



Demonstration of Black Urea® in Sugar Cane

Background Information

High fertiliser prices in 2008/2009 have significantly impacted the production economics of sugar cane. The grower needed to find a way to improve profits in order to remain viable. In a bid to prove, or otherwise, the claims made regarding Black Urea®, the grower undertook to test the product performance under commercially relevant and scientifically valid conditions.

Demonstration Goal

- To demonstrate that Black Urea® at 73% application of the usual granular Urea practice will produce superior economic results.

Grower: Kevin Mann

Location: Home Hill, Qld

Crop: Sugar cane

Agronomist: Neville Janke

<p>RAINFALL Avg Annual Rainfall 2008: 1000 mm 2007: 1200 mm</p>
<p>PADDOCK HISTORY 2008: Sugarcane 2007: Sugarcane 2006: Sugarcane</p>
<p>SOIL Location: Home Hill Type: sandy loam pH: 6</p>

Demonstration Method

Black Urea® Demonstration Plots: Black Urea @ 160kg/ha applied with stool splitter. Product cost of \$1,115/t on farm (excl. GST)

Urea Demonstration Plots: Granular Urea @ 220kg/ha applied with stool splitter (usual farm practice). Product cost of \$1,015/t on farm (excl. GST)

All sites set for three year rotation of the same rates of application

Crop was grown under normal commercial practice will all plots treated the same with the exception of nitrogen application rates. Each demonstration plot was harvested separately with bin numbers recorded. Bin Numbers were then matched with Inkerman Sugar Mill results of Yield, CCS, Units and income per Unit (\$4.00/u).

Results

Primary Demonstration – Replicated 3rd Ratoon Crop

Plot ID	Plot Size(ha)	Yield (t)	Av. Yield (t/ha)	CCS	Total Units	Units per ha
BLACK UREA						
15.1	.33	36.66	111.09	15.50	568.23	1721.91
15.2	.48	35.19	73.31	15.50	545.45	1136.35
15.3	3.77	310.86	82.46	17.11	5318.79	1410.82
Total	4.58	382.71	83.56		6432.47	1404.47



Plot ID	Plot Size(ha)	Yield (t)	Av. Yield (t/ha)	CCS	Total Units	Units per ha
UREA						
1.1	9.28	718.51	77.43	15.05	10813.58	1165.80
5	9.75	807.12	82.79	14.72	11879.66	1218.43
7	6.48	722.17	111.45	15.98	11542.14	1781.19
Total	25.51	2247.80	88.11		34235.38	1342.04

Economic Analysis

	Black Urea	v	Urea	Variance	Comment
Production Units per ha	1404.47	v	1342.04	62.43	Increase in units per ha
Income per ha (@\$4/u)	\$5617.88	v	\$5368.16	\$249.72	Increase in income per ha
Fertiliser cost per ha	\$178.40	v	\$223.30	-\$44.90	Decrease in input costs per ha
TOTAL BENEFIT BY USING BLACK UREA				\$294.62	INCREASE IN PROFIT PER HA

Secondary Demonstration – 5th Ratoon Crop

This demonstration was not replicated; results are further clouded by significantly different soil types with regards sodium levels and should be accepted as an indicative guide only to the possible benefit of Black Urea.

Plot ID	Plot Size (ha)	Yield (t)	Av. Yield (t/ha)	CCS	Total Units	Units Produced per ha	Production Increase
Black Urea							
14.1	7.23	818.17	113.16	16.68	13649.64	1888	90%
Urea							
8	7.01	464.82	66.31	15.00	6970.62	994	

Conclusion and Discussion

The demonstration proves that Black Urea® applied at 73% of the usual farm practice for nitrogen will significantly improve farm profits under commercial farming conditions.

The same plots and practices will be used for a further two years to further demonstrate the long term benefits of using this enhanced efficiency fertilizer.

The results further imply an environmental benefit of using Black Urea®, if less is used to achieve more as has been demonstrated; logically less “free” nitrogen is available for migration into environmental pathways and subsequent resultant damage. The manufacturing and distribution of 27% less fertilizer will provide a significant reduction to sugar cane productions carbon footprint.