

Forage Maize



Recommended Varieties for Northern Ireland 2013



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.

Acknowledgements:

The plant breeders, merchants and maintainers who supplied seed of the varieties tested are thanked for their assistance. The members of the Maize and Alternative Crops Group of the Ulster Grassland Society, who assisted in providing on-farm variety trial sites, are also thanked.

Cover photograph:

Maize growing under plastic near Crossnacreevy, June 2012

Booklet also available online at www.afbini.gov.uk/reclists

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

Forage Maize Varieties for 2013

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Recommendations Valid for One Year

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Open or Plastic Sown Maize?



Open and Plastic sown maize 25.06.2010



Open and Plastic sown maize 27.06.2011

Good maize yields can be produced in the open in Northern Ireland when the most suitable varieties are sown in favourable sites and the growing season weather is sufficiently warm and not too wet. Plastic mulch, (see page 8) although more expensive, will normally enhance the growth of varieties and achieve target dry matters, DM yields and starch yields both in good years such as 2010 *and* poor years such as 2011 or 2012.

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 sixteen 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 factors 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 2013, 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 contacts listed on the back page.

Summary Of Recommended Varieties

This section lists the names of the recommended varieties for 2013 and shows the identity of the 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 open establishment in 2013, Kaukas, Leeds and Sapphire have been removed from the recommended lists as they are no longer commercially available. Under plastic establishment, two varieties, Nescio and Klifton, which had been downgraded to 'Outclassed' were removed from the list and Kaukas, Klaymore, Traddi CS, Sunboy and PR39D60 have also been removed as they are no longer commercially available. 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 2013

Open Establishment

Variety	Maintainer or Agent	Variety	Maintainer or Agent
S KARIMBO	KWS Saat AG	Kougar	KWS Saat AG
SURPRISE	Saaten Union (UK) Ltd	S Artist	Limagrain
KROESUS	KWS Saat AG	Crescendo	Limagrain
AGASSY	Maisadour Semences	P Lapriora	KWS Saat AG
		P Karriol	KWS Saat AG
		P Vivacity	Limagrain

Plastic Mulch System

Variety	Maintainer or Agent	Variety	Maintainer or Agent
SALGADO	KWS Saat AG	Mas 10C	Maisadour Semences
AWARD	Limagrain	Mas 08G	Maisadour Semences
ANVIL	KWS Saat AG	NK Jasmic	Syngenta Seeds
PR39V43	Pioneer	Ronaldinio	KWS Saat AG
MAS 12A	Maisadour Semences	Gladi CS	Caussade Semences
PADDY	Syngenta Seeds	S Benicia	Pioneer
SURPRISE	Saaten Union (UK) Ltd	S PR39G12	Pioneer
KROESUS	KWS Saat AG	P Karriol	KWS Saat AG
		P Sunstep	Saaten Union (UK) Ltd.
		P Podium	KWS Saat AG

[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, originally sited near Dromore Co Down (54°26'N, 6°10'W), and later near Comber Co Down (54°33'N, 5°45'W) and on the trial grounds at Crossnacreevy (Gransha) (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 towards the last week of April. 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 generally 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 farmyard manure or slurry has been applied to the trial site. Following soil analysis, the final levels of nitrogen, potash and phosphate that are applied are consistent with RB209 guidelines. In the open system, part of the nitrogen and, if required, the phosphate, is delivered 'down the spout'. Pre-emergence herbicides under plastic contain the active ingredients: Bromoxynil; Flufenacet; Isoxaflutole; Terbutylazine and a mineral oil adjuvant (wetting agent). Open trials have post emergence herbicides applied six weeks after sowing and contain the active ingredients Mesotrione, Terbutylazine and Bromoxynil with a mineral oil adjuvant. Additional broad-leaf weed herbicides are applied as necessary in compliance with manufacturers' directions.
- **Plastic Film:** The film used is a 6µm photodegradable plastic applied over rows 1 & 2 and rows 3 & 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 +/- 180cm.

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 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. These types of varieties 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. These more productive varieties are needed to justify the additional expense associated with this management system. When reading either of these tables it is **VITAL** to note that provisional recommendations are based on two years of testing (first number column) and data should be treated with caution.
- Both the open and plastic trial results are an average of the previous ten 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	31 Jul	15.6	34.4	5.7	36.1	174	11.0
Open Established	14 Aug	12.8	29.6	3.7	28.3	141	10.6
Plastic Gain	14 days	2.8	4.8	2.0	7.8	33	0.4

These results are the average of the ten years from 2002-2011 for the best five varieties in each year under both the plastic and open systems. In both cases 'best' was defined as those with 'highest starch yield'.

The table shows that in addition to advancing silking by two weeks, all other important performance characters are improved by the use of plastic mulch. In difficult growing conditions, such as the exceptionally poor 2009 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 2009 increased the advantage for the plastic system to 4t/ha more DM yield at 6% higher DM content. Higher than average DM and starch yields were achieved in both open and plastic trials in 2010 - possibly due to the particularly warm and dry month of June - however the starch yield was still much higher (0.8t/ha) for varieties sown under plastic. In 2011, due largely to the cool mean monthly temperature of June, the worst performing varieties sown under plastic still produced greater DM yields than the best of the open sown varieties. In 2012, extremely poor growing conditions throughout the entire growing season caused exceptionally low yields and high variability within plot trials which obscured much of the variety differences.

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.

Plastic Mulch System

Control Values Variety Name & Trial Years	Silking Dates	Silking Height 180cm +/-	DM Yield 15.5 t/ha %	DM Content 30% +/-	Starch Yield 5.6 t/ha %	Starch Content 30% +/-	ME Yield 167 GJ/ha %	ME Content MJ/kgDM
SALGADO 5	1 Aug	+21	99	+4	<u>107</u>	+9	101	11.1
AWARD 5	3 Aug	+18	109	+2	<u>104</u>	+4	107	10.8
ANVIL 5	30 Jul	+15	100	+5	<u>102</u>	+7	100	10.9
PR39V43 4	31 Jul	+23	99	+2	<u>99</u>	+6	98	10.8
MAS 12A 5	30 Jul	+6	100	+5	<u>98</u>	+5	101	11.0
PADDY 5	1 Aug	+1	102	+4	<u>98</u>	+5	103	11.0
SURPRISE 4	30 Jul	+9	94	+4	<u>97</u>	+7	94	11.0
KROESUS 7	31 Jul	+17	97	+3	<u>95</u>	+5	96	10.8
Mas 10C 3	30 Jul	+8	105	+5	<u>108</u>	+7	107	11.1
Mas 08G 3	29 Jul	-8	99	+9	<u>102</u>	+7	100	11.1
NK Jasmic 3	3 Aug	+19	106	0	<u>97</u>	+3	106	10.9
Ronaldinio 3	3 Aug	+31	102	+1	<u>96</u>	+4	100	10.7
Gladi CS 3	31 Jul	+14	98	+4	<u>93</u>	+4	97	10.8
S Benicia 4	9 Aug	+37	107	-6	<u>89</u>	0	105	10.7
S PR39G12 5	7 Aug	+36	97	-2	<u>85</u>	+2	96	10.8
P Karriol 2	28 Jul	+12	111	+11	<u>113</u>	+7	111	11.0
P Sunstep 2	2 Aug	+44	115	+2	<u>105</u>	+3	110	10.5
P Podium 2	30 Jul	+3	99	+4	<u>102</u>	+7	101	11.1

Open Establishment System

Control Values		Silking Dates	Silking Height 180cm +/-	DM Yield 12.8 t/ha %	DM Content 30% +/-	Starch Yield 3.2 t/ha %	Starch Content 25% +/-	ME Yield 137 GJ/ha %	ME Content MJ/kgDM
Variety Name & Trial Years									
S	KARIMBO	13 Aug	0	94	-1	<u>103</u>	+2	94	10.7
	SURPRISE	16 Aug	+15	98	-3	<u>101</u>	+1	99	10.8
	KROESUS	20 Aug	+29	105	-3	<u>99</u>	-2	105	10.7
	AGASSY	16 Aug	+9	103	-2	<u>98</u>	-1	102	10.6
	Kougar	14 Aug	0	104	-2	<u>107</u>	+1	104	10.7
S	Artist	14 Aug	-1	88	-1	<u>97</u>	+3	89	10.8
	Crescendo	16 Aug	+10	95	-3	<u>94</u>	0	96	10.7
P	Lapriora	17 Aug	-7	102	-4	<u>117</u>	+4	106	11.1
P	Karriol	15 Aug	+15	105	-2	<u>100</u>	-1	106	10.7
P	Vivacity	14 Aug	-4	95	0	<u>99</u>	+1	95	10.7

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

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 medium 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.

Artist (S) A relatively short variety with a high starch content that ensures a good starch yield. This variety is specifically recommended for sowing in milder sites to allow potential for higher DM yield and content to be achieved.

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

Benicia (S) The latest maturing variety with an extremely high DM and ME 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.

Gladi CS This variety is of an average height and delivers good DM and ME yields with very good DM and starch contents.

Karimbo (S) A relatively early and short growing bold type variety that develops a good starch content and high starch yield. Specifically recommended for more favourable sites due to the indication from the DM yield and ME figures.

Kougar This is a short early maturing variety which can produce a very high starch yield with good starch content in the open as well as a high DM yield and ME yield.

Kroesus A tall variety that produces high DM yields particularly in the open, where it is highest yielding. It requires good growing conditions to fully mature and so will perform best under plastic or on milder sites in the open.

Mas 08G An early maturing, relatively short variety which can give high DM yields under plastic at very high DM content as well as high starch content and yield and high ME yield.

Mas 10C An early silking, relatively tall variety which can give very high DM, starch and ME yields under plastic with a high DM and starch content.

MAS 12A An early maturing, average height variety. Recommended for sowing under plastic where it dries off easily with a very high starch content that creates an impressive yield performance in all three categories.

NK Jasmic A tall variety, this recommendation produces very high total and ME yields and a high starch yield under plastic. Its DM content indicates a requirement for good conditions to support full maturity at harvest.

Paddy This fully recommended variety delivers excellent DM and ME yields plus high starch yields from relatively early short plants. Under plastic mulch, it dries down well to deliver a good starch content.

PR39G12 (S) A very tall, late maturing variety with good DM and ME yields. Specifically recommended for favourable sites with early sowing and mild growing conditions, higher starch contents can be achieved to give higher starch yields than listed.

PR39V43 This tall, fully recommended variety has high DM, starch and ME yields under the plastic system and also has a good starch content and above target DM content.

Ronaldinio This very tall variety produces very high total and ME yields and due to a relatively good starch content returns a good starch yield.

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

Surprise Fully recommended for both open and plastic systems. In the open it delivers very high starch 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 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.

Karriol (P) This variety is provisionally recommended for both systems where it produces high DM, starch and ME yields in the open and very high DM, starch and ME yields under plastic.

Lapriora (P) A new provisional recommendation, this relatively short variety delivers very high total starch yields with very high starch content in the open.

Podium (P) An early silking variety, this new provisional recommendation can give high DM, starch and ME yields under plastic with a high starch content.

Sunstep (P) A new provisional recommendation for plastic systems, this very tall variety delivers very high total and ME yields and a high starch yield. A sheltered site and carefully timed harvesting may be needed to avoid over maturity lodging.

Vivacity (P) An early maturing short variety this new provisional recommendation can deliver good DM content and a high starch yield with good starch content.

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 1st May – 31st Oct	Trial Sites
1997	2368	Dromore
1998	2250	Dromore and Comber
1999	2407	Dromore and Comber
2000	2256	Dromore and Comber
2001	2393	Gransha
2002	2100	Gransha
2003	2338	Gransha & Comber
2004	2385	Gransha & Comber
2005	2303	Gransha & Comber
2006	2632	Gransha & Comber
2007	2375	Gransha & Comber
2008	2289	Gransha & Comber
2009	2409	Gransha & Comber
2010	2497	Gransha & Comber
2011	2140	Gransha & Comber
2012	2111	Gransha & Comber
16yr Mean	2328	Average of 1997-2012

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.

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 grower's needs, depends on how suitable the growing area is 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

Some varieties were tested in 2011 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. As trial results from 2012 cannot be considered for variety performance comparisons due to the poor weather conditions, the best of the following varieties will continue for a further year of testing and will NOT be considered until 2014 for recommendation. The basic data are given for information purposes only.

Candidate Forage Maize Varieties in the 2011 and 2012 Recommended List Trial

(None of these varieties can be considered for recommendation until 2014)

VARIETY	Test Yrs	Silking Date	Silking Height	DM Yield	DM Content	Starch Content	ME Content
Open Establishment Trial Results 2011							
			180cm	12.8 t/ha	%	%	MJ/Kg
Ambition	1	9 Aug	+11	<u>102</u>	34	31	11.0
Arcade	1	10 Aug	+13	<u>98</u>	31	29	11.0
Kroft	1	6 Aug	-8	<u>98</u>	37	34	10.9
Kromwell	1	9 Aug	+1	<u>98</u>	32	30	10.9
P6862	1	11 Aug	-4	<u>88</u>	28	27	10.9
Plastic Mulch Trial Results 2011							
			180cm	15.5 t/ha	%	%	MJ/Kg
Surezzo	1	2 Aug	+34	<u>117</u>	31	33	10.9
Borgi CS	1	6 Aug	+30	<u>115</u>	30	31	10.5
Ambition	1	31 Jul	+22	<u>110</u>	42	41	11.3
P7892	1	31 Jul	+17	<u>108</u>	36	39	11.5
Ascender	1	27 Jul	+4	<u>100</u>	37	35	10.9
Kromwell	1	27 Jul	+9	<u>99</u>	43	39	11.0

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 within 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 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 criterion 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.

Good Maize can be Grown in Northern Ireland in a Poor Year

On average, at Greenmount in 2012, plastic sown maize yielded 12.6t/ha at 29% DM with 4.6t/ha starch



A plastic sown maize crop near Greenmount (CAFRE) 30th August 2012



Mature cobs from plastic sown maize harvested in October 2012

AFBI Crossnacreevy Contacts and Services

Plant Testing Station produces the following variety performance booklets:

- Cereals - Recommended Varieties for Northern Ireland
- Grass and Clover - Recommended Varieties for Northern Ireland
- Forage Maize - Recommended Varieties for Northern Ireland
- Potatoes - Varieties for Northern Ireland

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

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

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

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

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

The DARD Forage Maize Recommended List varieties are selected by a committee consisting of:

T. Gilliland (AFBI/ Chair)
E. Meehan (AFBI)
M. Scott (CAFRE, DARD)

Agri-Food and Biosciences Institute

AFBI's mission:

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

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

AFBI's expertise includes:

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

Technologies include:

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

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

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

AFBI Innovations

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

Tel: +44 (0)28 90 255 636

Fax: +44 (0)28 90 255 035

email: info@afbini.gov.uk

www.afbini.gov.uk

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

New DARD telephone numbers:

Animal Health & Welfare & Veterinary Public Health	0845 30 44 500
Education and Training	0845 30 44 501
Environment	0845 30 44 502
Farming	0845 30 44 503
Fisheries	0845 30 44 504
Flood Defence and Drainage	0845 30 44 505
Food	0845 30 44 506
Forests	0845 30 44 507
Grants and Funding	0845 30 44 508
Rural Development	0845 30 44 509
DARD Corporate Services	0845 30 44 510
Textphone	0845 30 44 511
Calls from non-UK numbers or networks/ International Calls	+44(0)28 9037 8418

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

CAFRE Technology & Business Division Services,
Crops and Horticulture, Greenmount College

Tel: 028 9442 6770

Fax: 028 9442 6777



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**Talmhaíochta agus
Forbartha Tuaithe**

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Kintra Fordèrin**

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