

# Viterra wheat trials at Witera

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Viterra, Streaky Bay

RESEARCH

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### Location:

Witera  
Craig and Len Kelsh  
Port Kenny and Viterra

### Rainfall

Av. Annual: 400 mm  
Av. GSR: 300 mm  
2011 Total: 454 mm  
2011 GSR: 280 mm

### Yield

Potential: 5.0 t/ha (W)  
Actual: 4.5 t/ha (W)

### Paddock History

2010: Medic pasture  
2009: Keel barley

### Soil Type

Clay loam over red brown earth

### Soil Test

0-10 cm, deep N and root disease

### Diseases

Leaf rust

### Plot Size

10 m x 1.8 m x 3 reps

### Yield Limiting Factors

Dry September

### Water Use efficiency

15 kg/mm/ha

## Why do the trial?

New cereal seed treatments and post emergent applications of N were examined at Witera. Each wheat trial was designed to observe yield, grain quality and vigour differences; one from the application of different seed dressings and the other from applying post emergent N at various rates and timings. Both trials focused on the net return on investment from each treatment.

Trials at Witera were designed to complement the existing research and development occurring on the upper Eyre Peninsula while keeping in line with district agronomic practices.

## How was it done?

The wheat seed treatment trial was sown on 11 May (Scout) at 75 kg/ha, with 90 kg/ha DAP applied at sowing and 90 kg/ha urea applied on 8 July. Measurements included plant vigour, plant counts along with grain yield and quality. Treatments included Veteran C (1 kg/t), Premis Protect (1.5 L/t), Veteran Plus (4 L/t), Hombre (4 L/t), Baytan (1.5 L/t), Dividend (1.3 L/t) + Cruiser Opti (1.65 L/t), Dividend (1.3 L/t) + Emerge (1.2 L/t).

The wheat post emergent N trial was sown on 11 May, with 90 kg/ha DAP applied at sowing. Yield and grain quality measurements were recorded. Treatments included 3 different rates (50, 100 and 150 kg/ha urea) and 2 different timings of application (GS32 and GS39, or second node and flag leaf fully emerged).

## What happened?

The economic benefit of applying various seed treatments to Scout wheat varied depending on the seed treatment used. The difference in yield between

treatments was not significant, however the difference in the net return over the untreated control is worth noting.

Veteran Plus recorded the highest net return (\$32/ha) over the untreated treatment, while Baytan (\$27/ha) and Dividend + Emerge (\$26/ha) also recorded reasonable net returns.

None of the various post emergent N treatments applied gave an economic return over the untreated control (Table 2). This result reinforces the importance of understanding stored soil N and soil moisture along with yield potential when considering post emergent N applications.

## What does this mean?

The inclusion of seed treatments can provide a small economic return. The likely reasons for this are improved seedling vigour, early season rust and/or other disease control in combination with good agronomy and favourable growing conditions. The differences in net return (\$/ha) between seed treatments may have been less with lower yields; however it may be worth trialling one of the better performing seed treatments in order to assess any differences on a larger scale.

When considering post emergent N applications it is important to use visual symptoms of N deficiency to assist decision making. The trial displayed no visual signs of N deficiency at the time of application and subsequently the results showed there was no economic benefit from applying post emergent N. It is also important to consider applied and stored soil N levels, along with plant available water and yield potential when determining the economic benefit of post emergent N.

## Key messages

- **Post emergent N applied to wheat did not give an economic return in this trial.**
- **Consider trialling premium wheat seed treatments.**
- **Seed treatment Veteran Plus (180 g/L imidacloprid + 6.25 g/L flutriafol) gave the best net return on investment (\$32/ha) compared to the untreated control.**
- **Baytan T (\$27/ha) and Dividend + Emerge (\$24/ha) seed treatments also gave respectable net returns.**

**Table 1 Yield (t/ha) and net return (\$/ha) of Scout wheat by seed treatment**

Treatment	Rate (ml/100 kg)	Yield (t/ha)	Cost (\$/ha*)	Net return over untreated (\$/ha)
Untreated		4.64	\$0.00	0.0**
Veteran C	100	4.66	\$1.60	2.40
Premis Protect	150	4.65	\$3.50	-1.50
VeteranPLUS	400	4.84	\$7.50	32.50
Hombre	400	4.74	\$6.80	13.20
Baytan	150	4.79	\$2.70	27.30
Dividend + Emerge	130+120	4.80	\$6.60	26.40
Dividend + Cruiser Opti	130+165	4.89	n/a	n/a
LSD (P=0.05)		0.62 (ns)		

\*Note: cost (\$/ha) of seed treatment is based on a sowing rate of 75 kg/ha

\*\*Net return (\$/ha) over untreated: (yield x price (\$200/t) – cost/ha) – (untreated yield x price)

**Table 2. Yield (t/ha) and net return (\$/ha) of Scout wheat by post emergent N treatments**

Treatment	Urea rate (kg/ha)	Timing (growth stage)	Yield (t/ha)	Net Return over untreated (\$/ha*)
<b>1 untreated</b>	0		4.84	0
<b>2</b>	50	GS32	4.81	-44
<b>3</b>	100	GS32	4.78	-83
<b>4</b>	150	GS32	4.94	-83
<b>5</b>	50+50	GS32+GS39	4.60	-123
<b>6</b>	50	GS39	4.67	-71
<b>7</b>	100	GS39	4.87	-65
LSD (P=0.05)			0.48 (ns)	

\*Note: net return (\$/ha) over untreated: (yield x price (\$200/t) – N rate x \$1.41/kg N – \$5/ha spreading cost) – untreated yield x price

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Veteran C, Premis Protect and Veteran Plus – registered trademark of CropCare  
Hombre and Baytan - registered trademark of Bayer Crop Science  
Dividend and Emerge - registered trademark of Syngenta

