



AGRONOMY TECHNICAL NOTE - APRIL 2005 DRILLING MAIZE IN A COLD CLIMATE SIMON DRAPER-MGA AGRONOMIST

Following a cold March and an average April, soil temperatures are lower than they have been for a number of years. As a result, spring growth has been much slower than normal (many grass crops have also slow and disappointing growth this year).

Time is now slipping away and maize crops need to be drilled as soon as possible. That said, it is important to check soil temperatures before drilling. The best method is via a soil thermometer, placed in the ground at about 5-10 cm and checked at about 9am each day. When the soil temperature is consistently above 8° C, it is ready for the seed.

Tips for drilling maize into a cold seedbed

If you are drilling when soil temperatures are cold:

- Ensure it is only the south facing, well-drained slopes, that are drilled first. (It is wet and cold conditions that maize seed hates the most).
- Increase the seed rate by 5% to accommodate greater than normal seed loss (as we move into May and assuming the soil does warm up, then this can be avoided).
- Do not cultivate deeply if at all possible – deep cultivations will bring up colder soil.
- Drill as shallow as possible – the soil will be warmer near the surface and therefore quicker germination can be achieved. However, shallow drilling has to be balanced with the greater risk of bird damage, as drilling at too shallow a depth will encourage more birds than normal. If we are in a prolonged dry spell (unlikely at the moment), the seed needs to be drilled more deeply to ensure a sufficient supply of moisture.
- Because of the high water content, wet soil can be exceptionally slow to warm up. – Under these circumstances the soil does need to be moved at depth – a chisel plough or subsoiler working at 5-7 inches would be my preferred choice, with the result that the land is opened up so it can dry more quickly.
- If land still needs to be ploughed to incorporate FYM or remove ruts etc, this should be done as soon as possible. Once the land is turned over, it is going to expose the cold soil, which will need to warm up before drilling.

- Ensure a seed dressing is used. For early drilling, Mesuroil is fine. However, where Gaucho is being used, please ensure that seed is only drilled at the correct soil temperatures, as Gaucho can affect seed vigour.
- Once drilled, ensure there is adequate moisture around the seed. If necessary, as a last resort, maize seedbeds can be rolled.

Nitrogen timing

Once the crop has been drilled, apply two thirds of its required nitrogen (if you don't know how much, use the MGA nitrogen predictor). The remainder should be applied once the crop reaches the two-leaf stage.

Where the crop is being drilled in less than ideal conditions, it is important to ensure the nitrogen can be applied both pre and post emergence, as the nitrogen applied at the two leaf stage will give the crop a 'kick' if it is required.

Can I use an ordinary cereal drill?

Some farmers successfully use a cereal drill to sow maize. Although the cereal drill does not space seeds uniformly within the row, my main concern is achieving the correct seedbed consolidation, to deliver a consistent supply of moisture to the seed. The seed will be in the ground for some three weeks and in this time an adequate supply of moisture is required for germination, and subsequent root and overall plant growth. Adequate moisture can be supplied via the soil through capillary action, but in order for this to happen, the soil around the seed needs to be fine and firm.

The best type of drill for this purpose is a disc drill. There are many disc-based drills available, the ones tested by the MGA include the cross-slot drill and the Vaderstad – Both drills are being demonstrated at the MGA demo sites during the summer.

MGA Demo Sites

Members keen to see both drills in action should attend one of the sessions planned at the two MGA demo sites. The sites will be close to Oxford and at the MGA Office, Town Barton in, Devon. Please phone the office to find out more.