



Pointers on minimising risk and maximising starch and energy yield

# Calculate your heat units

The variable 2015 maize crop highlights that risk management should be built into to more maize growers' strategies and underlines that selecting varieties that are suited to growing conditions is vital. We spoke to two leading forage experts to find out more.

text **Phil Hainey**

**V**ariable quality maize silage resulting from 2015's difficult growing season is proving a challenge for many UK producers, particularly with the on-going wet winter weather now adding another layer of complexity.

"The previous year, 2014, was really good for growing maize but the cold spring and summer, as well as a late harvest in 2015, caught many growers

out and this resulted in a wide range of feeding values now sitting in clamps up and down the country," says dairy nutritionist Martin Attwell.

"Maize was generally late to mature leading to crops lower in dry matter than producers would have liked. Most crops were between 25% and 30% dry matter, rather than the required 30%.

"This has resulted in acidic fermentation with some of the lowest values at around

pH 3.5 requiring considerable buffering to prevent acidosis and low butterfats."

He adds that, on many units, maize cobs were ripe but diluted by 'big green plant' yield: "So overall contribution of starch to the diet is much lower this year compared to the 2014 crop.

"Trouw Nutrition's average starch content for 2015 maize forage at the start of winter feeding was 30.8%, but this hides a wide range of values with the



Ripe cobs: many forage maize crops were diluted by 'big green plant' yield

lowest at just 7.3% and highest at 48%." Grainseed's technical director Neil Groom agrees and adds that a wide variety of energy values exist on-farm with producers growing earlier maturing varieties, such as Remington, Bodyguard and Ballade, having the best quality maize silage.

### Heat units

"Across the UK as a whole, heat units were around 7% short of where they needed to be. By contrast they were 8% higher than the 30 year average in 2014. Some of the more marginal areas for maize production got nowhere near the required 1,200 heat units for the crop," he explains. Those that had a crop that 'finished' properly have actually ended up with pretty good feeding material. "And although, across the board, actual starch contents are down, the quality of starch is better. The previous year's crop was characterised by hard glassy starch whereas this year the grains are not as hard and the starch more accessible in the rumen.

"This means digestibility is higher than 2014, with crops showing an average D-value of 73.2 compared to 71.5. One unit of D value is worth 5% of animal production, so this year's crops are really good."

That said, he stresses that producers must be aware of exactly what they have in the clamp as winter feeding continues and be prepared to make changes to rations to avoid problems.

"With an extended harvesting period you're always going to get variability and not only from clamp to clamp but also within the same clamp, depending on when it was filled and the quality of the crop that was ensiled."

### Regular analysis

Martin Atwell says it's important for producers to carry out regular forage analyses because starch degradability will increase. "Producers must monitor changes in their forage and adjust rations accordingly during the next few weeks to account for the extra starch availability to the rumen and small intestine.

"If different varieties have been clamped separately, make sure an analysis is done before feeding and allow a 10-day changeover period, from old to new, when changing clamps."

Where producers are struggling with wet maize, the winter's persistent rain on open clamp faces hasn't helped.

"In many cases, the high water content of forages has created intake issues and this means that troughs need to be regularly cleaned out to prevent a build up of 'spoilage'.

"Keeping the sheet tight to the edge of the clamp with gravel bags is important in wet weather, as is making sure no air can get underneath the sheet. It's also a good idea to check for vermin damage on the clamp because holes will create further spoilage."

Looking forward, Mr Atwell says that the main priority is to carry out a monthly stock take and budget the remaining maize tonnage accordingly. "Maize is a very useful buffer for spring grass and provision should also be made for maize in the autumn for dry cow feeding."

Neil Groom says producers must strive to make full use of farm forages in the future but this will require a change of mindset to include managing risk as well as simply maximising yield.

"The past 12 months have been a learning curve for many maize growing producers, with some valuable lessons learned – particularly with regard to the ideal



Neil Groom: "Digestibility for the 2015 crop is higher than in 2014"

maturity group for units, in light of the more variable growing conditions that we seem to be experiencing now."

The objective for every maize grower has got to be the harvesting of a crop at 30% dry matter with full maturity being achieved. "Overall yield is actually secondary – you have to get optimum starch lay-down and maximum energy to drive milk production. And the only way you can achieve that is by selecting a variety that you know will finish on your individual unit's growing conditions.

### Risk management

"The best early or very high yielding varieties, such as Bodyguard, now deliver yields to rival the best high yielders. So gambling on a later variety to finish properly and lay down that all-important starch in a difficult year is really a false economy."

He adds that the next step is to make management decisions that add more consistent production into the equation. "The starting point is being realistic about heat units. Work out what you think you have and then reduce it by between 5% and 10%. That way you'll be choosing varieties that in all, but the very worst, years will finish and produce the all-important energy you need for your cows.

"If you're in a marginal area, consider starting the crop under plastic next year – the extra costs are usually worth it. And always invest in the crop up-front, in terms of nutrition, removal of weed competition and quality of seedbed.

"While 2015 wasn't the best of years for maize production, it was far from the worst. The contrast between the past two years is an opportunity for producers to learn from experience and build risk management into their long-term maize-growing strategy." |