

NITROGEN TIMING FOR WHEAT AND BARLEY

Erin Cahill and Stephen Loss, CSBP Ltd



Grow to your full potential.

AIM

To compare the optimum rate and timing of nitrogen applications (Flexi-N) for the yield and quality of Wyalkatchem wheat and Baudin barley.

BACKGROUND

Wheat and barley have different end uses with differing protein and quality requirements. Unlike wheat growers, barley producers are often reluctant to apply high rates of nitrogen, especially post-emergent, in case this causes high screenings and excessive protein levels. In doing so, they are often limiting tiller survival and yield potential. It is well documented that split applications increase nitrogen use efficiency and can also be used as a risk management tool for cereal and other crops in variable environments.

TRIAL DETAILS

Property	Ian Syme, Liebe Group Main Trial Site, Buntine
Plot size & replication	20 x 2.1m
Soil type	Light brown sandy loam
Sowing date	31/05/06
Seeding rate (kg/ha)	100 kg/ha Wyalkatchem + Jockey, or 80 kg/ha Baudin
Fertiliser (kg/ha)	Basal – 140 MacroPro Extra + 400 mL/ha Impact coated
Paddock rotation	Wheat 2004, grassy pasture 2005
Herbicides	Wheat plots sprayed with 2.0L Treflan, 2.0L Sprayseed & 35g Logran. Barley plots sprayed with 1.8L Treflan 2.0L Sprayseed & 135g Lexone.
Growing Season Rainfall	122mm

SOIL ANALYSIS

	Description	pH	Salt	OC	N(Nit)	N(Amm)	P	Fe	K	S
0-10cm	Light brown loamy sand	4.7	0.056	0.52	11	3	16	327	68	3.2
10-20cm	Light brown loamy sand	4.4	0.022	0.38	2	1	7	676	34	4.6
20-30cm	Brown yellow loamy sand	4.5	0.029	0.24	2	1	2	620	29	12.5

RESULTS

Table 1: Grain yields from wheat and barley sown on 31/05/06 at the main Liebe trial site.

Trt	Variety	Flexi-N banded at sowing (L/ha)	Flexi-N 5-6 WAS (L/ha)	Total incl. basal (kg/ha)			Grain Yield t/ha
				N	P	K	
1	Wyalkatchem	-	-	14	16	16	0.318
2	Wyalkatchem	100	-	56	16	16	0.328
3	Wyalkatchem	-	60	39	16	16	0.349
4	Wyalkatchem	100	-	77	16	16	0.375
5	Wyalkatchem	100	60	81	16	16	0.370
6	Baudin	-	-	14	16	16	0.286
7	Baudin	100	-	56	16	16	0.349
8	Baudin	-	60	39	16	16	0.328
9	Baudin	100	-	77	16	16	0.339
10	Baudin	100	60	81	16	16	0.380

COMMENTS

Crop growth and yield potential were severely limited by one of the driest seasons on record at this site. Hence, the very poor grain yields and no response to nitrogen applications (Table 1).

A greater number of nitrogen treatments and measurements were planned for this trial, however these were cut back during the season because of the low rainfall and poor yield potential.

The plots at this site will be sown to wheat in 2007 to examine responses to residual nitrogen carried over from the dry 2006 season.

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