



TECHNICAL NOTE – JUNE 2023
MAIZE EARLY SEASON STRESS
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As we are writing this, there is some hope in the forecast that some maize crops will receive much-needed rain this week. However, with a delayed drilling campaign, seeds being planted into sub-optimal soil conditions and the east of the country experiencing a two-week period of cold cloudy weather at the start of June; there are many fields of maize which are struggling to rapidly grow.

As we approach the longest day, there are fields where there is more soil visible than leaf canopy, and in some extremes, no emergence has occurred at all yet, so we write this technical email to try and offer some help for struggling/backward crops.

At the early stages of maize plant development, growth is limited by the size of the leaves to intercept solar radiation and the root system picking up moisture and nutrients. A reduction in water uptake can also mean a reduction in nutrient uptake.

As a result, all nutrients need to be readily available at this time or poor growth will restrict yield. The critical growth stage with respect to crop nutrition is the sixth leaf stage (V6)*.

*By V6, all above-ground plant parts have been initiated, including all leaves, ear shoots, and the tassel. Development during this time establishes the size of the overall plant and the size of each leaf. Stress during this time can impact the eventual yield potential of the plant by reducing:

1. The number of kernel rows on the ear.
2. The number of kernels per row.
3. Total leaf area and photosynthetic capacity of the plant.

What options do we have?

Foliar feeds

Foliar feeds can provide a pick-me-up that some crops require, they are liquid micronutrient

fertilisers designed for maize crops, containing concentrations of phosphate together with zinc, magnesium and potash, plus other nutrients. Do make sure you have enough leaf target when applying, foliar feed will not provide any benefits if the product is applied to bare soil!

Nitrogen rates

Nitrogen is the nutrient most directly associated with crop yield and therefore using the right amount is important. The aim is to apply enough for the crop to reach full maturity at a suitable harvest date and it is this harvest date which is the first factor that should be taken into account. If the desire is for an early harvest, perhaps to allow time for the establishment of a following crop or to minimise the potential soil structure damage associated with a late harvest on unsuitable soil, nitrogen recommendations should be cut by up to 40kg/ha.

The fixed heat unit requirement of maize means that the drilling date should also be taken into account. Early drilled maize will have plenty of time to reach maturity so full nitrogen recommendations should be OK. Reducing the amounts of nitrogen applied to late-drilled crops or fields with slow emergence will go some way to speed up maturity in the autumn.

Irrigation

If you have spare capacity on the farm, then fields which have maize seeds not germinated or have uneven emergence due to dry soils would benefit from irrigation. The amount of water required will be subject to your soil type and the moisture already surrounding the seed.

Any form of extra nutrients should only be applied if soil indexes warrant it.