

How will maize feed this winter?

Initial analysis of this year's maize silage suggests that it may not provide the immediate boost to dairy diets that many farmers are looking for, mainly due to the growing season. Tom Goatman from Trouw Nutrition UK gives the latest update.

Reporting on the first 600 samples analysed by the company this year, Trouw Nutrition GB ruminant specialist Tom Goatman says that many of the differences between maize harvested this year and last year can be attributed to substantially different growing seasons.

"Last October, a significant proportion of the maize crop still had not been harvested. Farmers delayed harvest in the hope that crops would eventually mature with many maturing at least two weeks later than expected. They were then hit with very wet weather which made harvest a lottery," he comments.

Harvest condition

"This year could not be more different. Favourable growing conditions and an typically warm September meant crops matured much quicker, while the driest October for 65 years made for harvesting in near perfect conditions. This has, however, had implications for feed value and likely performance in the diet."

The table compares the results for the first crops harvested compared to a similar sample for 2015. Mr Goatman highlights that this year's sample is much drier as a result of the favourable harvest conditions. The ME content is lower at 11.4 MJ/kg DM, compared to 11.6 MJ last year. Only 31% of samples have an ME over 11.5 MJ compared to 57% last year.

Starch content

"The difference in ME is influenced in part by a lower starch content, 30.7% compared to 31.1% in 2015, which reflects more mature crops. Significantly, starch degradability is also affected. This year degradability is 76.8% compared to 79.8%. As a result, bypass starch levels are higher. Although maize starch degradability increases with time in the clamp, there are implications for feeding these early crops.

<i>Early maize silage analysis (source TNGB)</i>		
	2015	2016
Dry matter (%)	30.2	34.4
Crude protein (%)	7.9	7.3
D Value (%)	73.2	72.0
ME (MJ/kgDM)	11.6	11.4
pH	4.0	4.0
Starch (%)	31.1	30.7
Starch degradability (%)	79.4	76.8
Bypass starch (g/kg)	62.8	71.7
NDF (%)	39.2	40.0
NDF digestibility (%)	61.1	57.3
Lactic acid (g/kg)	52.9	31.7
Intake potential (g/kgML)	104.5	108.5
Acid load	49.1	41.1
Fibre Index	142.4	146.0

"The other factor influencing lower ME is the reduced digestibility of the vegetative parts of the plant, meaning less energy is available from the stem and leaves. NDF digestibility in the rumen is down from 61.1% in 2015 to 57.3% this year, an indication of overall plant maturity."

Mr Goatman explains that lower starch degradability and higher bypass starch combined with the reduction in NDF digestibility, mean

less carbohydrate energy will be available for rumen fermentation.

"When formulating diets in the first part of the winter, farmers

may not see the usual boost that maize gives to production because of the change in starch content and the impact on rumen fermentation. It will probably pay to increase the supply of rapidly fermented carbohydrates available from other sources such as wheat to ensure the

diet provides sufficient quickly



Tom Goatman.



Good weather in October helped this seasons maize harvest.

available energy to support effective microbial and rumen function. The new NutriOpt dairy rationing model will help quantify the requirement, allowing cost-effective solutions to be developed.

"Later on in the year as starch degradability in maize increase, so these supplementary sources can be trimmed back, helping to reduce diet costs."

Rumen health

On a positive note, Mr Goatman says the reduced starch degradability will help improve rumen health. "Lower starch degradability and reduced NDF digestibility mean less carbohydrate will be available for rumen fermentation. This coupled with the increased dry matter content and lower lactic acid content mean that this year's maize has significantly lower acid load. This, combined with a higher fibre index will help support good rumen health and function."

Mr Goatman advises farmers to keep a close watch on intakes and refusals. While the intake potential of the crop is better than last year suggesting cows will be keen to eat reasonable quantities, he says US research suggests that dry matter intakes decline with any reduction in NDF digestibility due to slower rates of fermentation and reduced rates of passage through the rumen.

"The lower NDF digestibility may lead to lower intakes so it will be important to monitor this carefully.

Balance diets carefully

"Careful attention to balancing early diets will help farmers get the most from early season maize, and as it matures in the clamp and starch degradability increases, so production from maize should increase.

"It will be vital to analyse clamps regularly to exploit the benefit of improved feed potential," he summarises.