

# Maize Portfolio 2019

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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](http://www.kws-uk.com):

- Online tools – Seed rate, soil temperature and heat unit services
- Agronomy and service guides (disease and pest guide, trials toolkit)
- Farmer testimonials from around the UK

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 (KXB7005)* 	160	✓		(✓)
12	KROFT	160	✓		
14	Early/Maincrop	FAO	Forage	Grain	Biogas
16	AVITUS KWS	160/170	✓		(✓)
17	KWS ARVID (KXB7007)* 	170	✓		
18	KWS CALVINI	170	✓		(✓)
19	AUTENS KWS	170	✓	✓	(✓)
20	SEVERUS	170	✓	✓	(✓)
21	RODRIGUEZ KWS	170	✓	✓	
22	EDGARD KWS	170	✓		
23	AURELIUS KWS	180	✓	✓	(✓)
24	KEOPS	210/220	✓		✓
25	AMBROSINI	220	✓	✓	✓
26	Energy	FAO	Forage	Grain	Biogas
28	AMAVERDE	220			✓
29	FABREGAS	220			✓
30	AMAVERITAS	240			✓
31	AMAROC	240			✓
32	FREDERICO KWS	250			✓
33	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





How do they compare?

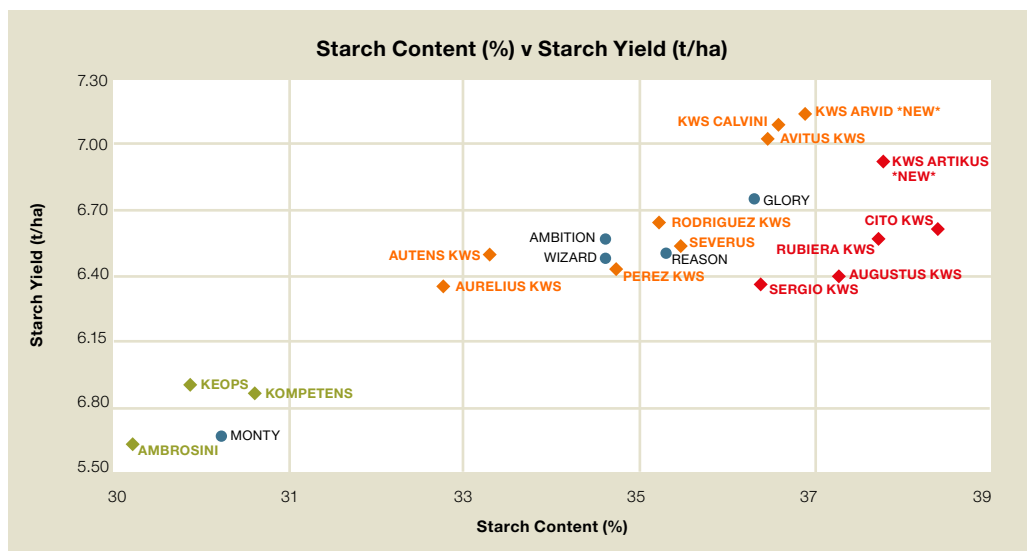
We have compiled the results below to show starch yield (t/ha) and starch content (%) – these are the key targets we look for in ‘ultra early’ hybrids.

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

### Maize Selection

# Ultra Early

A selection of the earliest maturing hybrids available.



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

Site / Soil Type	Feeding System	Yield Potential	Harvest Management
<ul style="list-style-type: none"> <li>✓ Ideal for cool sites or low heat unit areas</li> <li>✓ Ability to extend drilling window later on heavier soils</li> </ul>	<ul style="list-style-type: none"> <li>✓ High starch content is ideal for a TMR at up to 50% maize silage</li> <li>✓ Beef finishing</li> <li>✓ Excellent energy density ME/Kg</li> </ul>	<ul style="list-style-type: none"> <li>✓ Moderate yield potential for intermediate sites, where later varieties may not mature</li> </ul>	<ul style="list-style-type: none"> <li>✓ Secure a very early start to harvest on warmer sites</li> <li>✓ Silage is available earlier in the autumn / winter</li> </ul>
<ul style="list-style-type: none"> <li>✗ Typically unsuitable for very sandy soils or high heat unit areas</li> </ul>	<ul style="list-style-type: none"> <li>✗ Low energy yield / ha</li> </ul>	<ul style="list-style-type: none"> <li>✗ Yield may not be optimised if grown on very warm or sheltered sites</li> </ul>	<ul style="list-style-type: none"> <li>✗ Ultra early varieties tend to dry down more quickly leading to a shorter harvest window</li> </ul>



# CITO KWS

Ultra Early: FAO 150



# AUGUSTUS KWS

Ultra Early: FAO 160



“ 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 (36.0%) and ME (11.61 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 (2019)

## A born leader!

### Characteristics / Quality

- No.1 DM yield in its segment – (95%) across all marginal sites
- Rapid early vigour (7.2)
- Full cob sheath coverage
- Excellent starch (35.2 %) and ME content (11.49 MJ/Kg)

Data source: NIAB Forage Maize Descriptive List. First choice varieties for less favourable sites (2019)

“ 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



# SERGIO KWS

Ultra Early: FAO 160



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

#### Breeder's view

## The silage athlete!

#### Characteristics / Quality

- Class leading DM yield – (95%) across all sites
- Rapid early vigour (7.4)
- Semi dry down for low effluent risk
- Full cob sheath coverage
- Excellent starch (36.2%) and ME content (11.62 MJ/Kg)

Data source: NIAB Forage Maize Descriptive List. First choice varieties for less favourable sites (2019)

## Exceptional ME and early vigour!

#### Characteristics / Quality

- Above average DM yield for its maturity - (96%) across all sites
- Good early vigour (7.5) for early or late drilling
- Above average starch (36.1%) and ME (11.56 MJ/Kg) content

Data source: NIAB Forage Maize Descriptive List. First choice varieties for less favourable sites (2019)

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

#### Breeder's view

# PEREZ KWS

Ultra Early: FAO 160



# KWS ARTIKUS

Ultra Early: FAO 160



NEW

“ 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 – (102%)
- Ideal for late drilling on favourable sites to encourage earlier feedout
- Excellent starch (33.3%) and ME content (11.24 MJ/Kg)

Data source: NIAB Forage Maize Descriptive List. First choice varieties for less favourable sites (2019)

## 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)
- Rapid early vigour (2017: 6.0 – 8.7)
- Very high starch (2017: 37.8- 41.3%) and ME content (2017: 11.90 MJ/Kg)
- Full cob sheath coverage
- Superb kernel content and ripening stability – Leading maize hybrid from KWS' programme – limited supply for Spring 2019

Data source(s): KWS LP250 (\*2016 + \*2017) & FERA NL Trials for Forage Maize – All sites (2017) AFP 51/1561 (KXB7005) is subject to a PRE NL Marketing Agreement

“ 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

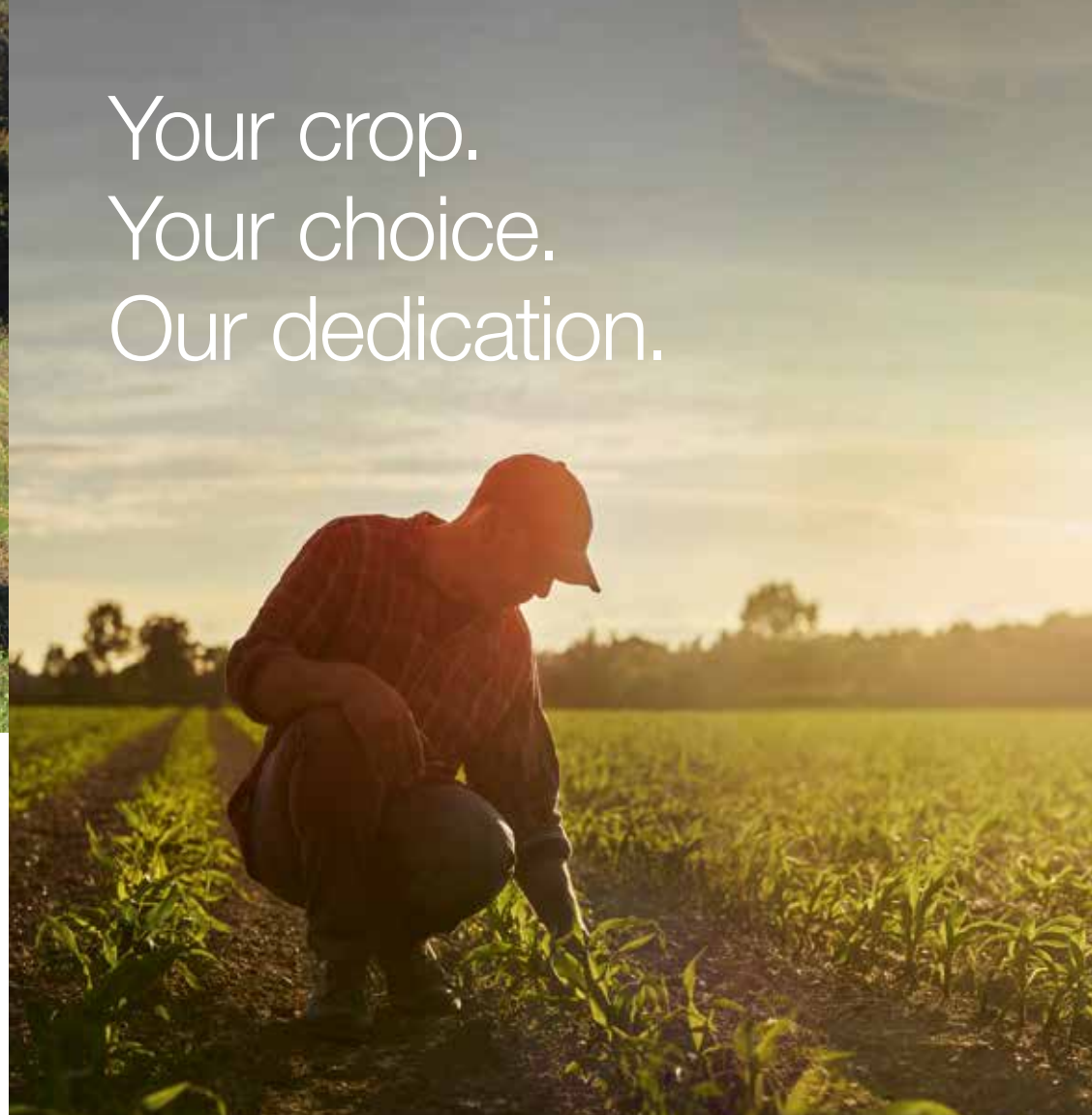


# KROFT

Ultra Early: FAO 160



Your crop.  
Your choice.  
Our dedication.



“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)

## KWS. Independent like you.

Making your own decisions. That is independence.  
You know what's best for your farm. We have the ideal variety.

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How do they compare?

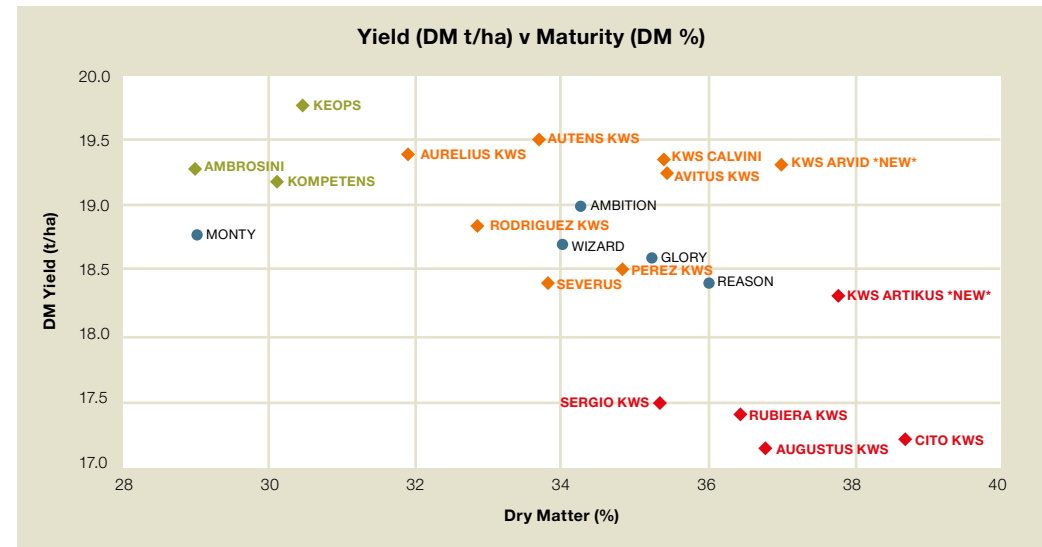
We have compiled the results below to show DM yield (t/ha) and DM content (%) – these are the key targets we look for in ‘early’ hybrids.

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

Maize Selection

# Early / Maincrop

High yielding hybrids for all mainstream growing areas.



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

Site / Soil Type	Feeding System	Yield Potential	Harvest Management
<ul style="list-style-type: none"> <li>✓ Ideal for all mainstream sites and moderate to high heat unit areas</li> </ul>	<ul style="list-style-type: none"> <li>✓ A balanced starch content is ideal for a TMR up to 70% maize silage</li> <li>✓ Ability to combine for crimped grain as a valuable by-pass starch source</li> </ul>	<ul style="list-style-type: none"> <li>✓ Lowest cost per tonne for almost any mainstream site</li> <li>✓ Only slightly less yield than maincrop forage hybrids, with no risk of late harvest</li> </ul>	<ul style="list-style-type: none"> <li>✓ Slower dry down leads to a wider harvest window</li> <li>✓ Ideal for biogas plants looking to stagger their harvest</li> </ul>
<ul style="list-style-type: none"> <li>✗ Typically unsuitable for heavier / chalk soils</li> </ul>		<ul style="list-style-type: none"> <li>✗ Yield may not be optimised if grown on very warm or sheltered sites</li> </ul>	





# 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 18t/ha DM on the NIAB 2019 List
- 1st place for DM Yield, Starch (%) and ME (MJ/Kg) of all modern hybrids
- Top early vigour (7.6)
- Very high starch (36.1%) and ME content (11.63 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 (2019)

With the early release and launch from KWS' screening programme, AVITUS KWS is a new benchmark for early maize breeding – AVITUS KWS is grown in the UK, Denmark, Netherlands and Northern France, for livestock farmers relying on early maturity maize silage.

## 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) – 2016 KWS pre-screening trials (2016: 17.2 – 21.4 - Average 19.6 T/Ha DM)
- Rapid early vigour (2017: 6.0 – 8.3)
- Very high starch (2017: 36.5 – 40.9%) and ME content (2017: 11.89 MJ/Kg)
- Full cob sheath coverage
- Superb kernel content and ripening stability – Leading maize hybrid from KWS' programme – limited supply for Spring 2019

Data source(s): KWS LP250 (\*2016 + \*2017) & FERA NL Trials for Forage Maize – All sites (2017) AFP 51/1562 (KXB7007) is subject to a PRE NL Marketing Agreement

“ 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



# AUTENS KWS

Early: FAO 170



“ KWS CALVINI offered superb early vigour, high grain content and yield stability 2015-2017 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 – [18.56 t/ha DM])
- Top early vigour (2017: 7.6)
- Very high starch (2017: 35.8%) and ME content (2017: 11.49 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)

Outstanding field performance!

#### Characteristics / Quality

- Top DM yield in its class - across all NIAB trials (2014: 112; 2015: 109)
  - 2019 NIAB List leading hybrid for DM Yield – 104% : 18.4 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)
  - 2019 DL: 7.5
- 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)
  - 2019 DL 32.9 % Starch, 11.48 ME (MJ/Kg)

Data source: NIAB Forage Maize Descriptive List. First choice varieties for favourable sites (2019)

“ 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



# SEVERUS

Early: FAO 170



# RODRIGUEZ KWS

Early: FAO 170



SEVERUS has been the benchmark for UK variety suitability in the early segment and remains a popular choice amongst KWS hybrids.

#### Breeder's view

## Commanding Yields from KWS!

#### Characteristics / Quality

- Stable DM yield – across all NIAB trials (99%)
- Outstanding early vigour on all soil types (7.4)
- Very high starch (35.1%) and ME content (11.51 MJ/Kg)

Data source: NIAB Forage Maize Descriptive List. First choice varieties for favourable sites (2019)

## Versatile in silage or grain!

#### Characteristics / Quality

- High DM yield (102%)
- Reliable early vigour (6.9)
- Full cob sheath coverage
- Stay green plant type for good eyespot resistance
- Excellent starch (34.8%) and ME content (11.60 MJ/Kg)

Data source: NIAB Forage Maize Descriptive List. First choice varieties for favourable sites (2019)

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\* 104% DM Yield 2019 Descriptive List – Favourable sites
- Rapid early vigour 7.6
- Full cob sheath coverage
- Excellent starch (32.4%) and ME content (11.44 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 (2019)

“ Outstanding yield potential to rival later maturity hybrids – AURELIUS KWS is ideal for a higher maize inclusion in modern TMR systems.

## Breeder's view



# KEOPS

Maincrop: FAO 210/220



# AMBROSINI

Maincrop: FAO 220



“ KEOPS offers a wide drilling and harvest window for silage or AD in warmer areas.

#### Breeder's view

## 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

## 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 (28.8%) and ME content (11.14 MJ/Kg)

Data source: NIAB Forage Maize Descriptive List. Second choice varieties for favourable sites (2019)

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

#### Breeder's view



How do they compare?

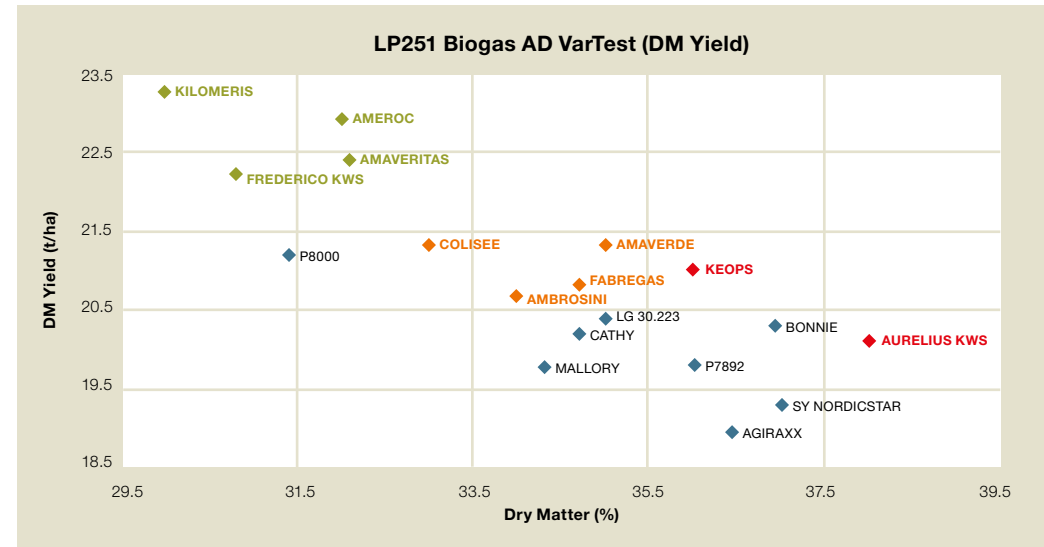
We have compiled the results below to show DM yield (t/ha) and DM content – these are the key targets we look for in our energy maize hybrids.

**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.**

Maize Selection

# Biogas

Maximise your energy yield per hectare with these varieties



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

Site / Soil Type	Feeding System	Yield Potential	Harvest Management
<ul style="list-style-type: none"> <li>✓ Ideal for all mainstream sites, and high heat unit areas</li> <li>✓ Ideal for sandy soils where drought tolerance and lower seed rates help to preserve yield</li> </ul>	<ul style="list-style-type: none"> <li>✓ Maximised cellulose and hemi-cellulose for longer retention times in biogas plants</li> <li>✓ Stay green nature for easier chop length management and storage</li> </ul>	<ul style="list-style-type: none"> <li>✓ Optimum cost per tonne</li> <li>✓ Yield potential can be maximised by drilling date and careful drilling planning</li> </ul>	<ul style="list-style-type: none"> <li>✓ High stay green nature avoids a short harvest window</li> <li>✓ Wide range of maturities available to spread workload</li> </ul>
<ul style="list-style-type: none"> <li>✗ Typically unsuitable for heavier / chalk soils – or colder sites</li> </ul>			<ul style="list-style-type: none"> <li>✗ Avoid growing feedstock at excessive distance from the main clamp</li> </ul>





# AMAVERDE

Energy: FAO 220

KWS  
ENERGY



# FABREGAS

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

## 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

“ The long term standard for AD maize production since its UK introduction.

#### Breeder's view



# AMAVERITAS

Energy: FAO 240



# AMAROC

Energy: FAO 240



“ AMAVERITAS is the No.1 in DM Yield over 2015 to 2017 in KWS' Northern European trials network.

## Breeder's view

## Top yields for biogas – rise to the challenge!

### Characteristics / Quality

- Heavy yield potential (55 - 60 t/ha)
- Ideal for spreading harvest or drilling window on lighter land – Surpasses former generation hybrids eg; RONALDINIO, BARROS and CAROLINIO
- 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

## 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

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

## Breeder's view



# FREDERICO KWS

Energy: FAO 250



# KILOMERIS

Energy: FAO 260/270



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

#### Breeder's view

## 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

## 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)

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

#### Breeder's view

# 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

\*1 Unit = 50,000 seeds

# 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



# Organic Maize Growing Tips

Organic livestock production using maize silage has been increasing steadily over the last few seasons.

Maize silage together with organic whole crop cereals and grass offers high yields and a key source of rumen degradable starch for dairy or beef units.



Inter-row hoeing (top) and ridge cultivation (bottom) are both effective methods for removing or burying weeds prior to row closure. This system necessitates 75 cm row spacing for best effect.

## Key considerations for organic maize growing:

### Cultivation & Pre Drilling

- Organic production is favored on light sandy to loam soils, cultivation on clays should be avoided. Cross harrowing ideally 2 weeks before drilling should help to discourage bird damage along the rows, after drilling. Aim to achieve a fine seed bed to discourage slug activity, rolling is not essential and may slow soil temperature accumulation if seedbeds are already very fine however. Frit fly attack can be minimized by avoiding fields coming out of grass leys.

### Drilling

- Allow seedbed temperatures to rise to a minimum of 12 – 15 deg. C this is warmer than conventional production, as seeds are un-treated and will also be placed somewhat deeper to limit bird attack. Later drilling will also encourage much faster emergence and growth to the vital 3- 5 leaf stage.

### Organic Assurance

- Organic assurance schemes will require a derogation to use untreated – conventionally produced hybrid maize seed. KWS offer early high vigor hybrids each season, available in untreated units. Please contact us to discuss for further advice.

# 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



### 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

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



# 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 provide 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](http://www.kws-uk.com)

SEEDING  
THE FUTURE  
SINCE 1856







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The described varieties have reached these results / traits in practice and trials. The achievement of the results and the genetic causes of atypical expression in the plants also depends on uncontrollable factors. From there we are not able to assume any responsibility or liability that these results / traits will be reached under all environmental conditions. This booklet has been produced to the best knowledge available at the time of printing, no liability can be accepted for any mistakes or loss in relation to this booklet.