

Forage Maize



Recommended Varieties for Northern Ireland 2011



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

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Cover photograph by Alan Hopps, CAFRE

Maize harvesting near Tynan, Co. Armagh, October 2010

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

Forage Maize Varieties for 2011

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For details of contacts and other services see the inside and
back cover pages

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 maintainer or agent details as listed in **Summary of Recommended Varieties**, and as a guide to the prospects of new varieties currently under test 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 fourteen 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 2011, 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 2011 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 2011, Leeds has returned to 'Bold Type' as it is commercially available again, Artist (S) and Karimbo have moved up from provisionally recommended to 'Plain Type' and Kougar has been added as a provisional recommendation. Three varieties, Award, Mas 12A and Surprise have moved up to 'Bold Type' for establishment using plastic mulch whereas one variety, Klifton, has moved down to 'Plain Type'. The following five varieties have moved up from provisional to 'Plain Type' status: Paddy, PR39V43, Ronaldinio, Gladi CS and PR39D60. Four new varieties have joined the list as provisional recommendations: Mas 10C, Sunboy, Mas 08.G and NK Jasmic. Ruler has been removed from the recommended list as it is 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 2011

Open Establishment

Variety	Maintainer or Agent	Variety	Maintainer or Agent
KAUKAS	KWS Saat AG	Karimbo	KWS Saat AG
KROESUS	KWS Saat AG	S Artist	Limagrain
AGASSY	Maisadour Semences	S LG3193	Limagrain
SURPRISE	Saaten Union (UK) Ltd	Crescendo	Limagrain
LEEDS	Maisadour Semences	Sapphire	Limagrain
		P Kougar	KWS Saat AG

Plastic Mulch

Variety	Maintainer or Agent	Variety	Maintainer or Agent
KAUKAS	KWS Saat AG	Paddy	Syngenta Seeds
SALGADO	KWS Saat AG	PR39V43	Pioneer
AWARD	Limagrain	Ronaldinio	KWS Saat AG
ANVIL	Limagrain	Gladi CS	Caussade Semences
MAS 12A	Maisadour Semences	Klifton	KWS Saat AG
SURPRISE	Saaten Union (UK) Ltd	Nescio	Limagrain
LG3193	Limagrain	S Benicia	Pioneer
KROESUS	KWS Saat AG	Goldclamp	British Seed Houses
TRADDI CS	Caussade Semences	PR39D60	Pioneer
KLAYMORE	KWS Saat AG	PR39G12	Pioneer
		P Mas 10C	Maisadour Semences
		P Sunboy	Saaten Union (UK) Ltd
		P Mas 08.G	Maisadour Semences
		P NK Jasmic	Syngenta 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, 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 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, phosphate and potash 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. 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 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 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	15.8	33.7	5.7	36.2	173	10.9
Open Established	15 Aug	13.2	30.1	3.8	28.1	139	10.5
Plastic Gain	15 days	2.6	3.6	1.9	8.1	34	0.4

Average figures for 'Best' varieties in each system, 2001 - 2010

These results are the average of the last ten years 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.

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.

Plastic Mulch System

Control Values Variety Name & Trial Years	Silking Dates	Silking Height 180cm +/-	DM Yield 15.3 t/ha %	DM Content 30% +/-	Starch Yield 5.3 t/ha %	Starch Content 30% +/-	ME Yield 165 GJ/ha %	ME Content MJ/kgDM
4	29 Jul	+10	105	+5	116	+9	108	11.1
5	2 Aug	+24	103	+4	113	+8	106	11.1
4	4 Aug	+19	112	+2	109	+4	111	10.7
5	31 Jul	+19	104	+5	108	+6	105	10.9
4	30 Jul	+9	105	+4	105	+5	106	10.9
4	30 Jul	+14	99	+4	105	+7	100	10.9
5	1 Aug	+2	102	+6	102	+5	103	10.9
7	1 Aug	+22	101	+3	102	+5	101	10.8
5	30 Jul	+2	101	+1	102	+6	99	10.7
5	2 Aug	+22	99	+5	102	+6	101	11.0
4	2 Aug	+3	106	+4	103	+4	108	11.0
3	2 Aug	+27	103	+2	102	+4	102	10.7
3	4 Aug	+34	106	+1	101	+4	105	10.7
3	1 Aug	+18	102	+4	99	+4	101	10.8
4	2 Aug	+20	98	+2	98	+5	98	10.8
4	1 Aug	-6	95	-1	98	+6	96	10.9
4	9 Aug	+41	112	-6	94	0	110	10.7
5	7 Aug	+23	106	-1	92	+1	104	10.6
3	6 Aug	+42	101	-1	91	+2	101	10.8
5	8 Aug	+40	101	-2	90	+1	101	10.8
2	31 Jul	+11	108	+5	114	+7	111	11.1
2	3 Aug	+48	113	+4	108	+3	111	10.6
2	30 Jul	-5	102	+8	105	+6	104	11.1
2	4 Aug	+20	110	-1	103	+3	112	11.0

Open Establishment System

Control Values Variety Name & Trial Years	Silking Dates	Silking Height 180cm +/-	DM Yield 13.5 t/ha %	DM Content 30% +/-	Starch Yield 3.3 t/ha %	Starch Content 25% +/-	ME Yield 144 GJ/ha %	ME Content MJ/kgDM
KAUKAS 5	14 Aug	+18	103	-1	<u>110</u>	+2	103	10.8
KROESUS 7	18 Aug	+32	104	-3	<u>99</u>	-1	104	10.7
AGASSY 6	15 Aug	+14	102	-2	<u>99</u>	-1	101	10.6
SURPRISE 5	15 Aug	+20	96	-3	<u>98</u>	0	97	10.8
LEEDS 5	16 Aug	+4	100	+1	<u>97</u>	-1	100	10.7
Karimbo 4	14 Aug	+5	91	-1	<u>99</u>	+2	91	10.7
S Artist 3	14 Aug	+3	86	-1	<u>95</u>	+3	87	10.9
S LG 3193 3	18 Aug	+18	98	-2	<u>93</u>	-1	97	10.6
Crescendo 7	15 Aug	+14	94	-2	<u>93</u>	0	94	10.7
Sapphire 5	14 Aug	+25	92	0	<u>90</u>	-1	91	10.6
P Kougar 2	15 Aug	+5	100	+2	<u>102</u>	0	101	10.8

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 high starch yield. It is specifically recommended for use under less favourable conditions where its lower yields but ability to mature and accumulate starch is a desirable combination.

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

Benicia (S) The latest maturing variety with an extremely high DM yield potential, is specifically recommended for early sowing under plastic in very mild regions to ensure the crop fully matures and achieves its very high yield potential.

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 Recommended for plastic use, it is of an average height and has similarly high DM and ME yields with very good DM and starch contents.

Goldclamp A late silking variety with a high total and good ME yield combination that needs to be grown under plastic in good growing areas. Early sowing and mild conditions will help achieve the target dry matter and starch contents.

Karimbo A relatively early and short growing variety that develops a good starch content and high starch yield. The indication from the DM yield and ME figures suggests that it requires favourable growing conditions.

Kaukas This is recommended as a 'Bold Type' variety for both systems. This relatively early, slightly above average height variety produces the highest starch yields in the open plus highest starch and very good total yields under plastic.

Klaymore Recommended for plastic use, this tall variety matures quickly to high dry matter, starch and ME contents that turn its good DM yield into high starch yields.

Klifton A tall variety, recommended for growing under plastic, which although having below average starch and ME yields, matures easily to produce a high starch content, indicating an underlying robustness.

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.

Leeds Production is among the higher 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 (S) 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.

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.

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

Paddy This 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.

PR39D60 This very tall and late variety has impressively high DM and ME yields under the plastic system and with a good starch content relative to its DM content. Being late silking it will benefit from early sowing to achieve even higher yields on favourable sites.

PR39G12 A very tall late maturing variety with high DM and ME yields. If grown on favourable sites with early sowing and favourable growing conditions, higher starch contents can be achieved to give higher starch yields than listed.

PR39V43 This tall, medium maturing variety has similarly high DM, starch and ME yields under the plastic system. It also has a high starch content and above target DM content.

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

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 very impressive starch yields.

Sapphire Is one of the tallest varieties for open establishment use over a range of conditions. It achieves the target DM content and delivers similar yields for total, starch and ME productivity.

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.

Traddi CS An early maturing relatively short variety with good 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.

Kougar (P) This new provisionally recommended variety is of short stature and is early maturing. It has a high yield potential when open grown and a very high DM content. It forms a good starch content and delivers a high ME yield.

Mas 08.G (P) A relatively short and early maturing provisional recommendation. Under plastic it has a very high DM content, notably good starch concentration and can produce a high starch yield as well as good total and ME yields.

Mas 10C (P) An early maturing variety, this new provisional recommendation has high total and ME yields that combine with a high starch content to produce very high starch yields.

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

Sunboy (P) This new provisional recommendation is very tall and produces an excellent DM and ME yield as well as a very high starch yield.

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 1st May to the 31st 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
14yr Mean	2357	Average of 1997-2010

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 growers needs, depends on how suitable the growing area is and how good the specific fields to be used are, 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 2010 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 2012 for recommendation. The basic data are given for information purposes only.

Candidate Forage Maize Varieties in the 2010 Recommended List Trial

(None of these varieties can be considered for recommendation until 2012)

VARIETY	Test Yrs	Silking Date	Silking Height	DM Yield	DM Content	Starch Content	ME Content
Open Establishment Trial Results 2010							
			180cm	13.5 t/ha	%	%	MJ/Kg
Lapriora	1	14 Aug	-10	<u>106</u>	27	31	11.2
Karriol	1	13 Aug	+20	<u>104</u>	29	24	10.9
Vivacity	1	13 Aug	-2	<u>90</u>	31	27	10.5
Plastic Mulch Trial Results 2010							
			180cm	15.3 t/ha	%	%	MJ/Kg
Sunstep	1	1 Aug	+46	<u>119</u>	33	31	10.0
SY Respect	1	7 Aug	+33	<u>118</u>	26	30	10.4
Karriol	1	28 Jul	+17	<u>114</u>	43	35	10.7
Podium	1	29 Jul	+3	<u>108</u>	33	36	11.2
Sum 1217	1	1 Aug	+18	<u>105</u>	35	35	10.8
Celux 225	1	29 Jul	+12	<u>101</u>	27	38	11.3
NK Falkone	1	4 Aug	+22	<u>101</u>	29	35	11.0
Ambrosini	1	1 Aug	+15	<u>100</u>	32	35	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 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 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.

AFBI Crossnacreevy Contacts and Services

Plant Science 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

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

Agri-Food & Biosciences Institute
Plant Testing Station,
Crossnacreevy
Castlereaugh
Belfast
BT6 9SH

Tel: +44 (0) (28 90) 548000
Fax: +44 (0) (28 90) 548001
Email: info@afbini.gov.uk
trevor.gilliland@afbini.gov.uk
eamonn.meehan@afbini.gov.uk

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

Agri-Food and Biosciences Institute

AFBI's mission is to maintain and enhance its reputation as a world-class scientific institute, delivering proven value to Government and other customers.

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:

Chief Executive's Office

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

Tel: +44 (0)28 90 255051

Fax: +44 (0)28 90 255035

Email: info@afbini.gov.uk

www.afbini.gov.uk

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



Department of

**Agriculture and
Rural Development**

www.dardni.gov.uk

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Forbartha Tuaithe**

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