Frontier

2027

Forage and AD crops *guide*



Creating a better future for *agriculture*

By working with our customers and partners, we're shaping the future of UK agriculture. Our unique position in the sector, leading expertise and continued investment in innovation helps us deliver pioneering solutions to growers and manufacturers across the whole supply chain, creating a more resilient industry able to adapt to change and embrace new opportunities.

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Welcome to your forage and AD crops guide for spring 2027

Our guide includes all the information you need to make the best variety choices to suit your business plans for harvest 2027. You'll find key data on our tried and tested farm-favourites, as well as details on newer varieties available to you for the first time.

Alongside this guide, our experts are always on-hand to support you throughout the growing season. If you have questions about any of our products and services, or would like support with other aspects of your business, you can speak directly to your Frontier contact or get in touch:

info@frontierag.co.uk | 0800 227445


Variety icons key
Forage
AD
Grain maize
FAO
FAO
Ultra early
Early
Late

Contents

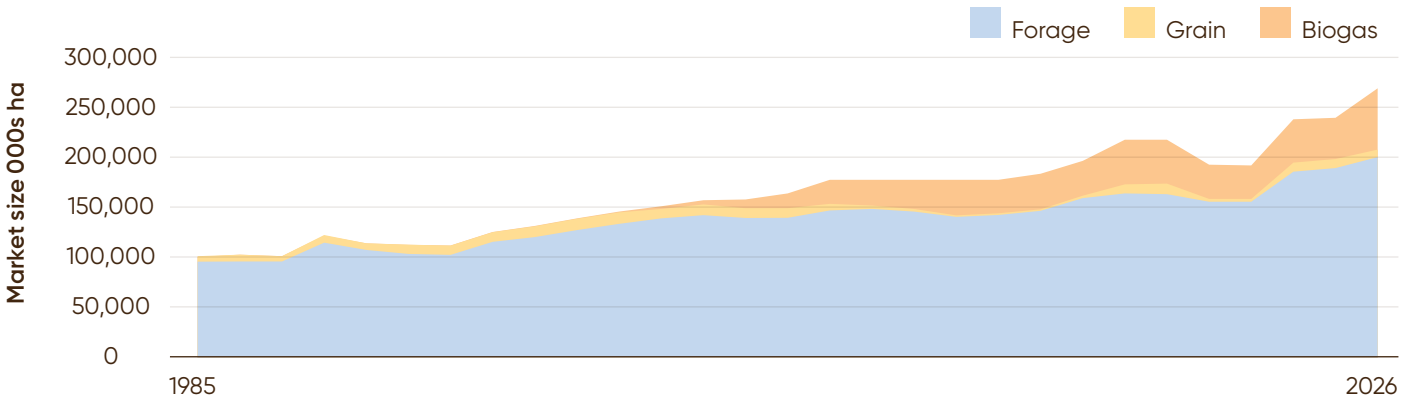
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Growing maize

Selecting maize varieties to suit different markets

Maize remains a first-choice feed for cattle, sheep and as anaerobic digestion (AD) thanks to its energy, starch and high dry matter (DM) yield characteristics. It's a crop that has seen extensive research by breeders to ensure the right varieties are available and that it can perform in the maritime climate of the UK. As a result, the maize area grown here has significantly increased over the past 20 years, with around 241,000 hectares being drilled in 2025, increasing to around 270,000 hectares in 2026.

Development of the UK maize area



Data source: DEFRA statistics, trade information.

This growth is supported by the introduction of earlier maturing maize hybrids, and with growers now seeing the multiple benefits of harvesting maize at the correct maturity, it's allowing for subsequent timely cropping and the protection of soils.

In addition, genetic improvements have translated into very significant gains in animal and AD productivity. Taking the table below as an example, for the milk producer this increase in DM and metabolisable energy (ME) yield between 2005 and 2023 results in more than 54,600MJ/Ha additional energy produced by the herd, which would lead to an impressive 10,000 litres of extra milk produced per hectare.

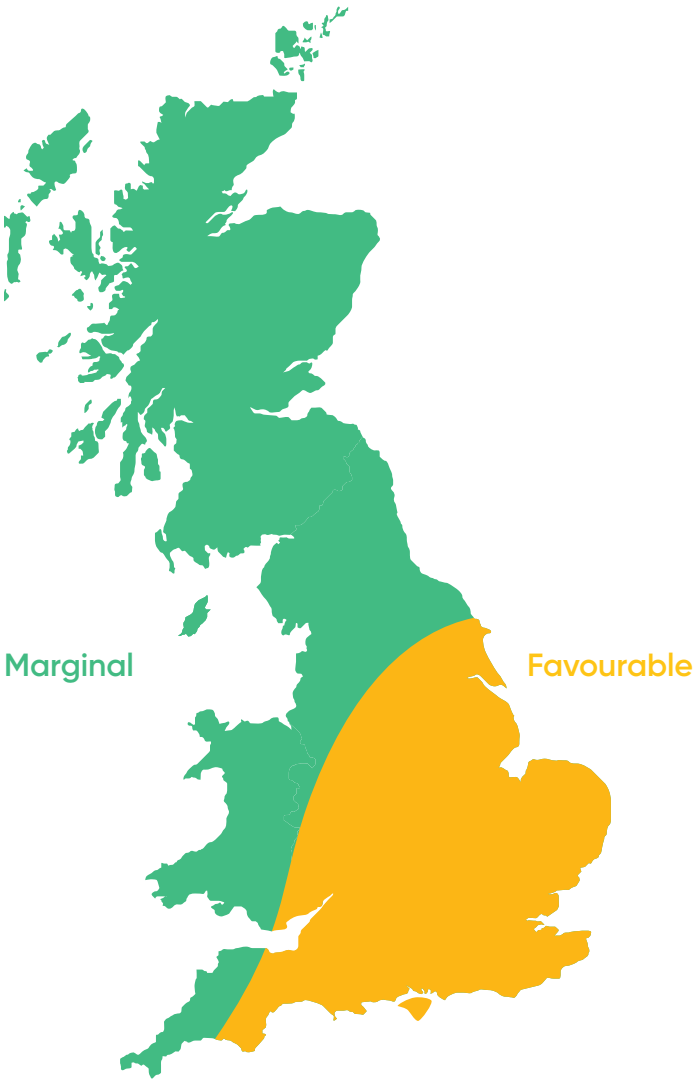
For the biogas producer the benefit in improved varieties is also seen; better yields, earlier vigour and better standing for security at harvest have boosted yields in this example by an additional 4.1 t/ha DM yield.

	2005	2026	
	Average of varieties (6) FAO 170 or lower	KWS Reo FAO 170	Difference
DM yield t/ha	15.9	18.7	+25.8%
ME yield MJ/ha	170,000	219,000	+30.5%
Starch yield t/ha	5.23	7.11	+38.8%

Data source: NIAB favourable sites, courtesy of KWS UK Ltd.

Understanding favourable and less favourable sites

Maize is a versatile crop, but choosing the right variety for your location is the key to maximising production. This becomes increasingly important today with extreme weather and climate change being a feature of our growing environment. Location, soil type and field aspect should all be considered before choosing to plant a variety of maize. The AHDB has produced a general guide as to where favourable and marginal (less favourable) growing sites are located across the UK and in this brochure, we'll be recommending the best varieties designated for both favourable and less favourable sites.



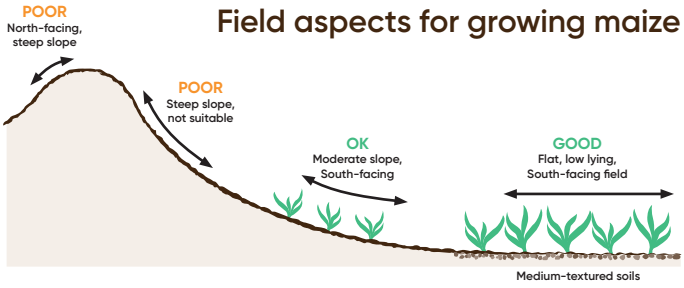
How do I use FAO numbers?

Harvest date and maturity are key considerations when choosing maize varieties. The maturity of a maize crop will be determined by the dry matter content of the whole plant at a harvest date. As a crop, maize has very specific heat requirements and the speed which different varieties take to reach harvest differentiates them in the field; with early maturing types having a lower heat requirement and shorter growing season to reach harvest compared to later maturing types.

The FAO number is a guide to the maturity of different varieties; the lower the FAO number, the fewer the heat units required for that variety to reach maturity. Your Frontier advisor will help you check your individual farm's heat unit requirements to make variety choice more straightforward.

In general, we designate the following FAO scale to determine harvest date:

FAO range	Variety description	End use potential
<165	Very early	Forage, grain and AD
165-200	Early	Forage, grain and AD
200+	Late	Forage, AD



Data source: AHDB Guide on Where to Grow Maize Across the UK

Visit the events page on our website to find out more information about our trial events.

Maize for forage

Using the right variety of maize for forage provides excellent energy density for the feed ration, typically ranging from 11.5-12+ MJ/kg DM.

Variety choice is driven by the animal performance you are aiming to achieve, as well as the site that the growing crop will be located on. Very early varieties have the shortest growing season, laying down starch quickly, and so have a high starch content and lower DM yield, producing high energy and starch density.

Varieties in the early maturing segment have a slower development rate that allows for a more balanced ratio of starch content and DM yield. Finally, varieties that are later maturing favour high DM yields rather than starch content.

In terms of site suitability, varieties able to withstand a shorter growing season are important for increasing options in the following autumn crop, as well as being key for less favourable sites where a shorter growth period must be considered, for example in more northern areas. On more productive sites, earlier varieties will deliver good yields with harvest security.

Maize for AD

Choosing a maize variety for biogas production is all about maximising the energy yield per hectare. High DM yield and higher starch yields deliver high methane yields, which is the key target for biogas plants.

Typically, the best varieties to choose for this end use are those with an FAO number over 170, with the varieties suited to a longer growing season and being later to mature maximising both yield and energy content. The later maturing varieties are best suited to more favourable sites, where high heat units are available and often lighter soils.

To spread workloads over the growing season, it can be worthwhile considering varieties with a range of drilling and harvest dates.

Maize for grain (crimping and drying)

Whilst only a relatively small proportion of the UK's total maize area, maize for grain is moving up the agenda, particularly due to the warmer, hotter summers in recent years. At Frontier, our experts are developing a market for UK-produced grain maize.

Grain maize is also grown for crimping, where the grain is processed prior to clamping or storage or as ground ear maize (GEM) or whole cob maize. Both can be used as a concentrate in feed mixtures, GEM being very high in fibre content. It is advisable to choose varieties specifically selected for the grain market (see section on maize varieties for use in grain), opting for types that are earlier maturing and with fast dry-down characteristics for ease at harvest time.

A consideration for eyespot and lodging risk should also be factored in when selecting grain maize varieties. In addition, varieties with a 50% grain 50% stover architecture will offer the best yields.

Our experts can help you to select the right maize variety for your farm, growing conditions and end market. They are also on-hand throughout the growing season to help you get the best out of your crop and can provide you with advice around post-maize cropping options to manage soil health over the winter months.

Considerations when choosing a maize variety

Location

Maize needs high temperatures (heat units) to reach maximum yield and maturity. The further north you are, the fewer potential heat units available, which requires you to grow an early maturing variety.

Soil type

Lighter soils can lend themselves to earlier drilling and later harvesting, allowing for the use of later maturing varieties. Plant architecture becomes increasingly important on more fertile sites, and varieties with good stem stiffness will be key.

Soil compaction can easily steal 50% from yield. Make sure the variety maturity choices you make don't cause unacceptable compaction for the following crop.

Altitude

Increasing altitude reduces the available heat units, which limits the variety choice to earlier maturing types.

Field aspect

A field facing southwest will likely get to the required soil temperature before one facing northeast and so can be planted earlier. Therefore later maturing varieties can be grown.

Place in rotation

If an autumn-sown crop follows maize, then earlier maturing varieties must be chosen, whereas a semi-continuous maize rotation does not restrict maturity type.

Maturity

A range of maturity types can spread the harvest period to match the capability of machinery and labour. Maturity types can also even out the effects of soil type and sowing date, condensing the harvest period where high-capacity contractors are used.

Drilling dates

Maize can be drilled from early April through to June, depending on variety maturity class and if the soil temperature is constantly above 8°C.

Seed rates

Maize is usually sold in 50,000-seed packs, but care must be taken when purchasing as some breeders pack in quantities of 45,000. Maize is mostly precision drilled; seed rates will vary depending on the time of drilling as they can have an impact on the harvest date. End use will also affect the seed rate. For example, for optimal grain and starch yields, a target plant population of 90,000 plants/ha is required, although for fresh weight and yield this is closer to 110,000 plants/ha. Unlike with cereals, seed rates should be reduced as the drilling date moves later.



Companion crops

Maize rotations present a significant opportunity to incorporate companion or green cover crops. Planting a companion crop into the growing maize crop or planting a green cover after the maize has been harvested can reduce soil erosion and nutrient loss whilst improving soil structure and health. If needed, the companion or cover crop can also provide useful additional forage in the autumn or early spring. Site specific weed pressures should be considered for companion crops sown into maize as some herbicide choices can have an impact on companion crop emergence.

See the section on environmental options for more information on the range of companion crops available for maize (page 37), or speak to your Frontier advisor.

Silage inoculants and clamp management

Using silage inoculants can lead to lower DM losses, a higher nutritional value and improved aerobic stability in the clamp. Inoculants are added to forage to ensure rapid fermentation. Attention to detail at clamping is critical, with adequate rolling required before sheeting. For best results, an oxygen barrier sheet should be used to further reduce any wastage.

For more information on the range of inoculants we offer to aid fermentation for silage clamp stability and to reduce storage losses, speak to your local Frontier advisor.



Maize
agronomy guidelines





Crop rotation, seedbeds and control of weeds and diseases

Maize has become an important part of the arable rotation, being a cereal break crop. Maize gives an economic alternative to replace other break crops which have become harder to establish through the loss of neonicotinoids.

Grain maize also compares favourably to first wheats in terms of gross margin. With careful management and variety selection, maize will enhance an arable rotation.

Seedbed

Seedbed preparation requires attention to detail. Most cultivation methods can be employed if care is given to the planting zone so that good soil-seed contact is achieved. Maize root depth typically reaches 1.5 to 1.8 metres (5 to 6 feet), with some cases extending up to 2.4 metres (8 feet). However, this depth is highly variable and influenced by genetics, management practices, and environmental factors like soil moisture, soil structure and weather.

Most roots are found in the upper 0-30cm of soil, even when deep rooting occurs. Removing compaction is key – you should always make assessments of soil structure and aim to target compaction layer removal at the appropriate depth for your field and soil type.

Seed rates and row widths

Seed rates vary depending on end use of the crop:

- Grain maize - lower seed rates of 85,000 to 95,000 seeds/ha
- Forage maize and AD - 105,000 to 125,000 seeds/ha as rule of thumb.

50cm and 75cm row widths are the most common. The Azurit Delta Row precision seeder with 75cm row widths and diamond seed placement are also becoming a popular choice.

Weed control

Weed control in maize is imperative. Although maize is a big strong plant from 8 leaves onwards, maize cannot stand any competition from weeds in its early stages.



Allelopathic weeds such as mayweed give off a toxin which stunts other plants around them and maize is no exception; mayweed is also especially hard to kill in drought situations.

You should always discuss your weed strategy with your agronomist to ensure the best approach to match the weed spectrum on your farm. It's always best practice to start with a pre-emergence application of herbicide ensuring you are always in control. There are certain weeds which can only be controlled with pre-emergence actives, such as cranesbill.

Using a pre-emergence application allows a later post-emergence herbicide to be applied, which will then coincide with the 5-6 leaf timing which is the point when the cob is forming. Adding a biostimulant and foliar nutrition at this stage will manipulate cob size, potentially improving starch yield. The second timing for manipulating starch production is at tasselling where an effect on cob length can be achieved.

Common fungal diseases affecting maize

Northern leaf blight (NLB): Caused by *Exserohilum turcicum*, this disease presents as elongated, tan-coloured lesions on leaves with dark, dusty masses of spores.

Grey leaf spot: Caused by the fungus *Cercospora zeae-maydis*, it results in leaf spots that can spread and cause significant yield loss.

Maize eyespot: Characterized by small, circular spots on leaves, often with a purplish-brown edge and surrounded by a light halo. Eyespot is the most common of all the diseases and can be controlled easily with an application of fungicide. For forage maize there is more justification for fungicide use in coastal areas where eyespot is more prevalent. A fungicide should be planned for grain maize as the cleaner the crop, the better the grain fill achieved.

***Fusarium* ear rot:** Caused by various *Fusarium* species, it contaminates the cobs with mycotoxins and can lead to yield reduction.

Wireworm

Wireworm can be a significant pest in maize, particularly following grass leys, long-term pasture, cover crops with a high grass content, or in fields with a history of wireworm damage. The larvae feed below ground and can attack maize from germination through to the 10 to 12 leaf stage. This results in poor and uneven establishment, missing plants within rows and stunted seedlings. With limited chemical control options available, management relies on an integrated pest management (IPM) approach, including ploughing out grass leys well in advance of maize, controlling grass weeds and volunteers, creating a firm, consolidated seedbed, and ensuring optimal seed placement and nutrition to boost establishment.





Maize nutrition – matching supply to demand

Grain and forage maize build significant biomass in a relatively short growing season. A well-planned nutrition programme is therefore essential to maximise crop establishment, biomass production and ultimately the conversion of nutrients into energy, cob and grain.

Before determining fertiliser and organic manure applications, soil analysis should be the starting point. Maize is sensitive to soil pH and has a high demand for nutrients throughout the growing season.

Nutrient	Requirement (kg/ha)		Key considerations
	40tn/ha	50tn/ha	
Nitrogen	150	150	Demand continues through to flowering
Phosphate	55*	69*	Particularly important for establishment
Potash	175*	219*	High demand due to rapid biomass production
Sulphur	20–40	20-40	Essential for efficient nitrogen utilisation

***Crop nutrient removal recommendations. Nutrient requirements should be adjusted according to soil supply, SNS and P & K indices, previous cropping and organic manure applications. Target soil pH is approximately 6.7, depending on soil type and rotation.**

Phosphate – establish the crop

Phosphate is particularly important during early maize development, supporting root growth and establishment.

Where manures or digestates are being used, it is important to understand how much phosphate will be available when the crop needs it. Around **60% of manure-derived phosphate is considered available during early establishment,** so relying entirely on organic sources may not provide sufficient readily available phosphate at this critical stage.

Where required, a fresh, water-soluble phosphate source can therefore complement organic nutrient supply and support early crop development.

Potash – support biomass and water regulation

Maize has a particularly high demand for potash due to the large amount of biomass produced during the growing season.

Potassium plays an important role in **water regulation, nutrient movement and overall plant development**, with crop uptake peaking around flowering. Ensuring sufficient potash supply through this period can therefore be an important driver of crop performance. A deficit in potash will result in the plant being less drought tolerant.

Although a significant proportion of potassium is eventually returned to the soil as the crop senesces, the crop must have sufficient available potash to meet peak demand. Significant crop offtake should also be considered when planning the following season's nutrient requirements.

Where large quantities are required, **MOP is ideally applied in the autumn**. Manure and digestate can provide some or all of the crop requirement, but nutrient analysis is essential to accurately quantify the nutrients being supplied. Potash from manure is typically around **90% available to the crop**.

Sulphur – maximise nitrogen efficiency

Sulphur is essential for **protein and chlorophyll production, enzyme activity and efficient nitrogen utilisation**.

A sulphur deficiency can result in pale, stunted crops and reduced nitrogen-use efficiency. Applications of slurry, digestate or FYM should not automatically be assumed to provide sufficient available sulphur, particularly where crop demand is high.

Sulphur supply should therefore be assessed alongside the wider nitrogen strategy.

Nitrogen – match supply to demand

Nitrogen demand in maize continues throughout the season and **peaks around flowering**, potentially several months after the final granular or liquid nitrogen application.

The N-max for maize is **150 kg N/ha from all available sources**, including organic manures and fertiliser. This level of available nitrogen may be required particularly on lower-fertility sites or in AD situations.

Where livestock manure has been regularly applied, background fertility may be considerably higher and lower fertiliser N rates may be appropriate. However, this should be calculated carefully rather than assumed.

On sites with a history of regular organic manure applications, **soil mineral nitrogen testing can help quantify the nitrogen likely to be supplied by the soil** and improve fertiliser decision-making.

Nutrino Pro – targeted foliar nutrition

As maize moves towards peak biomass production, maintaining an adequate supply of available nutrients becomes increasingly important.

Applying **20–30 L/ha of Nutrino Pro at the 8–10 leaf stage** provides a targeted foliar source of nitrogen alongside magnesium, sulphur and biostimulants.

This application can provide an efficient and crop-safe way of supplying additional nutrition when demand is increasing, while supporting the crop through a period of rapid growth and nutrient demand.

Nutrino Pro is a source of nitrogen and must therefore be included when calculating total nitrogen applied against the crop's N-max.



Maize Trial with 20 L/ha Nutrino Pro. In each pair of cobs, the left is untreated, the right is treated. On average there was an increase of 24% in cob weight from the nutrino pro application

Foliar nutrition – support early crop development

The **5–6 leaf stage is a key developmental point in maize**, when the crop is determining the number of kernels that can develop around the cob. Ensuring adequate nutrition at this stage can help establish a healthy, well-developed crop with the potential to maximise yield.

A targeted foliar application can complement the underlying fertiliser programme, particularly where nutrient availability or crop stress could restrict early development.

IntraCrop ProGrAm provides a broad spectrum of nutrients alongside biostimulants designed to support nutrient assimilation and help reduce crop stress. It can complement existing soil-applied nutrition across a range of soil nutrient levels and has also been shown to support the performance of post-emergence herbicide programmes.

ProLeaf M Boost is an alternative foliar nutrition option, providing direct nutrient supply and being particularly suited to soils with lower background nutrient availability, including phosphorus.

For more information on maize nutrition, speak to your local Frontier advisor.



Forage

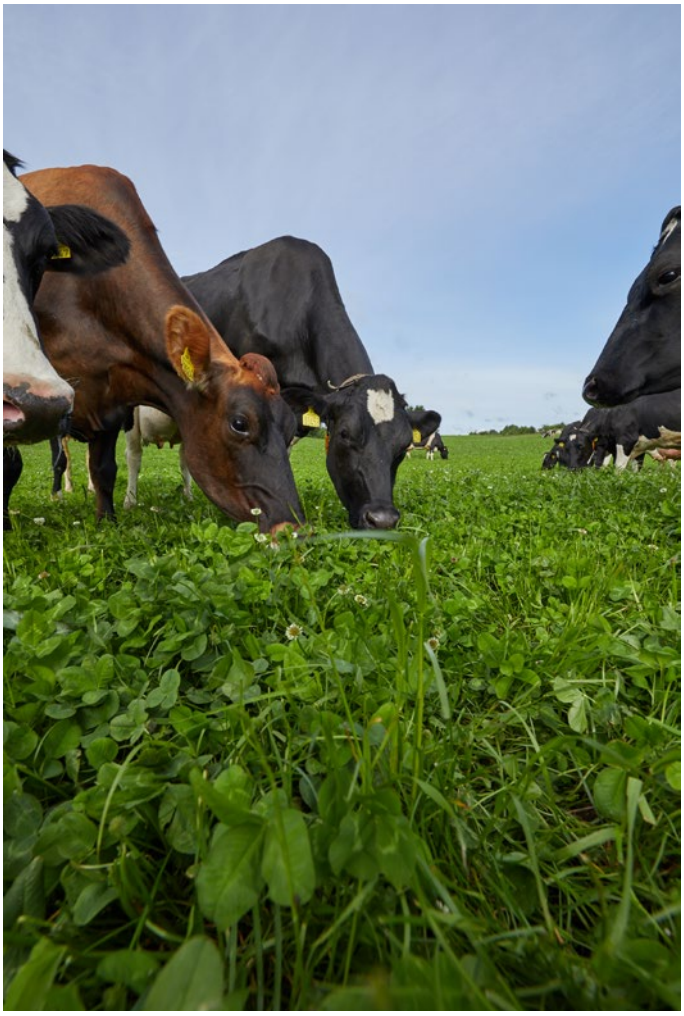
Forage maize

Maize silage is a good cereal replacement in dairy and beef rations thanks to its high starch and energy characteristics along with high DM yield. Whilst low in protein, it can be a very cost-effective addition to provide a well-balanced diet as an excellent source of starch.

Around 37% of the starch bypasses the rumen and is broken down in the intestine, reducing the risk of acidosis. It is also a highly palatable feedstock which can promote livestock intakes and reduce the need for purchased feed, but the advantages don't stop there.

In dairy and beef production:

- Maize offers the opportunity to use slurry, saving costs from use of inorganic fertiliser.
- Supports increased milk production levels.
- Maize silage is a 'rocket fuel' for all ruminant livestock, providing high levels of home-grown starch for rapid live-weight gain and carcass quality.
- It helps spread forage production risk in drought-prone areas compared to grass-only systems.



Maize inclusion vs. grass-only systems

Silage inclusion	Grass (100%)	Grass (66%) + maize (33%)	Grass (25%) + maize (75%)
Forage DM intake (kg/day)	9.8	11.2	13.0
Milk yield (kg/day)	22.0	25.2	27.5
Milk fat (%)	4.2	4.0	3.9
Milk protein (%)	3.0	3.1	3.2

Data source: CEDAR University of Reading.

Modern maize hybrids deliver excellent yield stability, even in more challenging growing years. This consistency means that silage performance can be predicted well, so that the production cost per kilo of DM is well understood. If correctly stored, maize silage will remain stable for several years, supporting efficient forage feeding.

Clamp losses can be effectively managed through the use of a silage inoculant as mentioned earlier in the guide. Attention to detail when sealing the silage clamp is crucial and use of an oxygen barrier sheet such as Silostop is strongly recommended. There can be losses of up to 20% in a badly managed clamp.

There is a trend towards longer chop length in maize which can increase the 'scratch factor' to promote healthy rumen function – known as shredlage. It is imperative when doing this that the correct grain processor is used in the forage harvester to ensure every grain is milled correctly, preventing digestion losses from un-cracked grains passing straight through the animal.

Anaerobic digestion

Maize for AD

Anaerobic digestion, or AD, in agriculture is a biological process where organic materials, like animal manure, crop biomass and food waste are broken down by microorganisms in the absence of oxygen. This process produces biogas (primarily methane and carbon dioxide) and digestate, a nutrient-rich byproduct that can be used as fertiliser.

The domestic biogas market is experiencing continued growth as part of the UK's strategic transition to meet net zero emissions by 2050. The industry encompasses small on-farm units through to large, centralised digesters operated by multinationals.

Units are responsible for injecting biogas into the national grid to replace fossil fuel derived methane. Biomethane is chemically indistinguishable from natural gas and can be injected into the grid without the need for any changes in transmission, distribution infrastructure or end-user equipment.

Biogas production has a number of associated benefits on farm:

- Waste management - helps efficiently handle livestock slurry, crop residues and food waste.
- Fertiliser production - digestate improves soil health and reduces the reliance on synthetic fertilisers.
- Greenhouse gas reduction - captures methane that would otherwise escape into the atmosphere.
- It increases the availability of nutrients in the by products.

Crops grown specifically for biogas production are required for stabilising or supplementing other feedstocks such as lower yielding slurries.

Whilst maize provides the mainstay of many AD plants, thanks to its high yield potential for biogas production, there are a number of other crop feedstock options available to suit each biogas process and farm rotation. Suitability of each is based on the DM content, its potential to produce energy, retention time in the digester and purity.

A general guide can be seen on the next page.

Maize silage makes up the largest share of the raw ingredients added to UK biogas plants. This is due to efficiency of the crop for gas production along with the ease to which maize's functionality is preserved in the clamp to provide year-round supply. This, coupled with the wider benefits of maize in the rotation, makes it an attractive option for many.

In fact, the only considerations are which variety to choose, what other crops to balance the feedstock with to encourage quicker retention time and effective soil management to lessen the environmental impact of the maize crop. In addition, because of the scale of many biogas enterprises, variety selection to manage maturity times and DM yields will be key to maximising profitability, organising workloads and prioritising which fields need cutting first.

Key considerations for energy maize:

- Balancing a range of maturities is key across large areas - better yield potential is achieved from later maturing varieties (above FAO 200), but earlier varieties will have a fast dry-down at harvest leading to an increased dry matter percentage.
- Energy maize suits mainstream and favourable sites – it performs especially well on lighter soils and when drilled early (can be drilled deeper into moisture if needed, up to 70mm).
- There is an increased risk of lodging/plant competition with late varieties (FAO >240), so ensure you select an appropriate variety split for your conditions.
- Varieties that 'stay green' provide the widest harvest window.

Turn to the maize varieties section to see our maize offering for use in AD.

Typical biogas yields from different crops

Feedstock	Biogas yield (m^3/t)
Cattle slurry	15-25 (10% DM)
Pig slurry	15-25 (8% OM)
Poultry	30-100 (10% OM)
Grass silage	160-200 (28% OM)
Whole wheat crop	185 (33% OM)
Maize silage	200-220 (33% OM)
Maize grain	560 (80'+, OM)
Crude glycerine	580-1000 (80% DM)
Wheat grain	610 (85'+, OM)
Rape meal	620 (90'+> OM)
Fats	up co 1200
Nettle	120-420
Sunflower	154-400
Miscanthus	179-218
Flax	212
Sudan grass	213-303
Sugar beet	236-381
Kale	240-334
Straw	242-324
Oats grain	250-295
Chaff	270-316
Potatoes	276-400
Rye grain	283-492
Clover grass	290-390
Sorghum	295-372
Grass	298-467
Reddover	300-350
Jerusalem artichoke	300-370
Turnip	314
Rhubarb	320-490
Triticale	337-555
Oilseed rape	340-340
Canary grass	340-430
Alfalfa	340-500
Clover	345-350
Barley	353-658
Hemp	355-409
Wheat grain	384-426
Peas	390
Ryegrass	390-410
Leaves	417-453
Fodder beet	160-180

Data source: NNFFC and Andersons Centre, taken from AD calculator based on fresh weight data unless otherwise stated.

Hybrid rye for AD

Hybrid rye can be grown for both grain and whole crop markets in the UK. You are likely already aware of the use of grain for specialist human consumption such as in Ryvita™ and products like rye whisky, but most of the UK crop is used in pig and poultry rations and more lately as whole crop in AD plants. No matter the local end market you are looking to serve, picking the right variety will be critical to maximising either grain yields or gas production.

Like many hybrid cereals, hybrid rye has a strong, deep rooting system, making it suitable for light land that is drought prone, but still yields well on heavier land. This rooting system not only helps with water uptake in difficult seasons, but also nutrient scavenging. It's also a carbon-efficient crop, with a lower nitrogen requirement (typically 120-150kg/ha per hectare) than wheat or barley.

Hybrid rye is best sown between late August and mid-October. Taking into account your site and local conditions; care should be taken as it is especially sensitive to poor seedbeds. Once drilled the crop has excellent early vigour and will move through the growth stages quicker than many winter cereals so careful crop monitoring is required to ensure that all applications, especially plant growth regulators (PGRs), are made in a timely manner.

Key considerations for hybrid rye:

- High grain yields, often outyielding wheat and barley as a second or third cereal.
- Wide drilling window (mid-September to early November) spreads autumn workload.
- Relatively early harvest (after winter barley, but before wheat) – good entry for oilseed rape especially if whole-cropped in June.
- Drought tolerance – 25% lower water requirement than winter wheat according to KWS (300 litres/t of grain versus 400 litres/t for winter wheat). Suits light land or drought-prone areas that may not yield well for wheat or barley.
- Lower risk from Take-all, *Septoria*, eyespot and barley yellow dwarf virus (BYDV).
- Generally, requires lower inputs than wheat or barley due to strong root system and natural disease resistance.
- Maximum yields come from regions with higher rainfall and heavier soils.
- Early harvesting when the crop is at 30-35% dry matter produces the best gas yields.

Turn to page 34 to see our hybrid rye offering for use in AD.

Beet for AD

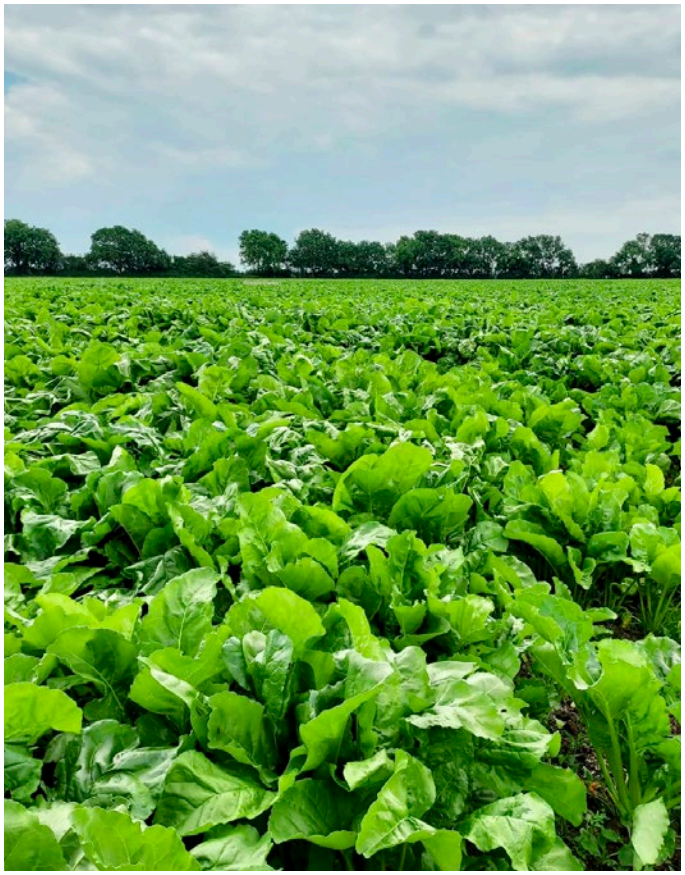
Energy beet is suitable for growth across most of the UK and offers growers consistently high DM yield and fast bio-digestion. It is an easy-to-grow crop thanks to a proven history of agronomic knowledge and incredibly clean, high methane.

On the other hand, the crop often offers a later harvest date than maize and the beet needs careful washing and storage. In addition, due to pest and disease pressures, energy beet needs quite a wide rotational position. If growing the crop, you should think carefully when it comes to storage as extra care needs to be taken when it comes to clamping.

Key considerations for energy beet:

- As with fodder or sugar beet, a minimum three-year rotation is recommended.
- To achieve maximum dry matter yield, aim to achieve a stand density of 85,000-100,000 plants/ha, using a seed rate of 110,000 seeds/ha.
- An efficient feed stock through the digester - almost all (over 90%) of the complete beet plant can be converted into biogas, with fermentation taking less than 14 days. This makes beet the ideal partner for maize, as equipment for sowing can be used for both crops.
- A robust soil management plan will be necessary to reduce the impact of structural damage.

Turn to page 35 to see our beet offering for use in AD.



Grass for AD

A versatile crop, grass is a good feedstock for AD, especially on mixed farms or in wetter parts of the UK. It can help broaden the rotation, manage earlier harvests and reduce black-grass levels.

Nevertheless, grass has lower methane yields than many other crop feedstocks and so if opting for it you will need to make time for two cuts per season.

Key considerations for grass:

- High yielding species, such as Italian ryegrass and advanced grasses, together with red clover have a very high yield potential and can, in many situations, compete with maize.
- Grass and grass-with-clover work very well in an anaerobic digester mixed with slurry, thus improving the yield of gas.
- Grass is a perennial crop with a good environmental profile.

Turn to page 37 to see our grass offering for use in AD.



Grain maize



Grain maize

The UK typically imports around two million tonnes of grain maize each year. However, with the maize area continuing to expand, the inclusion of maize in livestock rations increasing and warmer, hotter summers on the horizon, more growers are considering the potential margins that grain maize has to offer.

The key to grain maize success is choosing an early maturing variety and coupling that with a plant type that has good standing power. Harvest date is often three-to-five weeks later than maincrop forage varieties. Typically, the grain for crimping at harvest is 65–70% and 60–65% dry matter for GEM, which is higher than for maize silage.

One of the biggest challenges associated with grain maize is drying the grain down to 14-15% moisture, ideally within 48 hours of harvest. Whilst this was not an issue for many during the hot summers of 2025 and 2026, it is a key cost consideration when choosing to produce maize for grain.

Maize grain in more southern parts of the UK is produced for the dry grain market with the kernels being dried. Maize grain is typically grown in the West for crimping, the process by which specialist crimper rollers crush the wet grain exposing the endosperm. This increases its digestibility and reduces any loss of grain through poor digestion. Whole cob, also known as ground ear maize (GEM), can also be used to increase fibre levels in the feed. A comparison on the nutritional composition of different types of maize feed has been produced by the AHDB:

Nutritional composition of different types of maize feed

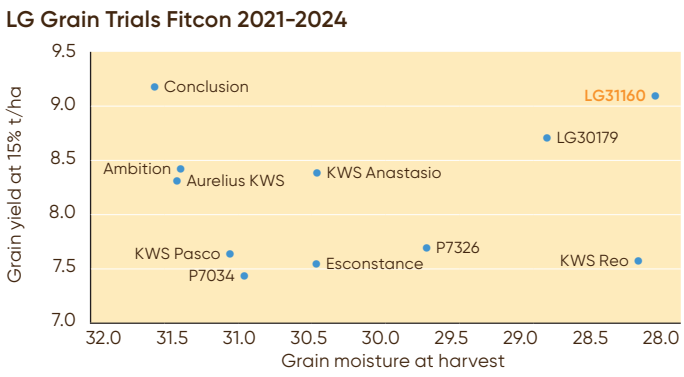
	Metabolisable energy (ME/kg DM)	Crude protein (% in DM)	Starch (% in DM)	DM (%)
Crimped maize grain	13.8-14.3	9-10.5	65-70	65-70
Ground ear maize	12.3-12.6	8.5-9	55-60	60-65
Maize silage	10.8-11.5	8-9	25-35	28-35

Data source: AHDB.

The addition of a late applied foliar nitrogen such as Nutrino Pro will provide an efficient source of Nitrogen that will directly support grain fill. This has been demonstrated with independent work via Maize Growers Association. Not only did the Nutrino Pro application support yield, but it also improved protein levels and due to novel nutrient and bio-stimulant formulation it helped the plant convert nutrients quicker and so reduced grain moisture at harvest.

Following the positive yield response from Nutrino Pro application on forage maize the Maize Growers Association trialled Nutrino Pro on grain maize. The MGA found that an application of Nutrino Pro at 20l/ha can increase yield by up to 1.8tn/ha, whilst also improving grain protein.

LG Grain Trials Fitcon 2021-2024



Data Source: BSPB 2025/6 Forage Maize Descriptive List - first choice less favourable varieties.

Maize varieties

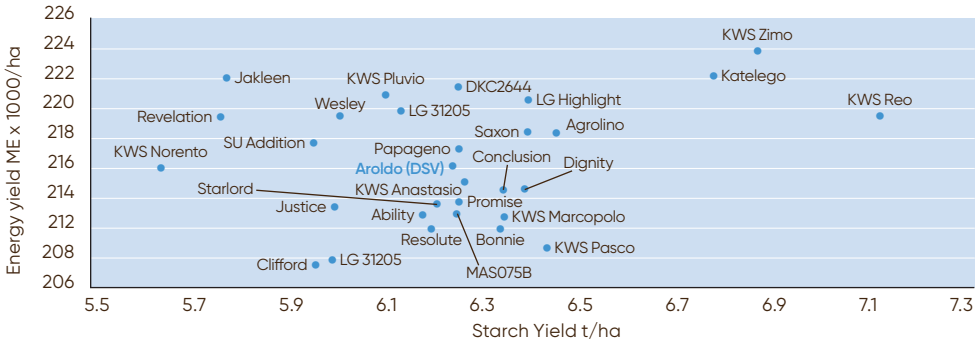


Frontier

Choosing maize varieties for forage

Look for varieties that produce the best energy density and high starch yields to boost milk yields and meat production. A range of maturities are available to suit your site and situation. DM yield will also be a key consideration.

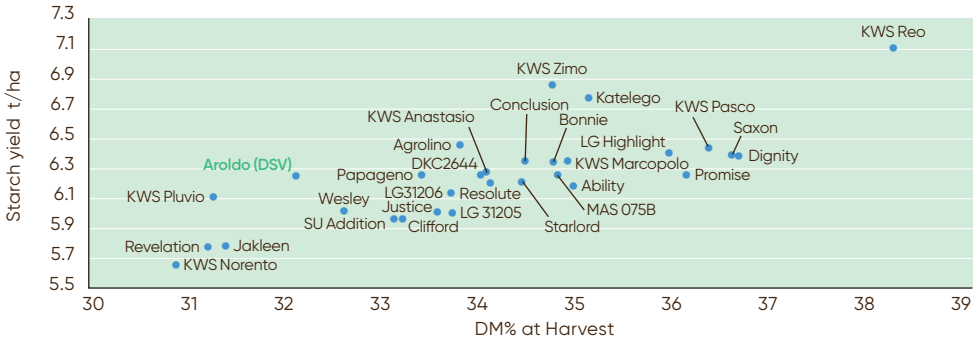
Descriptive List favourable sites - first choice starch and energy production for animal or AD performance including KWS Reo



Varieties towards the top right-hand corner of this graph have the best combination of energy and starch production.

Data source: BSPB 2027 Forage Maize Descriptive List and Fitcon Aroldo from DSV data set - first choice favourable varieties.

Favourable sites - varieties over 30% starch yield at harvest including KWS Reo



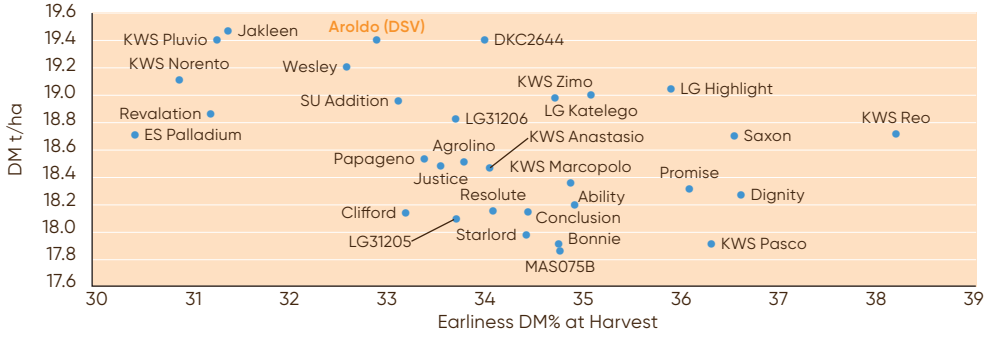
Varieties towards the top right-hand corner of this graph have the best combination of ME yield potential and DM content at harvest.

Data source: BSPB 2027 Forage Maize Descriptive List and Fitcon Aroldo from DSV data set - first choice favourable varieties.

Choosing maize varieties for biogas

High DM yields are key for maximising methane yields in biogas plants; exceptional sites have delivered DM yields more than 24t/ha. A range of maturities are available to suit your site and situation, and the characteristic will vary according to drilling and harvest dates.

Favourable sites - first choice varieties dry matter yield including KWS Reo



The higher a variety appears on the graph, the greater its dry matter yield per hectare.

Data source: BSPB 2027 Forage Maize Descriptive List and Fitcon Aroldo from DSV data set - first choice favourable varieties.

KWS Reo

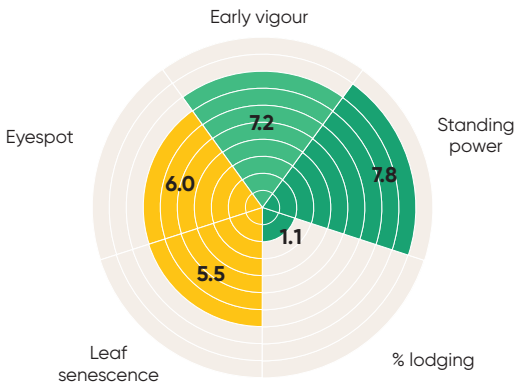
KWS UK Ltd.

A consistent top performer across mainstream, multiproduction sites. KWS Reo is a first-choice variety for Frontier growers.

KWS Reo - Performance figures

Maturity type*	**Early FAO 170**
Site type	**Favourable and less favourable sites**
UK DM yield (t/ha)	**18.7 (104% of year 4 and 5 varieties in trial)**
ME content (MJ/kg DM)	**11.69**
ME yield (1000s MJ/ha at harvest)	**219**
Starch content (% whole plant at harvest)	**38.0**
Whole plant starch yield (t/ha)	**7.11 (Highest on the DL)**
Cell wall digestibility (%)	**56.7**
Milk value/ha @ 38ppl	**£14,600**
Difference to BSPB Average	**+£667**

Data source: BSPB/NIAB Forage Maize First choice short-mid season varieties 2026/7..
*KWS estimate.



A consistent performer across sites and seasons, KWS Reo produces extremely high yields for its maturity class. A safe and secure plant type, right through to harvest, KWS Reo produces impressive starch yields and high energy density which boosts ration performance.

KWS Calvini

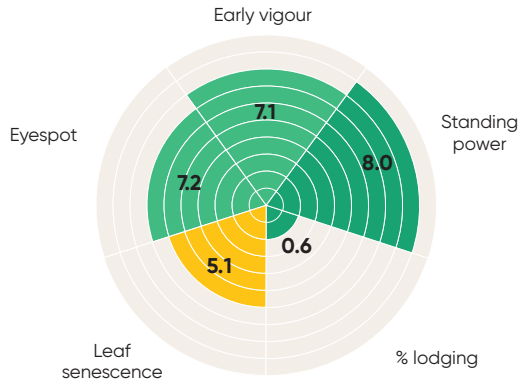
KWS UK Ltd.

Tried and tested since first being listed on the DL in 2019, KWS Calvini continues to boost ration performance thanks to its combination of yields, starch and plant vigour. 2nd Highest ME yld/ha in the Ultra Early Group (varieties over 38% DM @ Harvest)

KWS Calvini - Performance figures

Maturity type*	**FAO 170**
Site type	**Favourable and less favourable sites**
UK DM yield (t/ha)	**17.8**
ME content (MJ/kg DM)	**11.76**
ME yield (MJ/ha at harvest)	**209**
Starch content (% at harvest)	**37.4**
Starch yield (t/ha)	**6.65**

Data source: BSPB/NIAB Forage Maize First choice short-mid season varieties 2026/27 *KWS estimate.



A popular choice on-farm KWS Calvini is a very consistent performer across sites and seasons, delivering excellent dry matter yields 17.8t/ha even on less favourable sites. A very high starch content (37.4%) helps deliver strong energy values (11.76 MJ/kg DM). A robust plant type, KWS Calvini has good early vigour, a high kernel content and good ripening stability.

Silage from KWS Calvini won the Deeside Dairy Farmers Maize Silage competition three years running.

Saxon

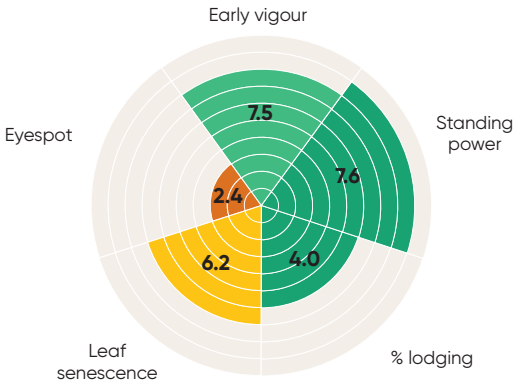
Limagrain UK

With still the best early vigour on the 2026/7 DL, LG Saxon is the ideal variety for those looking for high starch and excellent ME yields.

Saxon - Performance figures

Maturity type*	**FAO 180**
Site type	**Favourable and less favourable sites**
UK DM yield (t/ha)	**18.7 (104% of year 4 and 5 varieties in trial)**
ME content (MJ/kg DM)	**11.64**
ME yield (MJ/ha at harvest)	**217**
Starch content (% at harvest)	**34.2**
Starch yield (t/ha)	**6.39**
Cell wall digestibility (%)	**57.5**
Milk value/ha @38ppl	**£14,466**
Difference to BSPB Average	**+£533**

Data source: BSPB/NIAB Forage Maize First Choice short-mid season varieties 2026/7.



One of the top varieties for DM yield (18.7t/ha), Saxon delivers exceptional energy thanks to its high ME yield and cell wall digestibility. A fast-growing, hardy variety, Saxon strikes a perfect balance for both dairy and gas production. Its early harvest maturity makes the variety ideal for use on all mainstream maize sites.

Skipper

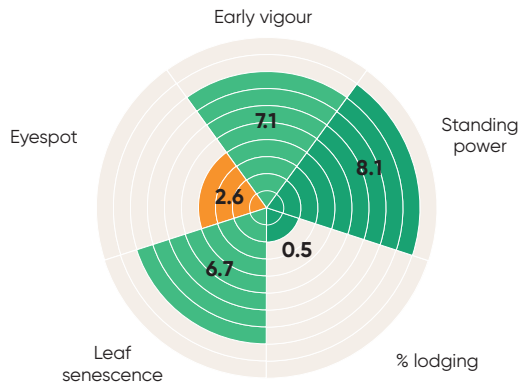
Limagrain UK

LG Skipper has exceptional starch yield - one of the best available. A top choice for growers looking to boost rations using a super stiff plant type with good stay-green characteristics.

Skipper - Performance figures

Maturity type*	**FAO 170**
Site type	**Favourable sites**
UK DM yield (t/ha)	**18.0 (100% of year 4 and 5 varieties in trial)**
ME content (MJ/kg DM)	**11.72**
ME yield (MJ/ha at harvest)	**211**
Starch content (% at harvest)	**36.6**
Starch yield (t/ha)	**6.60**
Cell wall digestibility (%)	**57.5**
Milk value/ha @ 38ppl	**£14,066**
Difference to BSPB Average	**+£133**

Data source: BSPB/NIAB Forage Maize First Choice short-mid season varieties 2026/7.



For growers looking for a very high starch content, Skipper offers delivers yields amongst the best on the 2026/7 DL. Backed by good cell wall digestibility and high DM yields, the variety offers great energy values (11.72MJ/kg DM). Good early vigour, strong standing power and high stay green characteristics complete this attractive package.



Aroldo

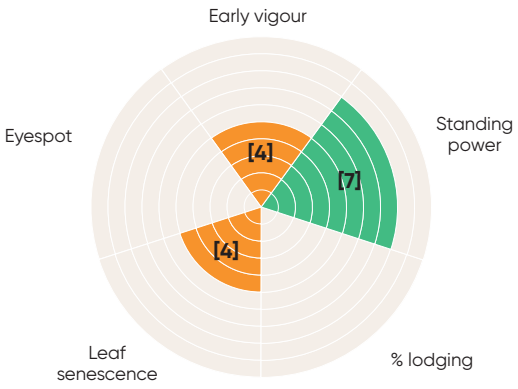
DSV UK

NEW

Quick to establish, Aroldo has looked well in trials throughout the challenges of 2025 and 2026 due to its impressive performance in the challenging conditions. Very high yield potential variety, with good standing power for harvest security.

Maturity type*	**FAO 210**
Site type	**Favourable and less Favourable sites**
UK DM yield (t/ha)	**20.49**

Data source: DSV and NIAB DL trials
*DSV estimate.



A flint-dent intermediate type, Aroldo is an early maturing maize that impressed in the extremely short growing and challenging season of 2026; it's a variety that has shown good potential across the maize belt in Europe including Germany, Denmark and Austria too. A taller variety, Aroldo has excellent lodging resistance and stem stability.

New and other maize varieties to catch this season:

KWS Giso (KC 3008)

KWS UK Ltd.



New to the Descriptive List for growers in 2026/7, a very early variety that delivers impressive yields combined with excellent feed quality, in shorter growing seasons. The highest dry matter produced (41.3%) by any of the new additions to the new DL. One to watch for grain maize production.

Maturity type*	**FAO 160, very early type**

KWS Mojo (KXC 3002)

KWS UK Ltd.



Suitable for use across all maize growing regions, performed well in Frontier trials in 2024 and 2025. Good combination of earliness, yield and quality potential.

Maturity type*	**FAO 170, early type**

Katelego

KWS UK Ltd.



New to the Descriptive List in 2026/7, a similar type for growers who have had good experience with Aurelius, but with higher starch and energy content. High DM yields round off this impressive package.

Maturity type*	**FAO 180, early type**

KWS Granturismo

KWS UK Ltd.



A long mid-season variety, with good suitability to the east of the country. The highest yielding variety on the DL with DM yields at 18.6t/ha (105% of year 4 and 5 varieties). Super secure through to harvest, good standing score (8.0) and low lodging score (0.5%) in 2026 trials on less favourable sites.

Maturity type*	**FAO 220, later type**

Varieties coming through trials to watch this season:

RGT Exxmouth

RGT Seeds

Ultra early, short season type with very large cobs. Good starch with rapid dry down for an early harvest.

DKC 2644

Bayer CropScience UK

A FAO 200 variety with high total energy production and high starch. Lots of biomass. Stay green.

RGT Waltixx

RGT Seeds

Good balance of yield and earliness with excellent standing.

LG Easyway

Limagrain UK

High dry matter yields in the FAO 160 segment, good early vigour and performs well on marginal sites.

2026/27 Forage Maize Descriptive List

First choice varieties for favourable sites (ranked in dry matter content order including KWS Reo)

Variety	Dry matter content at harvest %	Dry matter yield t/ha	Dry matter yield as % of 4 and 5-year varieties	No of trials for dry matter yield	ME of fresh plant at harvest (MJ/kg dry matter)	ME yield of fresh plant at harvest (1000s MJ/ha)	Starch content of whole plant at harvest (%)	Starch yield of whole plant at harvest t/ha	Cell wall digestibility (%)	Early vigour (1-9) 9=good 1=poor	Standing power at harvest (root lodging) 9=good 1=poor	Lodging% #	% of trials where lodging occurred	Brackling% #	Number of incidences of brackling%	Leaf senescence (1-9)	Eyespot rating (1-9) (9=good)	Year first listed	Agent
KWS REO	38.2	18.7	104	12.0	11.7	219	38.0	7.1	56.7	7.2	7.8	1.1	66.7	0.8	7.0	5.5	6.0	2025	KWS
DIGNITY	36.6	18.3	101	25.0	11.7	213	35.0	6.4	58.0	7.2	7.9	0.8	62.5	0.6	10.0	6.2	1.9	2022	LIMAGRAIN
SAXON	36.5	18.7	104	25.0	11.6	217	34.2	6.4	57.5	7.5	7.6	1.4	75.0	0.9	10.0	6.2	2.4	2022	LIMAGRAIN
KWS PASCO	36.3	17.9	99	61.0	11.7	209	35.9	6.4	57.2	6.8	7.8	0.9	73.2	1.8	32.0	6.2	8.1	2022	KWS
PROMISE	36.1	18.3	102	24.0	11.6	212	34.1	6.2	57.7	7.0	7.7	1.1	80.0	0.8	9.0	6.3	1.9	2024	LIMAGRAIN
LG HIGHLIGHT	35.9	19.0	106	13.0	11.5	220	33.6	6.4	57.5	6.7	8.2	0.3	40.0	0.1	9.0	7.0	6.9	2026	LIMAGRAIN
KATELEGO	35.1	19.0	105	11.0	11.7	222	35.6	6.8	57.8	7.0	7.7	1.1	62.5	0.7	8.0	6.6	6.3	2026	KWS
ABILITY	34.9	18.2	101	37.0	11.6	211	34.0	6.2	57.9	7.3	8.1	0.4	45.0	0.2	13.0	6.8	5.8	2020	DLF
KWS MARCOPOLO	34.9	18.4	102	11.0	11.5	211	34.6	6.3	57.2	6.8	6.9	2.6	87.5	0.4	8.0	6.5	6.3	2026	KWS
MAS 075B	34.8	17.9	99	29.0	11.8	211	35.0	6.2	59.6	7.0	7.6	1.4	68.8	0.3	10.0	6.5	6.2	2024	BRIGHT
BONNIE	34.7	17.9	99	89.0	11.8	210	35.4	6.3	58.4	7.3	8.0	0.6	56.9	0.3	38.0	7.2	5.9	2017	GRAINSEED
KWS ZIMO	34.7	19.0	105	16.0	11.8	224	36.2	6.9	58.3	7.1	7.9	0.8	50.0	0.4	8.0	6.7	6.1	2025	KWS
CONCLUSION	34.4	18.1	101	72.0	11.8	213	35.0	6.3	58.7	7.3	8.0	0.6	55.6	0.2	35.0	7.0	3.9	2020	LIMAGRAIN
STARLORD	34.4	18.0	100	29.0	11.8	212	34.5	6.2	59.6	6.8	7.4	1.7	75.0	0.5	10.0	6.4	7.8	2024	BRIGHT
RESOLUTE	34.1	18.1	101	37.0	11.6	210	34.2	6.2	57.3	7.2	7.8	1.0	50.0	0.4	13.0	7.0	2.4	2020	LIMAGRAIN
KWS ANASTASIO	34.1	18.5	102	29.0	11.6	214	33.9	6.3	57.2	7.2	7.8	0.9	68.8	0.5	10.0	7.0	7.6	2022	KWS
DKC2644	34.0	19.4	108	12.0	11.4	221	32.2	6.2	56.8	6.4	7.6	1.4	66.7	0.4	8.0	7.0	6.3	2026	BAYER
AGROLINO	33.8	18.5	103	16.0	11.8	217	34.8	6.4	58.7	6.8	7.7	1.2	62.5	0.6	8.0	6.6	6.4	2025	KWS
LG31205	33.7	18.1	100	16.0	11.5	208	33.2	6.0	56.9	6.7	7.6	1.4	50.0	0.5	4.0	7.0	8.2	2018	LIMAGRAIN
LG31206	33.7	18.8	104	16.0	11.6	219	32.6	6.1	58.6	7.1	7.4	1.8	77.8	0.1	7.0	7.2	4.0	2025	LIMAGRAIN
JUSTICE	33.5	18.5	102	24.0	11.5	212	32.5	6.0	57.3	6.9	7.9	0.7	64.3	0.2	9.0	6.6	8.6	2024	GRAINSEED
PAPAGENO	33.4	18.5	103	22.0	11.7	216	33.7	6.3	58.0	6.8	7.5	1.5	75.0	0.7	8.0	7.1	7.0	2024	KWS
CLIFFORD	33.2	18.1	101	19.0	11.5	208	32.9	6.0	57.0	7.1	8.1	0.5	27.3	0.7	8.0	7.0	7.4	2025	BRIGHT
SU ADDITION	33.1	19.0	105	17.0	11.4	217	31.4	6.0	57.2	7.0	7.9	0.9	66.7	0.4	7.0	7.1	4.5	2025	SU/ELSOMS
WESLEY	32.6	19.2	106	13.0	11.4	219	31.3	6.0	57.1	7.0	7.7	1.1	77.8	0.2	9.0	7.2	6.5	2026	GRAINSEED
JAKLEEN	31.4	19.5	108	14.0	11.4	221	29.7	5.8	57.4	6.8	7.4	1.8	85.7	0.2	3.0	7.2	6.2	2024	GRAINSEED
KWS PLUVIO	31.3	19.4	108	16.0	11.4	220	31.5	6.1	55.9	7.2	7.7	1.1	75.0	0.2	9.0	7.4	6.0	2026	KWS
REVELATION	31.2	18.9	105	13.0	11.6	219	30.6	5.8	58.9	7.1	7.6	1.3	77.8	0.3	9.0	7.6	5.2	2026	GRAINSEED
KWS NORENTO	30.9	19.1	106	16.0	11.3	215	29.6	5.6	56.5	7.0	7.8	1.0	75.0	0.3	9.0	7.1	6.8	2026	KWS
ES PALLADIUM	30.4	19.3	107	21.0	11.4	220	28.3	5.4	58.3	7.2	7.4	1.7	72.7	0.3	9.0	7.1	5.1	2023	GRAINSEED
TRIAL STATISTICS																			
Mean of 4&5 year varieties	35.6	18.0	100	-	11.59	209	34.3	6.19	57.5	7.0	7.8	0.9	-	0.5	-	6.4	5.7	-	-
LSD (V.Cont)	1.05	0.54	3.0	-	0.150	-	1.38	-	0.84	0.31	-	-	-	-	-	0.46	-	-	-
SE (variety mean)	0.529	0.274	1.52	-	0.0758	-	0.695	-	0.424	0.156	-	-	-	-	-	0.232	-	-	-

Notes: - indicates no data available[ ] = only 1 year of data available

ME is calculated as D-value x 0.16

= values are re-transformed from the mean of the log data

Standing Power (1-9) has been calculated so that a variety that shows significantly more (at 99%) lodging than the mean of the 4 & 5 year varieties receives a score of less than 7.0. This is equivalent to 2.6% lodging.

Eyespot rating derived from inoculated nurseries rather than field scores

Full data at www.bspb.co.uk

With thanks to the Maize Growers Association for part-funding the eyespot assessments

First choice less favourable sites (short to mid season varieties)

(ranked in dry matter content order)

VARIETY	Dry matter content at harvest (%)	Dry matter yield (t/ha)	Dry matter yield (% of 4 & 5 year varieties)	No of trials for dry matter yield	ME of fresh plant at harvest (MJ/kg dry matter)	ME yield of fresh plant at harvest (000s MJ/ha)	Starch content of whole plant at harvest (%)	Starch yield of whole plant at harvest (t/ha)	Cell wall digestibility (%)	Early vigour (1-9)	Standing power at harvest (root lodging) (1-9)	Lodging (%) #	% of trials where lodging occurred	Brackling (%) #	No of incidences of brackling	Leaf senescence (1-9)	Eyespot rating (1-9)	Year first listed	Agent
KWS TEMPRANO	41.6	16.3	90.6	20.0	11.8	192.3	39.8	6.5	56.7	7.0	7.9	0.9	76.9	1.3	7.0	3.8	4.9	2024	KWS
KWS GISO	41.3	17.2	95.5	10.0	11.7	201.1	39.2	6.7	55.8	7.0	7.7	1.2	66.7	0.6	8.0	4.3	6.1	2026	KWS
LG31152	40.9	17.7	98.3	12.0	11.6	205.4	37.0	6.6	56.4	7.2	7.7	1.2	66.7	0.4	7.0	5.3	5.7	2025	LIMAGRAIN
GEMA	39.6	16.9	93.6	23.0	11.7	197.2	38.4	6.5	56.8	6.7	7.5	1.5	80.0	0.7	9.0	5.7	6.4	2021	LIMAGRAIN
DUKE	39.5	17.1	94.6	19.0	11.9	203.1	39.0	6.7	57.9	7.0	7.7	1.2	92.3	0.4	7.0	5.6	6.6	2024	LIMAGRAIN
KWS PORTABELLO	39.0	17.4	96.4	12.0	11.7	204.2	38.5	6.7	57.1	7.4	8.0	0.5	77.8	1.7	7.0	5.6	6.4	2025	KWS
KWS CALVINI	38.6	17.8	98.5	24.0	11.8	208.9	37.4	6.6	57.6	7.1	8.0	0.6	80.0	1.4	9.0	5.1	7.2	2019	KWS
RGT DUXXFORD	38.4	17.6	97.6	10.0	11.6	204.6	36.3	6.4	57.2	6.8	7.9	0.7	66.7	0.8	8.0	6.0	2.3	2026	RAGT
KWS REO	38.2	18.7	103.7	12.0	11.7	218.8	38.0	7.1	56.7	7.2	7.8	1.1	66.7	0.8	7.0	5.5	6.0	2025	KWS
KWS EXELON	37.4	17.8	98.7	24.0	11.8	210.8	37.2	6.6	57.9	7.0	7.7	1.2	93.3	0.9	9.0	6.3	8.1	2021	KWS
SKIPPER	37.1	18.0	100.0	24.0	11.7	211.5	36.6	6.6	57.5	7.1	8.1	0.5	56.3	0.5	11.0	6.7	2.6	2023	LIMAGRAIN
FAITH	36.9	18.3	101.1	25.0	11.6	212.3	35.3	6.4	57.4	7.3	8.0	0.6	62.5	0.5	11.0	6.1	2.9	2023	GRAINSEED
FOXTROT	36.8	18.3	101.4	23.0	11.7	214.5	35.8	6.5	57.5	7.2	7.5	1.5	81.3	0.5	11.0	6.9	2.1	2023	LIMAGRAIN
PROSPECT	36.8	18.0	99.6	36.0	11.8	212.0	36.6	6.6	58.1	7.0	7.9	0.8	75.0	0.3	17.0	6.8	7.6	2019	LIMAGRAIN
DIGNITY	36.6	18.3	101.2	25.0	11.7	213.3	35.0	6.4	58.0	7.2	7.9	0.8	62.5	0.6	10.0	6.2	1.9	2022	LIMAGRAIN
SAXON	36.5	18.7	103.6	25.0	11.6	217.5	34.2	6.4	57.5	7.5	7.6	1.4	75.0	0.9	10.0	6.2	2.4	2022	LIMAGRAIN
KWS PASCO	36.3	17.9	99.2	61.0	11.7	209.0	35.9	6.4	57.2	6.8	7.8	0.9	73.2	1.8	32.0	6.2	8.1	2022	KWS
PROMISE	36.1	18.3	101.5	24.0	11.6	212.3	34.1	6.2	57.7	7.0	7.7	1.1	80.0	0.8	9.0	6.3	1.9	2024	LIMAGRAIN
LG HIGHLIGHT	35.9	19.0	105.5	13.0	11.5	219.8	33.6	6.4	57.5	6.7	8.2	0.3	40.0	0.1	9.0	7.0	6.9	2026	LIMAGRAIN
KATELEGO	35.1	19.0	105.3	11.0	11.7	221.6	35.6	6.8	57.8	7.0	7.7	1.1	62.5	0.7	8.0	6.6	6.3	2026	KWS
ABILITY	34.9	18.2	100.7	37.0	11.6	211.4	34.0	6.2	57.9	7.3	8.1	0.4	45.0	0.2	13.0	6.8	5.8	2020	DLF
KWS MARCOPOLO	34.9	18.4	101.7	11.0	11.5	211.3	34.6	6.3	57.2	6.8	6.9	2.6	87.5	0.4	8.0	6.5	6.3	2026	KWS
MAS 075B	34.8	17.9	98.9	29.0	11.8	211.4	35.0	6.2	59.6	7.0	7.6	1.4	68.8	0.3	10.0	6.5	6.2	2024	BRIGHT
BONNIE	34.7	17.9	99.1	89.0	11.8	210.4	35.4	6.3	58.4	7.3	8.0	0.6	56.9	0.3	38.0	7.2	5.9	2017	GRAINSEED
KWS ZIMO	34.7	19.0	105.1	16.0	11.8	223.6	36.2	6.9	58.3	7.1	7.9	0.8	50.0	0.4	8.0	6.7	6.1	2025	KWS
TRIAL STATISTICS																			
Mean of 4&5 year varieties	35.6	18.0	100	-	11.59	209	34.3	6.19	57.5	7.0	7.8	0.9	-	0.5	-	6.4	5.7	-	-
LSD (V.Cont)	1.05	0.54	3.0	-	0.150	-	1.38	-	0.84	0.31	-	-	-	-	-	0.46	-	-	-
SE (variety mean)	0.529	0.274	1.52	-	0.0758	-	0.695	-	0.424	0.156	-	-	-	-	-	0.232	-	-	-

Notes: ME is calculated as D-value x 0.16; # - Values are re-transformed from the mean of the log data. [ ] - only one year of data available.

Standing power(1-9) has been calculated so that a variety that shows significantly more (at 99%) lodging than the mean of the 4 & 5 year varieties, receives a score of less than 7.0. This is the equivalent to 2.6% lodging.

Full data at www.bspb.co.uk Eyespot rating derived from incoulated nurseries rather than field scores.

Hybrid rye varieties



SU Perspectiv

Saaten Union

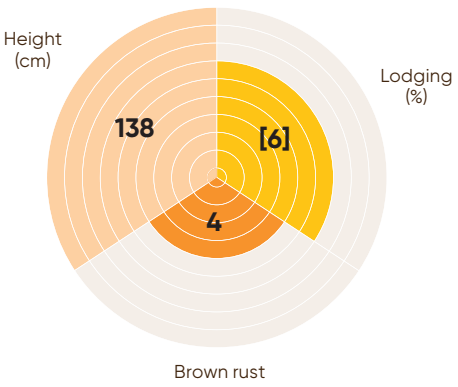
The successor to SU Performer with higher yields and earlier maturity, also under test by Ryvita.

Type	**Winter, hybrid rye**
AHDB recommended	**UK AHDB Described since 2024**
UK yield (% controls)*	**101**
Protein content (%)	**8.4**
HFN	**229**
Specific weight (kg/hl)	**77.0**

*AHDB Winter Rye Descriptive List 2026/27.

0

Earliness of maturity (+/- SU Performer)



With high yields, especially in more northern regions, SU Perspectiv brings an attractive grain package with good HFNs and high specific weights. An earlier maturing variety (0), it has medium height and stiff straw.

KWS Tayo

KWS UK Ltd

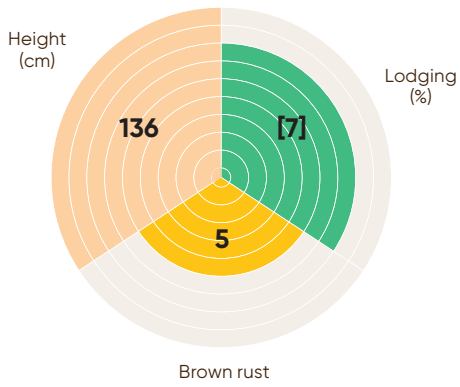
The UK's most widely grown hybrid rye for grain and whole crop thanks to its excellent yields, good straw and good brown rust resistance.

Type	**Winter, hybrid rye**
AHDB recommended	**UK AHDB Described since 2022**
UK yield (% controls)*	**101**
Protein content (%)	**8.2**
HFN	**242**
Specific weight (kg/hl)	**76.0**

*AHDB Winter Rye Descriptive List 2026/27.

+1

Earliness of maturity (+/- SU Performer)



Suited for sowing in all regions of the UK, KWS Tayo brings high yields, strong brown rust resistance and good standing power to growers. It is a multi-purpose variety and can be used in a variety of scenarios from whole crop for Anaerobic Digestion to feed for pigs and poultry and some food industry applications. KWS Tayo also has improved resistance to ergot thanks to PollenPLUS technology.

Fodder beet technical sheet

Variety	Treatment	Primed seed available	Rhizomania tolerant?	DM yield % control	Root colour	In/out ground	Root texture	% Dry matter	Comment
Lempa #	Force/Tachigran/Vibrance		✓	**90**	Red	In	Soft	12	Replacement for Splendide; suitable for grazing
Monro	Force/Tachigran/Vibrance			**75**	Red	Out		14	Very soft; ideal for grazing
Jamon #	Force/Tachigran/Vibrance			**90**	Orange	Out		15	Very palatable and very popular
Kyros	Force/Tachigran/Vibrance			**94**	Yellow	Out		18	Very digestible and palatable
Blaze #	Force/Tachigran/Vibrance			**95**	Red	Out		18	Well proven grazing variety; clean roots
Cagnotte	Force/Tachigran/Vibrance		✓	**92**	White	Out		18	Highly palatable, easy lifting and good storage
Bangor	Force/Tachigran			**96**	Yellow	Out		19	High yields and clean roots
Magnum	Force/Tachigran			**104**	White	In	Mid	19	Very reliable feeding variety
Robbos #	Force/Tachigran/Vibrance	✓		**100**	Yellow	Mid		20	Large leaves; well proven
Tarine	Force/Tachigran/Vibrance		✓	**104**	Red	Mid		21	High dry matter yields
Enermax	Force/Tachigran		✓	**100**	White	In		21	Dual purpose - can be used for AD and storage
Blizzard #	Force/Tachigran/Vibrance			**102**	White	Out		22	High % in the ground; ideal to lift late
Fosyma	Force/Tachigran/Vibrance	✓	✓	**117**	Red	Mid		22	Dual purpose - AD and forage. Only available as primed
Brick #	Force/Tachigran/Vibrance	✓	✓	**118**	White	In	High Ad	24	Very high biogas yield
Tadorne #	Force/Tachigran/Vibrance		✓	**118**	White	In		24	Very high biogas yield
Alisa	Force/Tachigran	✓		**114**	White	In		24	High DM %; keeps in the ground until spring
Eloquenta	Force/Tachigran	✓		**116**	White	In		23	Very high yields with good disease resistance
Degas	Force/Tachigran		✓		White	In		22	Sugar beet type with high yields. Limited stock
Gahan	Force/Tachigran		✓		White	In		22	Sugar beet type with high yields. Limited stock
Clemens	Force/Tachigran		✓		White	In		22	Sugar beet type with high yields. Limited stock

Preferred varieties



Grass varieties

Short-term ley mixtures

Westerwold

1 year

(SFI-IPM3/CIPM3/SOH4)

- Highly productive annual grass
- Ideal for silage production.

15-20kg/acre 37-50kg/ha

Sprinter

12-18 months

(SFI-IPM3/CIPM3/SOH4)

50% PELETON Westerwold ryegrass tet.
50% SENDERO Italian ryegrass dip.

- Short-term cutting mixture with rapid establishment
- Excellent early spring growth.

14-16kg/acre 35-40kg/ha

Catch Crop

1-2 years

(SFI-IPM3/CIPM3/SOH4)

86% Italian ryegrass dip.
14% Westerwolds ryegrass tet.

- Ideal mixture for break crop
- Will produce high yields in both years of production with rapid recovery after cuts
- Makes excellent coarse horse hay.

14-16kg/acre 35-40kg/ha

Extra Cut

2-3 years

10% PERSEUS Ryegrass plus*.
15% LOFA Ryegrass plus*.
20% SENDERO Italian ryegrass dip.
15% HUNTER Italian ryegrass tet.
25% TETRAGRAZE Hybrid ryegrass tet.
15% ASTONCRUSADER Hybrid ryegrass tet.

- **Available with 15% red clover**
- Aimed at 3-5 huge conventional cuts over two seasons with potential for early first cut in year three
- Improved forage quality from hybrid and ryegrass plus.

13-15kg/acre 32-37kg/ha

X-Seed Vesuvius

2 years

32% JACCAR Italian ryegrass dip.
32% MELSITRA Italian ryegrass tet.
36% ABERNICHE festolium.

- **Available with red clover**
  (NB. Sowing rate increase to 15kg/acre)
- Intensive silage mix with exceptional early growth
- Fast establishment with explosive short-term yields
- Narrow heading date to optimise overall yield and D-value.

12-14kg/acre 30-35kg/ha

These options listed generally fit well post-maize for quick forage potential and for undersowing situations.

Mixture compositions may change due to seed availability. Where substitutions are required, alternative varieties with similar characteristics will be selected.



Managing maize stubbles

Undersowing your maize

Maize is a popular choice for growers due to its wide accessibility as a high-quality forage.

However, it can bring challenges, specifically post-harvest when a high volume of nutrient and soil loss can occur due to the ground being exposed with wide rows between crop stalks, allowing topsoil to be washed out of fields and therefore losing nitrogen and phosphate. Where maize harvest is potentially too late to establish any cover crops post-harvest, we strongly recommend to undersow the maize crop.

Benefits of undersowing

- Optimising soil structure and organic matter
- Reducing soil erosion, compaction and surface runoff
- Retaining soil nutrients such as nitrogen and phosphate
- Providing winter/spring grazing opportunities.

On the following page is previous work Frontier carried out in collaboration with United Utilities and Darley Hall Farm to assess how successfully establishment of undersown grass can be achieved.

As growers of maize, Darley Hall Farm were interested in reducing the risk of erosion and runoff and wanted to see if an economic crop of grass could be established into the growing crop.

Similarly, water services company, United Utilities is also undertaking projects to look at the impact of undersown grass in nitrogen leaching.

By linking together with Frontier agronomist, Nick Jones, the demonstration work was carried out on a 13-hectare block of land which was growing continuous maize.

Undersowing maize



21st June

Grass being drilled



Grass being drilled



Grass at 10 days



Grass at 21 days



12th August



21st October

Grass after harvest

Undersowing of the grass took place on 21st June with Sprinter Mix drilled at 17.2kg/ha. This mix is a 50/50 split of Westerwold and Italian rye. These grasses work well in this situation as they are fast to establish and will not head under the maize, although will grow away quickly after harvest. Sowing took place with the maize at 6 leaf stage; at this point the maize is well enough established. Post-harvest, Darley Hall Farm left the grass until the spring, where they put sheep on to graze. Following that they burnt it off and put it back into maize.

Correct establishment is crucial to prevent leaching after rainfall. Here are our top tips for getting started:

1. Italian ryegrass or Westerwold ryegrass – Westerwold is the most reliable due to being quick to root, it won't head under the maize, copes well with shade and grows quick post-harvest.
2. Sow at 5-7 leaf stage of maize. Sowing too early will create competition with the maize and issues with herbicides.
3. Drill seed on an inter-row basis at 10-18kg/ha, depending on soil type, conditions and potential forage requirements.
4. After sowing on the inter-row, a light inter-row grass harrow is needed as well as merging with press wheels where possible. Using a drill is far more reliable than simply broadcasting the seed because it provides better germination.

Get in touch For support or any questions regarding undersowing your maize, contact your Frontier advisor.

Post-maize harvest cover crop opportunities 2026

With an increasing area of maize now being grown across the applicable English regions, there is a significant opportunity to reduce overwinter soil erosion and nutrient loss by planting a green cover after harvest. If needed, the cover crop can also provide useful forage this autumn or in early spring.

Remember: timing is key. The following crops need to be planted almost immediately to benefit from optimum day length, seedbed temperatures and moisture availability. With an increase in the use of direct/minimum tillage drills on farm, the majority of cover crops can be drilled straight into a stale seedbed; keeping costs and time to a minimum.

A particular focus on establishing post-harvest green cover should be applied to fields with slopes and those near to watercourses to limit erosion. Water companies are increasingly interested in encouraging growers to undertake this work, so don't overlook local funding opportunities that may be available.

Green cover crops will not only help look after the soil and condition it over winter, but can also provide valuable forage into the new year where soil types allow.



Opportunities with the Sustainable Farming Incentive in England

Given its inclusion in the Sustainable Farming Incentive (SFI), farms with current agreements can be paid £129/ha per year for the establishment of a multi-species winter cover (SAM2/CSAM2) and £203/ha per year for winter cover following maize (SOH4). For new SFI26 agreements, CSAM2 is available and highly recommended.

KGRAZE Post-Harvest Grazing Mix

(SFI-SAM2/CSAM2/SOH4)

Bringing together the best of grazing and cover crops, this mix strikes the balance required to deliver for both your livestock and soils. Can be used for SOH4 in SFI, following early harvested maize.

Contains: forage rape, kale rape, tillage, radish, turnip rape, berseem clover and stubble turnips.

8-10kg/ha 10kg pack

Crimson Sprinter Mix

(SFI-IPM3/CIPM3/SOH4/SAM2/CSAM2)

An ideal short-term cutting mix with added crimson clover to increase protein and diversity.

Contains: Westerwold ryegrass, Italian ryegrass and crimson clover.

37-50kg/ha 25kg pack

K34 Post-Maize Grazer

(SFI-SAM2/CSAM2/SOH4)

Designed for planting after maize harvest, providing a leafy grazing cover that also helps protect the soil.

Contains: forage rye, turnip rape and oil radish.

30kg/ha 25kg pack

KOATP Oat and Phacelia Mix

(CS-SW6)(SFI-SAM2/CSAM2/SOH4)

A simple, economical and highly effective mix commonly used before a legume crop and useful after a maize crop.

Contains: winter oats, phacelia and red clover.

25kg/ha 25kg pack

Key crop options

Species	Description	Seed rate
Winter turnip rape	A quick growing, leafy forage crop particularly suited to later sowing (early October). Efficient scavenger of nutrient and very winter hardy; provides a good grazing opportunity. Latest sowing date – mid-October.	10-12kg/ha
Mustard	An economical, quick growing crop that will provide effective green cover. Will deliver through the autumn months but is frost susceptible.	12 -14kg/ha
Winter forage rye	Fast growing with good winter hardiness.	100kg/ha
Winter grain rye	Provides steady growth through the winter months.	100kg/ha
Westerwolds	When sown immediately after maize, this short-term annual ryegrass should establish well before conditions deteriorate from November onwards. This crop would take a light grazing early winter but is best left until early spring in the lead up to the drilling of the next maize crop.	40kg/ha
Catch Crop (Italian ryegrass)	A blend of two Italian ryegrass varieties. Will establish quickly and provide forage potential for up to two years where required with intensive cutting from the following spring if needed.	35-40kg/ha
Sprinter (Italian ryegrass / Westerwolds mix)	A short-term cutting mixture with rapid establishment. Excellent for silage or hay.	35-40kg/ha
Biogas rye or triticale	Provides a green cover crop over winter and can then be utilised as whole-crop forage or biogas feedstock.	90-120kg/ha
Post-Harvest Grazing Mix	High performing, post harvesting grazing mix. Great for nutrient capture and soil structure improvement. Plant up to mid-September.	8-10kg/ha

Please note, seed rates are advisory depending upon soil and weather conditions.

When to sow chart

	September	October	November	December
Winter turnip rape	**Y**	**Y**	N	N
Mustard	**Y**	N	N	N
Winter rye (forage or rye)	**Y**	**Y**	**Y**	**Y**
Westerwolds / Sprinter	**Y**	**Y**	N	N
Catch Crop (Italian ryegrass blend)	**Y**	**Y**	N	N
Biogas rye/triticale	**Y**	**Y**	**Y**	**Y**
Post-Harvest Grazing Mix	**Y**	N	N	N

***Please note that crops should be sown as early as possible and only if soil conditions etc. are suitable.**



Get in touch.

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