GRASS AND CLOVER

Recommended Varieties for Northern Ireland 2005/06
Recommended Booklet

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

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.

The booklet contains a summary list of the recommended varieties followed by various tables of performance results and descriptive texts that give increasing detail on variety potential in Northern Ireland.

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
Haldrup plot harvester discards grass after weighing fresh weight and recording it into the onboard computer
GRASS AND CLOVER VARIETIES FOR 2005-06

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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.
INTRODUCTION

This booklet contains the main performance characteristics of the grass and white clover varieties recommended for agricultural use in Northern Ireland. These varieties all provide a higher agronomic performance under local growing conditions than any other tested varieties. No varieties with weaknesses in winter-hardiness, disease resistance or any other agronomic factor are recommended, except that Italian ryegrass may occasionally suffer some winter-damage under severe conditions.

The varieties are initially selected from the UK National List, and if subsequently removed from that List are retained provided they remain on the EU Common Catalogue. The most recent additions to the National List will not have completed a full recommended test programme but will be considered once sufficient data have been collected. Seed supplies of newly recommended varieties are usually scarce until stocks are multiplied. Furthermore, some varieties may only be available from certain outlets and sometimes cases can occur where supply and demand factors may also cause variety shortages. In the majority of cases, however, suitable alternatives of a similar type are available, but in case of difficulty, guidance can be acquired from the DARD Agricultural Development Centres.

SUMMARY OF RECOMMENDED VARIETIES

This section lists the names of the recommended grass and clover varieties for 2005/06 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:

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

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 2005/06

#### PERENNIAL RYEGRASS

<table>
<thead>
<tr>
<th>Early Diploid</th>
<th>Intermediate Diploid</th>
<th>Late Diploid</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOY</td>
<td>SPELGA</td>
<td>DENVER</td>
</tr>
<tr>
<td>DONARD</td>
<td>ABERDART</td>
<td>ABERAVON</td>
</tr>
<tr>
<td>SPIRA</td>
<td>BREE</td>
<td>FOXTROT</td>
</tr>
<tr>
<td>(P) Kilrea</td>
<td>AGRI</td>
<td>PASTOUR</td>
</tr>
<tr>
<td>(PS) Kimber</td>
<td>MARYLIN (PS)</td>
<td>PORTSTEWART</td>
</tr>
<tr>
<td>(O) Sambin</td>
<td>CORBET (PS)</td>
<td>(S) VERITAS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(S) AberZest</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gilford</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tyrone</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Choice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(O) Parcour</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Early Tetraploid</th>
<th>Intermediate Tetraploid</th>
<th>Late Tetraploid</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABERTORCH</td>
<td>MAGICIAN</td>
<td>DELPHIN</td>
</tr>
<tr>
<td>SESSION</td>
<td>CALIBRA</td>
<td>ABERCRAIGS</td>
</tr>
<tr>
<td>TETRAMAX Anton</td>
<td>FORNAX</td>
<td>NAVAN</td>
</tr>
<tr>
<td></td>
<td>GARIBALDI (P)</td>
<td>COOPER</td>
</tr>
<tr>
<td></td>
<td>GREENGOLD (O)</td>
<td>MILLENNIUM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Glencar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Loporetto</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elgon</td>
</tr>
<tr>
<td></td>
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<td>Tivoli</td>
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</table>

#### ITALIAN RYEGRASS

<table>
<thead>
<tr>
<th>HYBRID RYEGRASS</th>
<th>TIMOTHY</th>
</tr>
</thead>
<tbody>
<tr>
<td>MERIBEL</td>
<td>Eryri</td>
</tr>
<tr>
<td>LIGRANDE</td>
<td>COMER</td>
</tr>
<tr>
<td>MERYL</td>
<td>COMTAL</td>
</tr>
<tr>
<td>ABERCOMO</td>
<td>Goliath</td>
</tr>
<tr>
<td>Zarastro (P)</td>
<td>Dolina</td>
</tr>
<tr>
<td></td>
<td>Promesse</td>
</tr>
<tr>
<td></td>
<td>Erecta</td>
</tr>
<tr>
<td>(P) AberEpic</td>
<td>(P) Presto</td>
</tr>
</tbody>
</table>

#### HYBRID RYEGRASS

<table>
<thead>
<tr>
<th>Early</th>
<th>Late</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMER</td>
<td>MOTIM</td>
</tr>
<tr>
<td>COMTAL</td>
<td></td>
</tr>
<tr>
<td>Goliath</td>
<td></td>
</tr>
<tr>
<td>Dolina</td>
<td></td>
</tr>
<tr>
<td>Promesse</td>
<td></td>
</tr>
<tr>
<td>Erecta</td>
<td></td>
</tr>
<tr>
<td>(P) Presto</td>
<td></td>
</tr>
</tbody>
</table>

#### TIMOTHY

<table>
<thead>
<tr>
<th>Early</th>
<th>Late</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motim</td>
<td></td>
</tr>
<tr>
<td>Aber S48</td>
<td></td>
</tr>
</tbody>
</table>

#### WHITE CLOVER

<table>
<thead>
<tr>
<th>Small Leaved</th>
<th>Medium Leaved</th>
<th>Large Leaved</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABERACE</td>
<td>AVOCA</td>
<td>ALICE</td>
</tr>
<tr>
<td>Glds. DEMAND</td>
<td>ABERDAI</td>
<td>BARBLANCA</td>
</tr>
<tr>
<td>CRUSADER</td>
<td>CHIEFTAINT</td>
<td></td>
</tr>
<tr>
<td>Kent WW</td>
<td>AberHerald</td>
<td></td>
</tr>
<tr>
<td>Aber. S184</td>
<td>Menna</td>
<td></td>
</tr>
<tr>
<td></td>
<td>AberVantage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Glds. Huia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Triffid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(S) Aran</td>
<td></td>
</tr>
</tbody>
</table>

**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 diploid varieties in each table. The tetraploid perennials are expressed as a percentage of the diploid perennial controls and for Italian and hybrid ryegrasses, 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.

- **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 Veritas.

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 Corbet, than between Corbet and the ‘late’ variety Gilford. 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 2005-06:
Four early varieties have had their recommended status changed. Kilrea and Kimber are new ‘Provisional’ recommendations, Sambin has been downgraded to ‘Outclassed’ and Kilbride has been removed as seed production has been cancelled.

Eleven intermediate varieties have had their recommended status changed. The two tetraploids AberGlyn and Glenstall have been upgraded from ‘Provisional’ to the fully recommended category. There are three new ‘Provisional’ recommendations AberStar, Gandalf and the tetraploid Dunluce. AberElan has moved down from Bold to plain type, Napoleon (T) has been downgraded to ‘Outclassed’, Merbo has been moved off the list from ‘Outclassed’ and Missouri, Meradonna and Jason have been removed from the list either because seed supplies have stopped or they have not been sold locally for five years.

Four late varieties have had their recommended status changed. Denver has been upgraded to the ‘Bold’ category plus AberZest and Loporello are now fully recommended having been only provisionally recommended last year. Parcour has been 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.

<table>
<thead>
<tr>
<th>VARIETY</th>
<th>Heading Date</th>
<th>Grazing Yield 12.3*</th>
<th>Silage Yield 15.0*</th>
<th>2-Cut Silage 9.5*</th>
<th>Sward Density 0-9</th>
<th>Maturity Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOY</td>
<td>7 May</td>
<td>96%</td>
<td>102%</td>
<td>99%</td>
<td>6.7</td>
<td>Early</td>
</tr>
<tr>
<td>DONARD</td>
<td>9 May</td>
<td>101</td>
<td>104</td>
<td>99</td>
<td>6.1</td>
<td>Early</td>
</tr>
<tr>
<td>SPIRA</td>
<td>14 May</td>
<td>95</td>
<td>101</td>
<td>101</td>
<td>6.5</td>
<td>Early</td>
</tr>
<tr>
<td>SPELGA</td>
<td>19 May</td>
<td>99</td>
<td>107</td>
<td>107</td>
<td>6.2</td>
<td>Inter</td>
</tr>
<tr>
<td>ABERDART</td>
<td>25 May</td>
<td>100</td>
<td>99</td>
<td>96</td>
<td>6.5</td>
<td>Inter</td>
</tr>
<tr>
<td>BREE</td>
<td>26 May</td>
<td>100</td>
<td>102</td>
<td>102</td>
<td>6.5</td>
<td>Inter</td>
</tr>
<tr>
<td>AGRI</td>
<td>28 May</td>
<td>99</td>
<td>100</td>
<td>100</td>
<td>7.0</td>
<td>Inter</td>
</tr>
<tr>
<td>MARYLIN</td>
<td>31 May</td>
<td>98</td>
<td>94</td>
<td>93</td>
<td>6.6</td>
<td>Inter</td>
</tr>
<tr>
<td>CORBET</td>
<td>2 Jun</td>
<td>100</td>
<td>95</td>
<td>95</td>
<td>6.2</td>
<td>Inter</td>
</tr>
<tr>
<td>DENVER</td>
<td>1 Jun</td>
<td>97</td>
<td>103</td>
<td>108</td>
<td>6.5</td>
<td>Late</td>
</tr>
<tr>
<td>ABERAVON</td>
<td>4 Jun</td>
<td>103</td>
<td>103</td>
<td>107</td>
<td>6.0</td>
<td>Late</td>
</tr>
<tr>
<td>FOXTROT</td>
<td>6 Jun</td>
<td>104</td>
<td>100</td>
<td>102</td>
<td>6.3</td>
<td>Late</td>
</tr>
<tr>
<td>PASTOUR</td>
<td>7 Jun</td>
<td>103</td>
<td>104</td>
<td>108</td>
<td>6.1</td>
<td>Late</td>
</tr>
<tr>
<td>PORTSTEWARM</td>
<td>8 Jun</td>
<td>99</td>
<td>101</td>
<td>101</td>
<td>6.1</td>
<td>Late</td>
</tr>
<tr>
<td>(S) VERITAS</td>
<td>15 Jun</td>
<td>100</td>
<td>93</td>
<td>95</td>
<td>6.6</td>
<td>Late</td>
</tr>
<tr>
<td>Cashel</td>
<td>20 May</td>
<td>98</td>
<td>99</td>
<td>98</td>
<td>6.8</td>
<td>Inter</td>
</tr>
<tr>
<td>(S) AberElan</td>
<td>28 May</td>
<td>103</td>
<td>97</td>
<td>94</td>
<td>5.4</td>
<td>Inter</td>
</tr>
<tr>
<td>Glen</td>
<td>31 May</td>
<td>95</td>
<td>96</td>
<td>95</td>
<td>7.0</td>
<td>Inter</td>
</tr>
<tr>
<td>(S) AberZest</td>
<td>2 Jun</td>
<td>102</td>
<td>106</td>
<td>109</td>
<td>5.9</td>
<td>Late</td>
</tr>
<tr>
<td>Gilford</td>
<td>3 Jun</td>
<td>95</td>
<td>98</td>
<td>102</td>
<td>6.9</td>
<td>Late</td>
</tr>
<tr>
<td>Tyrone</td>
<td>8 Jun</td>
<td>97</td>
<td>97</td>
<td>97</td>
<td>7.1</td>
<td>Late</td>
</tr>
<tr>
<td>Choice</td>
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<td>98</td>
<td>99</td>
<td>99</td>
<td>6.5</td>
<td>Late</td>
</tr>
<tr>
<td>(P) Kilrea</td>
<td>16 May</td>
<td>100</td>
<td>104</td>
<td>98</td>
<td>6.5</td>
<td>Early</td>
</tr>
<tr>
<td>(PS) Kimber</td>
<td>18 May</td>
<td>97</td>
<td>106</td>
<td>106</td>
<td>6.4</td>
<td>Early</td>
</tr>
<tr>
<td>(P) Gandalf</td>
<td>27 May</td>
<td>100</td>
<td>104</td>
<td>105</td>
<td>6.6</td>
<td>Inter</td>
</tr>
<tr>
<td>(PS) AberStar</td>
<td>27 May</td>
<td>105</td>
<td>98</td>
<td>95</td>
<td>6.2</td>
<td>Inter</td>
</tr>
<tr>
<td>(PS) Betty</td>
<td>29 May</td>
<td>90</td>
<td>(103)</td>
<td>91</td>
<td>6.3</td>
<td>Inter</td>
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<tr>
<td>(O) Sambin</td>
<td>16 May</td>
<td>92</td>
<td>99</td>
<td>100</td>
<td>6.7</td>
<td>Early</td>
</tr>
<tr>
<td>(O) Parcour</td>
<td>8 Jun</td>
<td>96</td>
<td>98</td>
<td>102</td>
<td>6.5</td>
<td>Late</td>
</tr>
</tbody>
</table>

* = Average yield of ‘Bold Type’ diploid varieties in t/ha DM ( ) = Data for Betty when tested in early maturity group
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’.

<table>
<thead>
<tr>
<th>VARIETY</th>
<th>Seasonal Grazing Yields</th>
<th>Seasonal Silage Yields</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Spring</td>
<td>Early</td>
</tr>
<tr>
<td></td>
<td>2.0*</td>
<td>4.9*</td>
</tr>
<tr>
<td>MOY</td>
<td>118%</td>
<td>88%</td>
</tr>
<tr>
<td>DONARD</td>
<td>120</td>
<td>95</td>
</tr>
<tr>
<td>SPIRA</td>
<td>114</td>
<td>92</td>
</tr>
<tr>
<td>SPELG A</td>
<td>107</td>
<td>95</td>
</tr>
<tr>
<td>ABERDART</td>
<td>104</td>
<td>98</td>
</tr>
<tr>
<td>BREE</td>
<td>98</td>
<td>102</td>
</tr>
<tr>
<td>AGRI</td>
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<td>100</td>
</tr>
<tr>
<td>MARYLIN</td>
<td>85</td>
<td>101</td>
</tr>
<tr>
<td>CORBET</td>
<td>88</td>
<td>103</td>
</tr>
<tr>
<td>DENVER</td>
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<td>ABERAVON</td>
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<td>FOXTROT</td>
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<td>PORTSTEWART</td>
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(S) VERITAS 90 104 104 98 85 112 96 86
Cashel 95 100 97 97 99 96 100 99
(S) AberElan 106 97 102 114 92 96 95 114
Glen 95 99 90 95 109 93 103 95 101
(S) AberZest 99 99 105 110 111 103 105 98
Gilford 90 100 89 95 106 96 95 83
Tyrone 86 103 96 97 98 97 105 86
Choice 82 106 100 92 93 111 106 84
(P) Kilrea 117 94 96 100 94 105 109 119
(PS) Kimber 114 92 94 99 101 113 99 118
(P) Gandalf 104 101 100 96 109 95 103 104
(PS) AberStar 108 102 103 109 95 94 94 115
(PS) Betty 87 94 91 79 73 123 132 109
(O) Sambin 125 86 86 86 102 96 95 95
(O) Parcour 87 100 96 93 104 97 96 82

* = Average yield of ‘Bold Type’ diploid varieties in t/ha DM ( ) = Data for Betty when tested in early maturity group
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.

<table>
<thead>
<tr>
<th>VARIETY</th>
<th>Heading Date</th>
<th>Grazing Yield</th>
<th>Silage Yield</th>
<th>2-Cut Silage</th>
<th>Sward Density</th>
<th>Maturity Class</th>
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<tbody>
<tr>
<td>ABERTORCH</td>
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<tr>
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<td>Early</td>
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<td>TETRAMAX</td>
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</tr>
<tr>
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<td>104</td>
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<td>Inter</td>
</tr>
<tr>
<td>CALIBRA</td>
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<td>Inter</td>
</tr>
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<td>DELPHIN</td>
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<tr>
<td>ABERCRAIGS</td>
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<td>108</td>
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<td>MILLENNIUM</td>
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<td>AberGlyn</td>
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<td>Glencar</td>
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<td>Late</td>
</tr>
<tr>
<td>Loporello</td>
<td>4 Jun</td>
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<td>116</td>
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<td>Late</td>
</tr>
<tr>
<td>Elgon</td>
<td>4 Jun</td>
<td>104</td>
<td>103</td>
<td>107</td>
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<td>Late</td>
</tr>
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<td>Tivoli</td>
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<td>101</td>
<td>104</td>
<td>108</td>
<td>5.5</td>
<td>Late</td>
</tr>
<tr>
<td>(P) Dunluce</td>
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<td>110</td>
<td>109</td>
<td>102</td>
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<td>Inter</td>
</tr>
<tr>
<td>(O) Napoleon</td>
<td>21 May</td>
<td>97</td>
<td>103</td>
<td>110</td>
<td>5.5</td>
<td>Inter</td>
</tr>
</tbody>
</table>

* = Average yield 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.

<table>
<thead>
<tr>
<th>VARIETY</th>
<th>1st Cut Spring</th>
<th>2nd Cut Early</th>
<th>3rd Cut Late</th>
<th>Autumn Anonm</th>
<th>1st Cut Cut</th>
<th>2nd Cut Cut</th>
<th>3rd Cut Cut</th>
<th>Aftermath Grazing</th>
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</thead>
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<tr>
<td>ABERTORCH</td>
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<td>93 %</td>
<td>97 %</td>
<td>99 %</td>
<td>106 %</td>
<td>107 %</td>
<td>108 %</td>
<td>113 %</td>
</tr>
<tr>
<td>SESSION</td>
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<td>91</td>
<td>90</td>
<td>109</td>
<td>103</td>
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<td>110</td>
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<tr>
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<td>93</td>
<td>98</td>
<td>114</td>
<td>102</td>
<td>108</td>
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<tr>
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<td>112</td>
<td>110</td>
<td>96</td>
<td>102</td>
<td>106</td>
<td>109</td>
<td>88</td>
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<tr>
<td>MILLENNIUM</td>
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<td>107</td>
<td>105</td>
<td>97</td>
<td>103</td>
<td>106</td>
<td>107</td>
<td>88</td>
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<tr>
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<td>102</td>
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<td>117</td>
<td>115</td>
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<td>112</td>
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<td>97</td>
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<td>107</td>
<td>105</td>
<td>86</td>
</tr>
<tr>
<td>(P) Dunluce</td>
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<td>110</td>
<td>112</td>
<td>96</td>
<td>114</td>
<td>117</td>
<td>119</td>
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<tr>
<td>(O) Napoleon</td>
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<td>93</td>
<td>89</td>
<td>120</td>
<td>90</td>
<td>92</td>
<td>93</td>
</tr>
</tbody>
</table>

* = Average yield 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 2005-06: Four hybrid varieties have had their recommended status changed. AberEcho has moved up to ‘Bold’ type, Ligunda has moved from ‘Provisional’ to a full recommendation, Pirol is a new ‘Provisionally’ recommended diploid and Belleek has been temporarily removed as no seed will be available in the next 12 months, but will return directly to Bold Type when supplies resume.

<table>
<thead>
<tr>
<th>VARIETY</th>
<th>Heading Date</th>
<th>Silage Yields 1st Year</th>
<th>Silage Yields 2nd&amp;3rd Year</th>
<th>Early Spring Growth (t/ha DM)</th>
<th>Sward Density (0-9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABERSTORM (HT)</td>
<td>10 May</td>
<td>98 %</td>
<td>83 %</td>
<td>2.2</td>
<td>5.2</td>
</tr>
<tr>
<td>GAZELLA (HT)</td>
<td>10 May</td>
<td>104</td>
<td>89</td>
<td>2.2</td>
<td>4.5</td>
</tr>
<tr>
<td>ABERECHO (HT)</td>
<td>15 May</td>
<td>107</td>
<td>92</td>
<td>2.2</td>
<td>4.9</td>
</tr>
<tr>
<td>TWYBLADE (HT)</td>
<td>18 May</td>
<td>98</td>
<td>88</td>
<td>1.9</td>
<td>4.5</td>
</tr>
<tr>
<td>ABEREXCEL (HT)</td>
<td>19 May</td>
<td>96</td>
<td>85</td>
<td>1.8</td>
<td>4.8</td>
</tr>
<tr>
<td>ABERLINNET (HT)</td>
<td>19 May</td>
<td>95</td>
<td>83</td>
<td>1.9</td>
<td>4.8</td>
</tr>
<tr>
<td>BRUTUS (HD)</td>
<td>21 May</td>
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<td>91</td>
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<td>5.6</td>
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<tr>
<td>BARSIO (HD)</td>
<td>25 May</td>
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<td>89</td>
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<td>4.5</td>
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<tr>
<td>Ligunda (HD)</td>
<td>19 May</td>
<td>107</td>
<td>95</td>
<td>2.2</td>
<td>4.6</td>
</tr>
<tr>
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<td>95</td>
<td>83</td>
<td>1.4</td>
<td>4.9</td>
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<tr>
<td>(P) Hymer (HT)</td>
<td>21 May</td>
<td>100</td>
<td>89</td>
<td>2.0</td>
<td>4.7</td>
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<tr>
<td>(P) Pirol (HD)</td>
<td>21 May</td>
<td>110</td>
<td>94</td>
<td>2.3</td>
<td>5.1</td>
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<tr>
<td>(P) Foyle (HT)</td>
<td>22 May</td>
<td>95</td>
<td>82</td>
<td>1.3</td>
<td>4.9</td>
</tr>
</tbody>
</table>

* = Average first 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 2005-06: Only one Italian variety has had its recommended status changed. AberEpic has been added to the list as a new high performing provisionally recommended variety.

<table>
<thead>
<tr>
<th>VARIETY</th>
<th>Heading Date</th>
<th>Silage Yields 1st Year</th>
<th>Silage Yields 2nd&amp;3rd Year</th>
<th>Early Spring Growth (t/ha DM)</th>
<th>Sward Density (0-9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MERIBEL</td>
<td>20 May</td>
<td>100 %</td>
<td>90 %</td>
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<td>4.8</td>
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<td>LIGRANDE</td>
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<td>99</td>
<td>86</td>
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<tr>
<td>MERYL</td>
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<td>90</td>
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<td>4.9</td>
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<td>5.0</td>
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</table>

* = Average first year yield of all the varieties in t/ha DM
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.

<table>
<thead>
<tr>
<th>VARIETY</th>
<th>Spring Grazing</th>
<th>1st Cut Silage</th>
<th>2nd Cut Silage</th>
<th>Aftermath Grazing</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABERSTORM (HT)</td>
<td>1.9*</td>
<td>5.6*</td>
<td>3.2*</td>
<td>6.0*</td>
</tr>
<tr>
<td>MERIBEL</td>
<td>2.1*</td>
<td>5.7*</td>
<td>4.2*</td>
<td>7.0*</td>
</tr>
<tr>
<td>GAZELLA (HT)</td>
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<td>95</td>
<td>108</td>
<td>105</td>
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<tr>
<td>ABERECH (HT)</td>
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<td>104</td>
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<td>ABEREXCEL (HT)</td>
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<td>TWEYBLADE (HT)</td>
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<td>ABERLINNET (HT)</td>
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<td>Ligunda (HD)</td>
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<td>123</td>
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<td>(P) Drumlin (HT)</td>
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<tr>
<td>(P) Hymer (HT)</td>
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<td>(P) Pirol (HD)</td>
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<td>(P) Foyle (HT)</td>
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<td>83</td>
<td>97</td>
</tr>
</tbody>
</table>

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

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.

<table>
<thead>
<tr>
<th>VARIETY</th>
<th>Spring Grazing</th>
<th>1st Cut Silage</th>
<th>2nd Cut Silage</th>
<th>Aftermath Grazing</th>
</tr>
</thead>
<tbody>
<tr>
<td>MERIBEL</td>
<td>97 %</td>
<td>98 %</td>
<td>101 %</td>
<td>104 %</td>
</tr>
<tr>
<td>LIGRANDE</td>
<td>101</td>
<td>107</td>
<td>95</td>
<td>92</td>
</tr>
<tr>
<td>MERYL</td>
<td>105</td>
<td>100</td>
<td>102</td>
<td>102</td>
</tr>
<tr>
<td>ABERCOMO</td>
<td>100</td>
<td>95</td>
<td>103</td>
<td>103</td>
</tr>
<tr>
<td>Zarastro</td>
<td>97</td>
<td>99</td>
<td>99</td>
<td>98</td>
</tr>
<tr>
<td>(P) AberEpic</td>
<td>120</td>
<td>96</td>
<td>97</td>
<td>101</td>
</tr>
</tbody>
</table>

* = 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 ‘LATE’ maturing varieties are more dense growing pasture-types.

Recommendation changes for 2005-06: Two Timothy Varieties have had their recommended status changed. Dolina has been upgraded from Provisional to fully recommended and Presto is a new ‘Provisional’ recommendation in the early maturing Timothy group.

<table>
<thead>
<tr>
<th>VARIETY</th>
<th>Heading Date</th>
<th>Grazing</th>
<th>Silage Yield</th>
<th>2-Cut Silage</th>
<th>Sward Density</th>
<th>Maturity Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMER</td>
<td>10 Jun</td>
<td>102 %</td>
<td>105 %</td>
<td>106 %</td>
<td>5.6</td>
<td>Early</td>
</tr>
<tr>
<td>COMTAL</td>
<td>12 Jun</td>
<td>100 %</td>
<td>97 %</td>
<td>92</td>
<td>5.3</td>
<td>Early</td>
</tr>
<tr>
<td>MOTIM</td>
<td>18 Jun</td>
<td>98 %</td>
<td>98 %</td>
<td>101</td>
<td>6.1</td>
<td>Inter</td>
</tr>
<tr>
<td>Dolina</td>
<td>10 Jun</td>
<td>105 %</td>
<td>109 %</td>
<td>107</td>
<td>5.6</td>
<td>Early</td>
</tr>
<tr>
<td>Goliath</td>
<td>11 Jun</td>
<td>100 %</td>
<td>96 %</td>
<td>97</td>
<td>6.2</td>
<td>Early</td>
</tr>
<tr>
<td>Promesse</td>
<td>11 Jun</td>
<td>98 %</td>
<td>96 %</td>
<td>94</td>
<td>5.9</td>
<td>Early</td>
</tr>
<tr>
<td>Erecta</td>
<td>11 Jun</td>
<td>99 %</td>
<td>96 %</td>
<td>92</td>
<td>5.6</td>
<td>Early</td>
</tr>
<tr>
<td>Aber S48</td>
<td>24 Jun</td>
<td>92 %</td>
<td>96 %</td>
<td>101</td>
<td>7.0</td>
<td>Late</td>
</tr>
<tr>
<td>(P) Presto</td>
<td>10 Jun</td>
<td>101 %</td>
<td>104</td>
<td>101</td>
<td>5.6</td>
<td>Early</td>
</tr>
</tbody>
</table>

* = 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 2005-06: Four clover varieties have had their recommended status changed. Crusader has moved up to ‘Bold’ type, Kent Wild White has been downgraded from ‘Bold’ type to ‘Plain’ type, Milkanova has been removed from the ‘Outclassed’ category of last year and Gwenda has been removed as commercialisation has ceased.

<table>
<thead>
<tr>
<th>VARIETY</th>
<th>Relative leaf size (% Huia)</th>
<th>Clover Yield Potential 3.3*</th>
<th>Grazing Low N (0-9)</th>
<th>Persistance High N (0-9)</th>
<th>Leaf Size Class (0-9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABERACE</td>
<td>37 %</td>
<td>56 %</td>
<td>6.1</td>
<td>5.9</td>
<td>Small</td>
</tr>
<tr>
<td>Glds. DEMAND</td>
<td>75</td>
<td>81</td>
<td>6.4</td>
<td>5.4</td>
<td>Small</td>
</tr>
<tr>
<td>CRUSADER</td>
<td>83</td>
<td>108</td>
<td>5.8</td>
<td>5.2</td>
<td>Small</td>
</tr>
<tr>
<td>AVOCA</td>
<td>84</td>
<td>102</td>
<td>5.9</td>
<td>5.4</td>
<td>Medium</td>
</tr>
<tr>
<td>ABERDAI</td>
<td>96</td>
<td>100</td>
<td>5.5</td>
<td>4.8</td>
<td>Medium</td>
</tr>
<tr>
<td>CHIEFTAIN</td>
<td>99</td>
<td>127</td>
<td>5.5</td>
<td>4.7</td>
<td>Medium</td>
</tr>
<tr>
<td>ALICE</td>
<td>118</td>
<td>111</td>
<td>5.2</td>
<td>4.4</td>
<td>Large</td>
</tr>
<tr>
<td>BARBLANCA</td>
<td>120</td>
<td>113</td>
<td>5.5</td>
<td>5.1</td>
<td>Large</td>
</tr>
<tr>
<td>Kent Wild White</td>
<td>41</td>
<td>49</td>
<td>6.2</td>
<td>5.4</td>
<td>Small</td>
</tr>
<tr>
<td>Aber S184</td>
<td>64</td>
<td>72</td>
<td>6.3</td>
<td>4.9</td>
<td>Small</td>
</tr>
<tr>
<td>AberHerald</td>
<td>86</td>
<td>98</td>
<td>5.0</td>
<td>4.5</td>
<td>Medium</td>
</tr>
<tr>
<td>Menna</td>
<td>95</td>
<td>96</td>
<td>5.7</td>
<td>4.8</td>
<td>Medium</td>
</tr>
<tr>
<td>AberVantage</td>
<td>99</td>
<td>100</td>
<td>5.1</td>
<td>4.3</td>
<td>Medium</td>
</tr>
<tr>
<td>Glds. Huia</td>
<td>100</td>
<td>82</td>
<td>5.7</td>
<td>5.0</td>
<td>Medium</td>
</tr>
<tr>
<td>Triffid</td>
<td>129</td>
<td>111</td>
<td>5.4</td>
<td>4.3</td>
<td>Very Large</td>
</tr>
<tr>
<td>(S) Aran</td>
<td>149</td>
<td>115</td>
<td>4.2</td>
<td>3.6</td>
<td>Very Large</td>
</tr>
</tbody>
</table>

* = Average yield of ‘Bold Type’ varieties in t/ha DM
SEASONAL YIELDS OF TIMOTHY

There is 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 (see page 11).

<table>
<thead>
<tr>
<th>VARIETY</th>
<th>Seasonal Grazing Yields</th>
<th>Seasonal Silage Yields</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Spring</td>
<td>Early Summer</td>
</tr>
<tr>
<td></td>
<td>2.5*</td>
<td>4.2*</td>
</tr>
<tr>
<td>COMER</td>
<td>111 %</td>
<td>97 %</td>
</tr>
<tr>
<td>COMTAL</td>
<td>95</td>
<td>99</td>
</tr>
<tr>
<td>MOTIM</td>
<td>94</td>
<td>104</td>
</tr>
<tr>
<td>Dolina</td>
<td>114</td>
<td>101</td>
</tr>
<tr>
<td>Goliath</td>
<td>97</td>
<td>105</td>
</tr>
<tr>
<td>Promesse</td>
<td>93</td>
<td>103</td>
</tr>
<tr>
<td>Erecta</td>
<td>97</td>
<td>101</td>
</tr>
<tr>
<td>Aber S48</td>
<td>57</td>
<td>112</td>
</tr>
<tr>
<td>(P) Presto</td>
<td>113</td>
<td>98</td>
</tr>
</tbody>
</table>

* = 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 Fennema (perennial ryegrass) at 250 kg/ha.

<table>
<thead>
<tr>
<th>VARIETY</th>
<th>Annual Output</th>
<th>Clover Total Yield</th>
<th>Seasonal Clover Yields</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Clover Content</td>
<td>12.6*</td>
<td>Spring 0.31*</td>
</tr>
<tr>
<td>ABERACE</td>
<td>19%</td>
<td>91%</td>
<td>10%</td>
</tr>
<tr>
<td>Glds. DEMAND</td>
<td>26</td>
<td>97</td>
<td>74</td>
</tr>
<tr>
<td>CRUSADER</td>
<td>32</td>
<td>102</td>
<td>173</td>
</tr>
<tr>
<td>AVOCA</td>
<td>31</td>
<td>101</td>
<td>90</td>
</tr>
<tr>
<td>ABERDAI</td>
<td>31</td>
<td>100</td>
<td>80</td>
</tr>
<tr>
<td>CHIEFTAIN</td>
<td>38</td>
<td>103</td>
<td>143</td>
</tr>
<tr>
<td>ALICE</td>
<td>34</td>
<td>102</td>
<td>106</td>
</tr>
<tr>
<td>BARBLANCA</td>
<td>34</td>
<td>102</td>
<td>146</td>
</tr>
<tr>
<td>Kent Wild White</td>
<td>17</td>
<td>89</td>
<td>32</td>
</tr>
<tr>
<td>Aber S184</td>
<td>24</td>
<td>94</td>
<td>52</td>
</tr>
<tr>
<td>AberHerald</td>
<td>31</td>
<td>98</td>
<td>77</td>
</tr>
<tr>
<td>Menna</td>
<td>29</td>
<td>101</td>
<td>76</td>
</tr>
<tr>
<td>AberVantage</td>
<td>30</td>
<td>101</td>
<td>92</td>
</tr>
<tr>
<td>Glds. Huia</td>
<td>26</td>
<td>98</td>
<td>71</td>
</tr>
<tr>
<td>Triffid</td>
<td>33</td>
<td>104</td>
<td>147</td>
</tr>
<tr>
<td>Aran</td>
<td>35</td>
<td>100</td>
<td>102</td>
</tr>
</tbody>
</table>

* = Average yield of ‘Bold Type’ varieties in t/ha DM
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
DONARD (S) Very high total grazing and silage yields, very good second cut silage production, exceptional aftermath as well as excellent Spring and autumn production, from erect swards.
Kilrea (P) A new provisional recommendation that matures late in the early group. It has very high total silage yields and excellent aftermath growth plus a high overall grazing production with exceptionally high Spring grazing yields from swards of a good density.
Kimber (PS) Another new provisional member at the very late end of the early group. It produces exceptionally high silage yields boosted by an impressive second cut performance. It will also deliver very high Spring grazing yields, if required.
MOY A very early maturing, high density variety with large Spring yields, high total silage yields particularly at the first cut and excellent aftermath production.
Sambin (O) Although capable of producing high first cut silage yields and also high Spring yields, is generally outperformed by the higher yielding fully recommended varieties and is now downgraded to ‘Outclassed’.
SPIRA Forms erect swards well suited to silage use and maintains high silage production levels across both first and second cuts, supplemented by a high aftermath grazing to follow.

Intermediate Diploids
ABERDART Produces high annual grazing yields and has a good sward density rating. It has a large Spring growth for its maturity and excellent late summer/autumn seasonal grazings and excellent silage aftermath grazing yields.
AberElan (S) Specifically recommended for producing exceptionally high grazing yields throughout the season when mixed with dense growing varieties to balance its open growth. Delivers large Spring yields and exceptional end-of-season growth.
AberStar (PS) A new provisionally recommended variety, specifically recommended for producing exceptionally high grazing yields throughout the season and will be used to best advantage locally when mixed with more dense growing varieties, given its erect and somewhat open growth habit.
AGRI Similarly high annual performances under grazing and silage, performs best at the first silage cut despite being a later member of the group, grazing performance strongest in mid-summer, forms very dense swards.
Betty (PS)  Remains a provisionally recommended variety for a further year pending additional trials to confirm its high total annual silage yield potential for which it is 'specifically' listed. Grazing yields are moderate to low throughout the growing season.

BREE  Produces high annual grazing yields, especially in the main summer growing period, high annual silage yields especially at the first cut, good aftermath grazing and an erect growth habit.

Cashel  Performs similarly well under grazing or silage use, provides high early summer grazing or first silage cut yields and has good third cut and aftermath productivity.

CORBET  Forms erect but persistent swards with high grazing yields. Its very high grazing performance from early summer to autumn and very high second and third silage cuts makes it a valuable mixture component.

Gandalf (P)  A new provisional recommendation with high grazing and silage yields particularly at the first cut. Grazing production remains high through to early autumn when growth slows.

Glen  Forms exceptionally dense damage resistant grazing swards suited to a wide range of intensive uses, provides good all-round annual yields, most productive in the early summer.

MARYLIN  Forms swards with a good density and is best suited to grazing where Spring growth is low as it performs best during the main summer growth period. Alternatively can be brought into the 'second-cut' silage cycle with advantage after the first growth is grazed.

SPELGA  Highest silage yields of all fully recommended diploid varieties with a very high '2-cut' performance and an erect growth habit, plus high grazing yields with strong performances in Spring and autumn.

Late Diploids

ABERAVON  Produces a high annual grazing yield with particularly high outputs in summer, high annual silage yields provided mainly during the first two cuts from an erect open growth habit.

AberZest (S)  Produces very high silage yields delivered across all three cuts plus a high grazing yield especially in autumn. Specifically recommended for mixtures that balance its open growth habit.

Choice  A high mid-season performer, producing its highest grazing yields in the main summer growing period with much less growth in Spring and autumn and producing very high second and third silage cuts.

DENVER  Produces high total silage yields, particularly at the first cut, grazing performance is best during the main summer growing period, forms swards of good density.

FOXTROT  One of the highest yielding diploid varieties when grazed, particularly productive during the main summer growth period, produces very good silage yields particularly at the first cut, forms tall erect growing swards.

Gilford  Forms very dense grazing swards, produces high grazing yields in early summer, gives high ‘2-cut’ silage yields and delivers most of its production before the autumn aftermath.

Parcourt (O)  Provides moderate total annual grazing and silage yields and has a good sward density, but is now ‘Outclassed’ by newer high performing varieties.

PASTOUR  Gives very high grazing yields particularly during the summer growth period, delivers extremely high silage yields throughout the three cuts, has an erect open growth habit.

PORTSTEWART  Consistently delivers excellent silage yields at all three silage cuts, provides good total annual grazing yields distributed mostly in the main summer period with less production in Spring, forms erect swards ideal for silage use.
Tyrone  A notably dense growing late variety with good grazing yields, seasonal grazing distribution highest from early summer with good autumn growth and low production in Spring.
VERITAS (S)  Latest maturing recommended variety, very dense growing, specifically recommended for producing excellent leafy grazing swards with maximum performance during the main summer growing period.

TETRAPLOID PERENNIAL RYEGRASS

**Early Tetraploids**

**ABERTORCH**  A very early heading variety with extremely high Spring yields and good late season grazing, notably high silage yields well distributed across all cuts and into the aftermath grazing, has an erect open growth habit.

**Anton**  High annual silage yields with high ‘2-cut’ productivity and good aftermath growth, grazing production seasonally distributed to support high performance in Spring and lower outputs in autumn, good sward density for a tetraploid.

**SESSION**  Notably high annual silage yields with particularly high first and third cuts, produces excellent Spring grazing performances and forms dense swards for a tetraploid.

**TETRAMAX**  High annual silage production is delivered mostly at the second cut despite it being late heading in the group. It also produces good annual grazing yields with good Spring growth.

**Intermediate Tetraploids**

**AberGlyn**  Produces excellent silage yields comprising of an enormous first cut, also has a high grazing yield and an exceptional Spring performance.

**CALIBRA**  Delivers similarly high annual grazing and silage yields, maintains a consistently high grazing output from Spring to late summer, very high first cut silage yields followed by a very good late season performance, good sward structure for a tetraploid.

**Dunluce (P)**  A new provisionally recommended variety that creates clearly the highest grazing yields on the list, yet also has one of the highest silage production outputs supplemented with excellent aftermath growth.

**Eurostar**  A very dense variety for a tetraploid, with very high annual and Spring grazing yields and high silage production especially at the first cut from erect standing swards.

**Fornax**  One of the most dense growing tetraploids, annually provides excellent silage yields, including a high first silage cut, grazing profile distributed towards the front of the year to give high Spring and early summer productivity.

**Garibaldi**  Produces high grazing and very high silage yields, especially in the first cut, and has a typical erect tetraploid growth habit, seasonal grazing yield distribution is consistently high through the early season to the late summer.

**Glenstal**  The excellent silage yields include an enormous first cut followed by high yields in the next two cuts, grazing yields are very high particularly in Spring and has the classic tetraploid sward structure.

**Greengold**  Achieves superb all round total annual performances from high density swards for a tetraploid, a high grazing performance is maintained throughout the year and as a late member of the group, silage yields are distributed towards the second and later cuts.
**MAGICIAN**  Very high total annual grazing and silage yields maintained from Spring to late summer and produced from typically good tetraploid swards, also provides excellent second cut silage yields with continuing high growth to the end of the season.

**Napoleon (O)**  The grazing performance of this variety is well below the rapidly rising standards on the tetraploid list, and despite a very good first silage yield potential, this variety has been downgraded to ‘Outclassed’.

**Late Tetraploids**

**ABERCRAIGS**  Excellent ‘2-cut’ silage yields are delivered mostly in the high first cut, grazing performance is also high particularly during the summer period and has a good density for its type.

**COOPER**  Excellently high total annual grazing yields that increase into late summer, produces high silage yields in each of the three cuts and has a good density for its type.

**DELPHIN**  Produces one of highest silage yields among the tetraploid varieties plus a very high grazing performance. It gives its strongest performances in early season, at first cut or in Spring grazings, and forms an erect open tetraploid sward.

**Elgon**  Produces similarly strong total annual grazing and silage yields, the high ‘2-cut’ silage yield is mainly achieved at the first cut, a high grazing productivity is maintained through the main growing season, has a standard bold sward structure for a tetraploid.

**Glencar**  The highest silage yielding variety listed, particularly so for ‘2-cut’ silage yield. It also delivers high grazing yields through Spring and summer from swards of a good density.

**Loporello**  The excellent silage yields of this variety are evenly distributed through all three cuts. Its good grazing yields are delivered mostly in the summer periods from exceptionally dense swards for a tetraploid.

**MILLENNIUM**  This, the latest maturing variety, forms high density swards for a tetraploid, delivers similarly high grazing and silage yields with an excellent summer performance under both managements.

**NAVAN**  Consistently very high yielding under both sward managements, maintains its high productivity across all three silage cuts, while grazing performance is at an optimum during the main summer season, has a classic tetraploid density.

**Tivoli**  A high performing tetraploid variety over many trial years, with high summer grazing yields and low Spring production, maintains high outputs in all three silage cuts, has a classical bold tetraploid structure.

**HYBRID RYEGRASS**

**ABERECHO (HT)**  Produces very high total yields and a Spring growth typical of an ‘Italian type’ hybrid, yet develops a good sward density similar to the ‘perennial type’ varieties

**ABEREXCEL (HT)**  Has performance characteristics typical of a greater 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.

**ABERLINNET (HT)**  Produces a similar performance pattern to AberExcel, having a similar blend of Italian and perennial ryegrass characteristics, and the same sward density.

**ABERSTORM (HT)**  Expresses strongly its perennial ryegrass lineage, forms very dense tetraploid swards, has a good annual yield potential and exceptional Spring yields for a perennial type hybrid
**BARSILLO** (HD)  A diploid variety and the latest maturing of all the recommended hybrids, provides excellent total annual yields in all harvest years, seasonal yields distributed towards excellent late season outputs and has an open ‘Italian-type’ sward structure.

**BRUTUS** (HD)  Exceptionally high yields that are maintained throughout the following years, with a very high sward density, gives very high second cut silage yields and excellent productivity in the Spring and in aftermath grazings.

**Drumlin** (HT)  A very ‘perennial-type’ provisionally recommended variety that has a good sward structure, a lower tendency to produce secondary seed heads than the ‘Italian-types’, is slow to awaken in Spring but outperforms all other varieties for first cut silage.

**Foyle** (HT)  Is another particularly ‘perennial-type’ provisional 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.

**GAZELLA** (HT)  Develops a typical sward structure for an ‘Italian type’ tetraploid hybrid ryegrass, produces very high total annual yields and has a high Spring and end-of-season grazing performance.

**Hymer** (HT)  Produces very ‘perennial-like’ swards similar to the other provisionally recommended varieties Drumlin and Foyle, but with a higher total yield potential especially in Spring.

**Pirol** (HD) (P)  Provisionally recommended for the first time this year, this diploid variety produces exceptionally high total annual yields yet is also one of the most dense growing hybrid varieties on the list.

**Ligunda** (HD)  This diploid ‘Italian-type’ hybrid ryegrass is similar in type to Gazella, having a similar sward structure but out yielding it in total annual productivity and in almost every seasonal yield category.

**TWYBLADE** (HT)  An ‘Italian type’ tetraploid hybrid, forming swards with a density similar to Gazella, delivers good first, second and third year yields, a strong first cut silage performance is the key feature of the variety.

**ITALIAN RYEGRASS**

**ABERCOMO**  Produces similar total annual yields to the other recommended varieties in both harvest years, forms swards of a good density typical of its type, delivers high early Spring grazing yields and a good aftermath grazing performance.

**AberEpic** (P)  Matches the best varieties for first and second year productivity and forms swards of a density similar or better to the other varieties. It also has a Spring yield potential that substantially exceeds all the other recommended varieties and a high aftermath grazing performance.

**LIGRANDE**  Creates a similar sward structure to the other recommended varieties, has a good yield potential in both harvest years with an excellent first cut performance.

**MERIBEL**  Has a classical Italian ryegrass sward structure, a high yield performance in both harvest years, which are 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, excellent Spring yields, followed by a consistent performance throughout the year.

**Zarastro**  Matches the best varieties for first and second year productivity and has a yield distribution somewhat similar to Meribel, indicating that if further trials confirm these figures, this variety can progress to ‘Bold’ type.
TIMOTHY

Early
COMER Exceptionally high total annual grazing and silage yields, produces very high Spring grazing yields and excellent silage yields from swards of a similar type to Erecta.
COMTAL Delivers high total annual yields under the grazing management from erect growing swards, displays the classical early Timothy seasonal growth patterns of high grazing performances in Spring and autumn as well as excellent aftermath grazing yields.
Dolina Creates higher grazing and silage yields than any other recommended variety. Its sward structure is similar to Comtal and its seasonal yield distribution remains very high throughout the growing year.
Erecta Similarly good performing for grazing and silage production from erect growing swards, maintains a high performance throughout the main summer grazing period and partly because it is an early member of its maturity group, silage production peaks at the first and third cuts.
Goliath One of the more dense growing early varieties, produces good total annual grazing and silage yields. Following a high first silage cut production, its performance levels off throughout the remainder of the season.
Presto (P) A new provisionally recommended variety that enters the list with very high grazing and silage yields. Its sward structure is similar to Comer and its Spring yield performance is also very high.
Promesse Forms swards of high density for an early maturing variety, produces good annual grazing and moderate annual silage yields, provides high early summer grazing and retains this production level throughout the summer.

Late
Aberystwyth S48 A very late maturing, prostrate growing variety 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 Achieves good annual yields under both management systems, forms a compact dense sward, seasonal grazing yields feature a high early summer performance and a very high second cut silage productivity.

WHITE CLOVER

Small Leaved
ABERACE The smallest recommended variety, it has very high grazing persistency scores under both nitrogen levels plus the yield potential expected of such a very small clover variety.
Aberystwyth S184 Retains a high clover persistence at ‘Low N’ and achieves the expected persistence results at ‘High N’ 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 DEMAND With a leaf size at the upper end of the small group, it produces an unexpectedly high clover yield for its size and has excellent grazing persistency at both nitrogen levels.
Kent Wild White A very small leaved clover. It has a creeping, branching habit, which limits its yield potential, but makes it very persistent under low nitrogen and intensive grazing.
**Medium Leaved:**

**ABERDAI**  Produces high clover yields and is at its most vigorous in the early summer period and maintains a good persistency rating particularly at ‘High N’.

**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 later in the year.

**AberVantage**  Achieves a high output of clover, equal to the recommended list control standard giving a high total sward output supported by high clover contents and good grazing persistence, though performs better where applied nitrogen levels are low.

**AVOCA**  This variety is close to the top of the list for grazing persistency at both ‘Low N’ and ‘High N’ and has high clover and total herbage yields for its size class, 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 clover contents of any listed variety and clover persistency scores are consistent with its leaf size.

**Grasslands Huia**  Known as ‘New Zealand’ clover, it produces moderate clover yields but supports a good total sward production with a good grazing persistence.

**Menna**  Produces good clover yields and high late season clover contents, has a good total sward yield and a grazing persistency characteristic of its leaf size.

**Large Leaved**

**ALICE**  Produces very high total sward and clover yields which are maintained at a high level throughout the full growing season, 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 maintained throughout the growing season, plus its grazing persistent scores are atypically high for such a large leaved variety.

**Very Large Leaved**

**Aran (S)**  A very high yielding variety that maintains notably high clover contents throughout the growing season, although not highly persistent when tightly grazed, it is specifically recommended for hay or silage 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 HERBAGE SPECIES AND SEEDS MIXTURES

ALTERNATIVE FORAGE GRASSES AND CLOVERS

In certain very special situations where particular enterprises or very difficult growing conditions do not favour these popular species then the use of alternatives may be preferable. Although DARD does not routinely test varieties of these species, the general attributes and the names of the most well known varieties are as follows:

- **Westerwolds Ryegrass**: A fast establishing, fast growing annual with an open sward structure and very poor winterhardiness. Sown in Spring, it will produce seed-heads and high first cut silage yields in the summer. It will then continue growing to give further silage harvests until winter, when it will normally die out. There are no UK registered varieties but EU listings include Avance(T), Elunaria(T), Gids Tama(T), Lifloria, Tewera(T) and Weldra.

- **Cocksfoot**: Produces similar yields in N. Ireland to Timothy and develops seed-heads in early May. It is very persistent and deep rooted and so is suited to light or gravelly soil where mid-summer drought may cause problems. Its relatively poor palatability means that it is best, sown on its own, for hay or silage use. AberTop, Ludovic, Prairial and Sparta are UK registered varieties and Arly Athos, Cambria, Dactus, Jesper, Ladoga, Lidacta, Lully and Saborto are EU available varieties.

- **Meadow Fescue**: A productive, persistent and nutritive grass that is tolerant of heavy moist soils and low fertility. It tends to be competed out of swards by ryegrass and so is best used combined with Timothy and white clover to produce palatable grazing swards. No varieties are registered in the UK, but varieties likely to be commercially available include Bundy, Darimo, Merifest, Mimer, Rossa, Senu and Swift.

- **Tall Fescue**: A particularly high yielding, persistent grass which is cold tolerant and productive during the winter and in early Spring when it can provide useful herbage. Its value is rather limited by its slow establishment and low palatability and is probably easier utilized for cutting than for grazing. Talisman is the only UK registered variety.

- **Creeping Red Fescue**: A low yielding but palatable, persistent and dense, creeping grass that is tolerant of low fertility and cold. Mainly used to improve sward density under very severe conditions. Most varieties are amenity types but some can be used agronomically. The UK registered varieties are Abervelvet, Barcrown, Boreal, Count, Helena, Jasper, Javelin, Kristina, Lovisa, Orfflamme, Silhouette, Sylva, Twysport and Wilma.

- **Alternative Legumes**: In addition to white clover there are several other pasture legumes that may be of value in exceptional circumstances or in some organic systems. **Red Clover** is grown mainly for conservation and divides into early varieties that have high Spring growth, a large first cut and smaller subsequent cuts (available varieties include Marco, Mercury, Merviot, and the tetraploids Essex Broad Red, Marcom and Sara). 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 (available varieties are Altaswede, Britta Lemmon and the tetraploid Rotra). **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

*Note: Seed of other varieties may become available during the year. For up-to-date information contact the Plant Testing Station, Crossnacreevy.*
CHOOSING AND UTILIZING GRASS SEEDS MIXTURES

1. General Principles
Identify clearly the intended sward use and select only recommended varieties capable of meeting those requirements.
Always consider using white clover to improve soil fertility or herbage quality and choose prostrate growing grazing-tolerant varieties or tall growing higher yielding silage-tolerant varieties, as appropriate.
Include tetraploid perennial ryegrass varieties in all swards at a third of the total seed weight, except where poaching may become a severe problem, to improve sward palatability and productivity.

2. Seeds Mixtures
Correctly designed grass seeds mixtures can ensure consistently high performing swards with a flexibility and capacity to produce top quality forage at the time dictated by the needs of the farming enterprise.
In addition to yield potential and sward density, the selection and matching of varieties for inclusion in a mixture should also involve consideration of such factors as seasonal distribution of productivity, timing of maturity, growth habit, palatability and longevity.
A wide range of different seeds mixtures are available in commerce which are designed to meet the individual needs of most Northern Ireland grassland enterprises. However, to maximise production under difficult conditions or for specific enterprises, special mixture formulations may be necessary. Information and design of these special mixtures is available at all local DARD Agricultural Development Centres.

3. Grazing Swards
Try to use mixtures of either early and intermediate or intermediate and late perennial ryegrass varieties designed for specific functions and use more complex mixtures only where the intended sward use cannot be clearly identified.
On free draining early ground, consider including early Timothy, early perennial ryegrass and particularly early tetraploid varieties in the mixture, supported by an appropriate fertiliser policy to produce valuable growth for spring grazing.
On heavy land include Timothy and dense growing late pasture type perennial ryegrass varieties and exclude open growing grasses such as tetraploids, hybrids and Italians to produce tight swards resistant to poaching.

4. Silage Swards
As the silage crop develops, yield is rising but digestibility is falling, so avoid delaying cutting after the appearance of the first seed heads in or below the top ‘flag’ leaf as digestibility will then begin falling very rapidly.
Decide when silage harvesting normally starts on the farm each year and select varieties from the maturity group expected in most years to reach the 67D stage at that time.
Sow either single varieties (“straights”) or simple mixtures of a few varieties of similar maturity to make the timing of the first silage cut more easily determined.
Some varieties produce a greater proportion of their potential yield during the first two silage cuts, whereas others have a more even spread of production and so provide better back-end grazing. To simplify silage timing management, select varieties for silage with as similar a seasonal production pattern as possible.
# 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)

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<th>Variety</th>
<th>Breeder (country)</th>
<th>UK Agent</th>
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**Country Codes:**

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

**Addresses of UK Agents/maintainers:**
- **Adv**, Advanta Seeds UK, Selford, Lincolnshire, NG34 OLF.
- **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.
- **Ceb**, Cebeco Seed Innovations Ltd, North Cliff Farm, North Carlton, Lincoln, Lincolnshire. LN12RP.
- **CPB**, CPB Twyford Ltd, 56 Church Street, Thriplow, Royston, Hertfordshire SG8 7RE.
- **NFU**, NFU Offices, Geneva, School Lanel St Mary in the Marsh, Romney Marsh, Kent TN20 OBX.
- **DLF**, DLF Trifolium UK & N. Ireland Ltd, 9-14 Bellevue Mansions, Bellevue Road, Clevedon, N. Somerset BS21 7NU.
- **Nic**, Nickerson Seeds Ltd, Rothwell, Lincoln LN7 6071.
- **TBA** To be announced (contact breeder directly)
DARD CONTACTS and SERVICES

Applied Plant Science Division: The Applied Plant Science Division of DARD offers a range of technical services for farmers and growers. The main services include:

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

The Plant Testing Station also produces the following booklets:
- Cereals - Recommended Varieties For Northern Ireland
- Potatoes - Recommended Varieties For Northern Ireland
- Forage Maize - Recommended Varieties For Northern Ireland

For further information about these services and publications contact your nearest DARD centre or Advisors and Technologists located across the Province

Key DARD Contacts: Farmers, growers and processors requiring guidance on variety selection and use should contact their local Agricultural Development Centre:

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<tr>
<th>County</th>
<th>Town</th>
<th>Tel</th>
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<td>Antrim</td>
<td>Ballyclare</td>
<td>028 9332 2399</td>
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<td>Ballymoney</td>
<td>028 2766 0160</td>
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<tr>
<td>Armagh</td>
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<td>028 3751 5659</td>
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<td>028 3025 3310</td>
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<td>Down</td>
<td>Banbridge</td>
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<td>Fermanagh</td>
<td>Enniskillen</td>
<td>028 6632 5004</td>
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<td>028 7776 2521</td>
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<td>Omagh</td>
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Farmers, growers and processors requiring more specialist information on crops should contact:

Technology & Business Division Services,
Crops and Horticulture Tel: 028 9442 6770
Greenmount College Fax: 028 9442 6777

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

The Plant Testing Station,
Applied Plant Science Division
50 Houston Road Tel: +44 (0) (28 90) 548000
Crossnacreevy Fax: +44 (0) (28 90) 548001
Castleragh Email: trevor.gilliland@dardni.gov.uk
Belfast BT6 9SH Web site links: www.dardni.gov.uk www.afsni.ac.uk