**	**104**	**106**	**96**	**Late**
108	**115**	**116**	**88**	**92**	**105**	**113**	**104**	**Late**
99	**116**	**109**	**90**	**91**	**108**	**103**	**101**	**Late**
112	110	103	96	112	97	102	97	Inter
101	107	108	93	99	98	99	100	Inter
91	124	106	106	100	103	107	105	Inter
91	123	105	110	98	108	112	109	Inter
110	101	110	81	105	103	105	96	Late
108	105	105	84	93	111	101	96	Late
105	115	110	83	84	106	102	95	Late
100	117	111	90	89	109	101	101	Late
102	119	113	84	88	107	101	97	Late
110	107	103	86	95	109	102	92	Late
117	116	118	91	89	112	110	115	Late
106	125	110	90	89	106	104	111	Late
98	111	113	86	96	113	112	99	Late

* = Control yield as average of 'Bold Type' diploid varieties from the previous table, in t/ha DM

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 2009/10:

Three hybrid ryegrass varieties had their recommended list status changed this year. Drumlin and Foyle were reclassified as 'Plain Type' varieties and AberStorm was taken out of commercial use. All other varieties remained in either the highest 'Bold Type' or the 'Plain Type' classifications.

VARIETY	Heading Date	Silage Yields			Sward Density (0-9)
		1ST Year 18.9*	2ND Year 16.7*	3RD Year 15.8*	
		%	%	%	%
AberEcho (HT)	**13 May**	**104**	**104**	**104**	**5.0**
Ligunda (HD)	**17 May**	**105**	**106**	**106**	**4.6**
Pirol (HD)	**19 May**	**105**	**106**	**107**	**5.3**
Belleek (HT)	14 May	95	92	95	4.9
Twyblade (HT)	16 May	95	98	99	4.5
Drumlin (HT)	17 May	95	94	95	4.9
AberExcel (HT)	17 May	94	94	96	4.8
Hymer (HT)	18 May	97	100	100	4.6
AberEve (HT)	19 May	100	98	98	5.0
Foyle (HT)	20 May	94	94	94	4.9
Barsilo (HD)	22 May	101	98	102	4.5

* = Average first year 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 1.9*	1ST Cut Silage 5.7*	2ND Cut Silage 3.6*	Aftermath Grazing 6.0*
	%	%	%	%
AberEcho (HT)	**115**	**104**	**101**	**102**
Ligunda (HD)	**118**	**93**	**117**	**107**
Pirol (HD)	**114**	**94**	**122**	**106**
Belleek (HT)	88	100	85	95
Twyblade (HT)	100	104	88	96
Drumlin (HT)	73	110	83	94
AberExcel (HT)	92	100	90	93
Hymer (HT)	102	102	94	96
AberEve (HT)	88	102	96	100
Foyle (HT)	68	105	86	97
Barsilo (HD)	99	87	110	107

* = Average second year 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 utilized 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 2009/10:

Two Italian ryegrass varieties had their recommended list status changed this year. Fox moved up from provisional recommendation to 'Plain Type'. Litonio is a new provisionally listed variety and the only tetraploid Italian ryegrass recommended for use in Northern Ireland.

	VARIETY	Heading Date	Silage Yields		Early Spring Growth	Sward Density
			1ST Year 20.5*	2ND Year 20.5*		
			%	%	(t/ha DM)	(0-9)
	Meribel	**17 May**	**99**	**88**	**2.1**	**4.8**
	Meryl	**20 May**	**100**	**90**	**2.4**	**4.9**
	AberEpic	**20 May**	**101**	**88**	**2.6**	**5.1**
	Fox	17 May	99	85	2.3	4.7
	Ligrande	18 May	97	84	2.2	4.6
	AberMario	19 May	97	87	2.6	4.9
(P)	Litonio (T)	18 May	100	87	2.4	4.5

* = Average first year yield of all the 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	Seasonal Yields			
		Spring Grazing 2.4*	1ST Cut Silage 5.5*	2ND Cut Silage 4.4*	Aftermath Grazing 7.1*
		%	%	%	%
	Meribel	**89**	**99**	**102**	**100**
	Meryl	**100**	**102**	**101**	**100**
	AberEpic	**111**	**99**	**97**	**99**
	Fox	95	104	95	95
	Ligrande	93	105	95	90
	AberMario	108	98	94	96
(P)	Litonio (T)	100	103	95	97

* = Average second year yield of all 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 2009/10:

One Timothy variety, Narnia, had its recommended list status changed this year, moving up from provisionally recommended to the full 'Plain Type' category. All other varieties remained in either the highest 'Bold Type' or intermediary 'Plain Type' classifications.

	VARIETY	Heading Date	Silage		Grazing		Maturity Class
			Total Yield 14.1*	2-Cut Silage 8.9*	Total Yield 12.2*	Sward Density (0-9)	
			%	%	%	(0-9)	
	Comer	**7 Jun**	**102**	**104**	**101**	**5.5**	**Early**
	Dolina	**9 Jun**	**102**	**100**	**102**	**5.6**	**Early**
	Presto	**8 Jun**	**100**	**98**	**99**	**5.7**	**Early**
	Motim	**19 Jun**	**95**	**98**	**98**	**6.2**	**Inter**
(S)	**Aber S48**	**27 Jun**	**94**	**98**	**89**	**7.1**	**Late**
	Promesse	10 Jun	93	90	95	5.9	Early
	Comtal	9 Jun	95	92	98	5.3	Early
	Erecta	10 Jun	94	91	98	5.5	Early
	Narnia	15 Jun	102	106	98	7.4	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			
		1ST Cut 5.8*	2ND Cut 3.1*	3RD Cut 3.0*	Autumn Grazing 2.2*	Spring 2.9*	Early Summer 4.2*	Late Summer 3.7*	Autumn 1.4*
		%	%	%	%	%	%	%	%
	Comer	**105**	**100**	**101**	**102**	**104**	**97**	**101**	**103**
	Dolina	**101**	**97**	**108**	**100**	**104**	**101**	**103**	**102**
	Presto	**104**	**89**	**106**	**100**	**103**	**98**	**99**	**97**
	Motim	**90**	**114**	**86**	**98**	**89**	**104**	**97**	**98**
(S)	**Aber S48**	**67**	**157**	**62**	**116**	**50**	**117**	**86**	**97**
	Promesse	92	87	91	101	86	102	96	91
	Comtal	93	88	98	104	93	100	99	102
	Erecta	95	83	100	97	93	100	99	95
	Narnia	82	150	89	105	81	104	98	109

* = 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 2009/10:

Two White Clover varieties had their recommended list status upgraded this year as AberGuard and Grasslands Bounty both moved from provisional to the fully recommended 'Plain Type' status. All other varieties remained in either the highest 'Bold Type' or intermediary 'Plain Type' categories.

VARIETY	Relative leaf size (% Huia)	Grazing Yield Potential			Grazing Persistence	
		Total 12.8*	Clover 4.2*	Grass 8.6*	Low N	High N
	%	%	%	%	(0-9)	(0-9)
AberAce	**41**	**90**	**55**	**108**	**6.6**	**4.6**
Glds. Demand	**77**	**97**	**81**	**105**	**6.4**	**5.2**
Crusader	**85**	**101**	**101**	**101**	**5.8**	**4.9**
Avoca	**95**	**101**	**99**	**102**	**5.9**	**5.1**
AberDai	**99**	**101**	**107**	**98**	**5.5**	**4.7**
Chieftain	**105**	**104**	**124**	**94**	**5.4**	**4.5**
Alice	**124**	**102**	**113**	**97**	**5.1**	**4.2**
Barblanca	**125**	**104**	**121**	**95**	**5.7**	**4.6**
AberGuard	72	92	64	106	6.5	4.6
AberHerald	89	99	101	99	5.0	4.5
Glds. Bounty	90	101	96	104	5.9	4.7
Glds. Huia	100	98	85	104	5.8	4.6
Menna	104	100	97	102	5.6	4.5
AberVantage	102	102	101	102	5.2	3.7
Triffid	127	102	104	101	5.3	4.0
Aran	159	101	118	93	4.4	3.4

* = 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 depend 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 250 kg/ha.

VARIETY	Clover Content	Seasonal Clover Yields				Leaf Size Class
		Spring 0.48*	Early Summer 1.39*	Late Summer 1.49*	Autumn 0.94*	
	%	%	%	%	%	
AberAce	**20**	**25**	**68**	**76**	**48**	**Small**
Glds. Demand	**27**	**74**	**81**	**84**	**77**	**Small**
Crusader	**33**	**155**	**102**	**94**	**112**	**Medium**
Avoca	**32**	**89**	**97**	**96**	**109**	**Medium**
AberDai	**35**	**91**	**110**	**108**	**102**	**Medium**
Chieftain	**39**	**130**	**123**	**129**	**122**	**Medium**
Alice	**36**	**103**	**107**	**114**	**107**	**Large**
Barblanca	**38**	**132**	**112**	**100**	**123**	**Large**
AberGuard	23	60	82	74	43	Small
AberHerald	33	81	97	106	103	Medium
Glds. Bounty	31	93	84	96	103	Medium
Glds. Huia	29	74	83	91	81	Medium
Menna	32	76	97	106	97	Medium
AberVantage	32	99	94	103	105	Medium
Triffid	33	134	108	106	105	V. Large
Aran	38	103	105	121	134	V. Large

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

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

Donard Very high total silage and grazing yields, exceptional aftermath as well as excellent Spring and autumn production, from erect swards.

Genesis (P) A new provisional recommendation with extremely high total silage yields, very high total grazing yields including in Spring and in the silage aftermath.

January (S) Specifically recommended for very high silage yields with a large early first cut. It also has excellent Spring grazing followed by high autumn or aftermath growth.

Kilrea Although a late maturing member of the early group, it has very high Spring grazing yields, and creates excellent grass quality from swards of a good grazing density. Total silage yields are high with excellent aftermath growth.

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 maintains a high grazing grass quality for an early diploid.

Moy A very early maturing, high density variety with large Spring yields, high total silage yields and an excellent aftermath production.

Moyola (P) This new provisional recommendation enters the list with equally high total silage and grazing yields. It has extremely high Spring yields, good aftermath grazing and if required delivers a high third silage cut from erect growing swards.

Intermediate Diploids

AberDart (S) Specifically recommended for producing high annual grazing yields of very high quality grass at a high sugar content for a diploid. It has excellent late summer/autumn seasonal grazings and forms erect but dense swards.

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.

AberMagic (P) A new provisional recommendation with exceptionally high grazing yields and very high total silage yields, plus superb production across the main summer months and into the autumn.

Betty (S) Produces high total annual silage yields and although total grazing yields are only moderate to low, the second and if required third silage cuts are very high, as is grass quality and the early summer growth.

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.

Cashel Performs similarly well under grazing or silage use, provides high early summer grazing from dense swards or high second silage cut yields and has good third cut productivity.

Gandalf High total silage yields at both first and particularly second cuts, plus good grazing production that is maintained through the summer and it forms dense grazing swards.

Solomon (P) A new provisional recommendation with exceptionally high 2-cut digestible yields. It has uncharacteristically high Spring yields for its maturity, followed by a consistently strong performance through the rest of the grazing season.

Spelga An early member of the intermediate group with notably high silage yields, featuring a very high first cut performance and an erect growth habit, plus high grazing yields in Spring and for late season grazing.

Late Diploids

AberAvon Produces a high annual grazing yield at a high digestibility level and high sugar content. Its high silage yields are enhanced by its high quality characteristic giving excellent 2-cut digestible yields from an erect open growth habit.

AberChoice (PS) This new provisional recommendation enters the list with exceptionally high 2-cut digestible yields, very high total grazing yields of highly digestible grass. Its open growth makes it specifically recommended for use on drier ground or mixed with dense diploids.

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.

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

Drumbo (P) Another new provisional recommendation with exceptionally high 2-cut digestible yields and high total grazing yields of highly digestible grass. It also offers a high third silage cut, if required, and is consistently high producing from early summer into the autumn.

Foxtrot One of the higher yielding diploid varieties when grazed, particularly productive during the main summer growth period. Produces very good 2-cut digestible silage yields and forms tall erect growing swards.

Gilford (S) Produces below average total grazing and silage yields but is specifically recommended for its very high 2-cut digestible silage yield and its very dense grazing growth habit.

Mateon 1 Produces high total silage yields that are at their greatest during the first two silage cuts. It also produces good high quality grazing grass from dense swards, particularly during the main summer growing periods with exceptionally high 2-cut digestible yields.

Matiz (P) This provisional recommendation has high 2-cut silage yields, high total grazing yields, good summer production and excellent grass quality from dense swards.

Pastour Forms erect swards and delivers extremely high silage yields, most notably when digestible yield in the first two silage cuts is considered. Its high grazing yields are strongest during the main summer growth period.

Portstewart Forms erect silage swards, produces a high 2-cut digestible yield, provides good total annual grazing yields distributed mostly in the main summer period with less production in Spring and autumn.

Twytop (S) This, the latest maturing diploid variety, is specifically recommended on account of its excellent grazing yields and exceptional summer production. Also valuable for contributing to the second silage cutting cycle.

Tyrella Has high total annual yields for both grazing and silage use. Its first cut silage yield is exceptional for a late maturing variety and it forms swards of a good density typical of a dual purpose type variety.

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. Total annual silage yields are also high followed by excellent aftermath grazing.

Tetramax High annual silage production that peaks in the 2-cut digestible yields, partly due to it heading late in the early group. It also produces good annual grazing yields with very good Spring growth.

Intermediate Tetraploids

AberGlyn Produces excellent silage yields comprising of an enormous first cut, plus it has a good grazing yield supplemented by an exceptional Spring performance.

Astonenergy Produces excellent grazing yields of very high quality herbage and this high 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 the highest total grazing yield on the list, has one of the highest silage production outputs, retains 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, plus very good herbage quality characteristics.

Garibaldi Produces high silage yields, especially when 2-cut digestible yield is examined, and has a typical erect though dense tetraploid growth habit. Seasonal grazing yield distribution is consistently at a similar ranking to the controls throughout the entire growing season.

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. Grazing yields are high, especially in Spring and has a classic tetraploid sward structure.

Greengold Achieves good all round total annual grazing performances from high density swards for a tetraploid, enhanced by very good grass quality. As a late member of the group, silage yields are distributed towards the second and later cuts.

Magician High total silage yields that are enhanced greatly when digestibility over two cuts is considered. Grazing yield is also high in production with good grazing quality and very high Spring growth.

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

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

Trintella Produces extremely high 2-cut total and digestible silage yields from typical tall open tetraploid-type swards. The good grazing yields of good quality grass include impressive Spring yields for an intermediate maturing variety.

Late Tetraploids

AberBite (P) This new provisional recommendation enters the list with impressively high total and 2-cut silage yields that continue to bulk into the third cut. Grazing yields are also impressively high and 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 exceptionally high grass quality.

Astonprincess (P) A provisionally recommended variety with notably high 2-cut digestible silage yield from swards of high density for a tetraploid. Grazing production is also high particularly in early summer.

Cooper (O) The silage yields and grazing digestibility of this variety are below average compared to other recommended varieties and so it has been downgraded to 'Outclassed'.

Delphin One of the highest silage performing late tetraploid varieties in all categories plus a high grazing performance. It gives its strongest grazing performances in mid-season and forms tall erect open tetraploid swards.

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

Elgon Produces strong total annual grazing and silage yields which are enhanced by its high grass quality characteristics. This maintains its high 2-cut silage yield when digestible yield is measured and gives it a high grazing D-value from a classical bold tetraploid sward structure.

Fornido This variety has a consistently high yielding silage performance in the 'total', '2-cut' and '2-cut digestible' categories. It also forms highly dense swards for a tetraploid and gives its strongest grazing performances during the main summer growth period.

Glencar 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 (P) A new provisional recommendation with notably 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 excellent autumn productivity for extending the grazing season.

Loporello This variety has exceptionally dense swards for a tetraploid and achieves its highest performance under silage during the first two cuts, with its best grazing performance delivered in early summer.

Millennium This, the latest maturing variety, forms high density swards for a tetraploid, delivers similarly high silage yields in all categories, with an excellent summer grazing performance from within a high total season grazing yield.

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 while the grass quality is maintained at a high D-value.

Tivoli The generally good total silage yield 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 good sward density for a tetraploid.

Twymax Another variety with very high 2-cut digestible silage yields that are evenly distributed across both cuts. Grazing yields are high, particularly in early summer and forms very dense swards for a tetraploid.

Hybrid Ryegrass

AberEcho (HT) Produces very high total yields consistently over three years with a Spring growth typical of an 'Italian type' hybrid, yet develops a good sward density similar to the 'perennial type' varieties

AberEve (HT) This variety has a dense sward typical of a perennial-type hybrid, yet has high total seasonal yields plus an impressive first cut yield for this type of hybrid.

AberExcel (HT) Has performance characteristics typical of a equal perennial to Italian balance, having a good sward density and a more 'perennial-type' yield performance, though with a good first cut of silage for its type.

Barsilo (HD) A diploid variety and the latest maturing of all the recommended hybrids, it provides very good total annual yields in all harvest years, seasonal yields distributed towards excellent late season outputs and has an open 'Italian-type' sward structure.

Belleek (HT) A perennial-type hybrid with productivity similar to other perennial-type varieties, though with not quite as dense a sward but similar to Drumlin and Foyle in seasonal yield distribution.

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 outperforms all other varieties for first cut silage.

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 high total yields which improve relative to other varieties in the second and third years from swards that are more typical of an 'Italian-type' hybrid.

Pirol (HD) This diploid variety produces exceptionally high total yields in all three harvest years, yet is also the most dense growing hybrid variety on the list.

Ligunda (HD) This diploid 'Italian-type' hybrid ryegrass has the typical open bold growth habit, yet maintains high yields into the third year and features exceptional Spring and late summer/autumn productivity.

Twyblade (HT) Another 'Italian-type' tetraploid hybrid, forming swards with a density similar to Ligunda and delivering improving yields into the second and third year.

Italian Ryegrass

AberEpic Overall, one of the two highest yielding recommended varieties and forms swards of a better density than the other varieties. It also has a Spring yield potential that substantially exceeds all the other recommended varieties and a good aftermath grazing performance.

AberMario Has an excellent Spring growth and a similar sward structure to most of the other varieties, with a yield potential similar or better than Ligrande.

Fox This variety has very similar first year yields, Spring growth and density to Ligrande, and this also includes a notably high first cut silage yield and a similar seasonal growth distribution.

Ligrande Creates a similar sward structure to most other recommended varieties, has a good yield potential in both harvest years and the highest first cut performance of all the listed varieties.

Litonio (P) This new provisional recommendation is the only tetraploid Italian ryegrass on the list. It has a first year yield equal to Meryl and a second year yield similar to AberEpic, with a sward density close to that of Ligrande.

Meribel Has a classical Italian ryegrass sward structure and a high yield performance in both harvest years, with production distributed more towards the latter part of the growing season.

Meryl Produces very high first harvest year and second harvest year total annual yield results, plus very good Spring yields, followed by a consistently high performance throughout the year.

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. Despite being an early Timothy, seasonal grazing growth is best in late summer and autumn and is similarly excellent for aftermath grazing in autumn.

Dolina Creates a higher combination of grazing and silage yields than any other fully recommended variety. Its sward structure is similar to Comer and its seasonal grazing yield distribution remains very high throughout 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. Although an early member of its maturity group, production peaks in the main summer period.

Presto A consistently high yielding variety under both management systems, it forms swards of a higher density to most others 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 early summer period.

Narnia This recent listing has the highest 2-cut silage yield and the most dense sward structure of all the Timothy varieties, regardless of maturity.

Its grazing yields are also high and are delivered from early summer to an excellent autumn production.

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, forms a compact dense sward. Seasonal grazing yields feature a high early summer performance and very high second cut silage productivity.

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.

AberGuard This very small variety has a leaf size between Grasslands Demand and AberAce. It has a similar growth profile to AberAce with the same Low-N persistency, but has higher clover yields in Spring and early summer.

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 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 a good clover persistence and retains a high clover content throughout the season but particularly in late summer/ autumn periods.

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 is top of the list for grazing persistency at 'Low N' and close to the top at 'High N' and for its size class has high clover and total herbage yields, plus it maintains a high clover content in the grazing diet.

Chieftain This variety has production results comprising the highest clover yield, total yield and overall clover content of any listed variety. Clover persistency scores are consistent with its leaf size.

Crusader The largest of the small leaf varieties, produces very high yields with a dense, highly persistent growth under both nitrogen levels plus an exceptional Spring vigour.

Grasslands Bounty The leaf size of this variety lies between Crusader and Avoca. It has higher grass yields than either and similar Low-N persistency but a seasonal growth pattern more similar to Avoca.

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

Menna Supports high grass yields and high late summer clover contents, has a good total sward yield and a grazing persistency characteristic of its leaf size.

Large Leaved

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

Barblanca Achieves very high yield performance results typical of its large leaf size, these are highest in Spring, early summer and again in autumn, plus its grazing persistent scores are atypically high for such a large leaved variety.

Very Large Leaved

Aran A very high yielding variety that maintains notably high clover contents 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 has similar performance characteristics to Aran, giving very high yields throughout the grazing season and exceeding Aran for grazing persistence.

Guidance on Alternative Forage Legumes

Trial Results for Red Clover Varieties: Red Clover is grown mainly for conservation and divides into early and late varieties. Early varieties have high Spring growth, a large first cut and smaller subsequent cuts. Late varieties are two weeks later flowering, are slower in Spring, give their main yield at the first cut and are more persistent and suited to medium-term use. Red clover will perform best on well drained, fertile soils with a pH of 6.0–6.5. The table below shows the average yields and persistency of a selection of varieties currently undergoing assessment at Crossnacreevy. As the work is not as yet complete, no variety recommendations have been made and the results are for information only. There may also be other varieties in commerce that have yet to be assessed in these local trials.

VARIETY (alphabetical order) Control Yields	Harvest Year 1		Harvest Year 2		Harvest Year 3	
	DM Yield 17.3	Persistence (0-9 high)	DM Yield 16.2	Persistence (0-9 high)	DM Yield 13.7	Persistence (0-9 high)
	%		%		%	
Britta	90	6.9	97	4.5	101	3.0
Broadway	88	5.7	78	3.2	77	2.0
G27	100	4.0	89	5.2	86	4.4
GF67 (Creeping Slender)	89	4.2	76	4.2	76	1.7
Glds. Sensation	116	3.2	118	4.6	101	5.2
Glds. Pawera	91	3.8	92	4.2	107	2.7
Lemmon	113	4.5	111	5.1	98	5.0
Marco	103	4.6	107	4.1	118	2.9
Mercury	102	5.2	109	3.9	108	2.7
Merviot	111	4.9	117	4.5	110	3.5
Rotra	104	4.4	111	3.5	113	3.2
Sara	94	5.3	95	3.8	105	2.4

These yields were achieved without nitrogen fertilizer, 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. Furthermore, in experimental studies at Crossnacreevy, red clover/Italian ryegrass mixtures yielded 75% of the yield of pure Italian ryegrass swards receiving over 300 kg/ha nitrogen.

Notes on Alternative Forage Legumes: In addition to white and red clover there are several other pasture legumes that may be of value in exceptional circumstances or in some organic systems. Lucerne is best cut for conservation on approximately a 40 day rotation, giving 3-4 cuts per year. (Vertus is the only UK registered variety but Capri, Daisy, Diane, Europe, Euver, Marshal, Mercedes, Pondus and Vela may be available) Alsike clover is an alternative to red clover but is much lower yielding. Sainfoin is a much lower yielding alternative to Lucerne and is for specialist use particularly on chalk or limestone soils. EU varieties include Aigaion, Bellante, Carmen, Corona, Grimaldi and S. Omero

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
ITALIAN RYEGRASS		
AberEpic	IGER (UK)	BSH
AberMario	IGER (UK)	BSH
Fox	DLF Limigrain (FR)	DLF
Ligrande	Eurograss (D)	EG
Meribel	D.v.P. (B)	DLS
Meryl	D.v.P. (B)	DSV
Litonio (P)	Eurograss (D)	EG
WHITE CLOVER VARIETIES		
AberAce	IGER (UK)	BSH
AberDai	IGER (UK)	BSH
AberHerald	IGER (UK)	BSH
AberGuard	IGER (UK)	BSH
AberVantage	IGER (UK)	BSH
Alice	IGER (UK)	Bar
Aran	Teagasc (RoI)	BSH
Avoca	Teagasc (RoI)	DLF
Barblanca	Barenbrug BV (NL)	Bar
Chieftain	Teagasc (RoI)	DLF
Crusader	AgResearch (NZ)	Bar
Glds. Bounty	Wrightson (NZ)	DLF
Glds. Demand	AgResearch (NZ)	DLS
Glds. Huia	AgResearch (NZ)	DLS
Menna	IGER (UK)	Bar
Triffid	AgResearch (NZ)	Bar

Variety	Breeder (country)	UK Agent
HYBRID RYEGRASS		
AberEcho (HT)	IGER (UK)	BSH
AberEve (HT) (P)	IGER (UK)	BSH
AberExcel (HT)	IGER (UK)	BSH
Belleek (HT)	DARD (UK)	Bar
Barsilo (HD)	Barenbrug BV (NL)	Bar
Drumlin (HT)	DARD (UK)	Bar
Foyle (HT)	DARD (UK)	Bar
Hymer (HT)	D.v.P. (B)	DLS
Ligunda (HD)	BfAL (A)	DLF
Pirol (HD)	Saatzucht Steinach (D)	BSH
Twyblade (HT)	CPB Twyford Ltd (UK)	DLF
TIMOTHY VARIETIES		
Aber S48	IGER (UK)	BSH
Comer	D.v.P. (B)	DLS
Comtal	Advanta Seeds BV (NL)	DLF
Dolina	D.v.P. (B)	DLF
Erecta	D.v.P. (B)	DLS
Motim	Advanta Seeds BV (NL)	DLF
Narnia	DLF Trifolium (DK)	DLF
Presto	Euro Grass (D)	BSH
Promesse	Cebeco Seeds BV (NL)	DLF

Variety	Breeder (country)	UK Agent
DIPLOID PERENNIAL RYEGRASS		
AberAvon	IGER (UK)	BSH
AberChoice (PS)	IGER (UK)	BSH
AberDart	IGER (UK)	BSH
AberMagic (P)	IGER (UK)	BSH
AberStar	IGER (UK)	BSH
AberZest (S)	IGER (UK)	BSH
Betty (S)	Euro Grass (D)	EG
Bree	Cebeco Seeds BV (NL)	DLF
Cashel	Teagasc (RoI)	DLF
Denver	Advanta Seeds BV (NL)	DLF
Donard	DARD (UK)	DLF
Drumbo (P)	DARD (UK)	Bar
Foxtrot	Limagrain Genetics (NL)	DLF
Genesis (P)	Teagasc (RoI)	DLF
January	Teagasc (RoI)	DLF
Kilrea	DARD (UK)	Bar
Kimber	Advanta Seeds BV (NL)	DLF
Gandalf	Advanta Seeds BV (NL)	DLF
Gilford (S)	DARD (UK)	BSH
Mateon 1	Cebeco Seeds BV (NL)	DLF
Matiz	DLF Trifolium (DK)	DLF
Moyola (P)	DARD (UK)	Bar
Moy	DARD (UK)	Bar
Pastour	Limagrain Genetics (NL)	DLF
Portstewart	DARD (UK)	Bar
Solomon (P)	Teagasc (RoI)	DLF
Spelga	DARD (UK)	Bar
Tyrella	DARD (UK)	Bar
Twytop (S)	Advanta Seeds BV (NL)	DLF

Variety	Breeder (country)	UK Agent
TETRAPLOID PERENNIAL RYEGRASS		
AberBite (P)	IGER (UK)	BSH
AberCraigs	IGER (UK)	BSH
AberGlyn	IGER (UK)	BSH
AberTorch	IGER (UK)	BSH
Astonenergy	Eurograss (D)	EG
Astonprincess (P)	Eurograss (D)	EG
Cooper (O)	Limagrain Genetics (NL)	DLF
Delphin	CPB Twyford Ltd (UK)	DLF
Dunloy	DARD (UK)	Bar
Dunluce	DARD (UK)	Bar
Elgon	Advanta Seeds BV (NL)	DLF
Eurostar	Advanta Seeds BV (NL)	DLF
Fornido	Eurograss (D)	EG
Garibaldi	DLF Trifolium (DK)	DLF
Glencar	Teagasc (RoI)	DLF
Glenstal	Teagasc (RoI)	DLF
Greengold	Teagasc (RoI)	DLF
Kintyre	Teagasc (RoI)	DLF
Loporello	Eurograss (D)	EG
Magician	Teagasc (RoI)	DLF
Malone	DARD (UK)	Bar
Millennium	Teagasc (RoI)	DLF
Niagara	Advanta Seeds BV (NL)	DLF
Navan	DARD (UK)	Bar
Tetramax	DLF Trifolium (DK)	DLF
Tivoli	DLF Trifolium (DK)	DLF
Twymax	Advanta Seeds BV (NL)	DLF
Trintella	DLF Trifolium (DK)	DLF

Country Codes:

A – Austria B – Belgium; D – Germany; DK – Denmark; NL – Netherlands;
NZ - New Zealand; RoI- Ireland; UK – United Kingdom

Addresses of UK Agents/maintainers:

Bar, Barenbrug UK Ltd 33 Perkins Road, Rougham industrial Estate, Rougham, Bury St Edmunds, Suffolk IP30 9NW

EG, Eurograss Unit 1 Apple Tree Business Park, Appletree, Nr. Daventree, Northants, NN11 6UG

BSH, British Seed Houses Ltd, Portview Road, Avonmouth, Bristol BS11 9JH

DLF, DLF Trifolium UK & N. Ireland Ltd, 9-14 Bellevue Mansions, Bellevue Road, Clevedon, N. Somerset BS21 7NU

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/reclists

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 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 or
trevor.gilliland@afbini.gov.uk

Applied Plant Science and Biometrics Division An extensive range of technical services are 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

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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:
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AFBI Headquarters, Newforge Lane,
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 DARD Agricultural Development Centre:

County Antrim	Ballyclare	Tel: 028 9332 2399
	Ballymoney	Tel: 028 2766 0160
County Armagh	Armagh	Tel: 028 3751 5659
	Newry	Tel: 028 3025 3310
County Down	Banbridge	Tel: 028 4062 9182
	Newtownards	Tel: 028 9181 3570
County Fermanagh	Enniskillen	Tel: 028 6632 5004
County Londonderry	Limavady	Tel: 028 7776 2521
	Magherafelt	Tel: 028 7930 2112
County Tyrone	Dungannon	Tel: 028 8775 4777
	Omagh	Tel: 028 8225 1020

Farmers, growers and processors requiring more specialist information on crops should contact:
CAFRE Technology & Business Division Services,
Crops and Horticulture Tel: 028 9442 6770
Greenmount College Fax: 028 9442 6777

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Agriculture and
Rural Development
www.dardni.gov.uk

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