



Loveland

***AGRI PRODUCTS
Get Growing***

**WHEAT
Nutrition
Streaky Bay SA**

Streaky Bay 2017

Trial Design

- Replicated 4 times in a randomised block design
- Plots: 2m x 8m
- Sown using the plot seeder with DBS tynes on 300mm spacing, in a randomised block design

Seeding Date	7th June, 2017
Site	Streaky Bay, SA
Variety	Chief CL wheat – 180 plants/m ²
Protocol	<p>Pre Sow: Sprayseed @ 1.8 L + Boxer Gold @ 2.5 L + Trifluralin @ 1.5 L/ha</p> <p>Post Emergent: Intervix @ 500 ml + LVE MCPA @ 500 ml + Lontrel Ad @ 100 ml/ha + Uptake @ 0.5%</p> <p>Post Emergent: Piramor @ 300 g + Prosaro @ 150 ml/ha</p>
GSP	Sowing fert: as per protocol

Soil Test Data

Test		Streaky Bay Site
		0-10cm
pH (water)		8.3
pH (CaCl ₂)		7.7
EC (1:5 water)	<i>dS</i>	0.413
Organic Carbon (W&B)	<i>%</i>	2.0
Colour		Brown
Texture		Sandy loam
Fizz		Moderate
Gravel	<i>%</i>	1%
Phosphorus (Colwell)	<i>mg/kg</i>	43
PBI		240
DGT P	<i>µg/L</i>	10
Potassium (Colwell)	<i>mg/kg</i>	924
Sulfur (KCl40)	<i>mg/kg</i>	21.2
Cu (DTPA)	<i>mg/kg</i>	0.25
Zn (DTPA)	<i>mg/kg</i>	0.46
Mn (DTPA)	<i>mg/kg</i>	6.37
Cation Exchange Capacity (CEC)	<i>meq/100g</i>	10
% Ca	<i>%</i>	49
% Mg	<i>%</i>	19
% K	<i>%</i>	24
% Na	<i>%</i>	7
% Al	<i>%</i>	0
Ca:Mg Ratio		2.5
K:Na Ratio		3.2

Trial Protocol

	Fertiliser	N (kg/Ha)	P (kg/Ha)	Trace (kg/Ha)
1	Nil Fertiliser	-	-	-
2	MAP	25N	7P	-
3	Granulock Zn	25N	7P	0.3Zn
4	Granulock Zn + Basis XC	25N	7P	0.3Zn
5	MAP	25N	14P	-
6	Granulock Zn	25N	14P	0.6Zn
7	Granulock Zn + Basis XC	25N	14P	0.6Zn
8	Liquid P (Wilchem 11:16) IF	25N	7P	
9	Blacklabel Zinc (8:11.5:0 1.0) IF	25N	7P	0.3Zn
10	MAP + Primatrace Zn Fluid IF	25N	14P	0.6Zn
11	MAP + Sulphate Zn Fluid IF	25N	14P	0.6Zn
12	MAP + Sulphate Cu Fluid IF	25N	14P	0.6Cu
13	MAP + Sulphate Cu & Zn Fluid IF	25N	14P	0.6Cu / 0.6Zn

Product data

- **Granulock Zn** – IPL Zinc Compound 11-21.8-0-4 1% Zn
- **Basis XC XC** - Bio chemical product – applied 2 lt/T fertiliser
- **Liquid P (Wilchem 11:16) IF** – Liquid ammonium phosphate product
- **Blacklabel Zinc (8:11.5:0 1.0) IF** – Loveland a proprietary nitrogen and phosphate formulation complexed with 7.1% organic acids
- **Primatrace Zn Fluid IF** – Chelated Zinc (140g/L) applied in furrow
- **Sulphate Zn Fluid IF** – Zinc sulphate applied in furrow
- **Sulphate Cu Fluid IF** – Copper sulphate applied in furrow
- **Sulphate Cu & Zn Fluid IF** – Zinc + Copper sulphate applied in furrow

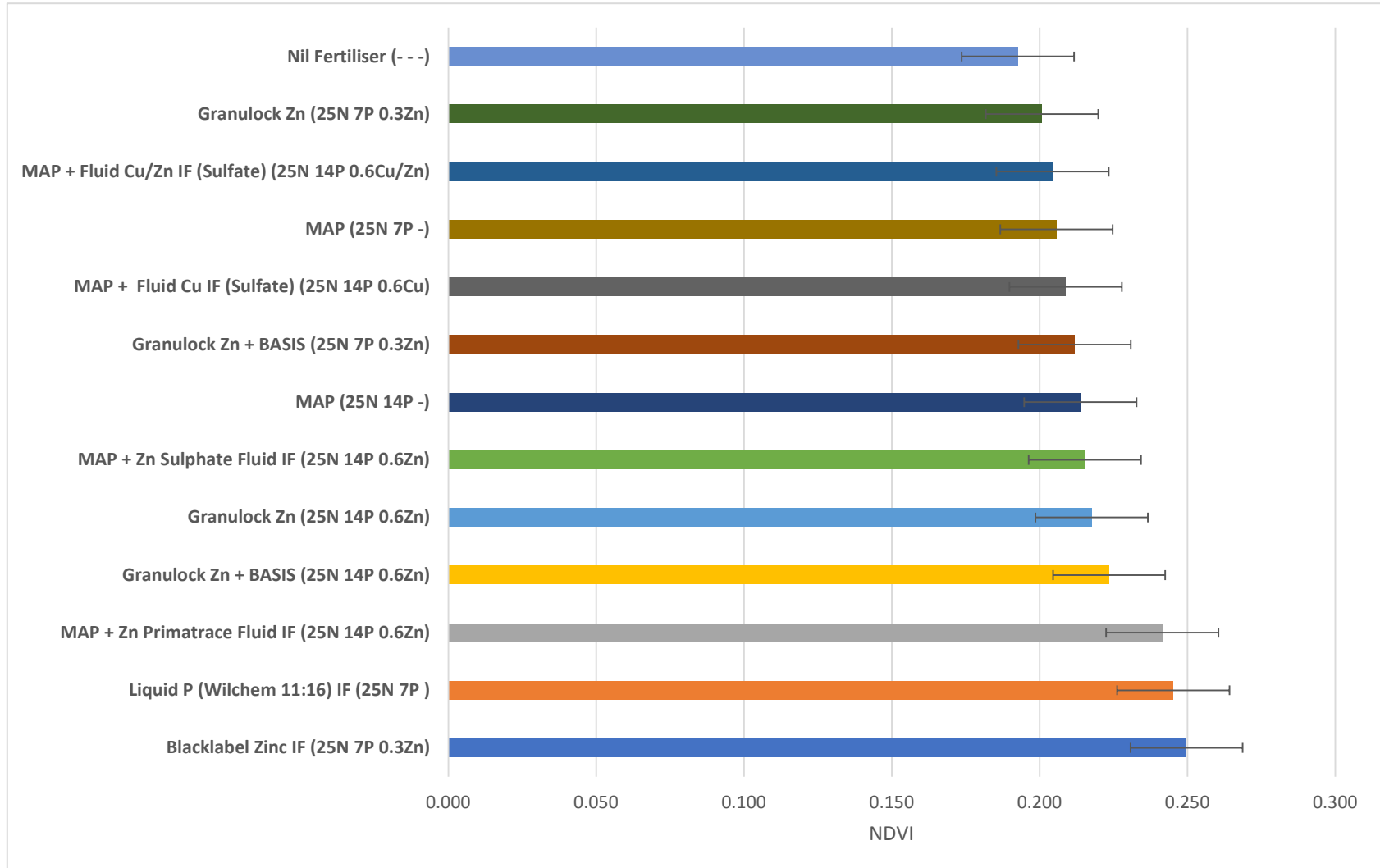
Wheat nutrition trial

Tissue tests taken at GS14 (23/8/17)

Test	Unit	Nil Fertiliser	Granulock Zn	MAP + Zn Sulphate Fluid IF	MAP + Zn Primatrace Fluid IF	MAP + Fluid Cu & Zn IF
		(- - -)	(25N 14P 0.6Zn)	(25N 14P 0.6Zn)	(25N 14P 0.6Zn)	(25N 14P 0.6Cu/Zn)
Nitrogen	%	5.10	5.90	5.50	6.20	4.90
Phosphorous	%	0.23	0.30	0.28	0.31	0.26
Potassium	%	3.30	3.30	3.00	3.50	3.02
Sulphur	%	0.32	0.34	0.34	0.36	0.33
Copper	mg/kg	4.95	4.79	5.09	5.18	5.21
Zinc	mg/kg	22.4	18.5	23.3	20.9	18.0
Manganese	mg/kg	56.0	66.0	62.0	67.0	70.0

Wheat nutrition trial

NDVI collected 23/8/17.
LSD 0.05: 0.019 (error bar)



Wheat nutrition trial photos from site (29/9/17)

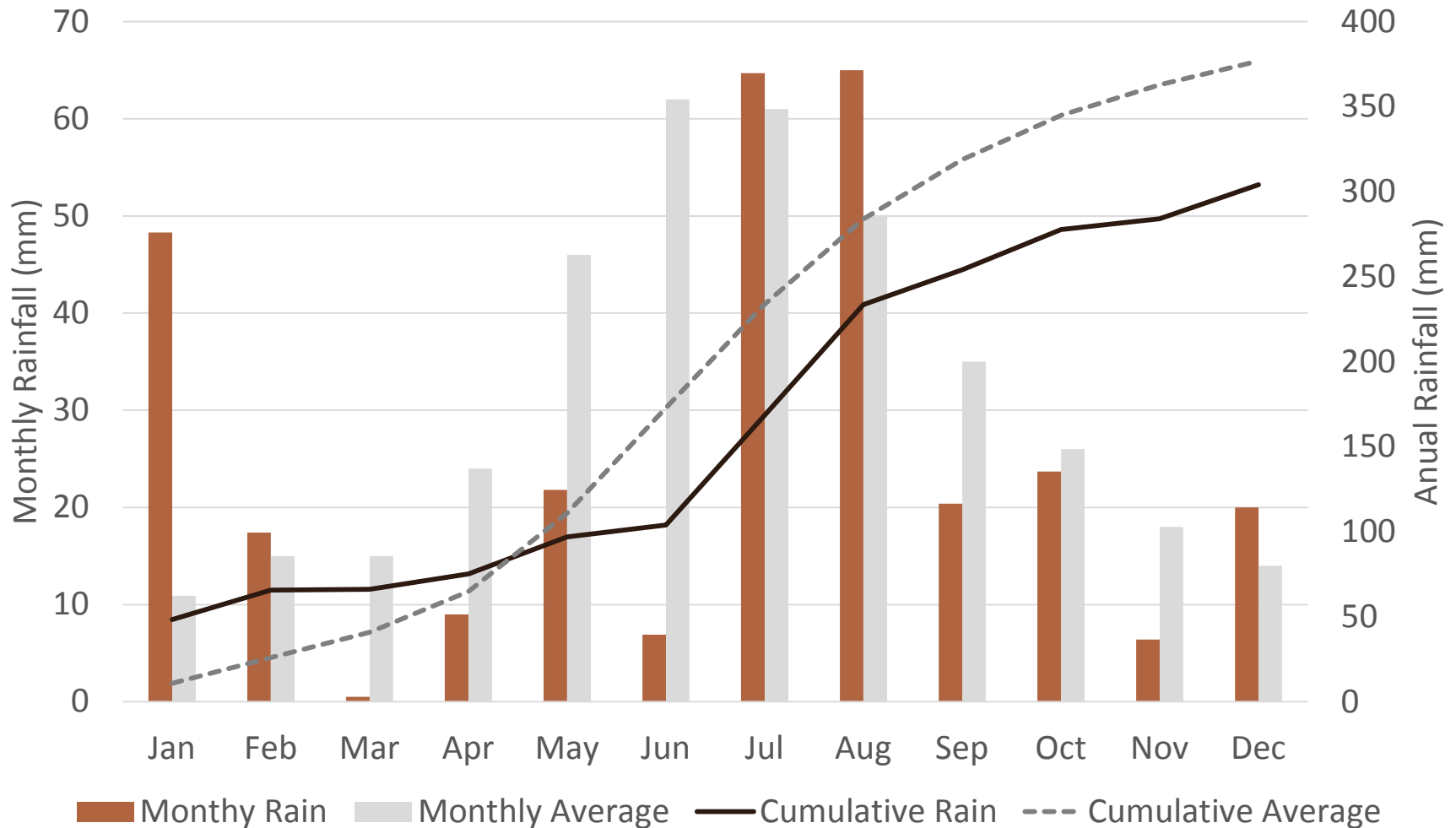


Yield and quality results

Treatment	N	P	Trace	Yield (T/Ha)		PR	TW	SC	Grade
Nil Fertiliser	-	-	-	0.29	<i>e</i>	13.5	78.4	1.92	APW
MAP	25N	7P	-	0.42	<i>d</i>	13.4	78.6	1.85	APW
Granulock Zn	25N	7P	0.3Zn	0.40	<i>de</i>	13.9	79.6	1.83	APW
Granulock Zn + Basis XC	25N	7P	0.3Zn	0.49	<i>cd</i>	14.0	80.0	1.57	APW
MAP	25N	14P	-	0.56	<i>bc</i>	13.7	79.8	1.57	APW
Granulock Zn	25N	14P	0.6Zn	0.55	<i>bc</i>	13.4	80.0	2.10	APW
Granulock Zn + Basis XC	25N	14P	0.6Zn	0.60	<i>abc</i>	13.8	79.4	1.76	APW
Blacklabel Zinc	25N	7P	0.3Zn	0.61	<i>ab</i>	13.2	79.9	1.99	APW
Liquid P (Wilchem 11:16)	25N	7P		0.56	<i>bc</i>	13.8	79.5	1.81	APW
MAP + Zn Fluid In Furrow Primatrace	25N	14P	0.6Zn	0.69	<i>a</i>	13.3	80.3	1.77	APW
MAP + Zn Fluid In Furrow Sulphate	25N	14P	0.6Zn	0.61	<i>ab</i>	13.4	80.2	1.88	APW
MAP + Fluid Cu (Sulfate)	25N	14P	0.6 Cu	0.51	<i>bcd</i>	13.8	80.2	1.83	APW
MAP + Fluid Cu & Zn (Sulfate)	25N	14P	0.6 Cu/Zn	0.59	<i>abc</i>	13.6	79.3	2.27	APW
Mean				0.53		13.6	79.6	1.86	
LSD 0.05				0.11					
CV				15.1					

RAINFALL DATA

2017 Streaky Bay Rainfall



Conclusions

- 2017 was a challenging season with a very late break.
- The trial was sown following some rain in early June and established slowly. The season was very dry at this site and hence yields were very low.
- Tissue testing (Table 15) was carried out at GS14 on selected treatments to assess any differences in nutrition between treatments. These tests did not show any significant differences in nutrient uptake.
- **Significant response to fluid P over granular P fertiliser**
- **Significant response to Primatrace Chelate Zinc applied in furrow**