# Quick guide to sorghum nutrition this summer

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This quick guide to sorghum nutrition is designed to be read before it rains, because when the rain comes, nothing is going to stand between growers and their planters! But getting these few things right before the planting rush might help avoid some costly mistakes and set the crop on the right path to success.

## Soil testing

If a paddock has been earmarked for sorghum, arrange soil testing to check on the nutrients available in the soil, particularly nitrogen. Segmented sampling to depths of 0-10 cm, 10-30 cm, 30-60 cm and 60-90 cm will provide data on both the amount and location of nutrients in the profile for the upcoming crop. The Nutrient Advantage® laboratory is available to help growers and their advisers with soil testing ahead of the summer cropping season.

Nutrient Advantage®

Following the long dry period, it is advisable to check for any soil structural problems. Drier conditions can also exacerbate subsoil constraints like chloride or salinity. These can increase in concentration when rainfall is sparse, then return to lower levels once better seasons return.

While sorghum is relatively tolerant to salinity compared with crops like maize or mungbeans, high concentrations of salts can still cause setbacks in germination or poor growth due to lower water availability. High chloride levels in soil and irrigation water supplies can cause similar problems.

Sodicity can also impede root development and plant uptake of nutrients and water. While sorghum is semi-tolerant, sodicity can still reduce seedling emergence, soil drainage, nutrient availability and soil aeration. It is better to know before you sow, especially where paddocks do not have the luxury of stubble cover. On sodic soils with no stubble, the surface will seal more readily.

## Nitrogen

A 5 t/ha grain sorghum crop will require around 190 kg/ha of nitrogen. Where fertilisers are needed to supplement soil nitrogen reserves, it is advisable to apply the majority of this nitrogen up front, either just prior to planting or much earlier in the fallow when the profile is drier. This allows time for the applied nitrogen to move to the active root zone where it can be best used by the sorghum crop. Urea or BIG N® should be drilled in a row at least 10 cm below and 10 cm to the side of the intended planting line.

BIG N®

Ensuring a good early nitrogen supply for crops by pre-applying nitrogen puts growers in the best position to capitalise on the season. Nitrogen is a flexible nutrient which can be effectively applied right up until 5-8 leaf stage, but it can be impractical and uneconomic to sidedress, topdress or foliar spray the majority of the nitrogen later in the season due to the large quantities required and the short time frame available.

It's no good being caught short if the season turns wet and the paddocks aren't accessible. The nitrogen might also stay at the surface, away from the active root zone, in cases of lower in-season rainfall.

If a large amount of nitrogen is needed in season, start applying early in-crop and hope that the nitrate is taken into the active root zone with early growing season rainfall events.

Fertiliser options include applying EASY N® prior to a rainfall event, using a boomspray and stream jet nozzles to direct the spray to the soil, or topdressing with Green Urea NV®. Green Urea NV protects against volatilisation losses for up to 14 days, allowing more time for the fertiliser to be safely incorporated into the soil by rain, where it can be used by your crop.

## Phosphorus and zinc

A 5 t/ha sorghum crop will require about 28 kg/ha of phosphorus and 375 g/ha of zinc. Both nutrients are required by the developing seedling, so they need to be applied at planting.

Not only is sorghum one of the higher zinc-removing crops, it has a high dependency on arbuscular mycorrhizae fungi (AMF) to help it access and take up phosphorus and zinc. Unfortunately, after the long dry fallow period, the AMF population is likely to be seriously depleted, so phosphorus and zinc rates at the higher end of ranges will be required to satisfy crop demand.

GRANULOCK®

Granulock® Z is ideal for sowing with sorghum, as it supplies good levels of phosphorus, other starter nutrients and zinc in every granule. Consider rates of 25 to 50 kg/ha, depending on soil phosphorus status, fallow length, row spacing and opener type.

Even where soil testing reveals adequate soil fertility, some phosphorus and zinc are still recommended to get the crop started. If this is your situation, consider 'pop up' rates of 15 to 20 kg/ha of Granulock Z.

## Seed safety

Too much nitrogen applied in a band too close to the planting row can kill germinating seeds before they even get out of the ground, so always ensure nitrogen fertiliser bands are positioned at least 10 cm below and 10 cm to the side of the planting line.

Where higher than usual rates of ammonium-based starter fertilisers are being applied with the seed, check the seed bed utilisation calculation to ensure the crop is not at risk of seedling damage. Crops are at greater risk in dry soils, on wide row spacings and where there is minimal soil disturbance from disc planters.

See the calculator at http://seed-damage-calculator.herokuapp.com/ or for more information, read Incitec Pivot Fertilisers' guide on seed safety at https://agronomycommunity.incitecpivotfertilisers.com.au/~/media/SBU.pdf.

For more information, feel free to contact me on 0417 896 377 or by email at bede.omara@incitecpivot.com.au.