



AGRONOMY TECHNICAL NOTE - MARCH 2009 GETTING READY FOR THE 2009 MAIZE CROP SIMON DRAPER

Introduction

Soils took a real hammering last autumn due to the necessary machinery traffic on very wet land. Further damage will have occurred in many cases due to over winter application of FYM and slurry. As a result, understanding and improving soil structure this spring will be vital if top yields are to be achieved. In this note I have attempted to provide advice on how best to manage damaged soils, as well as early pointers to maize establishment.

1. Determine the level of compaction in the field

A spade has become a vital bit of on-farm kit – get out there, dig a pit and look for the almost inevitable horizontal compacted layers of soil, which have resulted from machinery travelling on too wet a ground. The key aim of the pit is to work out at what depth the compaction is located. While we know that subsoiling in the spring is making the best of a bad job and that it can only be justified if the compaction is severe, you should have a go if compaction is between 6 – 25 cm's. Soil below this level is unlikely to be dry enough to shatter and therefore subsoiling will achieve very little. If compaction is below this level it is probably best to take note of its location, leave it alone this spring and subsoil in the autumn post harvest.

Even when shallow subsoiling in the spring, the wet soil may not shatter well, however the channel produced by the subsoiler will encourage root development and allow the roots to gain access to more of the soil profile.

Where fields have been 'trafficked' through the winter as a result of FYM and slurry application, they should be subsoiled in almost all situations. As well as helping root development, the subsoiler will go some way to level out ruts left by earlier machinery.

Ideally subsoiling should take place after the field has been ploughed, which should be possible in all but the deepest rutted fields

where a subsoiler may be required to do a levelling job.

Remember that the width of the subsoiler legs should be set at a maximum of twice the working depth of the subsoiler.

2. Spray off any green growth

Be it the lack of Atrazine or the wetter winter, fields appear to be greener this year than in the recent past. As a result many fields now require an application of glyphosate as soon as possible. Allowing overwintered weeds to compete with the crop can cause serious yield losses. MGA and other trial work has clearly shown that it is the weeds present in the first 4 weeks of the maize crop's life that are the most critical in relation to final crop yield.

Where the green growth is couch grass or other perennial weeds, these fields should be sprayed as soon as possible and then left for at least two weeks to ensure that the glyphosate is fully translocated down to the rhizomes.

Where control of just annual weeds is being sought, then 2-3 days time interval between spraying and cultivation is adequate. Glyphosate (360 ai version) should be used at a minimum of 2.5 l/ha for couch grass control (2.0 l/ha for annual weeds) and if possible a cationic wetter should be added to the mix, as this will encourage more rapid uptake of the glyphosate.

Greened up fields yet to be ploughed should still be sprayed with glyphosate pre ploughing. Even the best ploughmen or women are unlikely to bury all the greenery and competition problems down the line could result.

3. Earliest drilling date

The earlier the crop is drilled, the earlier it is to harvest and where September harvest

is required then the target should be to have the maize drilled by the third week in April at the latest and ideally by the 10th! PROVIDED soil temperatures are 8°C minimum. If colder than that the seed is better left in the barn. In order to determine the soil temperature accurately, a soil thermometer should be placed into the ground 2 weeks before the start of the drilling season (early March and the temperatures recorded at 9 am every day in order to assess what the average temperature is, as the soil temperature will fluctuate markedly day-by-day.

4. Seed Rates, row width and drill type

From the trial work that we have carried out, closer rows, higher seed rates and non – precision drills all have the potential to increase crop yields, all be it at the expense of cob size. As a result, overall starch yield /ha increases but the starch concentration per kg of material decreases.

If quality is not the main criteria and bulk yield is, then the options to consider to give the maximum output (with yield improvements of up to 17%) are:

- Seed rate – increase to 47,000 seeds/acre.
- Row width – decrease to 50 cm (20”).
- Drill type – consider using a Vaderstad.

5. Seedbed production

Obviously it is much too early to decide on seedbed cultivations at this time, but it is worth putting a marker down. We know that the land is in the most fragile condition it has been for a number of years and thus anything that damages soil structure is going to have a severe effect on crop performance this year.

Therefore when knocking the plough down to a seedbed, consider what is the best machine

for the soil structure, rather than for a brilliantly smooth seedbed. Maize, as long as it gets sufficient soil moisture, does not require an onion seedbed (its a big seed and as such as long as there is water, it will grow anywhere).

Traditional maize seedbed producing implements, such as power harrows and discs **may** not be the best option – look to see if you can get a seedbed from a tined implement – with the cold weather we have experienced it should be possible this year!

6. To plastic or not to plastic?

In the light of last year’s experience, using plastic might not be such a bad idea in the more exposed areas of the UK.

The cost of it must be born in mind relative to the amount of crimped grain one could buy for the money, should the maize crop fail.

The cost aside, plastic does produce a more guaranteed crop and is something that should be considered where maize is being grown on the margins. Using plastic should not be viewed as a reason to grow later maturing varieties, as the early harvest and more mature crop benefits will be lost.

7. Sowing Depth

The soil moisture at drilling should determine sowing depth – ideally sowing depth should be as shallow as possible to allow for quick germination in the warmer soil, which is obviously nearer the surface. However if there is no moisture present near the surface, then the seed has to be planted into the moisture – even if that is 4 inches down.

In this situation the seed rate should be increased by 10% to allow for greater seed loss.