



As autumn draws near, we conclude this year's Maize Matters series.

Ensure cobs are fully ripe before harvesting

The much-improved maize growing conditions in 2013 look set to produce high quality silages, with above-average ME and starch levels.

However, growers must monitor cob-to-plant ratios carefully in order to maximise crop potential.

Crops in many regions experienced rapid growth, due to the warm weather in August and early September, but heat units are declining as we head into autumn, says John Burgess of KWS.

"The plants are reaching the stage where most growers are waiting for cob-fill," he says. "Many crops are shorter than normal, averaging about 1.8m-2.1m, compared with 2.4m-3m. This means they have produced their tassels early.

"In other years, we have seen a 40:60 or 45:55 ratio of cob to plant. This year, some crops have a cob ratio of above 50, with 52:48 in some cases.

"Farmers will need to evaluate this balance carefully. The conditions we have been experiencing are highly unusual and it is important crops are not harvested before the cobs have the opportunity to fully ripen.

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JOHN BURGESS

er maize crops will be lower yielding, but yield is linked more closely to density than height.

"At the start of the growing year, it looked as if we would have an early harvest, but that prediction may not come true for most farms," says Mr Burgess.

However, some maize crops on lighter land in the east of the country are suffering from drought stress, he adds. Here, harvest dates may need to be brought forward in extreme situations, as the crop will cease to mature and will simply dry out, resulting in an artificially-enhanced dry matter percentage.

Crop assessment

One simple way to measure cob-to-plant ratio is to select 20 plants from each field at random and weigh them individually, followed by a single cob from each, to assess crop status.

As harvest date approaches, the cob can be snapped in two – a thumbnail pressed firmly into the grain should cause it to yield under pressure, indicating readiness.

A cob is judged to be unripe when the texture of the material is soft and milky.

Chop length will vary according to end use, says Mr Burgess. As a general rule, 12-15mm (0.4-0.6in) is appropriate for beef cattle, to give the material 'scratch factor'.

Silage for beef cattle is usually harvested slightly later than usual to encourage production of starch.

Dairy cows with a high level of maize silage in the diet will require a chop length of up to 18mm (0.7in). The optimum length for maize for biogas is 7-9mm (0.3-0.3in) as this will maximise crop surface area, thereby increasing its suitability for processing.

Post-harvest

Nigel Chesters, of BCW Agriculture, advises growers to use a bacterial inoculant during the ensiling process, as an insurance policy against overheating, which can lead to spoilage and waste.

For maize, a product containing *Lactobacillus buchneri* is recommended, as it has been shown to significantly reduce the growth of yeasts and



It is important crops are not harvested before cobs can fully ripen, says John Burgess of KWS.

improve resistance to heating. "Measured against the value of a standing maize crop the cost of £1.45 per tonne for the additive is a good investment and will suit crops destined for a variety of end uses.

"Untreated crops can suffer 5 to 10 per cent wastage, if the silage is allowed to overheat."

Many grass silages have produced disappointing results this year and this is another reason why extra care should be taken over maize silage making, says Mr Chesters.

"Cling film-type products are becoming more popular as they play a valuable role in keeping oxygen out of the clamp.

"Re-usable nets are also a

good way to protect the crop – they help to give a consistent weight distribution and keep the material on top of the clamp in a crisp condition.

"Contamination can be avoided by keeping the area used for tipping the crop clean and soil-free."

Maize for biogas

Gleadell's Robert Buck has recently visited a field-scale trial where the effects of the nitrogen stabiliser Piadin were under observation.

The liquid product is blended with slurry or biogas residues just before application.

"Half of a 50-acre field was treated and the remainder was

left untreated. In the treated area, a random plant analysis revealed that cob size was 17-20 per cent larger, compared with the control crop," he says.

"The variety used for this trial was KWS Ronaldinio, which is one of the later types and was looking good.

"In a typical year, early varieties favoured by biomass producers might have edged ahead, with KWS Fabregas one noted example.

"Fabregas has good early vigour and is early flowering, with a yield potential of 70t/ha-plus. Ronaldinio came into its own this year and may exceed most, or even all the other varieties, in terms of yield," says Mr Buck.

HEAT UNIT REQUIREMENTS

KWS has launched a free, web-based service to allow users to assess regional maize performance and compare current crop progress and potential against a 10-year average.

Producers enter their post-code to find the number of heat units their crop has received over the growing season. This will help them to pinpoint the likely harvest date for each variety according to its maturity rating, as well as to weigh up varietal choice com-

Heat units and percentage of requirement by variety

	Taunton (SW)	Lincoln (E)	Gloucester (W)	Chester (NW)
2013 to date	2,287	2,289	2,205	2,122
10-year average	2,424	2,547	2,345	2,397
% of variety requirement to date				
Kaspian (FAO 150)	106%	106%	103%	99%
Severus (FAO 170)	103%	103%	99%	95%
Karriol (FAO 190)	97%	97%	94%	90%
Fabregas (FAO 220)	95%	95%	91%	88%

pared with the previous season (see table above).

Early varieties (FAO 150-160) require around 2,100 heat units by mid-September

to reach maturity, while later varieties (FAO 180-210) need about 2,400 heat units.

Later-maturing energy maize hybrids for biogas (FAO 240-

260) require a longer season of 2,800 to 3,000 heat units, depending on drilling date.

More information at www.kws-uk.com



Nigel Chesters

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