

# NUTRIENT MANAGEMENT

2007 is a recovery year. There is scope for cutting back on fertiliser rates in some circumstances but be careful not to compromise crop requirements.

The aim for nutrient management in 2007 is to supply the crop requirements without over- or under-investing. Saving on fertiliser inputs can be successful but cutting back too much where nutrient history is low could mean you miss out on the big crop that is needed. Over-supplying nutrients will not penalise the crop but it will hurt your bottom line.

The main messages from BCG work are:

## Phosphorus

- Low phosphorus rates after poor years have been used successfully in the past (eg after 2002 drought).
- Many areas have been on historically low P rates now for five years or more. This does not mean rates cannot be cut again in 2007 but you will need to know on a paddock by paddock basis if fertiliser history is enough to support low rates.
- Use nutrient audits\* in conjunction with soil testing of representative paddocks to get a good idea of your starting point in 2007 and adjust P rates accordingly. Phosphorus can not be topped up after sowing if rates applied are too low.
- There is some evidence to suggest higher available phosphorus levels under the crop row compared to the inter-row. Auto-steer systems can allow exploitation of this resource and may allow a large cut in 2007 phosphorus rates.
- Opportunities for the use of liquid phosphorus are still being explored and some promising responses have been observed in previous DPI and BCG trials. However machinery changeover costs are high, results are still highly variable and very soil type dependent. Stay tuned!

\*Guide for conducting Nutrient Audits is on the following page.

## Nitrogen

- Don't apply too much nitrogen upfront – leave your options open until the season is clearer.
- Previous BCG/FAR trials have shown that delaying nitrogen for wheat until GS30 has not penalised yield and can save around \$25/ha in pre-drilling costs alone.
- For best results topdress wheat from the end of tillering (GS30) and there may be an opportunity for a late top up for protein at flag leaf (GS39). Don't delay on malt barley crops – topdress before end of tillering to avoid quality penalties.

Trials at Rupanyup and Hopetoun in 2006 showed that growers who followed this path and decided not apply any urea for the season were not penalised in overall yield.

- Urea or UAN?

Trials at Rupanyup in 2006 and Murtoa in 2005 have shown that timing of application is more important than product choice. Using either product to supply nitrogen under good conditions will give the same result. UAN can provide flexibility to apply nitrogen while spraying herbicides but is still significantly more expensive per unit of nitrogen than urea.

## Micronutrients

- Ten years of BCG trials have shown that it is difficult to see a yield response from micronutrient applications in paddocks with good trace element histories.
- Depending on soil type, farms with a good micronutrient history can rely on basic starter fertiliser this year and normal micronutrient programs can be resumed next year.
- Applying these nutrients in starter fertiliser as part of a regular program will help build up levels in the soil and is a cheaper method than using foliar sprays to correct deficiency symptoms later in the season.

## Guide for Nutrient Audits

Many computer paddock recording software packages have this facility already built in. If you do not have this luxury calculating your nutrient budget will take longer than the push of a button but can help you work out where you can safely cut back on nutrients which are best applied at sowing such as P (must go out at sowing), S and Zn.

Use the following tables to help calculate your budgets.

	Approx nutrients removed per tonne of grain			
	P (kg/t)	S (kg/t)	Zn (g/t)	Cu (g/t)
Cereals	2.5 - 3	1.5	14 - 20	3 - 5
Legumes	3.2 - 4	1.5 - 2.4	28 - 35	5 - 10
Oilseeds	4.3 - 7	4 - 10	26 - 40	4 - 14
Hay Approx	3.3	2.4	21	8

Source: Ezigrain Growers Action Planner

Set up a table such as below to do the calculations:

Year	Crop Type	Nutrients removed			Fertiliser applied			Total nutrients supplied
		P	S	Zn	P	S	Zn	
2005								
2004								
2003								
2002								
2001								
Total removed					Total supplied			

Nutrient balance = total nutrients applied – total nutrients removed (over the last 5 years)