

Wheat maximum yield experiment

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Key messages:

- In dry years wheat has only a little response to extra inputs.
- Avoid using unnecessary inputs early to maximise income.

Aim:

To assess the level of input required to maximise the yields of wheat grown after wheat.

Method:

A replicated experiment was established using different levels of post emergent N and fungicide to assess yield.

Location: Balldale

Growing Season Rainfall:

Annual: 232 mm

GSR: 166 mm

Soil:

Type: Red Chromosol

pH (H₂O): 4.9

P (Colwell): 42 mg/kg

Deep Soil N: 82 kg/ha

Sowing Information:

Sowing date: 28/6/2006

Fertiliser: 90 kg/ha MAP

Row Spacing: 180 mm

Paddock History:

2006 – Wheat

2005 – Wheat

2004 – Canola

Plot Size: 1.5 m x 16 m

Replicates: 4

Results:

Table 4: Summary of Yield (t/ha), Protein (%) and Screenings (%) and Gross Margin (\$/ha over 0N) results

Treatment Description	Mean	Protein (%)	Screenings (%)	Gross Margin (\$/ha)
P20, 0 N	0.66	13.20	1.7	53
P20, 20 N	0.84	14.60	2.6	87
P20, 40 N	0.91	15.40	4.1	86
P20, 60N	0.85	17.20	6.4	48
P20, 80 N	0.79	16.80	7.8	10
P20, 100N	0.59	17.90	8.2	-70
P20, 120N	0.50	17.30	8.6	-117
P20, 0 N, Fungicide ¹	0.94	12.60	1.0	129
P20, 20 N, Fungicide ¹	1.20	14.20	1.6	188
P20, 40 N, Fungicide ¹	1.22	15.80	4.6	176
P20, 60N, Fungicide ¹	0.94	17.40	4.6	71
P20, 80 N, Fungicide ¹	0.71	17.20	6.1	-17
P20, 100N, Fungicide ¹	0.68	17.00	7.4	-48
P20, 120N, Fungicide ¹	0.47	17.40	7.9	-131
P20 80N, Fungicide ² Z31	0.79	16.80	6.2	11
P20, 80N, Fungicide ² Z39	0.78	17.60	7.3	7
P20, 80N, Fungicide ² Z45	0.69	17.40	6.8	-19
P25, 80N, Fungicide ¹	0.80	16.80	5.4	0
P25, 120N, Fungicide ¹	0.80	17.50	8.2	-42
P30, 80N, Fungicide ¹	0.74	16.90	6.7	-25
P40, 80N, Fungicide ¹	0.71	17.60	6.3	-63
LSD (0.05)	0.53			76

1 – Fungicide - Two applications of 500 ml/ha of 125 g/L Triadimefon at growth stages Z30 and Z39.

2 – Fungicide Z31 (or other as indicated) One application of 500 ml/ha of 125 g/L Triadimefon at that growth stage. All seed treated with Jockey seed dressing. Protein and screenings on composite sample only. Gross Margin (whole \$/ha) based on \$300 /t (delivered local silo) and N @ \$0.98 /kg delivered, fungicide @ \$6.25 /ha/application for ground application and \$15.50 /ha for aerial application.

P – Phosphorus at rate indicated. N – Nitrogen at rate indicated. Z – Zadock growth stage.

Observations and comments:

- Addition of 20 and 40 kg/ha of N and a fungicide treatment resulted in a significant increase in yield and gross margin compared to the zero N treatment only.
- No other treatments show a significant response to yield or gross margin above no added input and many had significantly negative responses.
- Addition of fungicide did not increase yield except in combination with low rates of N fertilizer.
- Protein and screenings were not adversely affected until over 40 kg/ha of N was applied.

Sponsors:

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