

Forage Maize



**Recommended Varieties
for Northern Ireland
2008**



Department of
**Agriculture and
Rural Development**

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Biosciences Institute

This booklet provides information on the forage maize varieties currently recommended by DARD for use in Northern Ireland.

The booklet is designed to act as a variety selection tool for farmers and merchants and as a technical document to assist DARD extension staff make use of the latest advances in plant breeding.

Given that Northern Ireland is considered a marginal area for growing forage maize, variety selection for trialling involved pre-screening for maturity classification with only those in the earliest categories being tested.

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

Recommendations are reviewed and published annually.

Acknowledgements

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Cover photograph

Early vigour in 'open' established forage maize is an important characteristic for improving the speed of development through to the key silking stage.

Forage Maize Varieties for 2008

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Recommendations Valid for One Year

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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 tables in **Variety Performance Results**;
- a description of the main agronomic features of varieties in **Indexed List of Variety Descriptions**;
- a merchants' reference to breeder details as listed in **Summary of Recommended Varieties**, and as a guide to the prospects of new varieties currently under tests in **Candidate Varieties Under Test**; and
- as a guide to other AFBI/DARD facilities in **Contacts and Services**.

Introduction

This booklet comprises the Recommended List of Forage Maize Varieties for Northern Ireland. It is produced by the Department of Agriculture and Rural Development for Northern Ireland and is an important information resource for local growers, seed traders and international plant breeders.

The booklet contains the main performance characteristics of the Forage Maize varieties recommended for use in Northern Ireland. These varieties have all been tested under local growing conditions and found capable of providing high agronomic performances consistent with the needs of Northern Ireland growers.

Varieties are selected for testing based primarily on performances in UK National List trials, supplemented by evidence of variety performances supplied by breeders and their marketing representatives (all listed varieties are conventionally bred). Given that Northern Ireland is a marginal maize growing area, the varieties tested to date have been from the earlier end of the maturing range within the forage maize crop.

The results presented in this booklet are an accumulation of ten years of trial studies in order to develop appropriate systems for assessing varieties under Northern Ireland's climatic conditions and to provide a robust over-years data matrix of variety performances. This work has also provided an understanding of how different types of varieties react to local growing conditions and management options and has built up a sufficient quantity of results to make these recommendations possible.

No varieties with severe weaknesses in lodging or brackling, disease resistance or any other agronomic factor are recommended, though if varieties are left to 'over mature' then some lodging and brackling may occur. All varieties are on the EU

Common Catalogue and most are currently on the UK National List of Forage Maize Varieties.

Seed supplies are expected to be available for all the fully listed varieties during 2008, though quantities of the most sought after varieties may not always meet demand and so early selection of seed for sowing is advised. In the majority of cases, however, suitable alternatives of a similar type are available and in case of difficulty, guidance can be acquired from the DARD Agricultural Development Centres listed on the back page.

Summary of Recommended Varieties

This section lists the names of the recommended varieties for 2008 and indicates their country of origin and breeder.

Recommendation Categories

The normal progression of varieties begins with a 'Provisional Recommendation' (P) after two trial years. Varieties can then progress through the recommended categories from 'Plain Type' to 'Bold Type' after additional annual trials, or be removed if their provisional performances weaken. For 2008, one provisionally recommended variety has been removed from the list as its performance was below acceptable standards after completing the third trial series. In addition, Nescio and Speedy have been removed from the 'Open' List, having been 'Outclassed' in 2007. Preliminary information on the top performing new candidate varieties in their first trial year is provided on page 22 as an indication of future developments in variety improvement.

Recommended Forage Maize Varieties 2008

Open Establishment		Plastic Mulch	
Variety	Breeder	Variety	Breeder
REINALDO	KWS/APZ	LG3193	Limagrain Genetics
LEEDS	C.C.A.L. (Maisadour)	GOLDCOB	Zelder b.v.
KINGDOM	Advanta Seeds	S NESCIO	Semences Nickerson
CROWN	Advanta Seeds	GOLDCLAMP	Zelder b.v
KROESUS	KWS/APZ	PR39G12	Pioneer
RULER	Societe Mais Europe	S JUSTINA	Pioneer
Kaukas	KWS/APZ	Anvil	Limagrain Genetics
Agassy	C.C.A.L. (Maisadour)	Klaymore	KWS/APZ
Surprise	Sudwestdeuscche Saatucht	Surprise	Sudwestdeuscche Saatucht
Sapphire	Advanta Seeds	Kroesus	KWS/APZ
Caruso	KWS/APZ	Klifton	KWS/APZ
Crescendo	Advanta Seeds	S Benicia	Pioneer
PS LG3193	Limagrain Genetics	P Kaukas	KWS/APZ
O Goldcob	Zelder b.v.	P Salgado	KWS/APZ
O Meribel	KWS/APZ	P PR39B50	Pioneer
		P Traddi CS	Caussade Semences
		P Caruso	KWS/APZ
		O Crescendo	Advanta Seeds

[P = provisional, S = specific use, O = becoming outclassed]

Variety Testing System

This section provides information on how the trials were conducted and describes the performance characteristics reported in the results tables.

Trial Management Details:

The results presented in this booklet are a compilation of a series of ten annual trials, cycled between three sites: near Dromore Co. Down (54°26'N, 6°10'W), near Comber Co. Down (54°33'N, 5°45'W) and on the trial grounds at Crossnacreevy (54°32'N, 5°52'W). Since 1997, varieties have been tested under the standard 'open establishment' system. Since 2001 a plastic mulch system has also been used. Not all varieties are tested under both management systems as later silking types need plastic mulch to fully mature in N. Ireland. Conversely, very early maturing but potentially lower yielding types are not economic under plastic.

- **Trial Plots:** The 14m long trial plots comprise four rows at an average spacing of 75cm. Three replicate plots are sown under each management. To avoid edge effects between varieties, only the two central rows are harvested.
- **Sowing Details:** A sowing rate of 100,000 seeds/ha is used for all varieties with a seed spacing of 13cm and a sowing depth of 3.5cm.
- **Sowing and Harvest Dates:** The trials are always sown as soon as possible after soil temperatures reach around 10°C, which is normally during the last week of April or the first week of May. Harvesting is timed on the basis of a target 30% dry matter content averaged across all the varieties. This means that the plastic mulch system is harvested in mid October, while the open established plots are allowed to grow on, normally until growth ceases at the end of October or early November.

- **Fertility and Weed Control:** The application of fertilizer is modified depending on whether farm yard manure or slurry has been applied to the trial site. In principal, RB209 guidelines are followed to optimise the final levels of nitrogen, potash and phosphate that is applied. In the open system part of the nitrogen and phosphate is delivered 'down the spout'. Calaris is used as a pre-emergence herbicide under plastic, with Stomp, Grounded and Bromoxynil applied post emergence on open ground. Additional broad-leaf weed herbicides are applied as necessary and in compliance with manufacturers directions.
- **Plastic Film:** The film used is a 6µm unperforated photo-degradable plastic applied over rows 1 and 2 and rows 3 and 4 of the 4-row plots.

Measured Characteristics:

A range of 'Performance Characters' are noted during the growing of the crop or assessed on the harvested herbage as follows:

Silking Date: This is the average date on which each variety produces its female flowers, called silks. This is an important agronomic date as it is not until these silks have been fertilised by pollen from the male 'tassel' flowers, that cob filling can commence.

Silking Height: This is the height of plants at silk emergence, measured in centimetres to the base of the tassel and expressed +/- Crescendo.

Total Yield: This is the total dry matter yield in t/ha produced by each variety and is presented in the tables as a percentage of the control yields.

Dry Matter Content: This is the percentage dry matter of the harvested material and is an important characteristic as it indicates the degree of maturity the variety managed to achieve by the time of harvest. Varieties failing to reach at least 25% DM can be expected to have an effluent loss risk and may not be suitable for more marginal locations or for growing in Northern Ireland without plastic.

Starch Production: The amount of starch produced in the total harvested material is presented as a percentage 'Starch Content' and as a 'Starch Yield' (calculated as a percentage of the control yield in t/ha). This is an important indicator of the feeding value of the harvested material, especially when being fed as a supplement to a mainly grass silage winter feed or as a buffer feed to stock grazing spring grass.

Metabolisable Energy: This is a measure of the total energy produced by the crop and is presented as a percentage 'ME Content' and as an 'ME Yield' (calculated as a percentage of the control yield in t/ha). This is an important indicator of the animal value of the crop, which is particularly important when forage maize silage is the primary winter feed.

Additional Characteristics: The trials are regularly monitored throughout the growing season and observation notes taken on visible characteristics of agronomic value. These include lodging, brackling, disease infestation, early vigour, cob ripeness and any other exceptional growth responses. In addition, total digestibility and organic matter are analysed on the harvested crop. None of these results are presented in the data tables, but where a variety has a specific strength or weakness then this is described in the 'Indexed Lists of Variety Descriptions' section of the booklet.

Variety Performance Results

This section presents the performance results for the recommended forage maize varieties when grown in open establishment and when protected with plastic mulch.

Interpreting the Tables

The variety performances under the open establishment and plastic mulch systems are presented in separate tables.

- In the 'Open Establishment' table, the varieties are listed in declining order of 'Starch Yield' within the 'Bold', 'Plain' and 'Provisional' groups, the figures for which are highlighted in orange and underlined. This tends to bring the earliest maturing varieties with highest starch contents plus good yields towards the top of the table. It is these types of varieties that are most suited to this management system.
- In the Plastic Mulch table, the varieties are also listed in declining order of 'Starch Yield' within the 'Bold', 'Plain' and 'Provisional' groups, the figures for which are highlighted in orange and underlined. This brings the later maturing varieties with the highest DM yield/DM%/starch content combinations towards the top of the table. It is these more productive varieties that are needed to justify the additional expense associated with this management system.
- When reading either of these tables it is VITAL to note that some results are based on only one year of testing (first number column). These data cannot be relied upon until at least another and ideally two confirming trial years have been completed. For this reason these varieties have been listed as provisional recommendations.

Single trial year provisional data should be treated with caution.

- The open establishment results are an average of the last ten years and the plastic mulch results are an average of the last seven years. For this reason, the performance tables DO NOT show accurately the size of difference expected to exist between open established and plastic covered crops grown in the same year. The next section of this booklet clearly shows the expected extent of this difference. **These variety tables should not be used to estimate the performance differences between open established and plastic covered systems. This comparison is provided below.**

Plastic Mulch and Open Establishment Systems

The use of plastic film has a substantial effect on the temperatures around the base of the plants. Temperature increases of around 30%, measured as accumulated Ontario Heat Units (OHU), have been recorded at Crossnacreevy and this advantage extends more than 10cm below the soil surface. Most of this additional heat occurs in May, June and very early July before the crop canopy fully closes. This causes the crop to germinate quicker, emerge earlier and grow faster up to silking in July. The impact of this on the performance of the crop is considerable.

Crop Performance 'With' and 'Without' Plastic Mulch

	Silking Date	Total Yield t/ha	DM Content (%)	Starch Yield (t/ha)	Starch Content (%)	ME Yield (GJ/ha)	ME Content (MJ/kg)
Plastic Mulch	30 Jul	15.9	33.8	5.9	37.0	177	11.1
Open Established	16 Aug	12.8	31.2	3.7	28.5	136	10.6
Plastic Gain	16 days	3.1	2.6	2.2	8.5	41	0.5

Average figures for 'Best' varieties in each system, 2001 - 2007

These results are the average of the last seven years for the best five varieties in each year under the Plastic system, and also the best five each year under the Open system. In both cases 'best' was defined as those with 'highest starch yield'.

The table shows that in addition to advancing silking by 16 days, all other important performance characters are improved. During the six years 2001 to 2006 the average gains were a 60% increase in starch yield and a 30% increase in ME yield. In 2007 difficult growing conditions throughout most of the late spring and summer depressed the total DM yields on both the Plastic and Open trials to well below the average figures shown above. The impact was greater for the Open trial and this therefore increased the advantage for the Plastic system to give 80% more starch yield and 50% more ME yield under plastic than in the open. These differences were calculated as the average of the best five starch yielding varieties in each trial. In addition, the use of plastic mulch allows growers to sow their crops several weeks earlier than would be possible for Open established crops. As the Open and Plastic variety trials have to be sown on the same day, this additional advantage is not evident in the table above. It has been estimated that earlier sowing could add at least an additional 1t/ha of total DM yield, most of which would be starch.

Open Establishment System

Control Values Variety Name and Trial Years	Silking Dates	Silking Height 190cm	DM Yield 12.4t/ha %	DM Content (+/-) 30%	Starch Yield 3.3t/ha %	Starch Content (+/-) 25%	ME Yield 136GJ/ha %	ME Content (MJ/kgDM)
REINALDO	4 17 Aug	4	103	-3	<u>107</u>	2	103	10.9
LEEDS	5 17 Aug	-10	107	2	<u>98</u>	-1	106	10.8
KINGDOM	5 14 Aug	-8	89	1	<u>98</u>	4	89	11.0
CROWN	5 15 Aug	-9	93	1	<u>98</u>	3	94	11.1
KROESUS	4 20 Aug	19	109	-4	<u>96</u>	-1	107	10.8
RULER	5 19 Aug	12	106	-4	<u>94</u>	-1	105	10.8
Kaukas	3 16 Aug	4	110	-2	<u>110</u>	1	110	10.9
Agassy	3 16 Aug	3	105	-1	<u>101</u>	1	105	11.0
Surprise	3 17 Aug	8	103	-2	<u>100</u>	1	102	10.9
Sapphire	4 16 Aug	9	102	0	<u>95</u>	0	101	10.8
Caruso	4 18 Aug	-2	104	-1	<u>94</u>	-1	102	10.7
Crescendo	10 16 Aug	0	100	-2	<u>93</u>	0	100	10.9
PS LG 3193	2 20 Aug	7	107	-3	<u>93</u>	-2	105	10.7
O Goldcob	7 16 Aug	-7	93	-1	<u>96</u>	2	93	10.9
O Meribel	4 20 Aug	15	104	-6	<u>92</u>	-2	102	10.7

Note: Varieties listed in order of "Starch Yield" –underlined values [P = provisional, S = specific use, O = becoming outclassed]

Kutlass was provisionally recommended in this system last year but has now been removed due to its overall performances in 2005-2007 being below the required standard.

Plastic Mulch System

Control Values Variety Name and Trial Years	Silking Dates	Silking Height 183cm	DM Yield 15.6t/ha %	DM Content (+/-) 30%	Starch Yield 5.4t/ha %	Starch Content (+/-) 30%	ME Yield 172GJ/ha %	ME Content (MJ/kgDM)
LG3193	1 Aug	-1	103	6	<u>107</u>	6	103	11.1
GOLDCOB	30 Jul	9	98	4	<u>105</u>	7	99	11.1
S NESCIO	1 Aug	-10	97	0	<u>102</u>	7	97	11.0
GOLDCCLAMP	7 Aug	19	107	-1	<u>96</u>	1	105	10.8
PR39G12	7 Aug	36	102	-1	<u>94</u>	2	101	10.9
S JUSTINA	4 Aug	35	100	-2	<u>92</u>	2	100	11.0
Anvil	30 Jul	13	106	6	<u>111</u>	6	105	10.9
Klaymore	1 Aug	17	100	6	<u>107</u>	7	101	11.1
Surprise	30 Jul	12	98	4	<u>106</u>	8	98	11.1
Kroesus	31 Jul	16	99	4	<u>103</u>	6	99	11.0
Klifton	1 Aug	17	100	3	<u>102</u>	6	100	11.0
S Benicia	9 Aug	37	113	-5	<u>99</u>	0	111	10.8
P Kaukas	28 Jul	3	108	6	<u>123</u>	10	111	11.3
P Salgado	2 Aug	25	101	4	<u>113</u>	9	103	11.2
P PR39B50	6 Aug	23	115	-1	<u>111</u>	3	115	11.0
P Traddi CS	30 Jul	2	104	2	<u>111</u>	7	103	11.0
P Caruso	30 Jul	5	96	6	<u>102</u>	7	95	10.9
O Crescendo	27 Jul	0	94	5	<u>98</u>	6	94	11.1

Note: Varieties listed in order of 'Starch yield' –underlined values [P = provisional, S = specific use, O = becoming outclassed] Nescio and Speedy have been removed from this list, having been reported as 'Outclassed' in the 2007 booklet.

Indexed Lists of Variety Descriptions

This section provides outline descriptions of the main agronomic features of each variety. (Varieties are listed in alphabetical order)

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 specialists to compare varieties and select those best suited to a particular enterprise. By referring back to the preceding results tables, varieties that are flexible and multipurpose and those that tend to optimise performance under specific management systems can be identified.

Fully Recommended Varieties in either Bold or Plain classes

Agassy This slightly above average height early maturing variety has a high yield potential when open grown, forms a good starch content and delivers a high ME yield.

Anvil Under a plastic system it matures early to give one of the higher DM% and starch contents which when combined with its yield potential produces impressively high starch and ME yields.

Benicia (S), the latest maturing variety with the highest DM yield potential of all, is specifically recommended only for early sowing under plastic in only very mild regions to ensure the crop fully matures.

Caruso Produces a high total yield and excellent ME yield when grown in the open, with a relatively good starch yield which would improve where milder conditions aid dry matter and starch content.

- Crescendo** A robust and reliable early maturing variety that has a good yield potential in open trials, particularly when growing conditions are limiting (see also Plastic 'Outclassed' category below).
- Crown** A short, early silking variety that easily reaches full maturity to give a high DM% and starch content that provides very good starch yields when grown in the open. Expected to perform well under marginal conditions or for early harvesting.
- Goldclamp** A late silking variety with very high total and ME yields that needs to be grown under plastic in good maize growing areas. Early sowing and mild conditions will help fully achieve the target dry matter and starch contents, and this should also raise its total production figures above those shown.
- Goldcob** An average maturing, medium tall variety delivering very high starch yields under plastic to give an early harvest or resilience to poor conditions (see also Open 'Outclassed' category below).
- Justina** A late maturing very tall variety with excellent DM and ME yields. Needs to be grown under plastic to achieve the target DM content and a good overall quality but will yield much better when sown earlier and in milder areas than those used for the trial system.
- Kaukas** Fully recommended for plastic systems, this relatively early, slightly above average height variety produces the highest yields in all categories and has the highest listed starch yield of any variety in the open system (see also Open 'Provisional' category below).
- Kingdom** An early maturing variety of below average height, which matures quickly and easily and so is capable of high starch yields in open established crops in a range of less than ideal conditions.

- Klaymore** Recommended for plastic use, this tall variety matures quickly to very high dry matter and starch contents that turn its high DM yield into very high starch yields.
- Klifton** Fully recommended for growing under plastic, it matures easily to 30%DM with a high starch content to deliver a high starch yield.
- Kroesus** A tall variety that produces high yields in all categories when grown under either management system. Has the highest total yield of the Bold Type varieties in the open. It requires good growing conditions to fully mature and so will perform best under plastic or on milder sites in the open.
- Leeds** Produces one of the highest total DM, starch and ME yields among the Bold Type varieties in the open, yet also has the highest DM content. Will fully mature on more marginal sites or give optimum output in ideal locations but correctly timed harvesting is necessary to avoid the risk of 'over-maturity' lodging.
- LG3193** Of similar early maturity to Nescio. Under plastic, this 'top of the Bold Type list' variety, achieves a very high DM content and an excellent starch content that ensures very high total, starch and ME yields.
- Nescio** This relatively short variety delivers very high starch yields under plastic and has proven robust, reliable and able to grow successfully in a wide range of less than ideal conditions.
- PR39G12** A tall late maturing variety with high DM and ME yields, which can achieve higher starch yields than listed, particularly when grown on favourable sites with early sowing and optimal growing conditions.

Reinaldo A variety of above average height for open establishment use. It gives excellent DM, starch and ME yields, though it will require good management and mild conditions to ensure that a good DM content is achieved.

Ruler A very tall, later maturing variety producing excellent total and ME yields, that will benefit from early sowing in good growing areas to optimise the starch and DM contents and further enhance yields.

Sapphire One of the earlier maturing varieties in the open system, yet it produces very good total and ME yields, though requires good conditions to enhance the starch content and so starch yields.

Suprise Fully recommended for both open and plastic systems. In the open it delivers high DM yields but will benefit from growing in the milder regions to improve the DM% and starch content yet still achieved high yields in all categories during trials. Under Plastic it easily matures out to a high DM% and a very high starch content to create very high starch yields.

Provisionally Recommended Varieties

Having only two years of data on each of these varieties means that their results and descriptions are preliminary and should be treated with caution.

Caruso (P) Under plastic, its high provisional starch content provides a very good starch yield and indicates a robustness when supported by the mulch system.

Kaukas (P) Provisionally recommended for the open system, its exceptionally high starch content delivers the highest listed starch yield of any variety on the open list.

- LG3193 (PS)** Provisionally recommended for open use, it is one of the latest maturing varieties for this system, delivering very high total and ME yields but is specifically listed use where early planting on mild sites is possible to help it achieve the target dry matter and starch contents.
- PR39B50 (P)** A tall late maturing variety with impressively high provisional yields in all categories and develops notably high starch contents for its type.
- Salgado (P)** A very tall, but relatively early maturing provisional recommendation, that has high total and ME yields, and due to its very high starch developing character, also delivers impressive starch yields.
- Traddi CS (P)** An early maturing average height variety with high total and ME yields that combine with a high starch content to create an excellent starch yield for this provisional recommendation.
- Outclassed Varieties**
- Crescendo (O)** This variety has been downgraded to ‘Outclassed’ for plastic systems as its yield potential in all categories is now weak in comparison to newer higher yielding types.
- Goldcob (O)** A reliable variety for open systems with good starch yields but is being surpassed by newer varieties with higher potential yields, and so is now downgraded to ‘Outclassed’ for Open growing use.
- Meribel (O)** A tall variety with good DM and ME yield potential but is difficult to fully mature in the open, resulting in low starch yields which make it ‘Outclassed’.

Growing Conditions and Variety Choice

This section provides a guide to how location and management factors are accounted for when choosing forage maize varieties.

Ontario Heat Units

This is a standard system of assessing growing conditions by accumulating maximum and minimum air temperatures of above 10°C in the daytime and 5°C at night, from the 1 May to the 31 October.

Seasonal Ontario Heat Unit (OHU) Accumulations

Harvest Year	OHU 1 May – 31 Oct	Trial Sites
2001	2393	Maryland
2002	2100	Maryland
2003	2338	Maryland and Comber
2004	2385	Gransha and Comber
2005	2303	Gransha and Comber
2006	2632	Gransha and Comber
2007	2375	Gransha and Comber
11yr Mean	2360	Average of 1997-2007

Varieties differ in the amount of heat energy they require to reach 30% DM, but around 2300-2400 OHU is normally required for an average-maturing variety grown in the open system. If plastic mulch is used, this requirement falls to around 2100 OHU, due to the heating effects of the plastic. These trial sites are broadly of 'average to good' for maize growing. (Gransha and Maryland are trial sites close to PTS, Crossnacreevy.)

Key Characteristics

Growing maize successfully in Northern Ireland involves selecting varieties with the correct balance between the ability to fully mature under conditions that are seldom ideal and yet not over sacrificing performance potential. Clearly, only varieties with sufficient stress tolerance are able to deliver good yield, quality and energy outputs under these conditions, but the varieties that are least demanding of growing conditions are generally among the lower yielding varieties.

Finding the correctly balanced variety to meet each growers needs, depends on how suitable is the growing area and how good are the specific fields to be used, on whether or not plastic cover is being used and whether starch content or total energy output is the more important factor.

Candidate Varieties Under Test

During 2007 a number of varieties were tested for the first time in Northern Ireland. Due to the amount of variation in variety performance from year to year, these candidates will not be considered for recommendation in the specified management system until they have completed at least two years of recommended list testing. Therefore, the best of the following varieties will continue for a further year of testing and will NOT be considered until 2009 for recommendation. The basic data are given for information purposes only.

Candidate Forage Maize Varieties in the 2007 Recommended List Trial

(None of these varieties can be considered for recommendation until 2009)

Variety	Test Yrs	Silking Date	Silking Height	DM Yield	DM Content	Starch Content	ME Content
Open Establishment Trial Results 2007							
			190cm	12.4 t/ha	(%)	(%)	(MJ/Kg)
ES Regain	1	17 Aug	+7	106	36	25	10.8
Karimbo	1	16 Aug	-7	104	32	24	10.5
Plastic Mulch Trial Results 2007							
			183cm	15.6 t/ha	(%)	(%)	(MJ/Kg)
Beethoven	1	29 Jul	+4	96	37	39	11.2
MAS 12A(C)	1	31 Jul	+21	105	35	35	10.9
Paddy	1	30 Jul	+1	112	33	35	11.1
Award	1	4 Aug	+15	116	29	32	10.5
PR39D60	1	7 Aug	+33	107	29	34	11.1
Gladi CS	1	1 Aug	+10	105	33	35	10.9
Huski CS	1	2 Aug	+14	105	34	34	10.9

General Principles:

- The dry matter content of the harvested crop should not be less than 25% as, below this level, effluent problems become an increasing risk. While it must always be realised that years can differ dramatically, if previous crops have failed to achieve this 25% target level, then earlier maturing varieties than before, should be selected.
- Conversely, maturing a crop beyond 35% dry matter and certainly over 40% is not advised, as there are no apparent animal performance benefits and utilization and ensiling problems can occur. If previous crops have either become too dry or have had to be harvested too early in the autumn, and this pattern has been repeated for several years, then selecting a later maturing variety should provide higher yields from a crop that is still between the 25-35% DM range.

Specific Requirements:

- If plastic cover is being used this will advance the maturity of the crop and will allow later silking, higher yielding varieties to be used than would be possible if growing an open established crop. Therefore, the key characteristics for selecting varieties under plastic are their starch, ME and total dry matter yield potentials.
- If growing maize in open establishment, then the crop has no protection from the ambient conditions and unless in a very favourable growing area, dry matter content (DM%) ranking is an important characteristic as this identifies the risk of not getting a fully matured crop under restricted growing conditions, particularly if it proves to be a poor season.
- If high starch content is an important criterion for winter diets, then any variety compromises should be made in favour of earlier maturity and higher DM%, as this will represent less risk of getting a disappointing starch content if growing conditions are unseasonably poor.

- If high total energy (ME) content is an important criteria for the winter diets, then any variety compromises should be made in favour of later maturity and higher total yield. The key limitation is ensuring that the variety chosen is still capable of achieving the 25% DM threshold within the constraints of the location and management system involved.

Expert guidance on variety decisions is available from local DARD offices. In general, however, the earliest maturing, lowest yielding varieties normally require the least energy and will be ready for harvest first. They may also tolerate poor growing seasons better, but will not have as high a yield potential as the later maturing varieties.

AFBI Contacts and Services

Applied Plant Science Division: The Applied Plant Science Division of AFBI 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 other DARD Recommended Lists:

Grass and Clover – Recommended Varieties for Northern Ireland;

Cereals - Recommended Varieties For Northern Ireland;

Potatoes – Recommended Varieties For Northern Ireland.

For more information about these services and publications contact DARD Advisers and Technologists across Northern Ireland.

DARD Contacts and Services

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

County Antrim	Ballyclare	Tel: 028 9332 2399
	Ballymoney	Tel: 028 2766 0160
County Armagh	Armagh	Tel: 028 3751 5659
County Down	Downpatrick	Tel: 028 4461 2211
	Newry	Tel: 028 3025 5990
	Newtownards	Tel: 028 9181 3570
County Fermanagh	Enniskillen	Tel: 028 6632 5004
County Londonderry	Magherafelt	Tel: 028 7930 2112
County Tyrone	Dungannon	Tel: 028 8775 4777
	Omagh	Tel: 028 8225 1020

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

Development Service Unit
Crops and Horticulture Development Branch Tel: 028 9442 6770
Greenmount Campus Fax: 028 9442 6777

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

AFBI Crossnacreevy,
Plant Testing Station,
Applied Plant Science Division,
50 Houston Road,
Crossnacreevy,
Castlereagh,
Belfast,
BT6 9SH
Tel: 028 9054 8000 Fax: 028 9054 8001
Email: trevor.gilliland@afbini.gov.uk



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**Fáirms an
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