TOPIC: USING YIELD PROPHET FOR TACTICAL NITROGEN RESPONSES	Group: *Perenjori 2011*

ABSTRACT

Yield Prophet provided good background information to apply nitrogen during the season. Whilst the nitrogen application treatment based of Yield Prophet reports was the second highest yielding treatment it did provide a delayed spend on nitrogen. Treatment 4 had exactly the same nitrogen application rate but the timing was far early than treatment 7 (Yield Prophet guided treatment). This does prove that Yield Prophet can help growers to make less risky nitrogen decisions without sacrificing yield and grain quality. Obviously with the excellent finishing rainfall the highest nitrogen application was the highest yielding treatment.

BACKGROUND AND AIM

In conjunction with CSBP the aim of the trial was to use yield prophet to help determine rates of nitrogen to apply. In a sense use Yield Prophet to play the season. Pre determined rates of nitrogen were applied and one treatment was left to the discretion of CSBP, Simon Teakle and the Yield Prophet reports at the time. The aim was to see if Yield Prophet could help make a better nitrogen fertiliser decision using yield potentials and available stored moisture.

TRIAL DETAILS

See the details in the CSBP trial report on next page.

RESULTS

See the details in the CSBP trial report on next page.

COMMENTS

The shallow soil type that this trial was conducted on may have given different results had the spring rainfall been average in Perenjori. Normally the highest rate of nitrogen may have hayed off early on this shallow soil. Because of this caution was used in the final nitrogen application in treatment 7 (Yield Prophet guided treatment).

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FLEXI-N ON WHEAT

FARMER	Sparkman	AREA	Perenjori	TRIAL NO	YP11W2	YEAR	2011

SITE HISTORY:

Native vegetation: York Gum. 2010: Wheat (0.8 t/ha) with Agstar Extra + flexi-N; 2009: Wheat (2.2 t/ha) with Agstar Extra + Flexi-N; 2008: Wheat (2.1 t/ha) with Agstar Extra Plus.

SOIL ANALYSIS:

	Description	pH	Salt	OC	N(Nit)	N(Amm)	P	PBI	K	S
0 - 10		4.9 - 5.4	0.06	0.7	20	1	37	35	310	4
10 - 20		4.7 - 6.4	0.09	0.4	5	1	9	72	210	13
20 – 30cm		7.2	0.24	0.3	3	1	4	100	190	26

	Ex Ca	Ex Mg	Ex K	Ex Na	Ex Al	ECEC	Al	Cu	Zn	B
0 - 10	4	0.9	0.8	0.12	0.05	6.1	0.2	1.4	0.5	0.6
10 -20	5	1.3	0.5	0.17	0.08	7.8	0.2	1.9	0.1	0.7
20 – 30cm	14	2.0	0.5	0.62		17.4	0.2	2.0	0.2	0.5

AIM: To determine the response to Flexi-N in wheat.

MANAGEMENT:

18 May   Sprayed 1.8 l/ha Treflan, 300 ml/ha Lorsban. Sowed 65 kg/ha Mace wheat.
13 Jun   Applied Z13 Flexi-N.
20 Jul   Applied Z30 Flexi-N.
22 Nov   Harvest.

RESULTS AND DISCUSSION:

This site was very responsive to Flexi-N and some very high yields were produced.

Three applications (banded, Z13, and Z30) of 40 L/ha Flexi-N increased yield from 1.9 t/ha to 3.8 t/ha. This represented a very high nitrogen use efficiency of 37 kg grain/kg N.

Grain protein was very low (7.1 to 8.3%) due to low N supply relative to demand.

Plant and grain tests indicated that molybdenum supply was marginal (about 100 ug/kg).

With 24 kg N/ha, 85 kg/ha Agstar Extra out yielded 50 kg/ha Agstar Extra by 0.26 t/ha.

Grain tests showed marginal sulphur (S) concentrations (average 0.10 mg/kg). Low grain S concentrations can limit baking quality characteristics such as dough strength and extensibility.

Tr t	Banded (kg/ha)	(L/ha)	Z13 (L/ha)	Z30 (L/ha)	N	P	Yield (t/ha)	Protein (%)	HL wt. (kg/HL)	Scrns. (%)
1	-	-	-	-	0	0	1.42	7.6	77	4
2	50 Agstar Extra	-	-	-	7	7	1.92	7.4	76	4
3	50 Agstar Extra	40 FN	-	-	24	7	2.50	7.1	76	3
4	50 Agstar Extra	40 FN	40 FN	-	41	7	3.09	7.6	77	3
5	50 Agstar Extra	40 FN	40 FN	40 FN	58	7	3.80	8.3	77	4
6	85 Agstar Extra	28 FN	-	-	24	12	2.76	7.2	77	3
7	50 Agstar Extra	-	55 FN	25 FN	41	7	3.07	7.5	76	3
						Prob	<0.001	0.003	0.11	0.27
						Lsd	0.201	0.45	ns	ns