PRACTICE FOR PROFIT

Darren Chitty, Research Agronomist, Agritech Crop Research

AIM

To determine optimal input packages for commonly grown wheat varieties in the Buntine area.

BACKGROUND

Agritech Crop Research conducted this trial on behalf of the Liebe Group in order to determine the profitability of four levels of wheat crop management inputs. These levels of input were applied to noodle varieties Arrino and Calingiri, hard variety Bonnie Rock and APW Wyalkatchem. Arrino was chosen for its disease susceptibility, whilst Calingiri is a longer season variety well adapted to the local environment. Bonnie Rock and Wyalkatchem are considered good performing hard and APW varieties in the area. Management practices are explained below.

- **Low** input treatments are based on a farmer delivering grain to the bin at the lowest possible cost, regardless of seasonal conditions ($52.30/ha).
- **District** average inputs are based on what is considered common grower practice in the Liebe Group area ($108.50/ha).
- **High** input treatments simulate a paddock with high yield potential matched with increased management inputs to maximize yields and profitability ($240.55/ha).
- **Active** treatments are dependent on seasonal conditions and are determined by the Liebe R&D Committee ($83.00/ha).

The trial is intended to run over 10 seasons, with this being the sixth year.

TRIAL DETAILS

Property	Ian Syme, Main Trial Site, Buntine
Plot size & replication	9m x 10m x 3 Replications
Soil type	Sandplain / sandy loam
Sowing date	27/5/06
Seeding rate	Low = 50 kg/ha, District = 75 kg/ha, High = 100 kg/ha, Active = 75 kg/ha
Fertiliser (kg/ha)	Various – as per treatment list
Paddock rotation	2004 – wheat, 2005 – lupins
Herbicides	Various – as per treatment list
Growing Season Rainfall	122mm

RESULTS

Table 1: Yields (t/ha) and gross margins ($/ha) from previous years (2001- 2005).

		Yield				Gross Margin				
Treatment		**2001**	**2003**	**2004**	**2005**	**2001**	**2002**	**2003**	**2004**	**2005**
Arrino	Low	1.83	1.95	1.31	1.00	$381.3	-$38.5	$448.5	$190.1	158.1
	District	2.00	2.37	2.19	1.37	$355.5	-$101.7	$492.0	$271.9	164.5
	High	2.13	2.20	1.93	1.17	$267.6	-$179.7	$351.5	$136.1	0
	Active		1.94	2.14	1.30		-$45.1	$411.1	$282.5	191
Calingiri	Low	1.93	2.24	1.42	1.19	$419.0	-$38.5	$512.4	$181.3	162.5
	District	2.07	2.41	1.92	1.44	$322.6	-$101.7	$483.8	$202.1	137.1
	High	2.10	2.37	2.00	1.21	$234.8	-$179.7	$392.4	$130.4	5
	Active		2.24	1.62	1.35		-$45.1	$487.1	$166.4	182.4

Note: 2002 was a drought and no harvest took place. Active Management introduced in 2002.

Table 2: Crop Vigour (1-9), weed control (%) and yield (t/ha) in 2006.

Part Rated Rating Data Type Rating Date		Crop Vigour 6/09/2006	Weed Control 6/09/2006	Crop Yield 8/11/2006
No.	**Treatment**			
TABLE OF A MEANS				
1	Arrino	6.2	8.0	0.499
2	Calingiri	6.3	8.0	0.539
3	Wyalkatchem	5.7	8.0	0.439
4	Bonnie Rock	5.7	8.0	0.458
LSD (P=.05)		**NS**	**NS**	**NS**
TABLE OF B MEANS				
1	LOW INPUT Trifluralin 1.2 L/ha DAP 50 kg/ha Diuron 350 mL/ha LVE MCPA 400 mL/ha	5.0 c	8.0	0.467 b
2	DISTRICT INPUT Premis 1 L/t Trifluralin 1.6 L/ha Logran 35 g/ha Agstar 100 kg/ha Urea 50 kg/ha 2,4-D Amine 1 L/ha	5.6 b	8.0	0.428 b
3	HIGH INPUT Deep Ripped 30cm Real 1.5 L/t Trifluralin 1.6 L/ha Logran 35 g/ha Agstar 140 kg/ha Urea 80 kg/ha MOP 50 kg/ha Giant 600 mL/ha	6.9 a	8.0	0.566 a
4	ACTIVE INPUT Deep Ripped 30cm Trifluralin 1.6 L/ha Agstar 43 kg/ha MCPA LVE 1.2 L/ha	6.3 a	8.0	0.473 b
LSD (P=.05)		**0.5**	**NS**	**0.089**

Means followed by same letter do not significantly differ (P=.05, LSD)

ECONOMIC ANALYSIS

Table 3: Grain yield, quality, receival grade and gross margins for 2006.

Treatment		Yield (t/ha)	Protein (%)	Screenings (%)	Grade	Gross Margin $/ha
Arrino	Low	0.391	13.5	2.4	ASW	32.16
	District	0.401	14.1	3.6	ASW	-22.74
	High	0.720	13.6	3.3	ASW	-86.47
	Active	0.484	12.5	2.8	ASW	21.06
Calingiri	Low	0.514	12.5	4.7	ASW	55.64
	District	0.561	13.2	6.0	ASW	7.58
	High	0.514	13.5	6.2	ASW	-134.15
	Active	0.566	11.4	5.2	ASWN	40.39
Wyalkatchem	Low	0.494	12.5	3.6	APW	58.85
	District	0.370	14.1	4.2	APW	-25.67
	High	0.509	13.7	4.3	APW	-127.04
	Active	0.381	11.5	4.8	APW	0.44
Bonnie Rock	Low	0.468	13.8	8.0	AH	50.66
	District	0.381	14.2	9.5	AH	-26.25
	High	0.520	14.1	8.4	AH	-126.15
	Active	0.463	13.0	6.5	AH	20.25

COMMENTS

Crop Vigour

The low input treatments showed the least amount of vigour; a direct result of minimal nitrogen and a low seeding rate (50 kg/ha). Although not significant, Arrino and Calingiri showed greater early vigour than Wyalkatchem and Bonnie Rock.

Weed Control

The weed burden in 2006 was very minimal. All herbicide options performed well.

Deep Ripping

Deep ripping was introduced in 2006 for the High and Active management treatments. Improved vigour was observed, however, no significant yield increase occurred, most likely due to the dry season. Given a year with more rainfall some differences in yield could be expected on this sandplain soil type.

Yield and Profit

Well below average rainfall in 2006 resulted in low yields. The highest yielding variety was Calingiri (0.54 t/ha), and the best yielding management practice was the High input (0.567 t/ha) (Table 2). The highest yielding treatment was Arrino – High input at 0.72 t/ha (Table 3).

The Low input treatment was the most profitable in 2006, ranging from $32-$59/ha. This treatment managed weeds effectively, provided adequate nutrition, whilst also keeping costs in line with potential yield. Active management was the second most profitable treatment ($0/ha - $40/ha). This treatment received no nitrogen apart from the nitrogen in the compound fertiliser. Although the High input treatments generally obtained the highest yield, substantial losses for all wheat varieties (-$86/ha to -$134/ha) highlighted the need for growers to remain focused on profit rather than yield.

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