

Technical Update - Maize Harvest



Information correct as at 09:00am on 01.09.2023.

- 2023 maize crops are approaching the run in to harvest.
- Start to monitor dry matters.
- Aim for a dry matter of 32-35% at harvest.
- Adjust the chop length so it is right for the dry matter.
- Clamping and sheeting are crucial to minimise losses.
- Have a plan for your maize fields post-harvest

Despite the wet summer most maize crops are looking like they will produce big tonnages this year. A better forecast for next week will help with cob fill and crop maturity. The soil moisture levels have meant that there is a lot of vegetative growth and this will make whole plant dry matter testing even more important than ever.

As a result of the weather, harvest will be later than last year but if you have not already done so start to monitor dry matters and plan for harvest. As a rule of thumb, once the crop reaches 20% DM it will dry down at 2% per week on average. However, there will of course be varietal differences and seasonal weather effects influencing this. By testing now, you can start to liaise with contractors regarding harvest date with the target of ensiling at 32-35% dry matter.

Going too early will reduce yields and starch levels and lead to very acidic silage and effluent production. Leaving it too late will increase field losses and make the crop difficult to ensile leading to poor fermentation and increased potential for heating resulting in a lot of yeast and mould developing at feedout. We are already seeing some crops with smut present of the cobs. This will not cause issues with cow health but will influence starch yields where crops are badly affected and potentially make them more susceptible to deterioration in the clamp and at feedout.

There are varying methods available for sampling dry matter, but for the most accurate results you need to take a representative sample of the plants (well away from the gateway) chop them finely and dry them down.

The Dry Matter can be calculated as follows: $\text{Dry Matter}\% = \text{Dry weight}/\text{Fresh weight} \times 100$

Chop Length

Required chop length will depend on dry matter. For most situations within the target dry matter range aim for 10-15mm. If the material is wetter, then chop longer and if drier than 35% then chop as short as you can. For compact feeding you may want to make the harvester do more of the work and reduce the length to <10mm, but only do this if clamp management is top notch or it will slip.

Grains should be smashed- just a nick in the kernel is not enough so make sure the corn cracker is set correctly, even if that means having to decrease harvesting speed slightly. Monitor the crop coming into the pit regularly and keep in touch with the driver to ensure that you are getting the product you want.

Clamping

The speed of clamping should determine the rate of the whole operation, bearing in mind that we also want to fill clamps as quickly as possible. Make the ramp long and shallow spreading the crop in thin layers over the full area. The weight of the machines on the pit should be 25% of the hourly harvest yield. Target 250 kg DM/m³ of clamped material.

Sheeting

Clamps should be sealed and weighted as soon as possible after harvest is finished. There are numerous sheets on the market, we recommend the Silostop range of sheets as these have very low oxygen transmission rates (<3cm³/m²/24 hours for Silostop max). They also do a 2 in 1 sheet to get over the issues involved with putting on cling film and a top sheet. Ask your sheet supplier for oxygen transmission rates, these should be available. Side sheets are a must and again we would recommend using the best products available. Once sheeted use secure covers and gravel bags or lorry tyre sidewalls to weight down.

Forage is extremely valuable so cover the pit with a bird net to prevent them pecking holes.

Additives

Although maize crops generally ferment well enough on their own if the dry matter at harvest is correct many farms see a benefit from using a good additive.

The Silosolve FC product works very well in maize allowing clamps to be opened quickly after harvest. The additives really come into their own during summer feeding when temperatures are higher and feedout might be slower. If dry matters are above optimum, then a proven additive is essential. If you think that your crop may be affected by a higher burden of bacteria (mud splash etc.), then use Silosolve MC.

Post-Harvest

Post-harvest management of maize stubbles is becoming increasingly important as the crop can have a bad reputation if soil conditions are poor and harvests are difficult. There is increasing pressure to reduce soil erosion and nutrient leaching over winter.

As an absolute minimum some form of cultivation should be carried out to aid water infiltration into stubbles. A much better strategy is to establish a cover crop. This can either be done whilst the crop is growing (too late for this season) or as soon after harvest as possible.

The choice of cover crop will depend on future plans for the field. A cheap Italian ryegrass mix will give soil cover and the option of some over winter sheep grazing or an early cut of silage next spring before returning to maize. If a crop is just being sown to cover the ground it is important to have a plan for establishment and desiccation. Trials conducted by the MGA are suggesting that spraying off crops in February gives the best balance between growing a lot of biomass over winter, but not affecting the subsequent crop.

For further discussion or to help with any questions that you may have, please contact Consultant Support on consultantsupport@kiteconsulting.com or 01902 851007

