

## Trial 10. Foliar Nutrition Trial

### Kerrang, Victoria

**Sown:** 3 November 2020

**Harvested:** 20 May 2021

**Soil Type:** Neutral self-mulching grey clay

**Previous crop:** Grass dominant pasture (3 years)

**Hybrid:** Pioneer Hybrid P1756

**FAR code:** ICC M20-07-2

**Irrigation Type:** Border check irrigation

### Key Messages:

- Foliar application of a micronutrient mixes failed to provide in any yield improvement over and above the standard nutrition adopted (see appendix).
- Tissue testing prior to, and at tasselling, revealed no micro or macro nutrient deficiencies, and no response to the additional nutrient applications.

Foliar nutrition (based on 3L/ha Spraygro Complete K - NPK 5:10:27 plus trace elements ) was applied at different timing in relation to silking, either at silking or 14 days after silking. These foliar nutrition treatments were superimposed two timings of 250kg N/ha, either predrill and V4 (leaf 4) or V4 & V6 (6 leaf).

**Table 1.** Grain yield (t/ha @ 14% moisture) and test weight (kg/HL) in response to the timing of N application and foliar nutrient application.

Treatment		Grain Yield, Dry Matter Yield and Quality				
		Yield			Test Wt	
	Pre-drill	4 leaf	6 Leaf	Foliar Appl'n	t/ha	kg/hL
1.	125	125	-	Nil	16.20	84.2
2.	125	125	-	Silking	16.10	83.7
3.	125	125	-	Silk+14	16.23	84.2
4.	0	125	125	Nil	16.52	84.1
5.	0	125	125	Silk	16.66	84.2
6.	0	125	125	Silk +14	16.04	84.2
LSD Yield (p=0.05)		ns		P Val	0.665	cv%
LSD Test Wt (p=0.05)		ns		P Val	0.458	cv%

Figures followed by different letters are considered to be statistically different (p=0.05)

**Table 1a:** Grain Yield (t/ha @14% moisture)

Nitrogen kg N/ha		250 kg N/ha		250 Kg N/ha
		Pre-drill + 4 Leaf		4 Leaf + 6 Leaf
Nil (Control)		16.20		16.52
Foliar Appl'n @ Silking		16.10		16.66
Foliar Appl'n Silking + 14 days		16.23		16.04
LSD N Timing	p=0.05	ns	P val	0.529
LSD Foliar	p=0.05	ns	P val	0.648
LSD N x Foliar	P=0.05	ns	P val	0.916
CV		3.7		

There was no statistically significant yield response as a result of the different N timing controls or foliar nutrient application treatments. No treatment had any significant influence on grain test weight.

**Table 2a:** Summary of the leaf tissue testing (ear leaf), taken at silking, prior to foliar treatment.

Treatment	Total N	P	K	S	Ca	Mg	Fe	Mn	Cu	Zn	B	Mo
	%	%	%	%	%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Pre-drill + 4 Leaf	2.85	0.27	2.1	0.24	0.52	0.34	104	86	14	33	59	0.18
4 Leaf + 6 Leaf	2.80	0.27	2.1	0.23	0.52	0.33	60	77	12	24	54	0.15
Critical	2.5	0.2	1.6	0.13	0.1	0.08	20	15	2	15	2	0.10
Satisfactory	2.7-3.25	0.22-0.30	2.5-3.5	0.15-0.22	0.12-0.30	0.12-0.25	50-200	20-150	3-10	18-25	3-10	0.20

**Table 2b:** Summary of the leaf tissue testing (ear leaf), taken at 14 days after silking, post foliar nutrition treatments.

Treatment	Total N	P	K	S	Ca	Mg	Fe	Mn	Cu	Zn	B	Mo
Untreated Control	%	%	%	%	%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Pre-drill + 4 Leaf (Control)	2.55	0.26	1.80	0.20	0.51	0.34	120.0	83.5	11.0	23.5	44.5	0.25
4 Leaf + 6 Leaf (Control)	2.60	0.27	1.80	0.21	0.53	0.35	140.0	86.5	11.0	26.0	40.5	0.26
<b>Foliar Appl'n 14 days prior</b>												
Pre-drill + 4 Leaf	2.55	0.28	1.85	0.21	0.58	0.38	145.0	96.0	12.0	25.5	47.5	0.29
4 Leaf + 6 Leaf	2.55	0.27	1.80	0.20	0.54	0.35	140.0	86.5	11.5	35.0	38.0	0.28
Critical	2.5	0.2	1.6	0.13	0.21	0.08	20	15	2	15	2	0.10
Satisfactory	2.7-3.25	0.22-0.30	2.5-3.5	0.15-0.22	0.12-0.30	0.12-0.25	50-200	20-150	3-10	18-25	3-10	0.20

Apart from Total N taken 14 days post silking, all nutrients tested were at satisfactory levels in the samples analysed.

The leaf tissue samples taken from plants 14 days after application (the treatment labelled 'Foliar Application 14 days prior') in Table 2b did show a trend to higher levels of the various trace elements, but as the levels were already satisfactory, there was no influence on grain yield.