



**Cal-Gran**<sup>®</sup>  
in sugar cane

# Losing yield? Hold on to your nitrogen

**Get more from your nitrogen investment  
with Cal-Gran<sup>®</sup> fertiliser.**

Cal-Gran and Cal-Gran blends provide a less volatile source of nitrogen and are ideally suited for ratoon cane blocks where fertiliser is surface applied to green cane trash blankets.

The nitrogen in Cal-Gran is present in two forms, nitrate nitrogen (7.4%) and ammonium nitrogen (16.5%), making it less susceptible to volatilisation losses than urea. Cal-Gran also contains sulphur (10.8%) and calcium (4.4%).

To get your ratoon cane off to a flying start, choose Cal-Gran fertiliser.



## Key benefits of Cal-Gran

- Improved nitrogen efficiency, which increases the potential for better yields
- A fast growth response due to immediately available nitrate nitrogen
- Allows for a more timely and convenient granular fertiliser application compared to other methods
- Contains sulphur and calcium, which are essential nutrients for sugar cane. The form of calcium in Cal-Gran helps reduce soil acidification due to its neutralising value.



## Minimise nitrogen losses with Cal-Gran

There is a risk of volatilisation loss when applying urea to trash blankets.

Volatilisation is the process where nitrogen is lost to the atmosphere as ammonia ( $\text{NH}_3$ ). Where volatilisation occurs, the nitrogen is no longer available to the crop. If volatilisation losses are significant, cane yields may be reduced.

Trials by Freney et al.<sup>1</sup> compared the nitrogen volatilisation losses of surface applied fertilisers in green cane trash blanket blocks across sites in north Queensland.

The trials showed that it was common for 30 - 40% of the nitrogen in surface applied urea to be lost within six weeks of application.

When considering the potential for volatilisation losses, a fertiliser with a lower risk of volatilisation, like Cal-Gran,

may offer better nitrogen efficiency and potentially better yields in ratoon cane as a result.

Cal-Gran contains nitrogen in two forms, nitrate nitrogen (7.4%) and ammonium nitrogen (16.5%). Nitrate nitrogen has a zero risk of volatilisation, while ammonium has a significantly lower volatilisation risk compared to urea, making both these forms of nitrogen an ideal choice for surface application on trash blankets.

The nitrate nitrogen ( $\text{NO}_3^-$ ) component in Cal-Gran is immediately available to crops once dissolved into the soil solution. Sugar cane can also directly utilise nitrogen in the ammonium form ( $\text{NH}_4^+$ ).

While Cal-Gran based blends can be more expensive per unit of nitrogen compared to urea blends, in situations where volatilisation losses can be as high as 30 - 40%, Cal-Gran may be the more cost-effective option.

<sup>1</sup> Freney, J.R., Denmead, O.T., Wood, A.W. and Saffigna, P.G. (1994). Ammonia loss following urea addition to sugar cane trash blankets. Proceedings of Australian Society of Sugar Cane Technologist, 1994.

## Sulphur and calcium enhanced

As well as providing an efficient source of nitrogen for ratoon crops, Cal-Gran also contains sulphur (10.8% as sulphate sulphur) and calcium (4.4% as calcium carbonate).

As a rule of thumb, sulphur should be applied at rates of 25 kg/ha where soil sulphur is 'low' and 10 kg/ha where it is 'moderate'.

Cane growers farming sandy soils low in organic matter, such as in the Wet Tropics, Herbert, Burdekin, Bundaberg, Maryborough and the Central regions, are more likely to experience sulphur deficiency and should consider including sulphur in their fertiliser program.

Calcium plays an important role in determining a soil's physical and chemical characteristics, such as structure and pH. It is also an essential plant nutrient.

Calcium deficiencies can be evident in a range of conditions, including soils with high magnesium and potassium, low cation exchange capacities, and low pH. BSES research has shown that 27 - 55 kg/ha of calcium can be removed from the soil per crop.<sup>2</sup>

If a Cal-Gran blend is applied at 600 kg/ha, sufficient calcium will be applied to meet a 25 kg/ha calcium requirement.

Applying Cal-Gran in ratoon cane not only meets nitrogen crop requirements, but also assists with preventing sulphur deficiency and topping up calcium levels, giving your crops a flying start to the season.

### Consider using Cal-Gran

- For surface application of nitrogen fertiliser to green cane trash blankets
- Where there is a high risk for nitrogen losses through volatilisation
- When sulphur is likely to be deficient, particularly on sandy soils low in organic matter
- When fertilising ratoon cane<sup>3</sup>
- In soils where additional calcium is required at lower rates
- When seasonal conditions make sub-surface applications difficult.



**“We saw an improvement in the size and length of the cane after switching to Cal-Gran.**

**There is a lower risk of volatilisation, so we don't have to apply as much fertiliser to cover those losses.”**

**Len Reece-Hoyes, Abergowrie, Queensland.**

<sup>2</sup> BSES, 1994. Australian Sugarcane Nutrition Manual

<sup>3</sup> Cal-Gran should not be used in plant cane, either at planting or as a side-dress application. Unexplained setbacks to plant growth and resultant crop losses have been observed on poorly drained heavy textured soils in the Herbert where flooding rains have fallen after side-dressing plant cane with Cal-Am®.

# Choosing your Cal-Gran fertiliser

## Cal-Gran product range

Product	Product Analysis (% w/w)				
	N	P	K	S	Ca
<b>Cal-Gran</b>	23.9			10.8	4.4
<b>Cal-Gran 50/50</b>	17.9		15.0	3.6	4.4
<b>Cal-Gran 50/50 (S)</b>	16.9		14.4	8.7	4.4
<b>Cal-Gran 130</b>	18.8	1.0	12.5	3.7	4.4
<b>Cal-Gran 140</b>	18.7	2.0	12.5	2.6	4.4
<b>Cal-Gran 150</b>	18.6	3.0	12.5	1.4	4.4
<b>Cal-Gran 160</b>	19.7	2.0	10.0	3.8	4.4
<b>Cal-Gran Nitra King</b>	18.9		12.5	4.8	4.4
<b>Cal-Gran Extra K</b>	15.8		19.0	3.2	3.9

Cal-Gran and Cal-Gran blends provide a tailored fertiliser to meet the needs of ratoon cane blocks.

As well as providing nitrogen, sulphur and calcium, Cal-Gran and Cal-Gran blends can be custom blended with other fertilisers to meet the specific nutritional needs of your individual cane blocks.

Contact your nearest Incitec Pivot Fertilisers Distributor to arrange a sugar cane soil test through the Nutrient Advantage® Laboratory to measure your soil's fertility and tailor a suitable nutrition program.

As Cal-Gran and Cal-Gran blends contains calcium ammonium nitrate, they can be hygroscopic and will absorb moisture, potentially making the product difficult to apply. For best results, Cal-Gran blends should be ordered and blended as close as possible to the intended time of use, and not stored for extended periods.

**For more information about Cal-Gran and Cal-Gran blends, contact your local Incitec Pivot Fertilisers Distributor.**

[www.incitecpivot.com.au](http://www.incitecpivot.com.au)

This is a guide only, which we hope you find helpful as a general tool. While Incitec Pivot Fertilisers has taken all reasonable care in the preparation of this guide, it should not be relied on as a substitute for tailored professional advice and Incitec Pivot Fertilisers accepts no liability in connection with this guide. Talk to your local Incitec Pivot Fertilisers Distributor Agronomist about soil testing and arranging a specific fertiliser recommendation that best suits your needs.

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