

Phosphorus and Potassium Rates and Strategies

FARMER: Simkin

LOCATION: Binnu

YEAR: 2014 **CODE:** PK14W1

AIM: To determine the most profitable phosphorus (P) fertiliser rate and to compare the effectiveness of banded potassium (K) to topdressed K.

PADDOCK HISTORY: 2013: Lupins (0.6 t/ha) with 65 kg/ha MoP/MAP mix; 2012: Wheat (1.5 t/ha); 2011: Lupins.

SOIL ANALYSIS: February 2014

Yellow sand plain

Depth (cm)	pH	EC	OC	Nit N	Amm N	P	PBI	K	S	Al
0-10	5.7	0.05	0.4	16	3	21	7	28	10	
10-20	4.3	0.02	0.1	2	2	18	11	17	4	3
20-30	4.4	0.01	0.1	1	2	6	13	29	5	2

TREATMENTS:

Trt	Treatments			N*	P	K
	IBS (kg/ha)	Banded (L/ha)	Banded (kg/ha)			
1	-	-	-	0	0	0
2	80 MoP	40 Flexi-N	71 Urea	71	0	40
3	80 MoP	40 Flexi-N	28 Agstar Extra + 26 Urea	71	4	40
4	80 MoP	40 Flexi-N	56 Agstar Extra + 17 Urea	71	8	40
5	80 MoP	40 Flexi-N	85 Agstar Extra + 8 Urea	71	12	40
6	80 MoP	40 Flexi-N	112 Agstar Extra	71	16	40
7	-	40 Flexi-N	85 Agstar Extra + 8 Urea	71	12	0
8	-	40 Flexi-N	100 K-Till Extra + 12 Urea	71	12	11
9	-	40 Flexi-N	100 K-Till + 18 MoP + 12 Urea	71	12	20
10	40 MoP	40 Flexi-N	85 Agstar Extra + 8 Urea	71	12	20

*Trts 2-10 topped up with 50 L/ha Flexi-N

MANAGEMENT:

Seeding: 6 May 65 kg/ha Mace wheat

Fertiliser: 8 Jul Flexi-N

Pesticides: 6 May 1.5 L/ha Ultra, 118 ml/ha Sakura, 300 ml/ha Lorsban

Harvest: 10 Nov

The research contained in this document was funded by CSBP as part of our commitment to maximising the sustainability and profitability of our customers' farming operations.



RESULTS AND DISCUSSION:

Low rainfall limited yield potential and sub soil compaction (up to 4 MPa at 30 cm) was identified as major constraint at this site.

Despite good soil phosphorus (P) reserves, there was a linear response to increasing rates of P and a 0.4 t/ha response to 16 kg P/ha.

Plant test results indicated that potassium (K) was marginal, but responses to K fertiliser were not statistically significant.

Low hectolitre weights in this trial were related to high levels of whiteheads and teething issues with a new plot header.

Trt	IBS (kg/ha)	Banded (L/ha)	Treatment				Harvest			
			Banded (L/ha)	N	P	K	Yield (t/ha)	Protein (%)	HI Wt (kg/hl)	Scrngs. (%)
1	-	-	-	0	0	0	1.09	11.2	69	7
2	80 MoP	78 Flexi-N	-	71	0	40	1.00	11.6	70	7
3	80 MoP	69 Flexi-N	28 Agstar Extra	71	4	40	1.11	12.0	68	6
4	80 MoP	59 Flexi-N	56 Agstar Extra	71	8	40	1.22	12.5	67	7
5	80 MoP	50 Flexi-N	85 Agstar Extra	71	12	40	1.33	12.2	67	6
6	80 MoP	41 Flexi-N	112 Agstar Extra	71	16	40	1.43	11.8	69	6
7	-	50 Flexi-N	85 Agstar Extra	71	12	0	1.27	11.8	68	6
8	-	54 Flexi-N	100 K-Till Extra	71	12	11	1.44	11.4	68	6
9	-	54 Flexi-N	100 K-Till + 18 MoP	71	12	20	1.35	12.0	70	6
10	40 MoP	50 Flexi-N	85 Agstar Extra	71	12	20	1.31	12.0	71	6
						Prob	0.009	0.10	0.83	0.22
						Lsd	0.247	0.83	ns	ns

*Trts 2-10 topped up with 50 L/ha Flexi-N



OP v 12P

The research contained in this document was funded by CSBP as part of our commitment to maximising the sustainability and profitability of our customers' farming operations.

