

## K STRATEGIES

<b>FARMER</b> Simkin	<b>AREA</b> West Binnu	<b>TRIAL NO</b> K11W1	<b>YEAR</b> 2011
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**SITE HISTORY:** Native vegetation: Banksia, Pear tree. 2010: Lupins (1.0 t/ha) with Big Phos; 2009: Wheat with DAP; 2008: unfertilised pasture.

### SOIL ANALYSIS:

	Description	pH	EC	OC	N(Nit)	N(Amm)	P	PBI	K	S
0-10	Sand plain	5.7	0.04	0.3	8	1	9	11	29	4
10-20		4.8	0.01	0.1	2	1	4	12	19	2
20-30cm		4.6	0.02	0.3	2	2	2	14	33	3

	Ex Ca	Ex Mg	Ex K	Ex Na	Ex Al	ECEC	Ex Al%	Cu	Zn	Al
0-10	1.3	0.21	0.05	0.05		1.6		0.5	0.1	0.8
10-20	0.3	0.07	0.03	0.02	0.10	0.6	17	0.6	0.5	1.8
20-30cm	0.4	0.10	0.04	0.06	0.13	0.8	16	0.4	0.4	2.1

Individual K tests (0-10cm): 32, 31, 26 mg/kg.

**AIM:** To determine the most effective long term potassium (K) fertiliser strategy.

### MANAGEMENT:

11 May 1.8L/ha Treflan, 35g/ha logran, 300ml/ha Lorsban. Sowed 55 kg/ha Mace wheat.  
 14 Jun Applied 40 L/ha Flexi-N to trts 2-6. Also 100g/ha Lontrel for capeweed.  
 19 Jul Applied 50 l/ha Flexi-N on trts 2- 6 (Crop at Z37).  
 21 Oct Harvest.

### RESULTS:

Plant analysis indicated marginal potassium (K) status in July.

Although there were visual responses to K during the season, there were no yield or grain quality responses.

Grain protein was low which suggests that (N) supply may have limited responses to K.

Trt	IBS (kg/ha)	Banded (L/ha)	Banded (kg/ha)	Z37 (L/ha)	K	19-Jul		Harvest			
						Pl Wt (g)	K (%)	Yield (t/ha)	Protein (%)	HL wt. (kg/HL)	Scrns. (%)
1	-	-	-	-	0	1.0	2.1	0.90	8.6	77.0	3.5
2	-	40 FN*	94 Agstar Extra	50 FN	0	1.8	1.7	2.28	9.7	79.4	3.1
3	-	40 FN	110 K-Till Extra	50 FN	12	2.2	1.8	2.37	9.8	78.4	3.0
4	-	40 FN	110 K-Till Extra	50 FN	12	1.6	1.8	2.29	9.9	77.7	3.3
5	50 MoP	40 FN	94 Agstar Extra	50 FN	25	2.0	1.9	2.38	9.9	79.0	2.8
6	100 MoP	40 FN	94 Agstar Extra	50 FN	50	2.0	2.0	2.39	9.9	79.0	3.0
					<b>Prob</b>	0.051	0.21	<0.001	<0.001	0.037	0.191
					<b>Lsd</b>	0.68	ns	0.16	0.48	1.52	ns

\* FN = Flexi-N

### DISCUSSION:

When making a potash fertiliser decision a number of factors come into consideration. These factors are yield potential, fertiliser history and background levels. A potash trial at Nolan Harris's in 2010 highlighted that even at very low yield potentials we achieved economic responses to potash. It also highlighted potash timing and placement can greatly influence efficiency of uptake.

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Kind seasonal conditions with full moisture profile would appear to have had an influence on results of this years trial. Visually early post emergent on this trial it appeared to be a potash responsive site. Plots that had K looked to have better vigour and establishment early than plots that had no potash. Plant tests (19 July) indicated that K uptake from K Till (12K) and 50 MOP (25K) was mildly deficient and 100 MOP (50K) topdressed was just adequate. The sites visually evened out as the season progressed and correspondingly this equated to no yield or grain quality responses to K.

**CONCLUSION:**

Results may have been different if season was marginal or we had received spasmodic rain events. If a crop has better early vigour due to enhanced nutritional uptake plants have more ability to handle dry periods. If we can get as much vigour from half the K banded, we can be more efficient with our K applications.

**FOR FURTHER INFORMATION:** Contact Stuart Wakelam 0409 205978