RUMINANT TECHNICAL NOTE – NOVEMBER 2007
FEEDING 2007 MAIZE SILAGE
CHRIS SAVERY - MGA RUMINANT CONSULTANT

To say the open autumn has been welcome after a difficult summer is no exaggeration. Most maize crops were challenged by the excessive wet, if not directly, through difficult weed control. Later harvesting in good weather has benefited very many silages and almost all crops will now be clamped.

This years maize harvest was awaited more than usual. 2006 was a punishing year for many livestock farms leading to the far greater use of forage for buffer feeding than usual. And 2007, although kind to many around turnout, meant that many cows were back onto silage diets instead of grazing in June/ July.

With the difficulty in making grass silage in wet and unsettled weather – quality is variable to say the least and often poor. No wonder most farms have been hoping for great things from the maize.

Milking performance of many dairy herds has been well below par for the reasons given above, and many producers / members have been desperate to get maize back into the diet. Inevitably, some crops have been taken too early (despite being the same time or later than last year, but at an immature stage). Most of these crops have not had mature grains and have been very green. The result is a wet, often acidic silage with a low starch content.

For some, the availability of a cereal wholecrop filled the gap in August/ September, presenting a high starch forage and allowing the maize to mature further. But, too often the rising value of wheat grain was too much to resist.

So how have crops done and what is the result?
The range in crop yields and nutritional quality has been very wide. High yields, which are generally a fundamental of maize crops, have been lost in some cases, yet others have had bumper crops. Feeding values and starch % are certainly largely governed by the harvest date, but in some cases have been reduced by less developed plants, poor filling of the cobs, weed contamination and disease.
Even with the extended season for harvest, dry matters are lower than usual with many 25-30% rather than 30-35%. High energy (ME) values have been characteristic of this season, with higher fibre (NDF) levels and reduced starch contents. 30% starch remains very good, but many will be nearer 25% or less. All this is a sign of a less mature plant and a slower ripening period.
There is no risk of poor fermentations unless heavily contaminated crops, but the acidity of the silage will vary considerably, as indicated by the pH value and the fermentation acids, especially lactic acid.

What have you got to feed?
It is essential to know how much maize silage is available and what its analysis is, if it is to be used to full advantage. I would suggest that for most people the higher ME values seen, although welcome, are rather less valuable than good starch content. Not only is this because of the high cost of cereals, but also equally importantly, intakes will be reduced with lower dry matter content.

Hopefully maize stocks will be adequate to permit inclusion at the desired level for as much of the year as required. Many will fall short of this target and careful thought should be given now as to how best to use the available maize. The other forages fed with the maize silage will have a big influence on whether it is better to feed steadily, or more now and then run out. Almost always, maintaining maize in the diet throughout will be preferable.

p.t.o

As is always the case, the processing of the crop will effect how the maize feeds. With lower dry matters, the stability concerns are less and longer chopping was practical. Diet starch levels may be lower than usual but some silages are more acid than desirable. Whatever the chop length desired, it remains essential that grains are adequately damaged. This will be just as important where small maize grains are present. If grains are visible in the dung, you do not have the amount of starch available as the analysis suggests. If you can't tell, fetch the sieve.

More milk please!

With increasing milk prices there is an obvious desire by many to boost milk yields. This must be done in a manner appropriate to the increased price of feedstuffs and most importantly maintaining good health in the cows.

Pre-calving diets must be correct to permit calving down well and a good start to lactation. The provision of adequate fibre is important, but so is the provision of adequate energy with correct mineralization. Maize has an important role to play here, and it is essential to react to the quality of maize in the diet given.

Presentation of the diet over the transition period is all-important if intakes are to be maximized and digestive upsets avoided. Knowing the dry matter % of the maize so that the desired proportion can be included is key. If your maize is chopped finer than you intended and the starch is high, inclusion of a source of 'effective fibre' becomes more essential.

Once into lactation the diet presented will depend on the target yields and the milk contract. Cows adapt to their diet to some extent, but the nutrient supply must be within limits. High starch diets will be less likely this winter, but it is still possible to create an unsafe diet if the fibre levels are inadequate. Always aim to maintain at least 55% of the diet as forage.

The fact that maize starch may escape rumen degradation to a greater extent may be important in some diets, but remember that starch along with sugars remain very important substrates for rumen bugs. First and foremost the rumen must operate at maximum capacity. Whether concerned about fibre levels or bypass starch, remember that the 'particle size' of either component is important in influencing how the nutrients are used as they flow through the digestive tract.

Growing cattle and sheep welcome the maize as much as the cows, - if available. But, sheep in particular appear to relish low dry matter maize even less than cows, and 30% DM would be a desirable minimum. With growing cattle we are less concerned by fibre levels and starch levels. Endeavour to see that the maize grains are fully utilized and that diets presented to younger cattle in particular have adequate protein and minerals.

Be critical of all aspects of feeding management. There should be less risk of heating and spoilage with lower DM % silage, but this will depend how well the maize has been ensiled and how well feeding out is managed. Having got the maize to a safe ensiled state, it is unacceptable to allow waste or deterioration on its way to the animals' mouth.