Maize Variety Portfolio 2020

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THE FUTURE
SINCE 1856

Welcome!

You're reading our latest variety portfolio – our guide to help you select the most appropriate hybrids for your farming situation.

This easy to follow guide is divided into two market sectors – **forage** and **biogas** – to help your decision making.

Each section details the main criteria farmers should focus on, and is backed by a handy reference chart which enables you to compare relative performance.

Given the large number of varieties available, we suggest you contact us for advice. We would be delighted to help.

You will also find more help on our website at www.kws-uk.com:

- **Online tools – Seed rate, soil temperature and heat unit services**
- **Agronomy and service guides (disease and pest guide, trials toolkit)**

We hope you will find this guide useful in selecting the right maize varieties for your specific needs.

Variety List

To find suitable varieties by using the **KWS Live Maize Heat Unit Service** online tool, just enter the postcode of your farm to select suitable varieties, in accordance with local conditions, soil type and field aspect.

Below are our key variety selections for next season. They are arranged in maturity order and by market sector.

Other varieties are available – for more advice please contact a member of the KWS team.

04	Ultra Early	FAO	Forage	Grain	Biogas
06	CITO KWS	150	✓		
07	AUGUSTUS KWS	160	✓		
08	RUBIERA KWS	160	✓		
09	SERGIO KWS	160	✓	✓	
10	PEREZ KWS	160	✓		✓
11	KWS ARTIKUS	160	✓		✓
12	KROFT	160	✓		

14	Early/Maincrop	FAO	Forage	Grain	Biogas
16	AVITUS KWS	160/170	✓		✓
17	KWS ARVID	170	✓		
18	KWS CALVINI	170	✓		✓
19	KWS EXELON (KXB8007)* NEW	170	✓	✓	✓
20	AUTENS KWS	170	✓	✓	✓
21	RODRIGUEZ KWS	170	✓	✓	
22	EDGARD KWS	170	✓		
23	AURELIUS KWS	180	✓	✓	✓
24	KWS PRIXDOR (KXB7016)* NEW	190	✓	✓	✓
25	KEOPS	210/220	✓		✓
26	AMBROSINI	220	✓	✓	✓

28	Energy	FAO	Forage	Grain	Biogas
30	AMAVERDE	220			✓
31	FABREGAS	220			✓
32	AMAROC	240			✓
33	FREDERICO KWS	250			✓
34	KILOMERIS	260/270			✓

The FAO number is a relative index of maturity. The lower the number, the fewer heat units that are required to reach harvest time. You can check your farm's heat units and FAO suitability on the KWS website.

*Proposed name. Hybrid subject to a Pre NL Marketing Agreement

Maize Selection

Ultra Early

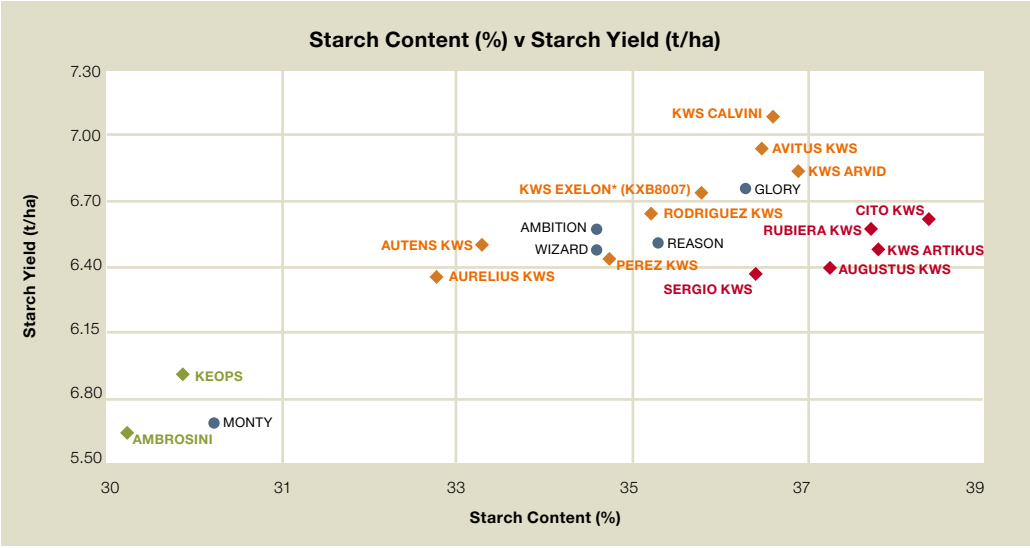
A selection of the earliest maturing hybrids available.

Site / Soil Type	Feeding System	Yield Potential	Harvest Management
☑ Ideal for cool sites or low heat unit areas ☑ Ability to extend drilling window later on heavier soils	☑ High starch content is ideal for a TMR at up to 50% maize silage ☑ Beef finishing ☑ Excellent energy density ME/Kg	☑ Moderate yield potential for intermediate sites, where later varieties may not mature	☑ Secure a very early start to harvest on warmer sites ☑ Silage is available earlier in the autumn / winter
☒ Typically unsuitable for very sandy soils or high heat unit areas	☒ Low energy yield / ha	☒ Yield may not be optimised if grown on very warm or sheltered sites	☒ Ultra early varieties tend to dry down more quickly leading to a shorter harvest window

How do they compare?

We have compiled the results below to show starch yield (t/ha) and starch content (%) – these are the key targets we look for in 'ultra early' hybrids.

A high starch yield makes maize economic to grow in marginal areas, when combined with the protein and sugar from grass silage.



Data source: KWS LP250 2016 – 2017 Average of all Sites. * Projected Position
Ultra Early (FAO 150-160) **Early (FAO 170-190)** **Intermediate (FAO 200-220)**

CITO KWS

Ultra Early: FAO 150

CITO KWS is the first in a new generation of short season hybrids – it offers higher grain density and disease tolerance over KASPIAN.

Breeder's view

Step up your forage performance!

Characteristics / Quality

- Strong yield performance in the ultra-early segment – (94%) across marginal sites
- Rapid early vigour (7.3) ideal for early or late drilling
- Short season hybrid with full cob sheath coverage
- High starch (36.3%) and ME (11.79 MJ/Kg) content
- KWS top selling ultra-early hybrid, replacing KASPIAN and RAMIREZ

Data source: NIAB Forage Maize Descriptive List. First choice varieties for less favourable sites (2020)

AUGUSTUS KWS

Ultra Early: FAO 160

A born leader!

Characteristics / Quality

- No.1 DM yield in its segment – (94%) across all marginal sites
- Rapid early vigour (7.2)
- Full cob sheath coverage
- Excellent starch (35.5 %) and ME content (11.66 MJ/Kg)

Data source: NIAB Forage Maize Descriptive List. Second choice varieties for less favourable sites (2020)

More options for early feedout! **AUGUSTUS KWS** is an ideal choice for short season maize silage production

Breeder's view

RUBIERA KWS

Ultra Early: FAO 160

RUBIERA KWS combines high DM yields with excellent ME and starch content owing to its very high grain content.

Breeder's view

The silage athlete!

Characteristics / Quality

- Class leading DM yield – (94%) across all sites
- Rapid early vigour (7.3)
- Semi dry down for low effluent risk
- Full cob sheath coverage
- Excellent starch (36.6%) and ME content (11.82 MJ/Kg)

Data source: NIAB Forage Maize Descriptive List. Second choice varieties for less favourable sites (2020)

SERGIO KWS

Ultra Early: FAO 160

Exceptional ME and early vigour!

Characteristics / Quality

- Above average DM yield for its maturity - (95%) across all sites
- Good early vigour (7.5) for early or late drilling
- Above average starch (36.7%) and ME (11.79 MJ/Kg) content

Data source: NIAB Forage Maize Descriptive List. Second choice varieties for less favourable sites (2020)

Versatile and vigorous! **SERGIO KWS** gives excellent early vigour on any site.

Breeder's view

PEREZ KWS

Ultra Early: FAO 160

PEREZ KWS rewards growers with an early harvest – A high yielding variety suitable for silage or AD use.

Breeder's view

Gain higher yields faster!

Characteristics / Quality

- Strong DM yield in its segment – (101%)
- Ideal for late drilling on favourable sites to encourage earlier feedout
- Excellent starch (34.1%) and ME content (11.49 MJ/Kg)

Data source: NIAB Forage Maize Descriptive List. Second choice varieties for less favourable sites (2020)

KWS ARTIKUS

Ultra Early: FAO 160

Ultra early yields...rocket fuel silage!

Characteristics / Quality

- Top DM yield in its class - across all NIAB trials
  - 2017: 15.0t/ha – 20.0t/ha (Average 17.8 t/ha DM)
  - 2018: Average 17.7 t/ha DM
- Rapid early vigour (2017: 6.0 – 8.7), 2018 Average: 7.4
- Very high starch (2017: 37.8- 41.3%), 2018 Average 37.1 %
- Excellent ME content
  - 2017: 11.90 MJ/Kg
  - 2018: 12.32 MJ/Kg
- Full cob sheath coverage
- Superb kernel content and ripening stability

Data source(s): KWS LP250 (2016 + 2017) & FERA NL Trials for Forage Maize – All sites (2017 + 2018)

KWS ARTIKUS continues to push UK maize performance higher – with superb energy – dense silage quality, driven by its high kernel content.

Ideal for securing an early harvest regardless of drilling date.

Breeder's view

KROFT

Ultra Early: FAO 160

KROFT is a stable performer on challenging sites where early harvesting is a necessity.

Breeder's view

Early Harvest… Early Feedout…

Characteristics / Quality

- Stable DM yield across NIAB trials (2011: 103)
- Good early vigour for heavier soils or later drilling (2011: 8.1)
- Excellent silage quality; Starch (2011: 36.6%), ME content (2011: 11.5 MJ/Kg)

Data source: NIAB Descriptive List Trial Reports (2011)

Maize Selection

Early / Maincrop

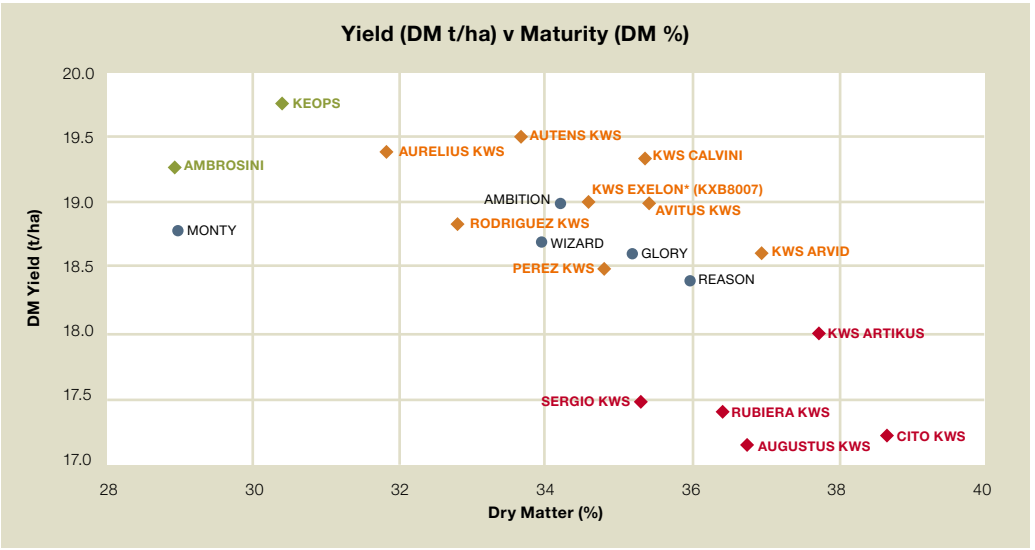
High yielding hybrids for all mainstream growing areas.

Site / Soil Type	Feeding System	Yield Potential	Harvest Management
✅ Ideal for all mainstream sites and moderate to high heat unit areas	✅ A balanced starch content is ideal for a TMR up to 70% maize silage ✅ Ability to combine for crimped grain as a valuable by-pass starch source	✅ Lowest cost per tonne for almost any mainstream site ✅ Only slighly less yield than maincrop forage hybrids, with no risk of late harvest	✅ Slower dry down leads to a wider harvest window ✅ Ideal for biogas plants looking to stagger their harvest
❌ Typically unsuitable for heavier / chalk soils		❌ Yield may not be optimised if grown on very warm or sheltered sites	

How do they compare?

We have compiled the results below to show DM yield (t/ha) and DM content (%) – these are the key targets we look for in 'early' hybrids.

An economic yield of dry matter and early maturity are the key priorities for the mainstream grower.



Data source: KWS LP250 2016 – 2017 Average of all Sites. * Projected Position
Ultra Early (FAO 150-160) **Early (FAO 170-190)** **Intermediate (FAO 200-220)**

AVITUS KWS

Early: FAO 160/170

KWS ARVID

Early: FAO 160/170

AVITUS KWS pushes the boundaries of current early forage maize breeding for all livestock farmers.

Breeder's view

Forage performance to reign supreme!

Characteristics / Quality

- Unrivalled DM yield in the early segment – over 18 t/ha DM on the NIAB 2020 List
- 1st place for DM Yield, Starch (%) and ME (MJ/Kg) of all modern hybrids
- Top early vigour (7.6)
- Very high starch (35.6%) and ME content (11.77 MJ/Kg)
- Full cob sheath coverage
- Moderate stay green for faster ripening

Data source: NIAB Forage Maize Descriptive List. First choice varieties for favourable sites (2020)

Elite grain density ...No.1 Starch Yield!

Characteristics / Quality

- Top DM yield in its class across all NIAB trials
  – 2017: 15.3 20.1 (Average 17.9 t/ha DM)
  – 2018: Average 18.6 t/ha DM
- Rapid early vigour 2017: 6.0-8.3, 2018 Average: 7.8
- Very high starch (2017: 36.5-40.9%) , 2018 Average 37.5 %
- Excellent ME content
  – 2017: 11.89 MJ/Kg
  – 2018: 12.38 MJ/Kg
- Full cob sheath coverage
- Superb kernel content and ripening stability

Data source(s): KWS LP250 (2016 + 2017) & FERA NL Trials for Forage Maize – All sites (2017 + 2018)

KWS ARVID delivers notable yields and starch content – progressing the trend in early maize performance.

In both 2017 NL trials, and KWS' 2016 pre-screening the hybrid was noted for its above average grain density.

Breeder's view

KWS CALVINI

Early: FAO 160/170

> **KWS CALVINI** offers superb early vigour, high grain content and yield, and is set to be a leading hybrid in the UK.
>
> **Breeder's view**

Drive your ration performance – maturity, yield & starch in one!

Characteristics / Quality

- Top DM yield in its class - across all NIAB trials
  - – 2017: 102 – 18.5 t/ha DM
  - – 2020 DL: 18.0 t/ha DM
- Top early vigour (2017: 7.6) 2020 DL: 7.6
- Very high starch content
  - – 2017: 35.8%
  - – 2020 DL: 33.5%
- Superb ME content
  - – 2017: 11.49 MJ/Kg
  - – 2020 DL: 11.54 MJ/Kg
- Full cob sheath coverage
- High kernel content and ripening stability

Data source(s): KWS LP250 (*2016 + *2017) & FERA NL Trials for Forage Maize – All sites (2017)

NIAB Forage Maize Descriptive List. First choice varieties for less favourable sites (2020)

KWS EXELON*

Early: FAO 170

NEW

Drive your silage output!

Characteristics / Quality

- Leading DM yield (2018 mean: 103% -18.8 t/ha DM)
- High grain : stover ratio for energy dense silage
  - – Starch % (2018: 36.2%)
  - – ME content (2018: 12.24 MJ/Kg)
- Ideal for moderate to high (50 – 70% TMR) inclusion and/or beef finishing
- Approx. 4 days earlier than AURELIUS in KWS screening trials
- Excellent vigour (2018: 7.6) for all soil types

Data source(s): FERA/NIAB National List Trials (2018) , KWS LP250 2018

*Proposed name. Hybrid subject to a Pre NL Marketing Agreement

> **KWS EXELON** brings added stability in field performance to the early forage segment, thanks to its lower ear insertion height. It has superb grain density leading to high starch yields surpassing hybrids of even 3–4 seasons ago.
>
> **Breeder's view**

AUTENS KWS

Early: FAO 170

AUTENS KWS delivers an impressive combination of bulk DM and higher grain content for added starch % – a new benchmark in KWS silage trials, compared with Severus.

Breeder's view

Outstanding field performance!

Characteristics / Quality

- Top DM yield in its class - across all NIAB trials (2014: 112; 2015: 109)
  – 2020 NIAB List leading hybrid for DM Yield – 103% : 18.5 t/ha DM
- Faster dry down with good standing power
- Approx. 4 days earlier to harvest than SEVERUS in KWS screening trials observations
- Outstanding early vigour on all soil types (2014: 8.2; 2015: 7.6, 2018 DL: 7.4)
  – 2020 DL: 7.6
- Full cob sheath coverage
- Very high starch (2015: 35.2%, 2016: 34.6%) and ME content (2015: 11.6 MJ/Kg; 2016: 11.5 MJ/Kg)
  – 2020 DL 33.1 % Starch, 11.65 ME (MJ/Kg)

Data source: NIAB Forage Maize Descriptive List. Second choice varieties for favourable sites (2020)

RODRIGUEZ KWS

Early: FAO 170

Versatile in silage or grain!

Characteristics / Quality

- High DM yield (101%)
- Reliable early vigour (6.7)
- Full cob sheath coverage
- Stay green plant type for good eyespot resistance
- Excellent starch (34.7%) and ME content (11.76 MJ/Kg)

Data source: NIAB Forage Maize Descriptive List. First choice varieties for favourable sites (2020)

Versatile for grain or silage production, **RODRIGUEZ KWS** is stable particularly when grown at altitude or on heavier soils.

Breeder's view

EDGARD KWS

Early: FAO 170

AURELIUS KWS

Early: FAO 180

> **EDGARD KWS** was tested in 2014 in KWS screening and NL trials in both the UK and Denmark, offering stable yield performance since its introduction.
>
> **Breeder's view**

Good early vigour, DM yields and feed value…

Characteristics / Quality

- Top DM yield in its class - across NIAB trials (2014: 106 Rel. DM Yield)
- Equal maturity to SEVERUS in KWS screening trials observations
- Good early vigour on all soil types (2014: 7.6)
- Full cob sheath coverage
- Very high starch (2014: 34.3% and ME content (2014: 11.36 MJ/Kg)

Data source(s): FERA NL Trials for Forage Maize – All sites (2014)

A new dynasty in maize growing!

Characteristics / Quality

- Unsurpassed DM yield in its segment – (2013-16: 110-112%) across all sites* 103% DM Yield 2020 Descriptive List – Favourable sites
- Rapid early vigour 7.7
- Full cob sheath coverage
- Excellent starch (31.7%) and ME content (11.59 MJ/Kg)
- Ideal balance of forage yield and energy content for 60 – 70% + maize inclusion

Data source: NIAB Forage Maize Descriptive List. First choice varieties for favourable sites (2020)

> Outstanding yield potential to rival later maturity hybrids – **AURELIUS KWS** is ideal for a higher maize inclusion in modern TMR systems.
>
> **Breeder's view**

KWS PRIXDOR*

Intermediate: FAO 190

NEW

> Selected for ultimate harvest versatility, **KWS PRIXDOR** is an ideal single cross flint dent hybrid. Suitable for silage harvesting where required and also for crimped or grain / CCM harvesting in favourable areas without the need for plastic cover.
>
> **Breeder's view**

The premier forage and grain hybrid !

Characteristics / Quality

- Leading DM yield (t/ha DM)
  - – Silage 2018 mean: 102% -18.6 t/ha DM
  - – Grain 2018 mean: 98% -9.4 t/ha Grain
- High grain : stover ratio for energy dense silage
  - – Starch % (2018: 34.5%)
- Single cross flint dent hybrid with excellent uniform ear insertion height
- Ideal for CCM, crimped or dried grain maize harvesting or high starch silage for beef finishing
- Approx. 4 days later than RODRIGUEZ in KWS screening trials
- Excellent vigour (2018: 8.0) for all soil types

Data source(s): KWS Agroservice Development Trials, NL, FR 2018

*Proposed name. Hybrid subject to a Pre NL Marketing Agreement

KEOPS

Maincrop: FAO 210/220

Multi-use silage or biogas – wide drilling window…

Characteristics / Quality

- Heavy yield potential (50 - 55 t/ha)
- Ideal for spreading harvest or drilling window
- High grain:stover ratio for more stable ripening in cooler seasons
- Rapid early vigour
- Recommended chop length: 7 – 9 mm
- Recommended seed rate: 42,000 seeds / acre (103,000 seeds / hectare)
- In low rainfall areas: 38,000 seeds / acre (94,000 seeds / hectare)

Data source: KWS Agroservice 2015 – 2016

> **KEOPS** offers a wide drilling and harvest window for silage or AD in warmer areas.
>
> **Breeder's view**

AMBROSINI

Maincrop: FAO 220

AMBROSINI continues to be a true benchmark for all FAO 200-220 maincrop hybrids within the KWS programme.

Breeder's view

One of KWS' highest yielding silage hybrids

Characteristics / Quality

- 104% DM yield across all NIAB trials
- Good early vigour (7.3) on all sites
- Balanced starch (29.0%) and ME content (11.30 MJ/Kg)

Data source: NIAB Forage Maize Descriptive List. Second choice varieties for favourable sites (2020)

KWS MAIZE DEMONSTRATION SITE

Lydney, Gloucestershire – Open during September

To book your visit please contact your merchant, or the KWS Office.

The KWS Maize demonstration sites at Lydney and St Briavels are unique in the UK, showcasing all aspects of maize breeding and the full KWS maize portfolio. They include:

- Breeding demonstration
- Population wheel
- All current commercial hybrids
- New pre-market KWS forage and energy hybrids
- Sowing date trial
- Vaderstad row width trial (50cm v 75cm)
- Compare the UK's top 20 bestselling maize hybrids

Second demonstration site at nearby St Briavels at 600ft above sea level demonstrates the different growing and varietal effects experienced at altitude.

Maize Selection

Biogas

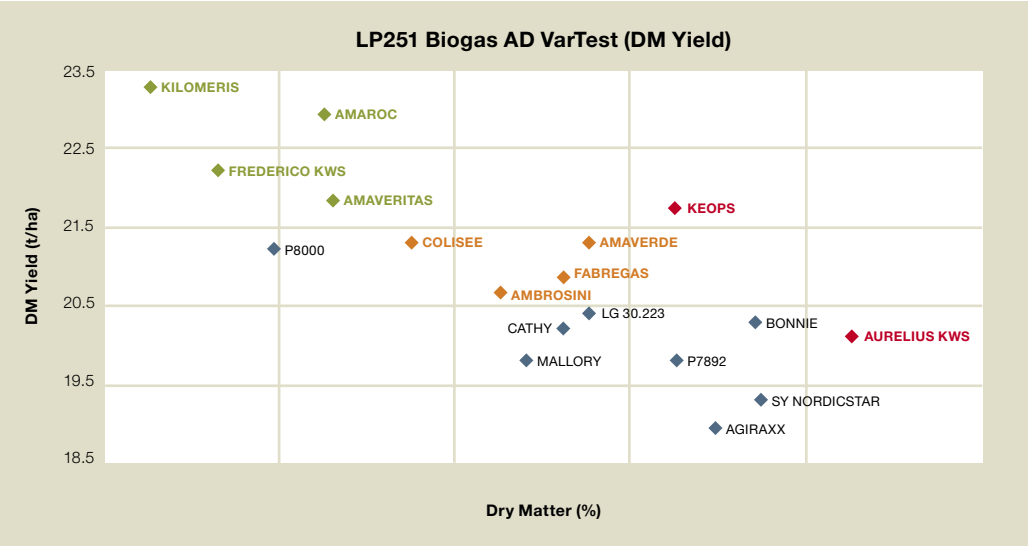
Maximise your energy yield per hectare with these varieties

Site / Soil Type	Feeding System	Yield Potential	Harvest Management
☑ Ideal for all mainstream sites, and high heat unit areas ☑ Ideal for sandy soils where drought tolerance and lower seed rates help to preserve yield	☑ Maximised cellulose and hemi-cellulose for longer retention times in biogas plants ☑ Stay green nature for easier chop length management and storage	☑ Optimum cost per tonne ☑ Yield potential can be maximised by drilling date and careful drilling planning	☑ High stay green nature avoids a short harvest window ☑ Wide range of maturities available to spread workload
☒ Typically unsuitable for heavier / chalk soils – or colder sites			☒ Avoid growing feedstock at excessive distance from the main clamp

How do they compare?

We have compiled the results below to show DM yield (t/ha) and DM content – these are the key targets we look for in our energy maize hybrids.

A high DM yield is directly linked to methane yield. A key target for farmers looking to optimise their feedstock cost and achieve an adequate DM content suitable for anaerobic digestion.



Data source: KWS LP251 2016-2017 Average of all Sites
Early (FAO 190-210) **Intermediate (FAO 220-240)** **Late (FAO 250-260)**

AMAVERDE

Energy: FAO 220

KWS ENERGY

AMAVERDE is useful for pulling harvest forward – it responds well to lower seed densities on sandy soils, whilst remaining greener for longer.

Breeder's view

Enhance your fresh weight and dry matter!

Characteristics / Quality

- Mass type, high volume plant, semi stay green
- Heavy yield potential (55-60 t/ha)
- Rapid early vigour and early flowering – ideal for later planting
- Recommended chop length: 7-9 mm
- Recommended seed rate: 42,000 seeds / acre (103,000 seeds / hectare)
- In low rainfall areas: 38,000 seeds / acre (94,000 seeds / hectare)

Data source: KWS Agroservice 2014 – 2015

FABREGAS

Energy: FAO 220

KWS ENERGY

The early midfielder… proven in practice!

Characteristics / Quality

- Heavy yield potential (50-55 t/ha)
- Safe maturity for the majority of mainstream sites (27-31% DM)
- Recommended chop length: 7-9 mm
- Recommended seed rate: 42,000 seeds / acre (103,000 seeds / hectare)
- In low rainfall areas: 38,000 seeds / acre (94,000 seeds / hectare)

Data source: KWS Agroservice 2008 – 2011

FABREGAS is the long term standard for AD maize production since its UK introduction.

Breeder's view

AMAROC

Energy: FAO 240

KWS ENERGY

FREDERICO KWS

Energy: FAO 250

KWS ENERGY

AMAROC offers excellent DM yield for AD feedstock production on favourable sites and high heat unit areas.

Breeder's view

Heavy yield potential

Characteristics / Quality

- Heavy yield potential (55 - 60 t/ha)
- Ideal for spreading harvest or drilling window on lighter land – Surpasses former generation hybrids eg; CAROLINIO and BARROS
- Rapid early vigour
- Recommended chop length: 7 – 9 mm
- Recommended seed rate: 42,000 seeds / acre (103,000 seeds / hectare)
- In low rainfall areas: 38,000 seeds / acre (94,000 seeds / hectare)

Data source: KWS Agroservice 2015 – 2016

Unsurpassed yield potential for all mainstream sites with later harvesting

Characteristics / Quality

- Heavy yield potential (60 - 64 t/ha +)
- Excellent early vigour
- High volume plant type
- Safe maturity for the majority of mainstream sites (27 -31% DM)
- Recommended chop length: 7-9 mm
- Recommended seed rate: 42,000 seeds / acre (103,000 seeds / hectare)
- In low rainfall areas: 38,000 seeds / acre (94,000 seeds / hectare)

Data source: KWS Agroservice 2013 – 2014

FREDERICO KWS offers maximum yield performance on light soil types – ideal for late harvesting and the lowest cost per tonne.

Breeder's view

KILOMERIS

Energy: FAO 260/270

KILOMERIS offers top yield potential from lighter soils – exclusive for biogas use.

Breeder's view

The ultimate in feedstock yield – ideal for light soils!

Characteristics / Quality

- Ideal hybrid for drought prone areas where yield exceeds earlier hybrids*
- Mass type, very high volume plant, strong stay green
- Excellent early vigour
- Recommended chop length: 7-9 mm
- Recommended seed rate: 40,000 seeds / acre (98,000 seeds / hectare)
- In low rainfall areas: 38,000 seeds / acre (94,000 seeds / hectare)

Data source: KWS Agroservice 2013 – 2016. *(60 t/ha + in optimum conditions, 40 – 45 t/ha in dry areas depending on cultivation)

Drilling Tips

Optimum drill timing depends on **soil conditions**, **temperature** and **seedbed moisture**.

Modern hybrids have a high degree of cold tolerance but should not be drilled before soils have reached an **even temperature** for 3-4 days (8°C for light soils, 12°C for heavy soils) to give the best possible establishment.

Drilling considerations

- Soil type (heavy, medium or light soils), temperature and moisture availability
- Site and yield potential (e.g. warm site with light soils, cold site with heavy soils)
- Short term weather forecast

Effects of premature drilling

- Slowed germination
- Uneven emergence, necessity to increase seed rates
- Reduced nutrient uptake (low soil temperature)

Effects of late drilling

- Delayed harvesting
- Requirement for earlier maturing varieties
- Increased risk of lodging

Recommended seed rates

Plants/ha (acre)	Units*/ha (acre)	Deposition distance (cm) at 75cm (30")	at 50cm (19")
85,000 (34,000)	1.8 (0.72)	14.9	22.4
90,000 (36,000)	1.9 (0.76)	14.1	21.2
95,000 (38,000)	2.0 (0.81)	13.3	20.1
100,000 (40,000)	2.1 (0.85)	12.7	19.0
105,000 (42,000)	2.2 (0.89)	12.1	18.1
110,000 (44,500)	2.3 (0.93)	11.5	17.3
115,000 (46,500)	2.4 (0.98)	11.0	16.6

Pros/Cons of 50cm v 75cm row widths

Row spacing differs from **plant density** but can sometimes be confused with it.

Typical yield responses are difficult to measure when harvested for silage with the main effects being a difference in starch content and dry matter for the same hybrid at equal harvest time.

Closer row spacing produces a **denser crop** with higher freshweight yields and is best adopted on favourable sites. Thicker crops also show a faster dry down over standard row widths, but care should be taken to **avoid excess plant numbers**, as this is likely to induce lodging.

Advantages

- Faster row closing and inhibition of weeds
- Reduced erosion risk
- Minimal risk of excess residual nitrogen
- Ability to tramline
- Drill utilization between crops

Disadvantages

- Higher risk of seed bunching if using a non precision drill
- Potential for higher lodging on exposed sites
- Overall higher drilling cost
- Precludes crimping / CCM or dried grain maize harvesting
- Necessitates possible adjustment of starter fertilizer (DAP / MAP) rates

Standard 75cm row width (top) & non-standard 50cm row width (bottom) Images supplied courtesy Väderstad

*1 Unit = 50,000 seeds

Harvesting Tips

The KWS UK portfolio focuses on offering farmers increased flexibility in harvest date, demonstrated in two key areas:

- Avoiding rapid dry down of the leaf stover maintains a good level of stay green
- Early flowering and cob maturity

Grain maturity	Description	Cob DM (%)	Whole plant DM (%)
Milk	Grain immature Avoid premature harvesting	10-15	< 20
Soft dough	Grains become firmer. Husks remain green	20-28	20-27
Hard dough	Silage maturity reached at 'hard dough' stage. Reduced risk of clamp effluent	30-45	28-32
Hard ripe	Grain at 'hard ripe' stage. Crop ready for late cut silage or CCM	48-50	33-35
Fully ripe	Grain fully matured Husks died back Ready for crimped maize or late cut CCM	65-70	36-45

Effects of harvesting too early

- Lower yield
- Reduced energy, starch and ME which results in lower intake potential
- Higher risk of clamp effluent which will require a longer chop length
- Poor dry matter intake and palatability resulting in acidic silage

Effects of late harvesting

- Higher harvesting costs and increased field losses
- Low digestibility and palatability
- Excessive dry matter and poor clamp stability
- Difficult clamp consolidation which will require a shorter chop length
- Soil damage/compaction

Providing innovative new varieties to UK agriculture: it's all in the seed

As a key supplier of new varieties to UK agriculture, KWS UK provides a range of crops to meet varied end-market requirements.

We use a range of technologies to ensure improved consistency in crop performance.

www.kws-uk.com

SEEDING
THE FUTURE
SINCE 1856

KWS

KWS Maize Demonstration Site, Lydney, Gloucestershire – Open during September

KWS UK LTD – MAIZE

Atwoods Grange
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