

“Soft Wheat Agronomy Trial Results 2012”

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Key Outcomes:

- There was no significant difference in yield of the soft wheat varieties tested
- There was a yield increase associated with applying 50 kg/ha of nitrogen, but no further yield increases with higher rates of nitrogen.
- All varieties and nitrogen treatments were able to achieve Soft 1 specification for protein

Trial Objectives: To determine the adaptation and nitrogen management requirements of new soft wheat varieties compared to existing commercial cultivars

Trial Duration: 2012

Location: Navan

Farmer Co-operators: Pat & Mary Connell

Soil Type: Black Cracking Clay

Paddock History: 2010 Wheat
2011 Oats Hay

Monthly Rainfall:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
18	11	55	16	42.5	76.5	38	46.5	29	21.5	4.5	10

Yield Limiting Factors: Dry Spring

Type of Trial: Replicated small plot trial

Trial Design: Randomised Complete Block Design

Treatments:

5 varieties of Soft wheat were tested in the trial they were:

Impala, Gazelle, Orion, Yenda and Barham

All plots were sown on 16/05/2012 at 300 seeds/m² and 80 kg/ha Triple Superphosphate. 4 Nitrogen treatments were applied across each variety: Nil N, 50 kg/ha N Seeding, 100 kg/ha N Seeding, 100 kg/ha N GS 31. Plots were machine harvested with a small plot header and sub sampled for grain protein content.

Results:

Table 1: Soft wheat variety yields, MNRHZ 2012

Variety	Yield (kg/ha)	Protein (%)
Barham	5678.1	6.76
Gazelle	5741.7	6.28
Impala	5565.5	6.63
Orion	5680.6	6.73
Yenda	5728.1	6.25
LSD (0.05)	NS	NS

Table 2: Effect of nitrogen rate and timing on soft wheat yield, MNHRZ 2012

Nitrogen	Yield (kg/ha)	Protein (%)
Nil N	5406.7	4.15
50N Seeding	5988.3	6.89
100N Seeding	5913.5	7.65
100N GS 31	5792.3	7.43
LSD (0.05)	474	1.2095

Table 3: Soft Wheat variety yield & protein x nitrogen interaction, MNHRZ 2012

Variety	Nitrogen	Yield (kg/ha)	Protein (%)	Variety	Nitrogen	Yield (kg/ha)	Protein (%)
Barham	Nil N	5476.2	4.4	Orion	Nil N	5024.8	4.9
	50N Seeding	6033.9	7.6		50N Seeding	5916.5	6.8
	100N Seeding	5745.1	7.2		100N Seeding	6021.9	8.0
	100N GS 31	5457.1	8.0		100N GS 31	5759.1	7.2
Gazelle	Nil N	4837.2	2.8	Yenda	Nil N	4953.1	4.5
	50N Seeding	5974.2	8.1		50N Seeding	6094.3	5.3
	100N Seeding	6384.4	6.7		100N Seeding	5891.7	7.9
	100N GS 31	5771.1	7.4		100N GS 31	5973.2	7.2
Impala	Nil N	4814.1	4.1		LSD (0.05)	NS	NS
	50N Seeding	5922.5	6.6				
	100N Seeding	5524.6	8.5				
	100N GS 31	6000.9	7.4				
	LSD (0.05)	NS	NS				

Comments:

The varieties tested in the trial in 2012 showed no significant difference in terms of yield or protein (See **Table 1**). The excellent levels of plant available moisture in the subsoil at the

MNHRZ this year, were likely the cause of this lack of variation in yield. This has not always been the case, as in 2011 trials the newer varieties Gazelle and Orion yielded up to 1 t/ha more than the other varieties tested. To produce soft wheat consideration must also be given to the receival standards that apply. Factors such as test weight, screenings and ability to consistently produce grain of low protein must also be taken into account. Nitrogen was the main factor influencing yields and protein in this trial in 2012 (See **Table 2**). It appears that 50 kg/ha of nitrogen was adequate to meet the yield demands of the crop in this situation and is likely a reflection of excellent residual N levels at the site (125 kg/ha N 0-100cm). Protein levels showed a similar trend with all treatments that received nitrogen producing higher protein levels than the Nil N treatment, but not significantly greater than each other. This information confirms previous MNHRZ trial results where large and/or later nitrogen applications have still been able to produce wheat with protein levels of Soft 1 standard (<9.5%).

Conclusion and into the paddock

The soft wheat market in the Mid North is finite, so markets should be sought prior to growing the crop. It appears (although not reflected in these results!) that the more recently released varieties (e.g. Impala, Gazelle, Orion) offer more higher end yield potential than contemporary varieties. As always, early sowing and correct nitrogen management (not excessive) are the keys to producing high quality soft wheat. Later nitrogen applications to the crop are possible in seasons with high yield potential without compromising protein levels for Soft 1.

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