

# Nutrition

The main messages from the trial work undertaken in 2005 for nutrient management in 2006 were:

- **Applying N fertilisers to soil high in available N is a waste of inputs (money)**

There were no nitrogen responses in our trials where the soil was already high in N following a wet summer when mineralisation rates were high. Soil testing is still the only way to find out what the soil N status is before sowing and the Yield Prophet can then be used to work out the probabilities of getting a yield benefit or economic response from N fertiliser.

- **Late N is better than early N on wheat for yield and protein**

On soils that were N fertiliser responsive, Nick Poole's GRDC supported trial work at Lubeck and BCG work at Marnoo, showed that applying nitrogen fertiliser as late as the first node stage was more efficient for yield and protein compared to pre-drilling. The added benefit is that you know much more about the season and how it is likely to finish later in the season.

- **Late N is also better for yield in barley BUT not for protein**

Nick Poole's work at Lubeck showed that applying N at the first node stage also worked better for yield in barley but that the corresponding increase in protein made this a very risky exercise. Unfortunately when growing malting barley the nitrogen fertiliser will have to go out before sowing or at the latest the 5 leaf stage otherwise the risk of growing high protein barley is too high.

- **Barley with N applied at sowing had higher disease pressure**

Dense barley crops obtained when all nitrogen requirements were put out up front resulted in crops with higher disease pressure. In some of these cases a fungicide was necessary to reduce the yield incidence. Monitor all your crops for diseases throughout the season and be pro-active in treating diseases.

- **What N product to use?**

BCG trials in 2005 at Marnoo, which was a highly responsive site to N fertiliser could not differentiate between N products (granular Urea and Calcium Ammonium Nitrate; and liquid Urea and UAN). Even when used in-crop, the granular Urea was as efficient as the other nitrogen products used. Stick with Urea if you are happy with the product – there is no urgent need to change to a different product.

- **For those using UAN or liquid Urea**

For many farmers UAN or liquid Urea is an easier and more cost effective form of N to use during the season compared to granular urea. UAN is compatible with most herbicides and fungicides. The only herbicide which has had a problem with spraying with UAN in BCG trials was Amicide625. The negative effect of Amicide625 is alleviated to a large extent when the product is mixed with water before adding the UAN.

- **Granular P versus Liquid P on sandy soils**

In BCG trials on a sandy calcareous soil in the central Mallee, there were no yield benefits from using liquid P (TGMAP) versus granular P (MAP). There were some differences early in the season when liquid P produced more dry matter compared to granular P. Before spending large amounts of money on changing over to liquid P make sure you are on a soil type where crops will respond favourably to liquids. At this stage it is not at all clear what are the most responsive soil types are.

- **Micronutrients on sandy soils**

On sandy calcareous soils there were no yield or grain quality benefits from applying Zinc and Copper micronutrients. If you are considering applying micronutrients make sure your soils are low in these micronutrients and that your crop will respond. Remember that it is not wise to just add micronutrients without knowing what the consequences are – for example if you apply too much Zinc you can induce Copper deficiencies.