

Technical Update - Maize Establishment

Thanks to the Maize Growers Association for their help compiling this note

Information correct as at 10:00am on 26.03.2021

- The better the seedbed the better the plant emergence
- Check soil temperatures regularly
- Drilling accuracy is paramount for even emergence and maximum yield
- Ensure good early season weed control and correct nutrient supply
- Establishing a cover crop is best practice to reduce post-harvest run off and leaching

Seedbed Preparation

Different soils will need different management, but the target should be to create the best seedbed possible with the minimum number of passes to minimise compaction. If subsoiling, then make sure that conditions are right so that the soil is cracked rather than 'smeared'. If soil at the intended working depth can be rolled into a ball, then it is too wet.

Drilling Date - 7/8/9

So far soils are not warming up particularly fast this year. Checking soil temperature is crucial so remember 7/8/9 – 7 days at 8 degrees C at 9.00am at your chosen drilling depth (for heavy soils leaving drilling until soils are a couple of degrees higher may be advantageous). A day late drilling in the spring can equal two days later harvesting in the autumn. However, do not drill your maize pre-April 15th to reduce the risk of frost damage.

Trials undertaken by the MGA last year again showed the benefits of getting crops in early. Plots were drilled on 20th April and 21st May at 5 and 10cm drilling depths. On the harvest date the early drilled crops were both 'ready' with dry matters at 35% and starch levels of 34-35%, whilst the later drilled crops were at 26% dry matter so still a month off harvest. Dry matter yields were over 2t/ha lower and starch percentages still in the mid-teens for the plots sown in May. Clearly these crops would have improved if they had been left, but an early harvest is crucial if we are going to minimise soil damage at harvest and get following crops established.

Drilling Speed and Depth

The absolute key for a good maize crop is uniform emergence. Work from France has shown that the biggest competitor to a maize plant is its next-door neighbour. Each plant should emerge at the same time to minimise competition between plants. Extreme examples of inconsistent emergence can result in losses of up to 40%. The poorer the seedbed, the slower the drill will have to go to achieve a uniform drilling depth. Make sure the drill operator does a good job.

Seed Rate and Row Width

Generally, the higher the seed rate and closer the row width, the higher the overall yield, but this yield increase can be at the expense of starch percentage. As the number of plants per hectare increases, the size of the cob decreases.

Are you looking for bulk or starch percentage? For bulk, narrow the row width to 50cm and increase the seed rate to 110,000/ha, for quality use 75cm rows and 90,000 seeds/ha to establish 100,000 or 80,000 plants/ha respectively.

Sowing Depth and Seed Dressings

Sowing depth will depend upon what/if seed dressings are on the seed. Where there is no bird repellent seed dressing, drill at least 7cm deep to ensure that rooks cannot dig the seed up. With a dressing the seed can be drilled at the normal depth (5cm) or into the soil moisture if the seedbed becomes dry.

Please read and follow the guidance given by your seed supplier where dressings are applied as the dust should not be inhaled.

For advice on fertiliser requirements consult your FACTS qualified advisor or use the MGA Nitrogen predictor. Consult your agronomist to ensure a weed-free first six weeks. Generally, this can only be achieved with a 2-pass strategy: pre-emergence to commence the weed control followed by a post emergence application to give season-long protection.

Cover Crops

If maize stubbles are going to be overwintered, establishing a cover crop is crucial to avoid run off and nutrient leaching. The ultimate scenario is to have a crop undersown in the maize so that there is never going to be a bare stubble. Research has shown that sowing a companion crop at the same time as the maize crop compromises the yield. Equipment is now available to sow grass between the rows in mid-late June which does not affect the maize and provides an already established crop at harvest.

There are numerous post-harvest cover crops available, the choice will depend on what you are trying to achieve with the crop and at what time of the year it can be established. Speak to your consultant about the options available.

For further discussion or to help with any questions that you may have, please contact Consultant Support on consultantsupport@kiteconsulting.com or 01902 851007 / 07542 403225