

Forage Maize



Recommended Varieties
for Northern Ireland
2009



Department of
**Agriculture and
Rural Development**
www.dardni.gov.uk



Recommended Booklet

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, and are available on-line at www.afbini.gov.uk.

Acknowledgements

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Cover photograph

Maize cobs at the silking stage, with some already beginning to dry off.

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

Forage Maize Varieties for 2009

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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**.
- 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 twelve 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 2009, 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 2009 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 2009, one provisionally recommended variety has been removed from the list as its performance was below acceptable standards after completing their third trial series. In addition, Goldcob and Meribel have been removed from the 'Open' List and Crescendo from the 'Plastic List', having been 'Outclassed' in 2008. Preliminary information on the top performing new candidate varieties in their first trial year is provided on page 21 as an indication of future developments in variety improvement.

Recommended Forage Maize Varieties 2009

Open Establishment Variety		Plastic Mulch Breeder	
Variety	Breeder	Variety	Breeder
KAUKAS	KWS/APZ	ANVIL	Limagrain
REINALDO	KWS/APZ	LG3193	Limagrain Genetics
SURPRISE	Sudwestdeuscche Saatzucht	KLAYMORE	KWS/APZ
LEEDS	C.C.A.L. (Maisadour)	KROESUS	KWS/APZ
AGASSY	C.C.A.L. (Maisadour)	GOLDCOB	Zelder
KROESUS	KWS/APZ	KLIFTON	KWS/APZ
RULER	Societe Mais Europe	Kaukas	KWS/APZ
Kingdom	Advanta Seeds	Salgado	KWS/APZ
Crown	Advanta Seeds	Traddi CS	Caussade Semences
Sapphire	Advanta Seeds	PR39B50	Pioneer
S LG3193	Limagrain Genetics	Surprise	Sudwestdeuscche Saatzucht
Crescendo	Advanta Seeds	Nescio	Semences Nickerson
P Karimbo	KWS/APZ	S Benicia	Pioneer
P ES Regain	Euralis Semences	Goldclamp	Zelder B.V.
		PR39G12	Pioneer
		S Justina	Pioneer
		P Award	Advanta Seeds
		P Mas 12A	C.C.A.L. (Maisadour)
		P Gladi CS	Caussade Semences
		P Paddy	Syngenta Seeds
		P PR39D60	Pioneer
		P Huski CS	Caussade Semences

[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 100k 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 fertiliser 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'. In 2008 Caudostar, Templar and Grounded were used as a pre-emergence herbicide under plastic, with Calaris 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 perforated 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 +/- the control height of 1.8m.

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 List 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 two years of testing (first number column). These data should not 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 candidate 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 on the following page.**

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	15.7	33.8	5.7	36.6	173	11.0
Open Established	15 Aug	12.7	31.3	3.6	28.0	134	10.5
Plastic Gain	15 days	3.0	2.3	2.1	8.6	49	0.5

Average figures for 'Best' varieties in each system, 2001 - 2008

These results are the average of the last eight years for the best five varieties in each year under the Plastic system, and also the best 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 15 days, all other important performance characters are improved by the use of plastic mulch. In difficult growing conditions, such as that of the 2007 late spring and summer, total DM yields on both plastic and open trials can be depressed well below the average figures shown above. The impact is normally greater for the open trial and in 2007 increased the advantage for the plastic system to give 80% more starch yield and 50% more ME yield than in the open. In 2008 the good spring and very poor summer and autumn resulted in similar variety performance differences. The data in the table above 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, though it incurs a significantly higher cost due to the plastic laying operation. 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 1 t/ha of total DM yield, most of which would be starch.

Open Establishment System

Control Values		Silking Dates	Silking Height 180cm	DM Yield 12.5 t/ha %	DM Content (+/-) 30%	Starch Yield 3.2 t/ha %	Starch Content (+/-) 25%	ME Yield 135 GJ/ha %	ME Content (MJ/kgDM)
Variety Name and Trial Years									
KAUKAS	4	15 Aug	15	109	-1	113	2	110	10.8
REINALDO	4	16 Aug	15	102	-3	108	2	102	10.8
SURPRISE	4	16 Aug	19	102	-2	100	0	101	10.8
LEEDS	5	17 Aug	1	106	2	99	-1	105	10.8
AGASSY	4	16 Aug	13	103	-1	98	0	103	10.8
KROESUS	5	19 Aug	30	106	-3	98	-1	105	10.7
RULER	5	19 Aug	24	105	-4	95	-2	104	10.7
Kingdom	6	14 Aug	3	89	2	<u>102</u>	5	90	11.0
Crown	6	14 Aug	4	92	2	<u>98</u>	2	94	11.0
Sapphire	4	15 Aug	20	100	0	<u>96</u>	0	100	10.7
S LG 3193	3	19 Aug	16	104	-2	<u>95</u>	-1	103	10.7
Crescendo	10	15 Aug	12	99	-2	<u>94</u>	0	99	10.8
P Karimbo	2	15 Aug	12	102	0	<u>97</u>	0	100	10.6
P ES Regain	2	17 Aug	17	101	2	<u>94</u>	-1	99	10.6

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

Goldcob and Meribel have been removed from this list, having been reported as 'Outclassed' in the 2008 booklet.

Plastic Mulch System

Control Values		Silking Dates	Silking Height 180cm	DM Yield 15.4 t/ha %	DM Content (+/-) 30%	Starch Yield 5.2 t/ha %	Starch Content (+/-) 30%	ME Yield 168 GJ/ha %	ME Content (MJ/kgDM)
Variety Name and Trial Years									
ANVIL	4	31 July	17	106	6	115	7	106	10.9
LG3193	5	2 Aug	1	102	6	108	6	103	11.0
KLAYMORE	4	3 Aug	20	99	6	107	6	100	11.1
KROESUS	5	1 Aug	19	99	4	106	6	99	11.0
GOLDCOB	7	31 July	11	97	4	105	7	98	11.1
KLIFTON	4	2 Aug	19	99	3	103	5	99	10.9
Kaukas	3	29 Jul	8	105	6	122	9	108	11.2
Salgado	3	2 Aug	25	103	4	120	9	106	11.2
Traddi CS	3	31 July	3	101	2	110	7	101	10.9
PR39B50	3	7 Aug	27	113	-2	109	2	113	10.9
Surprise	3	31 July	14	97	4	107	7	97	11.0
Nescio	4	2 Aug	-8	95	0	103	6	96	11.0
S Benicia	4	10 Aug	39	112	-5	99	0	110	10.8
Goldclamp	5	7 Aug	21	106	0	97	1	104	10.7
PR39G12	5	8 Aug	39	101	-1	95	2	100	10.9
S Justina	8	5 Aug	37	99	-2	91	1	99	10.8
P Award	2	4 Aug	15	117	1	119	4	115	10.7
P Mas 12A	2	31 July	12	107	5	112	6	107	10.9
P Gladi CS	2	1 Aug	17	104	4	106	5	103	10.9
P Paddy	2	1 Aug	0	104	2	102	3	104	11.0
P PR39D60	2	7 Aug	37	105	-1	101	2	105	10.9
P Huski CS	3	3 Aug	16	101	4	100	3	100	10.8

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

Caruso was provisionally recommended in this system last year but has now been removed due to its overall performances in 2006-2008 being below the required standard. Crescendo has been removed from this list, having been reported as 'Outclassed' in the 2008 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 an extremely high DM yield potential, is specifically recommended only for early sowing under plastic in only very mild regions to ensure the crop fully matures.

Crescendo A robust and reliable early maturing variety that has a good yield potential in open trials, particularly when growing conditions are limiting.

- 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 a very high total and ME yield combination that needs to be grown under plastic in good maize growing areas. Early sowing and mild conditions will help achieve the target dry matter and starch contents.
- Goldcob** An average maturing, medium height variety delivering very high starch yields under plastic to give an early harvest or resilience to poor conditions.
- Justina (S)** A late maturing very tall variety with good DM & ME yields. Needs to be grown under plastic to achieve the target DM content but has been affected by pollination problems on-farm in a few years.
- Kaukas** Fully recommended for both systems, this relatively early, slightly above average height variety produces the highest starch yields and very high total yields.
- 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 good DM yield into very high starch yields.
- Klifton** Fully recommended for growing under plastic, it matures easily to 30%DM with a good 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

second highest total yield 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 and ME yields among the Bold Type varieties in the open, and with a high 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 Under plastic, this variety, achieves a very high DM content and an excellent starch content that ensures very high total, starch and ME yields, while in the open its yields remain high but is specifically recommended for milder areas to benefit quality levels.

Nescio This relatively short variety delivers high starch yields under plastic and has proven robust, reliable and able to grow successfully in a wide range of less than ideal conditions.

PR39B50 A tall late maturing variety with impressively high yields in all categories and develops notably high starch contents for its type.

PR39G12 A tall late maturing variety with high DM and ME yields, which can achieve higher starch yields than listed, 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 & 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

Salgado A very tall but relatively early maturing variety that has high total and ME yields, and due to its very high starch developing character, also delivers impressive starch 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.

Surprise Fully recommended for both open and plastic systems. In the open it delivers high DM, starch and ME yields, though its DM content will benefit from milder conditions. Under plastic it easily matures out to a high DM% and a very high starch content to create very high starch yields.

Traddi CS An early maturing relatively short variety with high total and ME yields that combine with a high starch content to create an excellent starch yield performance.

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.

Award (P) An average height average maturing variety that delivers exceptionally high provisional yields in all categories, with a good starch content.

ES Regain (P) This new provisional recommendation is easily dried down to maturity in the open, to give good DM yields and high DM content, though requires good conditions to ensure starch contents reach target levels.

Gladi CS (PS) Provisionally recommended for plastic use, it has average height and its provisional figures show it to be consistently high yielding in all three categories with very good DM and starch contents.

Huski CS (P) Another provisionally recommended variety for plastic systems, it also has consistent performances across all three yield categories, supported by high DM content and good starch content.

Karimbo (PS) The latest maturing variety on the plastic mulch list, it has notably high total and ME yields but is provisionally recommended specifically for early sowing in milder locations to ensure the target dry matter contents are achieved before harvest.

MAS 12A (PS) Provisionally recommended for the plastic system, it is an early maturing, average height, variety that dries off easily with a very high starch content that create very impressive yield performances in all three categories.

Paddy (P) This relatively early, average height, provisionally recommended variety delivers very good DM, starch and ME yields and under plastic dries down well to deliver a good starch content.

PR39D60 (P) This very tall and late new provisionally recommended variety has impressively high DM and ME yields under the plastic system and with a very good starch content relative to its DM content.

Outclassed Varieties

There are no 'Outclassed varieties for 2009

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
2008	2289	Gransha and Comber
12yr Mean	2356	Average of 1997-2008

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 & 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 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 2008 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 2010 for recommendation. The basic data are given for information purposes only.

Candidate Forage Maize Varieties in the 2008 Recommended List Trial

(None of these varieties can be considered for recommendation until 2010)

VARIETY	Test Yrs	Silking Date	Silking Height	DM Yield	DM Content	Starch Content	ME Content
Open Establishment Trial Results 2008							
			180cm	12.5 t/ha	(%)	(%)	(MJ/Kg)
Sum1217	1	19 Aug	10	102	25	23	10.5
Mas09 C	1	17 Aug	-8	98	28	24	10.9
Artist	1	15 Aug	-3	96	28	29	11.1
Plastic Mulch Trial Results 2008							
			180cm	15.4 t/ha	(%)	(%)	(MJ/Kg)
Ronaldinio	1	5 Aug	35	109	32	36	11.0
NK Jasmic	1	5 Aug	20	109	30	33	11.1
PR39T13	1	7 Aug	25	109	25	28	10.6
Sum1217	1	2 Aug	17	105	35	35	10.9
PR39V43	1	2 Aug	19	101	32	37	11.2
Nigella	1	2 Aug	26	101	32	31	10.7

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 criteria for the 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, 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 your nearest DARD centre or Advisors & 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
	Newry	Tel: 028 3025 3310
County Down	Banbridge	Tel: 028 4062 9182
	Newtownards	Tel: 028 9181 3570
County Fermanagh	Enniskillen	Tel: 028 6632 5004
County Londonderry	Limavady	Tel: 028 7776 2521
	Magherafelt	Tel: 028 7930 2112
County Tyrone	Dungannon	Tel: 028 8775 4777
	Omagh	Tel: 028 8225 1020

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

Development Service Unit
Crops and Horticulture Development Branch
Greenmount Campus
Tel: 028 9442 6770
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 90) 548000 Fax: (028 90) 548001
Email: trevor.gilliland@afbini.gov.uk

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

County Antrim	Ballyclare	Tel: 028 9332 2399
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Farmers, growers and processors requiring more specialist information on crops should contact:

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



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**Talmhaíochta agus
Forbartha Tuaithe**

MÁNNYSTRIE O

**Fairms an
Kintra Fordèrin**

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