

TRIAL REPORT

Evaluation of Hibrix BB with varying rates of Agras fertiliser for growth and yield effects in wheat cv. Eradu

Northam, Western Australia, 2013

Protocol Number:
MWS Wheat 2013

Client:
*Frank Pownall
HiBrix*

Author:
Mark W. Sumner

Project Leader:
*Mark W. Sumner
Peracto WA*

Report Number:
HBX 002-13

Report Date:
29 January 2014



Peracto WA ABN: 46 541 848 716
Unit 2, 28 Welshpool Rd, Welshpool, Western Australia, 6106
Telephone: +61 8 9355 599 Fax: +61 8 9472 4479
msumner@peractowa.com www.peracto.com

CONTENTS

SUMMARY	3
INTRODUCTION	4
<i>Aims</i>	4
MATERIALS AND METHODS	5
<i>Treatments</i>	5
<i>Chronology of events</i>	6
RESULTS	7
<i>Table 1. Crop biomass</i>	7
<i>Table 2. Normalised difference vegetation index</i>	7
<i>Figure 1: Normalised difference vegetation index</i>	8
<i>Table 3. Harvest yield</i>	9
<i>Figure 2: Harvest yield</i>	11
<i>Figure 3: Yield compared to untreated control</i>	11
<i>Table 4. Grain quality components</i>	12
<i>Figure 4: Grain quality - hectolitre weight</i>	13
<i>Figure 5: Grain quality - screenings</i>	14
<i>Figure 6: Grain quality - protein content</i>	14
DISCUSSION	15
CONCLUSIONS	16
APPENDICES	17
<i>Appendix i. Trial details</i>	17
<i>Site details</i>	17
<i>Trial location map – Fig tree paddock</i>	18
<i>Trial plan</i>	19
<i>Treatment plan</i>	20
<i>Sowing details</i>	21
<i>Application details – spray</i>	22
<i>Assessments</i>	23
<i>Appendix ii. Statistical analysis</i>	25
<i>Factorial analysis</i>	25
<i>Analysis of variance – P = 0.05</i>	30
<i>Analysis of variance – P = 0.10</i>	32
<i>Appendix iii. Raw data</i>	34
<i>Appendix iv. Meteorological details</i>	40

SUMMARY

At Northam in the central wheatbelt of Western Australia in 2013, wheat cv. Eradu was sown into a pasture paddock to evaluate the effects of various rates of fertiliser in combination with Hibrix BB. Agras fertiliser was banded below the seed at sowing at 0, 25, 51, 75 or 99 kg/ha whilst Hibrix BB was applied to half the plots as a broadcast soil spray at 2.5 L/ha two days after sowing.

There were no visual differences in crop establishment or biomass between treatments, however NDVI readings showed a significant dose response to increasing rates of Agras, with 0 and 25 kg/ha inferior to 51, 75 and 99 kg/ha. Hibrix BB showed numerically higher NDVI readings compared to the same rate of Agras applied alone.

The untreated control (no Hibrix BB or Agras) yielded 2.975 t/ha, with treatments increasing yield from 2% to 12%. There was a dose response to increasing rates of Agras, with higher rates providing greater yield than lower rates. At equivalent rates of Agras, the addition of Hibrix consistently showed numerically higher yield, however the effect was not statistically significantly different.

All treatments reduced grain hectolitre weight compared to the untreated control, whilst the addition of Hibrix BB increased grain hectolitre weight compared to equivalent rates of Agras alone. The percentage of grain screenings declined with increasing rates of Agras, with Hibrix BB having no significant effect. There was no effect on protein content by changing rates of either Hibrix BB or Agras.

There were no visible signs of phytotoxicity or adverse crop effects by any treatment in this trial.

INTRODUCTION

Aims

- To evaluate the effects of Hibrix BB on the growth and yield of wheat when applied post sowing and pre-emergence.
- To compare the effects of Hibrix BB on the growth and yield of wheat when applied in combination with varying rates of Agras fertiliser.
- To confirm the safety of Hibrix BB to wheat cv. Eradu.

MATERIALS AND METHODS

Treatments

No.	Treatment	Rate		Application schedule
		Hibrix BB (L/ha)	Agras (kg/ha)	
1	Untreated control	0	0	
2	Agras	0	25	Agras applied at sowing banded below the seed. Hibrix applied as a single broadcast soil application two days after sowing.
3	Agras	0	51	
4	Agras	0	75	
5	Agras	0	99	
6	Hibrix BB	2.5	0	
7	Hibrix BB + Agras	2.5	25	
8	Hibrix BB + Agras	2.5	51	
9	Hibrix BB + Agras	2.5	75	
10	Hibrix BB + Agras	2.5	99	

Chronology of events

Date	Days after sowing (DAS)	Crop stage		Event
		Zadok's scale	Description	
12/05/13	-11	-		Site scarified
23/05/13	0	Z00	Seed	Crop sown
25/05/13	2	Z01	Seed imbibing	Hibrix application
21/06/13	29	Z22	2 tiller	Observations
26/06/13	34	Z22	2 tiller	Observations
01/07/13	39	Z23	3 tiller	Observations
08/07/13	46	Z24	4 tiller	Observations
19/07/13	57	Z31	Early jointing	Maintenance – Kamba M application (Emex & radish)
03/08/13	72	Z39	Flag leaf emergence	Maintenance – cut-outs
15/08/13	84	Z55	Head emergence	Crop biomass assessment
02/09/13	102	Z65	Flowering	Biomass & NDVI assessment
10/09/13	110	Z67	Late flowering	Biomass assessment
24/09/13	124	Z71	Early milk	Biomass assessment
15/10/13	145	Z81	Early dough	Biomass assessment
08/11/13	169	Z92	Ripe grain	Observation
20/11/13	181	Z92	Ripe grain	Harvest yield & grain quality

RESULTS

Table 1. Crop biomass

No.	Treatment	Rate (L or kg/ha)	Mean crop biomass (% of untreated control)				
			84DAS	102DAS	110DAS	124DAS	145DAS
1	Untreated control	-	100	100	100	100	100
2	Agras	25 kg	100	100	100	100	100
3	Agras	51 kg	100	100	100	100	100
4	Agras	75 kg	100	100	100	100	100
5	Agras	99 kg	100	100	100	100	100
6	Hibrix BB	2.5 L	100	100	100	100	100
7	Hibrix BB Agras	2.5 L 25 kg	100	100	100	100	100
8	Hibrix BB Agras	2.5 L 51 kg	100	100	100	100	100
9	Hibrix BB Agras	2.5 L 75 kg	100	100	100	100	100
10	Hibrix BB Agras	2.5 L 99 kg	100	100	100	100	100

DAS: Days after sowing

Table 2. Normalised difference vegetation index

No.	Treatment	Rate (L or kg/ha)	Mean NDVI/plot
			102DAS
1	Untreated control	-	0.790 c
2	Agras	25 kg	0.797 c
3	Agras	51 kg	0.830 ab
4	Agras	75 kg	0.829 ab
5	Agras	99 kg	0.827 ab
6	Hibrix BB	2.5 L	0.800 c
7	Hibrix BB Agras	2.5 L 25 kg	0.805 bc
8	Hibrix BB Agras	2.5 L 51 kg	0.838 a
9	Hibrix BB Agras	2.5 L 75 kg	0.837 a
10	Hibrix BB Agras	2.5 L 99 kg	0.834 a
P-value			0.002
CV			2.21
LSD (p=0.05)			0.0263

Means followed by the same letter are not significantly different ($p = 0.05$, LSD).

DAS: Days after sowing

NDVI: Normalised difference vegetation index ranges from 0 - 1, the greater the number indicates a higher photosynthetic capacity which visually would appear greener.

Factorial analysis – Mean NDVI – 102DAS		
Rates	Formulation	
L or kg/ha	Hibrix BB	Agras
0	0.815 a	0.795 a
2.5 L	0.823 a	
25 kg		0.801 b
51 kg		0.834 c
75 kg		0.833 c
99 kg		0.831 c
P-value	0.2979	0.0044
LSD (p=0.05)	NSD	0.022

Means within columns followed by the same letter are not significantly different at the 5% level according to least significant difference (LSD) test.

NSD = No significant difference due to a p-value > 0.05

DAS: Days after sowing

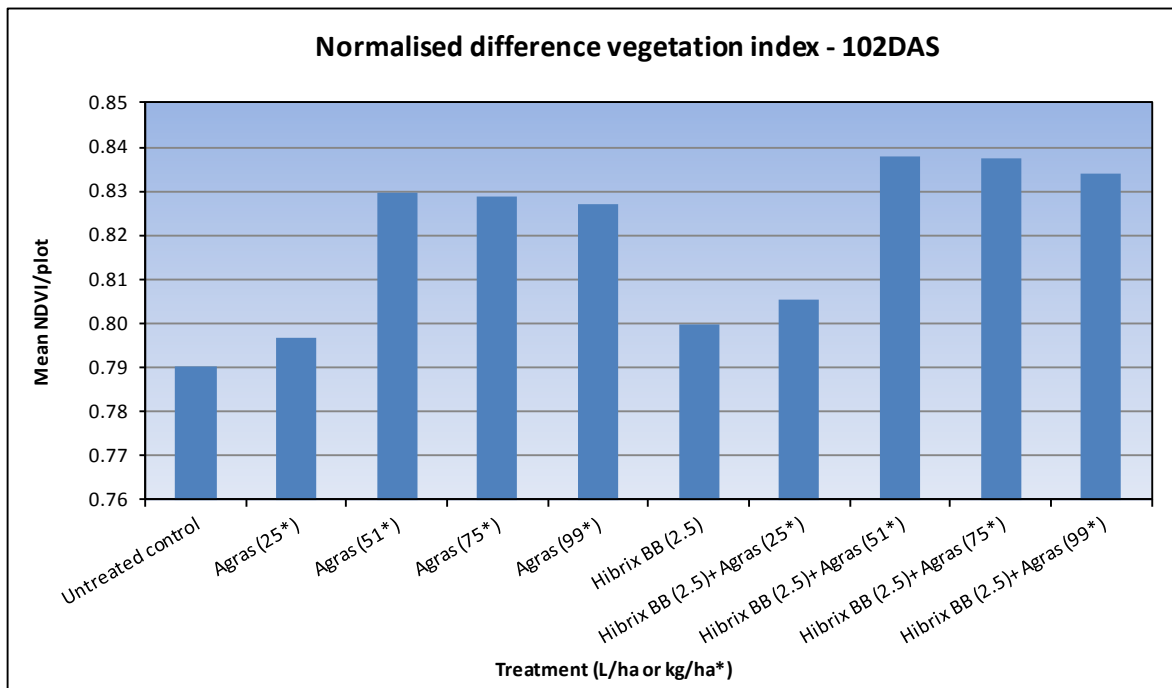


Figure 1: Normalised difference vegetation index

Table 3. Harvest yield

No.	Treatment	Rate (L or kg/ha)	Mean harvest yield		
			Yield (kg/plot)	Yield (kg/ha)	Percentage of UTC yield
1	Untreated control	-	20.35 d	2975.1 d	100.0
2	Agras	25 kg	20.74 cd	3031.8 cd	102.1
3	Agras	51 kg	21.21 bcd	3101.2 bcd	104.5
4	Agras	75 kg	22.79 a	3331.5 a	112.2
5	Agras	99 kg	21.90 abc	3201.8 abc	107.8
6	Hibrix BB	2.5 L	20.81 cd	3042.8 cd	102.3
7	Hibrix BB Agras	2.5 L 25 kg	21.78 abc	3183.5 abc	107.1
8	Hibrix BB Agras	2.5 L 51 kg	22.39 ab	3273.1 ab	110.3
9	Hibrix BB Agras	2.5 L 75 kg	22.20 ab	3245.6 ab	109.2
10	Hibrix BB Agras	2.5 L 99 kg	22.24 ab	3251.1 ab	109.3
P-value			0.0702	0.0701	0.1370
CV			5.24	5.24	5.80
LSD ($p=0.10$)			1.366	199.63	NSD

Means followed by the same letter are not significantly different ($p = 0.10$, LSD).
NSD = No significant difference due to a p -value > 0.10 .

Factorial analysis – Mean harvest yield (kg/plot)		
Rates	Formulation	
L or kg/ha	Hibrix BB	Agras
0	21.40 a	20.58 a
2.5 L	21.88 a	
25 kg		21.26 a
51 kg		21.80 a
75 kg		22.49 a
99 kg		22.07 a
<i>P</i> -value	0.1746	0.1615
LSD ($p=0.05$)	NSD	NSD
Factorial analysis – Mean harvest yield (kg/ha)		
Rates	Formulation	
L or kg/ha	Hibrix BB	Agras
0	3128.3 a	3008.9 a
2.5 L	3199.2 a	
25 kg		3107.7 a
51 kg		3187.1 a
75 kg		3288.6 a
99 kg		3226.4 a
<i>P</i> -value	0.1747	0.1615
LSD ($p=0.05$)	NSD	NSD
Factorial analysis – Mean harvest yield (% of UTC yield)		
Rates	Formulation	
L or kg/ha	Hibrix BB	Agras
0	105.3 a	101.2 a
2.5 L	107.6 a	
25 kg		104.6 a
51 kg		107.4 a
75 kg		110.7 a
99 kg		108.5 a
<i>P</i> -value	0.1889	0.2469
LSD ($p=0.05$)	NSD	NSD

Means within columns followed by the same letter are not significantly different at the 5% level according to least significant difference (LSD) test.

NSD = No significant difference due to a p -value > 0.05

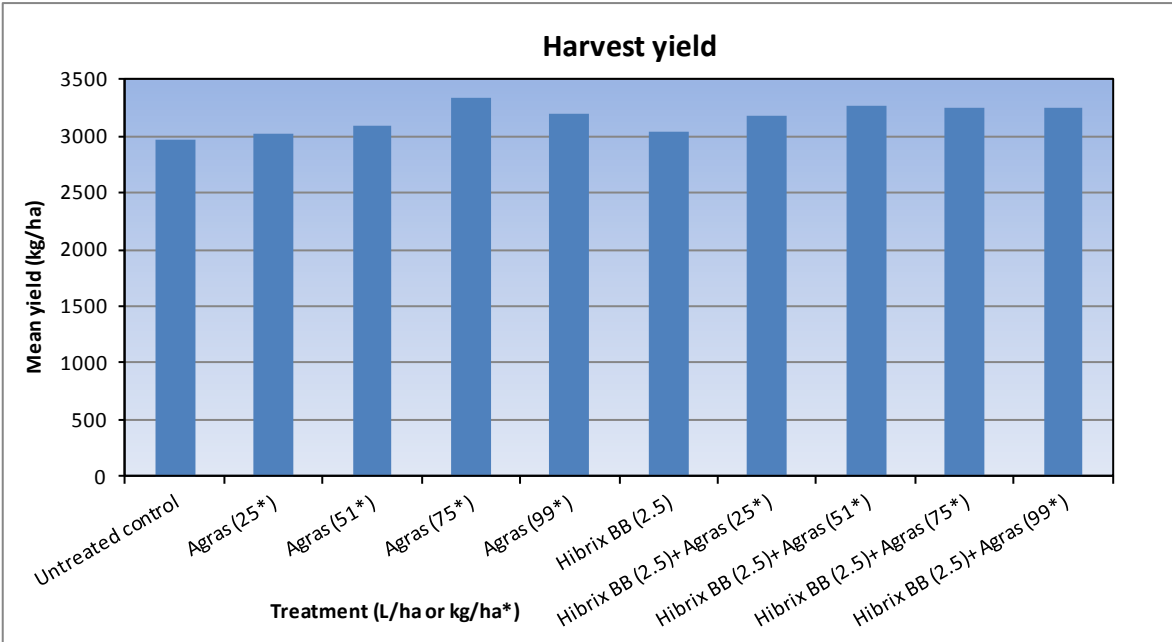


Figure 2: Harvest yield

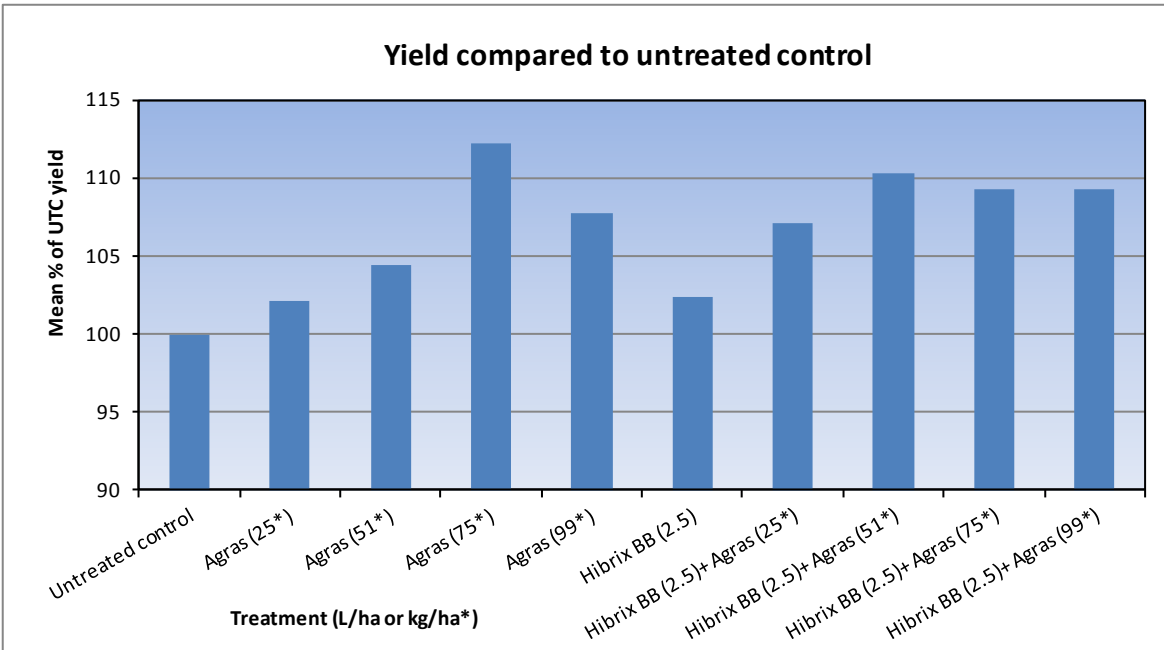


Figure 3: Yield compared to untreated control

Table 4. Grain quality components

No.	Treatment	Rate (L or kg/ha)	Grain quality components at harvest		
			Hectolitre weight (kg/hL)	% screenings (less cracked grain)	% protein (at 11% moisture)
1	Untreated control	-	70.8 a	2.7 abc	9.7
2	Agras	25 kg	65.4 cd	3.0 ab	9.2
3	Agras	51 kg	64.8 cd	2.3 abcd	9.4
4	Agras	75 kg	61.2 d	2.2 abcd	9.8
5	Agras	99 kg	66.7 abc	1.2 d	9.9
6	Hibrix BB	2.5 L	68.6 abc	2.9 abc	9.9
7	Hibrix BB Agras	2.5 L 25 kg	65.6 bcd	1.9 bcd	9.2
8	Hibrix BB Agras	2.5 L 51 kg	70.2 ab	3.5 a	9.8
9	Hibrix BB Agras	2.5 L 75 kg	67.1 abc	1.6 cd	9.7
10	Hibrix BB Agras	2.5 L 99 kg	67.8 abc	1.3 d	9.5
P-value			0.0815	0.0855	0.3858
CV			5.98	47.95	5.29
LSD ($p=0.10$)			4.81	1.3	NSD

NSD = No significant difference due to a p-value > 0.10

Means within columns followed by the same letter are not significantly different at the 10% level according to least significant difference (LSD) test.

Factorial analysis – Hectolitre weight (kg/hL)		
Rates	Formulation	
L or kg/ha	Hibrix BB	Agras
0 L	65.7 a	69.7 a
2.5 L	67.8 a	
25 kg		65.5 a
51 kg		67.5 a
75 kg		64.1 a
99 kg		67.2 a
P-value	0.1726	0.2865
LSD ($p=0.05$)	NSD	NSD

NSD = No significant difference due to a p-value > 0.05

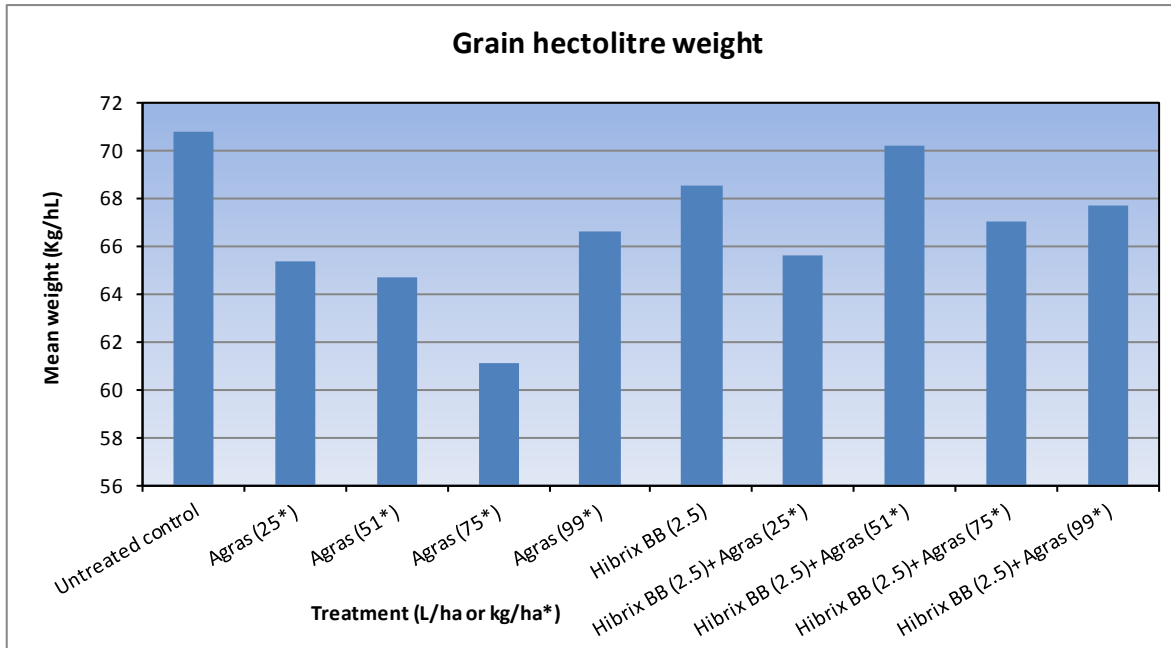


Figure 4: Grain quality - hectolitre weight

Factorial analysis – % screenings (less cracked grain)		
Rates	Formulation	
L or kg/ha	Hibrix BB	Agras
0 L	2.3 a	2.8 a
2.5 L	2.2 a	
25 kg		2.5 a
51 kg		2.9 a
75 kg		1.9 ab
99 kg		1.2 b
P-value	0.9142	0.0478
LSD (p=0.05)	NSD	1.2
Factorial analysis – % protein (at 11% moisture)		
Rates	Formulation	
L or kg/ha	Hibrix BB	Agras
0 L	9.6 a	9.8 a
2.5 L	9.6 a	
25 kg		9.2 a
51 kg		9.6 a
75 kg		9.7 a
99 kg		9.7 a
P-value	0.8878	0.1269
LSD (p=0.05)	NSD	NSD

Means within columns followed by the same letter are not significantly different at the 5% level according to least significant difference (LSD) test.

NSD = No significant difference due to a p-value > 0.05

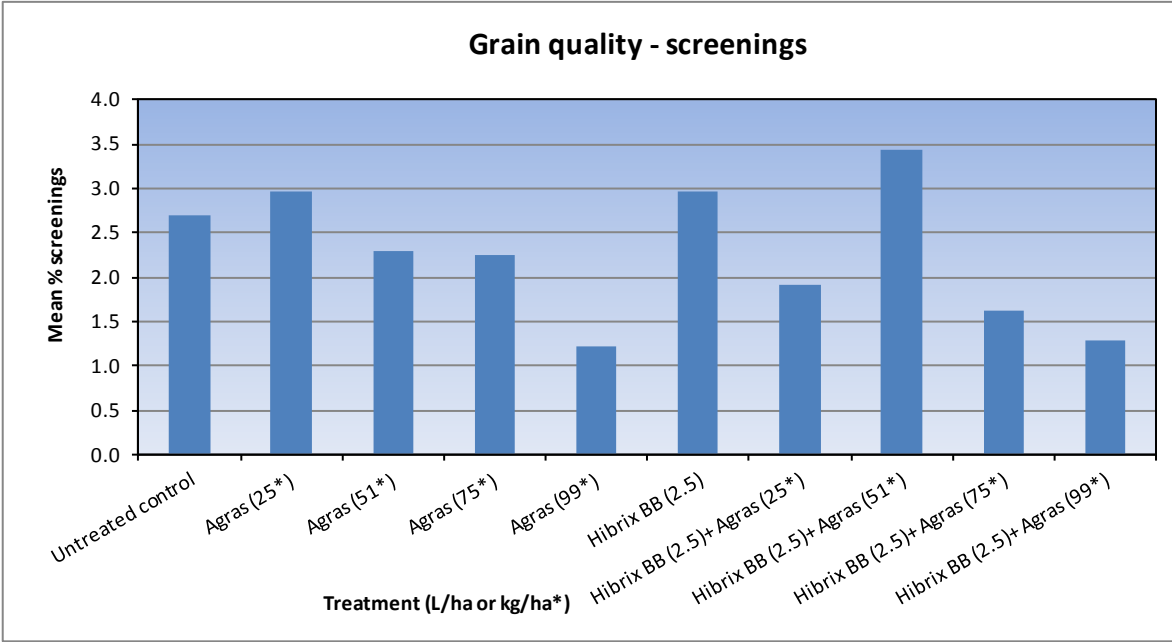


Figure 5: Grain quality - screenings

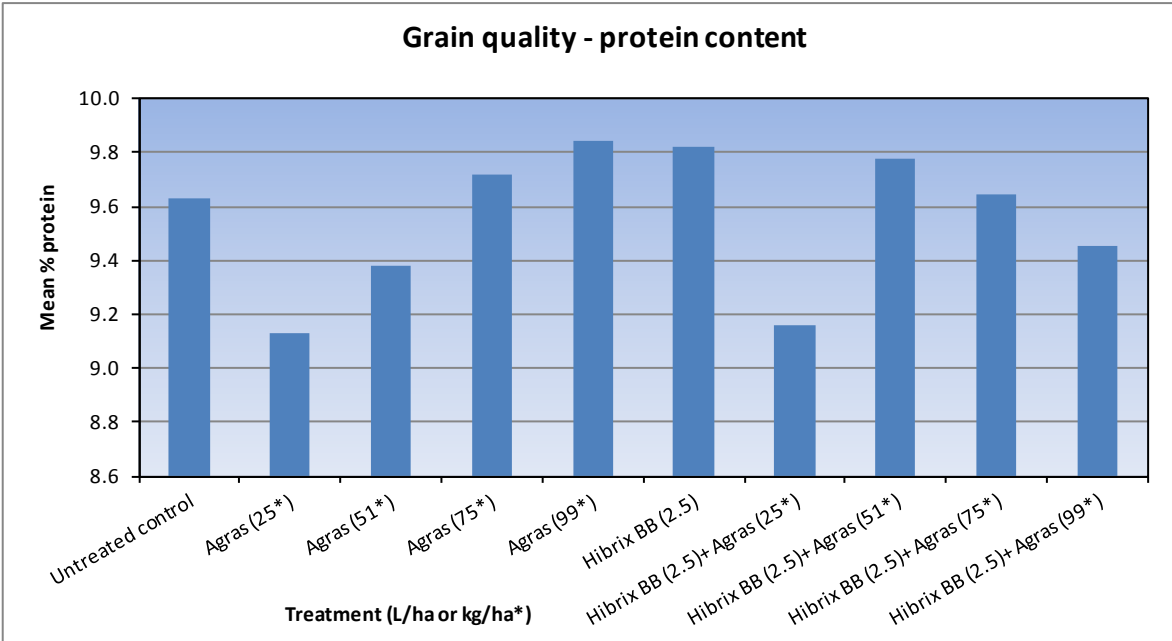


Figure 6: Grain quality - protein content

DISCUSSION

The trial was conducted in a sandy loam paddock following three years of pasture. The soil was scarified 11 days prior to sowing then the wheat sown using a conventional full cut combine with finger harrows. Agras fertiliser was applied at sowing and banded below the seed at 0, 25, 51, 75 or 99 kg/ha. Hibrix BB treatments were applied as broadcast soil applications two days after sowing. The trial was sown in late May into moist soil, with 54 mm falling for the month. Following the Hibrix BB application, 12 mm of rain fell which would have helped incorporation into the soil. June and the first half of July were extremely dry with plants suffering moisture stress. Spring rainfall was well above average providing a very good finish to the season.

Crop establishment and biomass were observed regularly until late tillering, with no visual differences observed between treatments at any stage. Visual crop biomass assessments were made at 84, 102, 110, 124 and 145 days after sowing (DAS) with no differences observed between any treatment, regardless of fertiliser or Hibrix BB rate. At flowering, 102DAS, Normalised Difference Vegetation Index (NDVI) readings were taken using a Greenseeker hand held machine. The NDVI is a numerical indicator to assess the greenness of a plot. NDVI is directly related to the photosynthetic capacity and hence energy absorption of plant canopies. The index ranges from 0 – 1, where higher numbers indicate a higher photosynthetic capacity which visually would appear greener. There was a significant dose response to increasing rates of Agras, with 0 and 25 kg/ha inferior to 51, 75 and 99 kg/ha. Treatments containing Hibrix BB showed numerically higher NDVI readings compared to the same rate of Agras applied alone, however the effect was not statistically significantly different. Factorial analysis of the NDVI data showed similar results, with a trend towards higher NDVI in Hibrix BB treatments compared to Agras alone, and a significant dose response to increasing rates of Agras.

The untreated control (no Hibrix BB or Agras) yielded 2.975 t/ha with all treatments increasing yield, with increases ranging from 2% to 12%. There was a significant dose response ($p = 0.10$) to increasing rates of Agras, with higher rates providing greater yield than lower rates. At equivalent rates of Agras, the addition of Hibrix consistently showed numerically higher yield, however the effect was not statistically significantly different. Factorial analysis of the harvest data confirmed the same trend, although not statistically significant, of treatments with Hibrix BB showing slightly higher yield than treatments with equivalent Agras and no Hibrix BB. Grain from harvest was retained and analysed for quality components of hectolitre weight, protein content and screenings. All treatments reduced grain hectolitre weight compared to the untreated control. The addition of Hibrix BB significantly ($p = 0.1$) increased grain hectolitre weight compared to equivalent rates of Agras alone. The percentage of grain screenings in the harvest sample significantly ($p = 0.10$) declined with increasing rates of Agras, with Hibrix BB having no significant effect. There was no effect on protein content by changing rates of either Hibrix BB or Agras.

There were no visible signs of phytotoxicity or adverse crop effects by any treatment in this trial.

CONCLUSIONS

The trial was conducted in sandy loam paddock with wheat cv. Eradu sown with varying rates of Agras, each with and without Hibrix BB applied two days after sowing. Agras was applied at 25, 51, 75 or 99 kg/ha with Hibrix BB applied at 2.5 L/ha.

The following was concluded:

- There were no visual differences in crop establishment or biomass between treatments.
- NDVI readings showed a significant dose response to increasing rates of Agras, with 0 and 25 kg/ha inferior to 51, 75 and 99 kg/ha.
- Hibrix BB showed numerically higher NDVI readings compared to the same rate of Agras applied alone.
- The untreated control (no Hibrix BB or Agras) yielded 2.975 t/ha.
- All treatments increased yield, with increases ranging from 2% to 12%.
- There was a dose response to increasing rates of Agras, with higher rates providing greater yield than lower rates.
- At equivalent rates of Agras, the addition of Hibrix consistently showed numerically higher yield, however the effect was not statistically significantly different.
- All treatments reduced grain hectolitre weight compared to the untreated control.
- The addition of Hibrix BB increased grain hectolitre weight compared to equivalent rates of Agras alone.
- The percentage of grain screenings declined with increasing rates of Agras, with Hibrix BB having no significant effect.
- There was no effect on protein content by changing rates of either Hibrix BB or Agras.
- There were no visible signs of phytotoxicity or adverse crop effects by any treatment in this trial.

APPENDICES

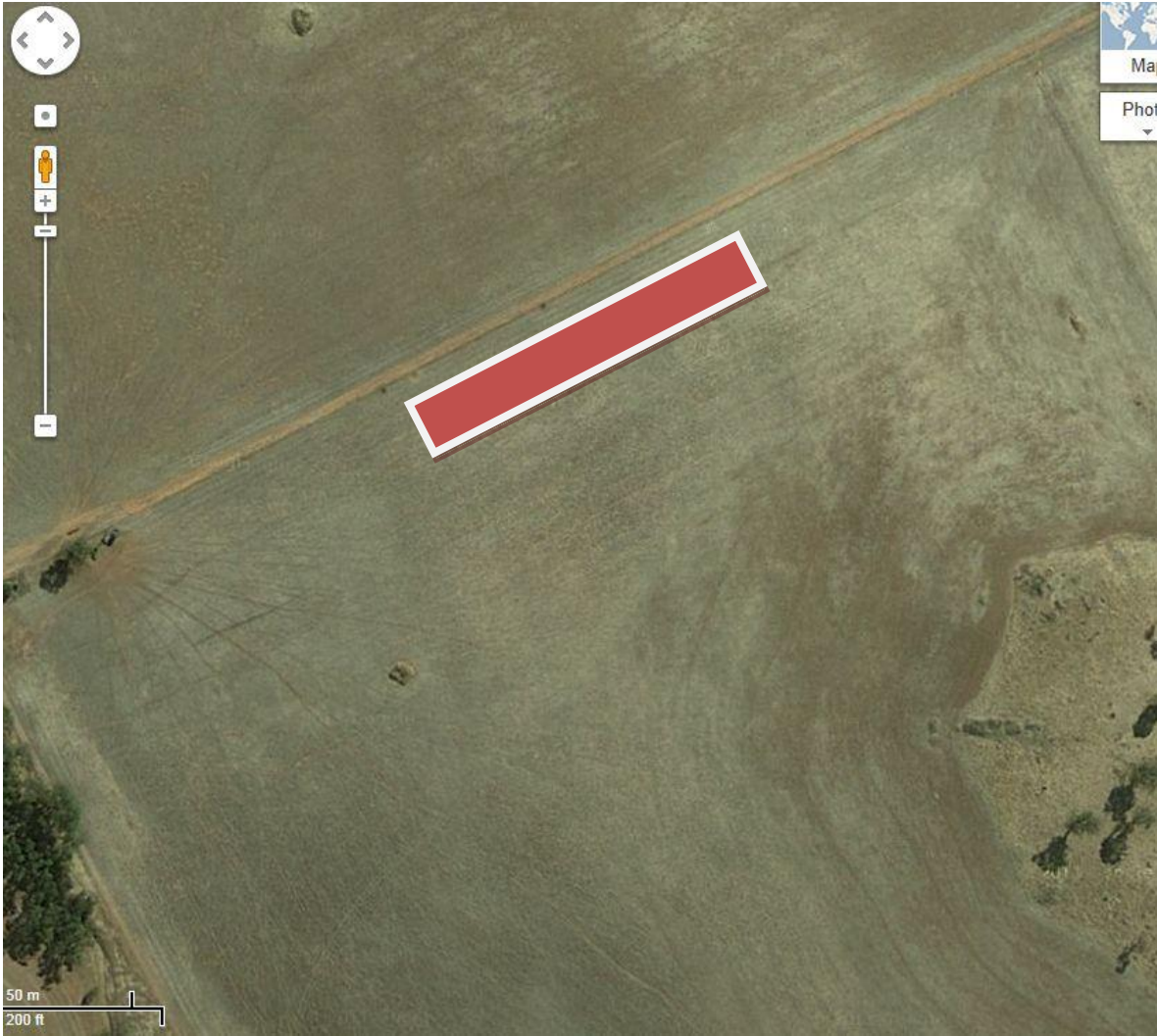
Appendix i. Trial details

Site details

Grower	Ashley Smith 0429-083152
Location	Goomalling Road Northam 6401 Western Australia
GPS co-ordinates	-31.565018 116.698985
Paddock name	Fig tree
Paddock history	Pasture in 2010, 2011, 2012
Soil type	Sandy loam
Crop	Wheat
Variety	Eradu
Trial design	Randomised complete block
Replications	4
Plot size	40.2 m x 4.3 m
Sowing date	23/05/13
Harvest date	20/11/13

Trial location map – Fig tree paddock

N→



Trial plan

← **North**

kg/ha	Block	Hibrix 1		Hibrix 2		Hibrix 3		Hibrix 4		Block	kg/ha
99		48	47	46	45	44	43	42	41		99
75		33	34	35	36	37	38	39	40		75
51		32	31	30	29	28	27	26	25		51
25		17	18	19	20	21	22	23	24		25
0		16	15	14	13	12	11	10	9		0
99		1	2	3	4	5	6	7	8		99
	Block	1	1	2	2	3	3	4	4	Block	

---- Fence ----- Fence ----- Fence ----- Fence ----

Treatment plan

← North

kg/ha	Block	Hibrix 1		Hibrix 2		Hibrix 3		Hibrix 4		Block	kg/ha
99		10	5	10	5	10	5	10	5		99
75		9	4	9	4	9	4	9	4		75
51		8	3	8	3	8	3	8	3		51
25		7	2	7	2	7	2	7	2		25
0		6	1	6	1	6	1	6	1		0
99		0	0	0	0	0	0	0	0		99
	Block	1	1	2	2	3	3	4	4	Block	

---- Fence ----- Fence ----- Fence ----- Fence ----

Sowing details

Sowing details	
Date	23/05/13
Method	Full cut combine
Combine make	Massey Ferguson
Combine configuration	24 row with 7" spacing and finger harrows
Crop	Wheat
Variety	Eradu
Sowing rate (kg/ha)	65
Sowing depth (cm)	4
Fertiliser	Agras
Fertiliser rate (kg/ha)	0, 25, 51, 75, 99
Fertiliser placement	Banded below seed
Soil moisture at surface	Dry
Soil moisture below surface	Moist
Soil moisture during emergence	Moist
Other products applied to site	
Pre-sowing	Trifluralin 480 @ 1 L/ha + Paraquat @ 1 L/ha
Post-emergence	Kamba M (Dicamba + MCPA) @ 1.7 L/ha at early jointing (Z31)

Application details – spray

Application equipment				
Method	Low volume broadcast boom spraying			
Equipment	Quad bike mounted compressed air boom sprayer			
Nozzles	Agrotop AirMix yellow 11002 flat fan			
Nozzle spacing	50 cm			
Spray volume	100 L/ha			
Pressure	250 kPa			
Ground speed	2.44 m/sec 8.78 kph			
Treatment applications				
Application number	1			
Date	25/05/13			
Days after sowing	2			
Times	12.00 – 12.15			
Treatments applied	6 - 10			
Temperature (°C)	18			
Relative humidity (%)	51			
Cloud cover (%)	30			
Wind direction	NW			
Wind speed (km/h)	6			
Soil moisture	moist			
Timing	PSPE			
Leaf wetness	NA			
Crop stage	seed BBCH01			

Assessments

Normalised difference vegetation index					
Date	02/09/13				
Days after sowing	102				
Sample size	Whole plot				
Method	Readings taken with "Greenseeker" by walking the length of each plot and the average reading recorded as Normalised Difference Vegetation Index (NDVI). The NDVI is a numerical indicator to assess the greenness of a plot. NDVI is directly related to the photosynthetic capacity and hence energy absorption of plant canopies. The index ranges from 0 – 1. The greater the number indicating a higher photosynthetic capacity which visually would appear greener.				
Statistical analysis	Factorial analysis, analysis of variance and comparison of means using LSD test.				
Crop biomass					
Dates	15/08/13	02/09/13	10/09/13	24/09/13	15/10/13
Days after sowing	84	102	110	124	145
Sample size	Whole plot				
Method	Visual assessment using percentage scale relative to untreated=100% No biomass differences were observed.				
Statistical analysis	Not applicable				
Crop safety					
Dates	15/08/13	02/09/13	10/09/13	24/09/13	15/10/13
Days after sowing	84	102	110	124	145
Sample size	Whole plot				
Method	Visual assessment of each plot. No phytotoxicity or adverse crop effects were observed.				
Statistical analysis	Not applicable				

Harvest yield & grain quality	
Date	20/11/13
Days after sowing	181
Sample size	38 m x 1.8 m = 68.4 m ²
Method	A strip 1.8 m wide x 38 m was mechanically harvested from each plot using a small plot harvester and the threshed grain weighed. Harvested grain samples were retained and laboratory tested for the grain quality components hectolitre weight, protein content and screenings.
Statistical analysis	Factorial analysis, analysis of variance and comparison of means using LSD test.

Appendix ii. Statistical analysis

Factorial analysis

Crop Name	WHEAT	WHEAT	WHEAT	WHEAT	WHEAT	WHEAT	
Crop Variety	ERADU	ERADU	ERADU	ERADU	ERADU	ERADU	
Description	PLOT	PLOT	PLOT	PLOT	PLOT	LESS CRACKED	
Rating Date	02/09/13	20/11/13	20/11/13	20/11/13	20/11/13	20/11/13	
Rating Type	NDVI	YIELD	YIELD	YIELD	YIELD	SCREENINGS	
Rating Unit	INDEX	kg/plot	kg/ha	%UNCK	H/L gram	%	
Sample Size, Unit	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	
Crop Stage Majority	BBCH65	BBCH92	BBCH92	BBCH92	BBCH92	BBCH92	
Plant-Eval Interval	102 DP-1	181 DP-1	181 DP-1	181 DP-1	181 DP-1	181 DP-1	
Number of Decimals	3	2	1	1	1	1	
Trit Treatment							
Rate							
No. Name	1	5	6	7	8	9	
Rate Unit							
TABLE OF R MEANS							
Replicate 1	0.800	22.25	3252.9	109.0	69.0	1.9	
Replicate 2	0.810	20.97	3065.8	105.4	67.8	1.5	
Replicate 3	0.824	21.45	3135.2	105.4	66.9	2.4	
Replicate 4	0.841	21.90	3201.0	106.1	63.5	3.3	
TABLE OF A (Hibrix) MEANS							
1 Hibrix	0 l/ha	0.815	21.40	3128.3	105.3	65.7	2.3
2 Hibrix	2.5 l/ha	0.823	21.88	3199.2	107.6	67.8	2.2
TABLE OF B (Agras) MEANS							
1 Agras	0 kg/ha	0.795	20.58	3008.9	101.2	69.7	2.8
2 Agras	25 kg/ha	0.801	21.26	3107.7	104.6	65.5	2.5
3 Agras	51 kg/ha	0.834	21.80	3187.1	107.4	67.5	2.9
4 Agras	75 kg/ha	0.833	22.49	3288.6	110.7	64.1	1.9
5 Agras	99 kg/ha	0.831	22.07	3226.4	108.5	67.2	1.2
TABLE OF A (Hibrix) B (Agras) MEANS							
1 Hibrix	0 l/ha	0.790	20.35	2975.1	100.0	70.8	2.7
1 Agras	0 kg/ha						
2 Hibrix	2.5 l/ha	0.800	20.81	3042.8	102.3	68.6	2.9
1 Agras	0 kg/ha						
1 Hibrix	0 l/ha	0.797	20.74	3031.8	102.1	65.4	3.0
2 Agras	25 kg/ha						
2 Hibrix	2.5 l/ha	0.805	21.78	3183.5	107.1	65.6	1.9
2 Agras	25 kg/ha						
1 Hibrix	0 l/ha	0.830	21.21	3101.2	104.5	64.8	2.3
3 Agras	51 kg/ha						
2 Hibrix	2.5 l/ha	0.838	22.39	3273.1	110.3	70.2	3.5
3 Agras	51 kg/ha						
1 Hibrix	0 l/ha	0.829	22.79	3331.5	112.2	61.2	2.2
4 Agras	75 kg/ha						
2 Hibrix	2.5 l/ha	0.837	22.20	3245.6	109.2	67.1	1.6
4 Agras	75 kg/ha						
1 Hibrix	0 l/ha	0.827	21.90	3201.8	107.8	66.7	1.2
5 Agras	99 kg/ha						
2 Hibrix	2.5 l/ha	0.834	22.24	3251.1	109.3	67.8	1.3
5 Agras	99 kg/ha						

Crop Name	WHEAT	
Crop Variety	ERADU	
Description	PROTEIN CONTENT	
Rating Date	20/11/13	
Rating Type	PROTEIN	
Rating Unit	11%MOIST	
Sample Size, Unit	1 PLOT	
Crop Stage Majority	BBCH92	
Plant-Eval Interval	181 DP-1	
Number of Decimals	1	
Trt Treatment	Rate	
No. Name	Rate Unit	10
TABLE OF R MEANS		
Replicate 1		9.1
Replicate 2		9.5
Replicate 3		9.5
Replicate 4		10.3
TABLE OF A (Hibrix) MEANS		
1 Hibrix	0 l/ha	9.6
2 Hibrix	2.5 l/ha	9.6
TABLE OF B (Agras) MEANS		
1 Agras	0 kg/ha	9.8
2 Agras	25 kg/ha	9.2
3 Agras	51 kg/ha	9.6
4 Agras	75 kg/ha	9.7
5 Agras	99 kg/ha	9.7
TABLE OF A (Hibrix) B (Agras) MEANS		
1 Hibrix	0 l/ha	9.7
1 Agras	0 kg/ha	
2 Hibrix	2.5 l/ha	9.9
1 Agras	0 kg/ha	
1 Hibrix	0 l/ha	9.2
2 Agras	25 kg/ha	
2 Hibrix	2.5 l/ha	9.2
2 Agras	25 kg/ha	
1 Hibrix	0 l/ha	9.4
3 Agras	51 kg/ha	
2 Hibrix	2.5 l/ha	9.8
3 Agras	51 kg/ha	
1 Hibrix	0 l/ha	9.8
4 Agras	75 kg/ha	
2 Hibrix	2.5 l/ha	9.7
4 Agras	75 kg/ha	
1 Hibrix	0 l/ha	9.9
5 Agras	99 kg/ha	
2 Hibrix	2.5 l/ha	9.5
5 Agras	99 kg/ha	

COMPLETE FACTORIAL AOV For WHEAT ERADU PLOT 02/09/13 NDVI INDEX 1 PLOT BBCH65 102 DP-1 3 (Data Column 1)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	39	0.030715				
R	3	0.009639	0.003213	15.705	0.0002	0.014
A	1	0.000681	0.000681	1.578	0.2979	0.021
RA	3	0.001294	0.000431	2.108	0.1526	0.020
B	4	0.011525	0.002881	6.759	0.0044	0.022
RB	12	0.005115	0.000426	2.084	0.1090	0.031
AB	4	0.000006	0.000002	0.008	0.9999	0.022
RAB	12	0.002455	0.000205			

FACTORIAL/POOLED ERROR AOV For WHEAT ERADU PLOT 02/09/13 NDVI INDEX 1 PLOT BBCH65 102 DP-1 3 (Data Column 1)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	39	0.030715				
R	3	0.009639	0.003213	9.787	0.0002	0.017
A	1	0.000681	0.000681	2.073	0.1614	0.012
B	4	0.011525	0.002881	8.777	0.0001	0.019
AB	4	0.000006	0.000002	0.005	1.0000	0.026
ERROR	27	0.008864	0.000328			

COMPLETE FACTORIAL AOV For WHEAT ERADU PLOT 20/11/13 YIELD kg/plot 1 PLOT BBCH92 181 DP-1 2 (Data Column 5)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	39	67.870995				
R	3	9.240502	3.080167	6.433	0.0076	0.67
A	1	2.352249	2.352249	3.137	0.1746	0.87
RA	3	2.249250	0.749750	1.566	0.2489	0.95
B	4	17.652243	4.413061	1.982	0.1615	1.63
RB	12	26.723248	2.226937	4.651	0.0063	1.51
AB	4	3.907749	0.976937	2.040	0.1524	1.07
RAB	12	5.745754	0.478813			

FACTORIAL/POOLED ERROR AOV For WHEAT ERADU PLOT 20/11/13 YIELD kg/plot 1 PLOT BBCH92 181 DP-1 2 (Data Column 5)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	39	67.870995				
R	3	9.240502	3.080167	2.395	0.0902	1.04
A	1	2.352249	2.352249	1.829	0.1874	0.74
B	4	17.652243	4.413061	3.432	0.0216	1.16
AB	4	3.907749	0.976937	0.760	0.5606	1.65
ERROR	27	34.718252	1.285861			

COMPLETE FACTORIAL AOV For WHEAT ERADU PLOT 20/11/13 YIELD kg/ha 1 PLOT BBCH92 181 DP-1 1 (Data Column 6)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	39	1450715.199217				
R	3	197492.438955	65830.812985	6.433	0.0076	98.6
A	1	50275.179864	50275.179864	3.137	0.1747	127.4
RA	3	48077.885722	16025.961907	1.566	0.2488	139.4
B	4	377339.268339	94334.817085	1.982	0.1615	237.7
RB	12	571183.817963	47598.651497	4.652	0.0063	220.4
AB	4	83551.299049	20887.824762	2.041	0.1523	155.9
RAB	12	122795.309325	10232.942444			

FACTORIAL/POOLED ERROR AOV For WHEAT ERADU PLOT 20/11/13 YIELD kg/ha 1 PLOT BBCH92 181 DP-1 1 (Data Column 6)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	39	1450715.199217				
R	3	197492.438955	65830.812985	2.395	0.0902	152.1
A	1	50275.179864	50275.179864	1.829	0.1874	107.6
B	4	377339.268339	94334.817085	3.432	0.0216	170.1
AB	4	83551.299049	20887.824762	0.760	0.5604	240.5
ERROR	27	742057.013011	27483.593074			

COMPLETE FACTORIAL AOV For WHEAT ERADU PLOT 20/11/13 YIELD %UNCK 1 PLOT BBCH92 181 DP-1 1 (Data Column 7)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	39	1699.047720				
R	3	85.786740	28.595580	2.470	0.1120	3.3
A	1	54.522279	54.522279	2.869	0.1889	4.4
RA	3	57.014737	19.004912	1.641	0.2321	4.7
B	4	434.023894	108.505974	1.563	0.2469	9.1
RB	12	833.272072	69.439339	5.997	0.0021	7.4
AB	4	95.473992	23.868498	2.061	0.1493	5.2
RAB	12	138.954006	11.579501			

FACTORIAL/POOLED ERROR AOV For WHEAT ERADU PLOT 20/11/13 YIELD %UNCK 1 PLOT BBCH92 181 DP-1 1 (Data Column 7)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	39	1699.047720				
R	3	85.786740	28.595580	0.750	0.5318	5.7
A	1	54.522279	54.522279	1.430	0.2421	4.0
B	4	434.023894	108.505974	2.846	0.0433	6.3
AB	4	95.473992	23.868498	0.626	0.6479	9.0
ERROR	27	1029.240816	38.120030			

COMPLETE FACTORIAL AOV For WHEAT ERADU WEIGHT 20/11/13 WEIGHT H/L gram 1 PLOT BBCH92 181 DP-1 1 (Data Column 8)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	39	883.071110				
R	3	167.099046	55.699682	7.727	0.0039	2.6
A	1	43.680951	43.680951	3.179	0.1726	3.7
RA	3	41.218998	13.739666	1.906	0.1825	3.7
B	4	143.406103	35.851526	1.419	0.2865	5.5
RB	12	303.146081	25.262173	3.504	0.0195	5.9
AB	4	98.013967	24.503492	3.399	0.0445	4.1
RAB	12	86.505964	7.208830			

FACTORIAL/POOLED ERROR AOV For WHEAT ERADU WEIGHT 20/11/13 WEIGHT H/L gram 1 PLOT BBCH92 181 DP-1 1 (Data Column 8)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	39	883.071110				
R	3	167.099046	55.699682	3.490	0.0292	3.7
A	1	43.680951	43.680951	2.737	0.1096	2.6
B	4	143.406103	35.851526	2.247	0.0904	4.1
AB	4	98.013967	24.503492	1.535	0.2201	5.8
ERROR	27	430.871043	15.958187			

COMPLETE FACTORIAL AOV For WHEAT ERADU LESS CRACKED 20/11/13 SCREENINGS % 1 PLOT BBCH92 181 DP-1 1 (Data Column 9)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	39	70.235998				
R	3	17.834000	5.944667	4.889	0.0191	1.1
A	1	0.016000	0.016000	0.014	0.9142	1.1
RA	3	3.506000	1.168667	0.961	0.4426	1.5
B	4	15.018500	3.754625	3.312	0.0478	1.2
RB	12	13.603500	1.133625	0.932	0.5473	2.4
AB	4	5.666500	1.416625	1.165	0.3740	1.7
RAB	12	14.591499	1.215958			

FACTORIAL/POOLED ERROR AOV For WHEAT ERADU LESS CRACKED 20/11/13 SCREENINGS % 1 PLOT BBCH92 181 DP-1 1 (Data Column 9)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	39	70.235998				
R	3	17.834000	5.944667	5.063	0.0065	1.0
A	1	0.016000	0.016000	0.014	0.9079	0.7
B	4	15.018500	3.754625	3.198	0.0284	1.1
AB	4	5.666500	1.416625	1.207	0.3309	1.6
ERROR	27	31.700999	1.174111			

COMPLETE FACTORIAL AOV For WHEAT ERADU PROTEIN CONTENT 20/11/13 PROTEIN 11%MOIST 1 PLOT
BBCH92 181 DP-1 1 (Data Column 10)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	39	16.864003				
R	3	7.364002	2.454667	8.925	0.0022	0.5
A	1	0.009000	0.009000	0.024	0.8878	0.6
RA	3	1.147000	0.382333	1.390	0.2934	0.7
B	4	1.841501	0.460375	2.229	0.1269	0.5
RB	12	2.478501	0.206542	0.751	0.6862	1.1
AB	4	0.723500	0.180875	0.658	0.6329	0.8
RAB	12	3.300499	0.275042			

FACTORIAL/POOLED ERROR AOV For WHEAT ERADU PROTEIN CONTENT 20/11/13 PROTEIN 11%MOIST 1 PLOT
BBCH92 181 DP-1 1 (Data Column 10)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	39	16.864003				
R	3	7.364002	2.454667	9.569	0.0002	0.5
A	1	0.009000	0.009000	0.035	0.8528	0.3
B	4	1.841501	0.460375	1.795	0.1590	0.5
AB	4	0.723500	0.180875	0.705	0.5954	0.7
ERROR	27	6.926000	0.256519			

Analysis of variance – P = 0.05

Crop Name	WHEAT	WHEAT	WHEAT	WHEAT	WHEAT	WHEAT
Crop Variety	ERADU	ERADU	ERADU	ERADU	ERADU	ERADU
Description	PLOT	PLOT	PLOT	PLOT	WEIGHT	LESS CRACKED
Rating Date	02/09/13	20/11/13	20/11/13	20/11/13	20/11/13	20/11/13
Rating Type	NDVI	YIELD	YIELD	YIELD	WEIGHT	SCREENINGS
Rating Unit	INDEX	kg/plot	kg/ha	%UNCK	H/L gram	%
Sample Size, Unit	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT
Crop Stage Majority	BBCH65	BBCH92	BBCH92	BBCH92	BBCH92	BBCH92
Plant-Eval Interval	102 DP-1	181 DP-1	181 DP-1	181 DP-1	181 DP-1	181 DP-1
Number of Decimals	3	2	1	1	1	1
Trt Treatment						
No. Name Rate Unit	1	5	6	7	8	9
1 Hibrix	0 l/ha	20.35 a	2975.1 a	100.0 a	70.8 a	2.7 a
Agras	0 kg/ha					
2 Hibrix	0 l/ha	20.74 a	3031.8 a	102.1 a	65.4 a	3.0 a
Agras	25 kg/ha					
3 Hibrix	0 l/ha	21.21 a	3101.2 a	104.5 a	64.8 a	2.3 a
Agras	51 kg/ha					
4 Hibrix	0 l/ha	22.79 a	3331.5 a	112.2 a	61.2 a	2.2 a
Agras	75 kg/ha					
5 Hibrix	0 l/ha	21.90 a	3201.8 a	107.8 a	66.7 a	1.2 a
Agras	99 kg/ha					
6 Hibrix	2.5 l/ha	20.81 a	3042.8 a	102.3 a	68.6 a	2.9 a
Agras	0 kg/ha					
7 Hibrix	2.5 l/ha	21.78 a	3183.5 a	107.1 a	65.6 a	1.9 a
Agras	25 kg/ha					
8 Hibrix	2.5 l/ha	22.39 a	3273.1 a	110.3 a	70.2 a	3.5 a
Agras	51 kg/ha					
9 Hibrix	2.5 l/ha	22.20 a	3245.6 a	109.2 a	67.1 a	1.6 a
Agras	75 kg/ha					
10 Hibrix	2.5 l/ha	22.24 a	3251.1 a	109.3 a	67.8 a	1.3 a
Agras	99 kg/ha					
LSD (P=.05)	0.0263	1.645	240.54	8.96	5.80	1.57
Standard Deviation	0.0181	1.134	165.78	6.17	3.99	1.08
CV	2.21	5.24	5.24	5.8	5.98	47.95
Bartlett's X2	17.382	16.073	16.078	2.395	3.45	10.351
P(Bartlett's X2)	0.043*	0.065	0.065	0.966	0.944	0.323
Skewness	-1.0532*	0.5742	0.5742	0.2081	-0.2827	0.7226
Kurtosis	0.4499	0.2994	0.2994	-1.2363	-0.6263	0.3049
Replicate F	9.781	2.395	2.396	0.752	3.490	5.063
Replicate Prob(F)	0.0002	0.0903	0.0902	0.5309	0.0292	0.0065
Treatment F	4.131	2.066	2.067	1.703	1.985	1.959
Treatment Prob(F)	0.0020	0.0702	0.0701	0.1370	0.0815	0.0855

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Crop Name	WHEAT	
Crop Variety	ERADU	
Description	PROTEIN CONTENT	
Rating Date	20/11/13	
Rating Type	PROTEIN	
Rating Unit	11%MOIST	
Sample Size, Unit	1 PLOT	
Crop Stage Majority	BBCH92	
Plant-Eval Interval	181 DP-1	
Number of Decimals	1	
Trt	Treatment	Rate
No.	Name	Rate Unit
		10
1	Hibrix	0 l/ha
	Agras	0 kg/ha
		9.7 a
2	Hibrix	0 l/ha
	Agras	25 kg/ha
		9.2 a
3	Hibrix	0 l/ha
	Agras	51 kg/ha
		9.4 a
4	Hibrix	0 l/ha
	Agras	75 kg/ha
		9.8 a
5	Hibrix	0 l/ha
	Agras	99 kg/ha
		9.9 a
6	Hibrix	2.5 l/ha
	Agras	0 kg/ha
		9.9 a
7	Hibrix	2.5 l/ha
	Agras	25 kg/ha
		9.2 a
8	Hibrix	2.5 l/ha
	Agras	51 kg/ha
		9.8 a
9	Hibrix	2.5 l/ha
	Agras	75 kg/ha
		9.7 a
10	Hibrix	2.5 l/ha
	Agras	99 kg/ha
		9.5 a
LSD (P=.05)	0.73	
Standard Deviation	0.51	
CV	5.29	
Bartlett's X2	11.354	
P(Bartlett's X2)	0.252	
Skewness	0.797*	
Kurtosis	0.8421	
Replicate F	9.570	
Replicate Prob(F)	0.0002	
Treatment F	1.115	
Treatment Prob(F)	0.3858	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Analysis of variance – P = 0.10

Crop Name	WHEAT	WHEAT	WHEAT	WHEAT	WHEAT	WHEAT	
Crop Variety	ERADU	ERADU	ERADU	ERADU	ERADU	ERADU	
Description	PLOT	PLOT	PLOT	PLOT	PLOT	LESS CRACKED	
Rating Date	02/09/13	20/11/13	20/11/13	20/11/13	20/11/13	20/11/13	
Rating Type	NDVI	YIELD	YIELD	YIELD	WEIGHT	SCREENINGS	
Rating Unit	INDEX	kg/plot	kg/ha	%UNCK	H/L gram	%	
Sample Size, Unit	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	
Crop Stage Majority	BBCH65	BBCH92	BBCH92	BBCH92	BBCH92	BBCH92	
Plant-Eval Interval	102 DP-1	181 DP-1	181 DP-1	181 DP-1	181 DP-1	181 DP-1	
Number of Decimals	3	2	1	1	1	1	
Trt Treatment							
No. Name Rate Unit	1	5	6	7	8	9	
1 Hibrix	0 l/ha	0.790 c	20.35 d	2975.1 d	100.0 a	70.8 a	2.7 abc
Agras	0 kg/ha						
2 Hibrix	0 l/ha	0.797 c	20.74 cd	3031.8 cd	102.1 a	65.4 cd	3.0 ab
Agras	25 kg/ha						
3 Hibrix	0 l/ha	0.830 a	21.21 bcd	3101.2 bcd	104.5 a	64.8 cd	2.3 a-d
Agras	51 kg/ha						
4 Hibrix	0 l/ha	0.829 a	22.79 a	3331.5 a	112.2 a	61.2 d	2.2 a-d
Agras	75 kg/ha						
5 Hibrix	0 l/ha	0.827 ab	21.90 abc	3201.8 abc	107.8 a	66.7 abc	1.2 d
Agras	99 kg/ha						
6 Hibrix	2.5 l/ha	0.800 c	20.81 cd	3042.8 cd	102.3 a	68.6 abc	2.9 abc
Agras	0 kg/ha						
7 Hibrix	2.5 l/ha	0.805 bc	21.78 abc	3183.5 abc	107.1 a	65.6 bcd	1.9 bcd
Agras	25 kg/ha						
8 Hibrix	2.5 l/ha	0.838 a	22.39 ab	3273.1 ab	110.3 a	70.2 ab	3.5 a
Agras	51 kg/ha						
9 Hibrix	2.5 l/ha	0.837 a	22.20 ab	3245.6 ab	109.2 a	67.1 abc	1.6 cd
Agras	75 kg/ha						
10 Hibrix	2.5 l/ha	0.834 a	22.24 ab	3251.1 ab	109.3 a	67.8 abc	1.3 d
Agras	99 kg/ha						
LSD (P=.10)	0.0218	1.366	199.63	7.43	4.81	1.30	
Standard Deviation	0.0181	1.134	165.78	6.17	3.99	1.08	
CV	2.21	5.24	5.24	5.8	5.98	47.95	
Bartlett's X2	17.382	16.073	16.078	2.395	3.45	10.351	
P(Bartlett's X2)	0.043*	0.065	0.065	0.966	0.944	0.323	
Skewness	-1.0532*	0.5742	0.5742	0.2081	-0.2827	0.7226	
Kurtosis	0.4499	0.2994	0.2994	-1.2363	-0.6263	0.3049	
Replicate F	9.781	2.395	2.396	0.752	3.490	5.063	
Replicate Prob(F)	0.0002	0.0903	0.0902	0.5309	0.0292	0.0065	
Treatment F	4.131	2.066	2.067	1.703	1.985	1.959	
Treatment Prob(F)	0.0020	0.0702	0.0701	0.1370	0.0815	0.0855	

Means followed by same letter do not significantly differ (P=.10, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Crop Name	WHEAT	
Crop Variety	ERADU	
Description	PROTEIN CONTENT	
Rating Date	20/11/13	
Rating Type	PROTEIN	
Rating Unit	11%MOIST	
Sample Size, Unit	1 PLOT	
Crop Stage Majority	BBCH92	
Plant-Eval Interval	181 DP-1	
Number of Decimals	1	
Trt	Treatment	Rate
No.	Name	Rate Unit
		10
1	Hibrix	0 l/ha
	Agras	0 kg/ha
		9.7 a
2	Hibrix	0 l/ha
	Agras	25 kg/ha
		9.2 a
3	Hibrix	0 l/ha
	Agras	51 kg/ha
		9.4 a
4	Hibrix	0 l/ha
	Agras	75 kg/ha
		9.8 a
5	Hibrix	0 l/ha
	Agras	99 kg/ha
		9.9 a
6	Hibrix	2.5 l/ha
	Agras	0 kg/ha
		9.9 a
7	Hibrix	2.5 l/ha
	Agras	25 kg/ha
		9.2 a
8	Hibrix	2.5 l/ha
	Agras	51 kg/ha
		9.8 a
9	Hibrix	2.5 l/ha
	Agras	75 kg/ha
		9.7 a
10	Hibrix	2.5 l/ha
	Agras	99 kg/ha
		9.5 a
LSD (P=.10)	0.61	
Standard Deviation	0.51	
CV	5.29	
Bartlett's X2	11.354	
P(Bartlett's X2)	0.252	
Skewness	0.797*	
Kurtosis	0.8421	
Replicate F	9.570	
Replicate Prob(F)	0.0002	
Treatment F	1.115	
Treatment Prob(F)	0.3858	

Means followed by same letter do not significantly differ (P=.10, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Appendix iii. Raw data

Crop Name	WHEAT	WHEAT	WHEAT	WHEAT	WHEAT	WHEAT		
Crop Variety	ERADU	ERADU	ERADU	ERADU	ERADU	ERADU		
Description	PLOT	PLOT	PLOT	PLOT	WEIGHT	LESS CRACKED		
Rating Date	02/09/13	20/11/13	20/11/13	20/11/13	20/11/13	20/11/13		
Rating Type	NDVI	YIELD	YIELD	YIELD	WEIGHT	SCREENINGS		
Rating Unit	INDEX	kg/plot	kg/ha	%UNCK	H/L gram	%		
Sample Size, Unit	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT	1 PLOT		
Crop Stage Majority	BBCH65	BBCH92	BBCH92	BBCH92	BBCH92	BBCH92		
Plant-Eval Interval	102 DP-1	181 DP-1	181 DP-1	181 DP-1	181 DP-1	181 DP-1		
Number of Decimals	3	2	1	1	1	1		
Trt Treatment								
No. Name	Rate	Rate	Rate	Rate	Rate	Rate		
Rate Unit	Unit	Unit	Unit	Unit	Unit	Unit		
Plot	Plot	Plot	Plot	Plot	Plot	Plot		
1	1	5	6	7	8	9		
1 Hibrix	0 l/ha	1	0.748	19.85	2902.0	100.0	71.4	2.0
Agras	0 kg/ha	3	0.792	19.00	2777.8	100.0	72.4	1.5
		5	0.777	21.35	3121.3	100.0	74.8	3.3
		7	0.844	21.20	3099.4	100.0	64.6	4.0
		Mean =	0.790	20.35	2975.1	100.0	70.8	2.7
2 Hibrix	0 l/ha	16	0.784	20.95	3062.9	105.5	68.6	2.3
Agras	25 kg/ha	14	0.782	20.50	2997.1	107.9	64.6	2.6
		12	0.810	20.60	3011.7	96.5	67.6	2.7
		10	0.812	20.90	3055.6	98.6	60.6	4.3
		Mean =	0.797	20.74	3031.8	102.1	65.4	3.0
3 Hibrix	0 l/ha	17	0.827	21.25	3106.7	107.1	68.8	3.0
Agras	51 kg/ha	19	0.817	20.90	3055.6	110.0	65.6	1.9
		21	0.823	21.35	3121.3	100.0	68.8	0.6
		23	0.851	21.35	3121.3	100.7	55.8	3.7
		Mean =	0.830	21.21	3101.2	104.5	64.8	2.3
4 Hibrix	0 l/ha	32	0.830	24.40	3567.3	115.1	66.0	0.9
Agras	75 kg/ha	30	0.834	22.15	3238.3	103.7	58.8	0.6
		28	0.823	22.65	3311.4	119.2	58.4	3.3
		26	0.829	21.95	3209.1	110.6	61.4	4.1
		Mean =	0.829	22.79	3331.5	112.2	61.2	2.2
5 Hibrix	0 l/ha	33	0.828	24.15	3530.7	113.9	70.8	1.1
Agras	99 kg/ha	35	0.811	20.50	2997.1	96.0	69.0	0.5
		37	0.824	21.65	3165.2	113.9	63.6	0.4
		39	0.845	21.30	3114.0	107.3	63.2	2.8
		Mean =	0.827	21.90	3201.8	107.8	66.7	1.2
6 Hibrix	2.5 l/ha	2	0.770	19.30	2821.6	97.2	69.0	1.0
Agras	0 kg/ha	4	0.756	20.50	2997.1	107.9	73.2	1.6
		6	0.827	21.85	3194.4	102.3	71.8	2.9
		8	0.846	21.60	3157.9	101.9	60.2	6.2
		Mean =	0.800	20.81	3042.8	102.3	68.6	2.9
7 Hibrix	2.5 l/ha	15	0.756	20.70	3026.3	104.3	66.6	2.7
Agras	25 kg/ha	13	0.808	21.40	3128.7	112.6	61.0	1.2
		11	0.823	21.75	3179.8	101.9	63.2	2.6
		9	0.834	23.25	3399.1	109.7	71.6	1.2
		Mean =	0.805	21.78	3183.5	107.1	65.6	1.9
8 Hibrix	2.5 l/ha	18	0.825	23.00	3362.6	115.9	71.8	3.0
Agras	51 kg/ha	20	0.822	21.75	3179.8	114.5	74.6	2.2
		22	0.852	21.40	3128.7	100.2	70.8	4.1
		24	0.852	23.40	3421.1	110.4	63.6	4.5
		Mean =	0.838	22.39	3273.1	110.3	70.2	3.5
9 Hibrix	2.5 l/ha	31	0.819	24.75	3618.4	116.7	67.2	1.9
Agras	75 kg/ha	29	0.848	21.15	3092.1	99.1	65.2	1.0
		27	0.837	21.85	3194.4	115.0	65.6	2.9
		25	0.845	21.05	3077.5	106.0	70.2	0.7
		Mean =	0.837	22.20	3245.6	109.2	67.1	1.6

Crop Name	WHEAT		WHEAT	WHEAT	WHEAT	WHEAT	WHEAT		
Crop Variety	ERADU		ERADU	ERADU	ERADU	ERADU	ERADU		
Description	PLOT		PLOT	PLOT	PLOT	PLOT	LESS CRACKED		
Rating Date	02/09/13		20/11/13	20/11/13	20/11/13	20/11/13	20/11/13		
Rating Type	NDVI		YIELD	YIELD	YIELD	YIELD	SCREENINGS		
Rating Unit	INDEX		kg/plot	kg/ha	%UNCK	H/L gram	%		
Sample Size, Unit	1	PLOT	1	PLOT	1	PLOT	1	PLOT	
Crop Stage Majority	BBCH65		BBCH92	BBCH92	BBCH92	BBCH92	BBCH92		
Plant-Eval Interval	102 DP-1		181 DP-1	181 DP-1	181 DP-1	181 DP-1	181 DP-1		
Number of Decimals	3		2	1	1	1	1		
Trt Treatment	Rate								
No. Name	Rate	Unit	Plot	1	5	6	7	8	9
10 Hibrix	2.5	l/ha	34	0.814	24.15	3530.7	113.9	69.6	1.2
Agras	99	kg/ha	36	0.825	21.85	3194.4	102.3	73.2	1.7
			38	0.843	20.00	2924.0	105.3	64.6	0.9
			40	0.854	22.95	3355.3	115.6	63.6	1.3
	Mean =			0.834	22.24	3251.1	109.3	67.8	1.3

Crop Name	WHEAT		
Crop Variety	ERADU		
Description	PROTEIN CONTENT		
Rating Date	20/11/13		
Rating Type	PROTEIN		
Rating Unit	11%MOIST		
Sample Size, Unit	1 PLOT		
Crop Stage Majority	BBCH92		
Plant-Eval Interval	181 DP-1		
Number of Decimals	1		
Trt	Treatment	Rate	
No.	Name	Rate Unit	Plot
			10
1	Hibrix	0 l/ha	1
	Agras	0 kg/ha	3
			5
			7
			9.3
			9.2
			9.5
			10.6
			Mean =
			9.7
2	Hibrix	0 l/ha	16
	Agras	25 kg/ha	14
			12
			10
			8.7
			8.8
			8.7
			10.4
			Mean =
			9.2
3	Hibrix	0 l/ha	17
	Agras	51 kg/ha	19
			21
			23
			9.4
			9.8
			9.1
			9.3
			Mean =
			9.4
4	Hibrix	0 l/ha	32
	Agras	75 kg/ha	30
			28
			26
			9.0
			10.1
			9.4
			10.5
			Mean =
			9.8
5	Hibrix	0 l/ha	33
	Agras	99 kg/ha	35
			37
			39
			9.9
			9.7
			9.3
			10.6
			Mean =
			9.9
6	Hibrix	2.5 l/ha	2
	Agras	0 kg/ha	4
			6
			8
			8.7
			9.3
			9.8
			11.6
			Mean =
			9.9
7	Hibrix	2.5 l/ha	15
	Agras	25 kg/ha	13
			11
			9
			8.9
			9.5
			9.0
			9.3
			Mean =
			9.2
8	Hibrix	2.5 l/ha	18
	Agras	51 kg/ha	20
			22
			24
			8.5
			9.8
			10.5
			10.4
			Mean =
			9.8
9	Hibrix	2.5 l/ha	31
	Agras	75 kg/ha	29
			27
			25
			9.5
			9.2
			9.9
			10.1
			Mean =
			9.7

Crop Name				WHEAT
Crop Variety				ERADU
Description				PROTEIN CONTENT
Rating Date				20/11/13
Rating Type				PROTEIN
Rating Unit				11%MOIST
Sample Size, Unit				1 PLOT
Crop Stage Majority				BBCH92
Plant-Eval Interval				181 DP-1
Number of Decimals				1
Trt Treatment				
No. Name	Rate	Unit	Plot	
				10
10 Hibrix	2.5 l/ha		34	9.0
Agras	99 kg/ha		36	9.3
			38	9.7
			40	9.9
	Mean =			9.5

Field plot no.	Block	Trial plot	Treatment	Protein (%)	Moisture content (%)	Protein (%) dry	Protein (%) as at 11% moisture	H/Litre weight (grams)	Screenings below 2.5mm (grams)	Visual cracked grain %	Specific weight (kg/hL)	Screenings (%)	Screenings less cracked grain (%)
1	1	0	0	11.2	10.1	12.5	11.1	308.0	16.5	20.0	61.6	5.36	4.29
2	1	0	0	11.2	10.1	12.5	11.1	313.0	23.1	20.0	62.6	7.38	5.90
3	2	0	0	11.1	10.0	12.3	11.0	301.0	22.6	30.0	60.2	7.51	5.26
4	2	0	0	10.4	10.0	11.6	10.3	334.0	15.1	30.0	66.8	4.52	3.16
5	3	0	0	11.6	10.0	12.9	11.5	295.0	18.6	20.0	59.0	6.31	5.04
6	3	0	0	10.0	9.9	11.1	9.9	334.0	18.7	30.0	66.8	5.60	3.92
7	4	0	0	9.5	9.9	10.5	9.4	316.0	18.7	30.0	63.2	5.92	4.14
8	4	0	0	9.2	9.9	10.2	9.1	355.0	18.5	90.0	71.0	5.21	0.52
9	4	1	1	9.4	9.8	10.4	9.3	357.0	17.6	60.0	71.4	4.93	1.97
10	4	2	6	8.8	9.8	9.8	8.7	345.0	17.5	80.0	69.0	5.07	1.01
11	3	3	1	9.3	9.7	10.3	9.2	362.0	18.0	70.0	72.4	4.97	1.49
12	3	4	6	9.4	9.8	10.4	9.3	366.0	15.0	60.0	73.2	4.10	1.64
13	2	5	1	9.6	9.9	10.7	9.5	374.0	20.6	40.0	74.8	5.51	3.30
14	2	6	6	9.9	9.9	11.0	9.8	359.0	15.1	30.0	71.8	4.21	2.94
15	1	7	1	10.7	10.0	11.9	10.6	323.0	15.2	15.0	64.6	4.71	4.00
16	1	8	6	11.7	9.9	13.0	11.6	301.0	23.5	20.0	60.2	7.81	6.25
17	1	9	7	9.4	9.9	10.4	9.3	358.0	11.0	60.0	71.6	3.07	1.23
18	1	10	2	10.5	10.0	11.7	10.4	303.0	16.1	20.0	60.6	5.31	4.25
19	2	11	7	9.1	10.0	10.1	9.0	316.0	13.5	40.0	63.2	4.27	2.56
20	2	12	2	8.8	9.8	9.8	8.7	338.0	15.3	40.0	67.6	4.53	2.72
21	3	13	7	9.6	9.8	10.6	9.5	305.0	17.8	80.0	61.0	5.84	1.17
22	3	14	2	8.9	9.8	9.9	8.8	323.0	14.1	40.0	64.6	4.37	2.62
23	4	15	7	9.0	9.8	10.0	8.9	333.0	14.9	40.0	66.6	4.47	2.68
24	4	16	2	8.8	9.8	9.8	8.7	343.0	15.6	50.0	68.6	4.55	2.27
25	4	17	3	9.5	9.8	10.5	9.4	344.0	13.0	20.0	68.8	3.78	3.02

26	4	18	8	8.6	9.8	9.5	8.5	359.0	13.3	20.0	71.8	3.70	2.96
27	3	19	3	9.9	9.8	11.0	9.8	328.0	15.6	60.0	65.6	4.76	1.90
28	3	20	8	9.9	9.9	11.0	9.8	373.0	11.7	30.0	74.6	3.14	2.20
29	2	21	3	9.2	9.9	10.2	9.1	344.0	13.3	85.0	68.8	3.87	0.58
30	2	22	8	10.6	9.8	11.8	10.5	354.0	18.0	20.0	70.8	5.08	4.07
31	1	23	3	9.4	9.9	10.4	9.3	279.0	14.7	30.0	55.8	5.27	3.69
32	1	24	8	10.5	9.9	11.7	10.4	318.0	18.0	20.0	63.6	5.66	4.53
33	4	25	9	10.2	9.8	11.3	10.1	351.0	13.0	80.0	70.2	3.70	0.74
34	4	26	4	10.6	9.9	11.8	10.5	307.0	17.9	30.0	61.4	5.83	4.08
35	3	27	9	10.0	9.7	11.1	9.9	328.0	15.8	40.0	65.6	4.82	2.89
36	3	28	4	9.5	9.9	10.5	9.4	292.0	16.2	40.0	58.4	5.55	3.33
37	2	29	9	9.3	9.8	10.3	9.2	326.0	15.9	80.0	65.2	4.88	0.98
38	2	30	4	10.2	9.7	11.3	10.1	294.0	18.9	90.0	58.8	6.43	0.64
39	1	31	9	9.6	9.8	10.6	9.5	336.0	15.7	60.0	67.2	4.67	1.87
40	1	32	4	9.1	9.7	10.1	9.0	330.0	15.1	80.0	66.0	4.58	0.92
41	1	33	5	10.0	9.7	11.1	9.9	354.0	12.7	70.0	70.8	3.59	1.08
42	1	34	10	9.1	9.9	10.1	9.0	348.0	14.0	70.0	69.6	4.02	1.21
43	2	35	5	9.8	9.7	10.9	9.7	345.0	18.5	90.0	69.0	5.36	0.54
44	2	36	10	9.4	9.7	10.4	9.3	366.0	15.5	60.0	73.2	4.23	1.69
45	3	37	5	9.4	9.8	10.4	9.3	318.0	12.9	90.0	63.6	4.06	0.41
46	3	38	10	9.8	9.8	10.9	9.7	323.0	14.4	80.0	64.6	4.46	0.89
47	4	39	5	10.7	9.9	11.9	10.6	316.0	22.4	60.0	63.2	7.09	2.84
48	4	40	10	10.0	9.9	11.1	9.9	318.0	14.0	70.0	63.6	4.40	1.32

Appendix iv. Meteorological details

Year: 2013

Location: Northam, Western Australia

	January 2013			February 2013			March 2013		
	Min °C	Max °C	mm	Min °C	Max °C	mm	Min °C	Max °C	mm
1	25.6	39.3	0.0	15.2	35.6	0.0	17.8	31.6	0.0
2	21.8	35.5	0.0	17.2	37.8	0.0	17.0	30.9	0.0
3	17.7	29.9	0.0	17.0	41.1	0.0	15.0	35.2	0.0
4	14.1	31.2	0.0	14.3	38.1	0.0	15.4	29.7	0.0
5	16.7	39.3	0.0	16.7	34.5	0.0	14.1	29.2	0.0
6	25.3	31.3	0.0	17.8	32.4	0.0	16.7	32.0	0.0
7	22.6	38.5	7.6	15.8	32.5	0.0	16.6	32.0	0.0
8	25.7	43.3	0.0	16.7	36.0	0.0	16.1	33.0	0.0
9	22.8	34.9	0.0	16.6	37.2	0.0	17.5	33.1	0.0
10	16.6	32.1	0.0	17.2	38.2	0.0	23.2	31.2	0.0
11	17.5	33.2	0.0	21.5	39.1	0.0	18.1	30.4	0.0
12	19	32	0.0	23.0	41.5	0.0	10.1	25.7	0.0
13	19.8	25.8	0.0	23.1	41.6	0.0	11.5	28.2	0.0
14	20.2	37.7	10.8	24.6	39.2	0.0	17.6	21.8	0.2
15	25.2	41	0.0	19.6	38.1	0.0	15.5	30.0	33.2
16	23.1	32.9	0.0	20.5	42.0	0.0	18.5	30.1	0.0
17	18.1	28.7	0.0	19.2	30.8	0.0	18.8	33.5	0.0
18	12.9	29.6	0.0	13.0	29.4	0.0	19.4	34.0	0.0
19	14.7	33.3	0.0	14.1	34.6	0.0	19.1	36.1	0.0
20	18.4	38.1	0.0	19.8	39.1	0.0	18.7	26.2	0.0
21	18.1	36.2	0.0	22.7	39.6	1.0	15.8	27.1	0.0
22	16.5	36.1	0.0	23.7	31.8	4.8	12.6	27.0	0.0
23	20.6	36.7	0.0	11.3	28.3	0.0	12.6	29.8	0.0
24	15.2	31.8	0.0	11.8	31.9	0.0	13.0	32.4	0.0
25	14.2	33.6	0.0	16.9	36.6	0.0	15.3	28.3	0.0
26	16.4	36	0.0	19.6	36.1	0.0	12.6	18.9	31.2
27	17.9	35.1	0.0	18.6	33.6	0.0	7.1	22.2	1.1
28	14.8	31.4	0.0	17.5	33.5	0.0	10.5	24.0	0.0
29	15.2	35	0.0				13.1	26.3	0.0
30	17.1	35	0.0				13.0	27.4	0.0
31	15.6	34.8	0.0				12.2	29.4	0.0
Total			18.4			5.8			65.7

Year: 2013

Location: Northam, Western Australia

	April 2013			May 2013			June 2013			
	Min °C	Max °C	mm	Min °C	Max °C	mm	Min °C	Max °C	mm	
1	10.7	31.0	0.0	14.0	28.4	0.0	2.5	16.2	0.0	
2	12.8	31.0	0.0	16.6	22.8	3.8	7.8	16.3	0.0	
3	17.6	33.4	0.0	11.2	20.1	1.0	10.0	19.1	0.0	
4	15.9	36.1	0.0	11.7	23.3	0.0	7.0	19.0	0.0	
5	16.7	31.1	0.0	13.2	25.1	0.0	6.5	18.9	0.4	
6	17.7	27.0	0.0	10.9	22.8	0.0	11.5	20.0	0.0	
7	16.4	32.0	0.0	14.0	25.0	0.0	7.3	20.8	0.0	
8	16.4	37.0	0.0	16.1	21.1	10.4	2.8	21.1	0.0	
9	15.6	37.0	0.0	10.8	20.4	7.6	7.0	22.4	0.0	
10	15.4	36.6	0.0	10.9	19.3	5.8	9.5	17.3	1.4	
11	20.9	36.7	2.2	11.9	19.8	1.0	3.5	17.8	0.0	
12	21.6	24.8	0.0	Site scarified	5.7	19.1	0.0	6.1	18.5	0.0
13	19.5	27.5	1.2	6.3	20.0	0.0	2.0	20.0	0.0	
14	18.4	29.7	0.0	7.9	20.5	0.0	5.2	19.4	0.5	
15	18.5	31.0	0.0	4.5	22.0	0.0	10.4	13.3	0.0	
16	19.1	27.1	0.4	3.6	24.0	0.0	2.6	18.1	0.0	
17	18.6	27.0	0.0	10.1	21.3	0.8	4.5	18.0	0.0	
18	14.7	26.7	0.0	4.7	20.1	0.0	2.1	17.9	0.0	
19	17.3	25.8	6.2	9.7	20.6	3.2	2.1	17.5	0.0	
20	14.1	23.4	0.0	10.5	18.2	9.2	2.0	18.0	0.0	
21	8.8	21.1	0.0	9.0	19.8	0.0	Observe	1.0	19.1	0.0
22	13.6	22.8	2.2	3.9	19.4	0.0	-1.2	21.8	0.0	
23	7.3	24.8	0.0	Crop sown	3.0	19.7	0.0	0.8	20.1	0.0
24	9.2	28.3	0.0	5.0	21.0	0.0	7.5	21.5	0.4	
25	14.5	25.8	0.0	Applic	5.1	22.8	0.0	11.4	18.0	2.6
26	13.9	28.6	0.0	10.8	24.9	0.0	2.5	17.5	0.3	
27	10.5	26.8	0.0	10.1	23.5	0.0	4.2	19.1	0.0	
28	12.5	25.1	0.0	10.1	20.4	0.5	2.7	20.2	0.0	
29	11.0	24.6	0.0	10.5	19.1	3.0	2.4	21.3	0.0	
30	12.1	30.0	0.0	9.2	14.2	6.5	-0.2	21.6	0.0	
31				4.0	14.3	1.6				
Total			12.2			54.4				5.6

Year: 2013

Location: Northam, Western Australia

	July 2013				August 2013				September 2013			
		Min °C	Max °C	mm		Min °C	Max °C	mm		Min °C	Max °C	mm
1	Observe	-1.0	21.5	0.0		9.1	20	0.8		14.4	21.6	0.8
2		-1.0	21.0	0.0		7.1	20.7	0.4	Assess	11.2	23.0	0.0
3		4.2	16.0	0.6	Maintain	5.3	20	0		10.7	20.7	0.0
4		0.0	16.5	0.5		6	23.1	0		7.5	18.4	2.8
5		-2.5	16.1	0.0		6.8	22.4	1.6		3.5	18.2	0.0
6		-1.0	16.1	0.0		13.1	22.1	3.2		3.6	20.6	0.0
7		1.8	15.3	0.0		13.6	23.1	1.6		10.8	18.1	5.4
8	Observe	-3.2	17.5	0.0		14.7	17.9	25.2		7.3	20.1	4.2
9		0.5	19.5	0.0		8.5	18.4	3.4		5.4	21.5	0.0
10		3.5	18.1	4.4		5.8	19.9	0.2	Assess	6.8	22.2	0.0
11		5.0	16.1	0.0		9.4	18	1		11.5	18.5	12.6
12		7.7	16.7	10.3		8.7	18.6	0		11.7	19.0	8.2
13		5.1	19.8	0.4		9.8	18			12.4	20.7	0.4
14		5.8	22.0	0.0		5.3	18.5	9.6		10.4	18.2	11.4
15		5.3	22.3	0.0	Assess	6.7	18.5	0.2		10.3	18.2	1.2
16		9.0	20.0	2.5		3.9	16.6	10.5		4.2	21.0	0.0
17		7.5	13.4	6.0		6.5	17.7	0.6		6.1	17.0	9.8
18		2.0	13.0	0.0		8.1	17.4	0		6.5	19.1	0.0
19	Maintain	1.0	14.3	0.0		5.3	18.8	0		9.7	20.9	0.4
20		4.1	13.3	0.0		3.5	19	0		6.8	21.4	0.0
21		5.5	14.8	0.0		7.2	18.3	0		7.5	23.2	0.5
22		-0.3	17.4	0.0		4.3	19.2	0		11.3	18.6	3.6
23		0.3	22.7	0.0		2.3	22.6	0		12.1	19.3	6.4
24		6.5	19.1	5.8		2.8	25.9	0	Assess	15.1	20.8	4.2
25		2.2	20.6	0.0		8.4	18.6	0		9.9	20.7	0.0
26		7.1	16.1	4.2		10.6	19	2.4		5.9	21.0	0.0
27		8.5	17.7	25.8		4.1	14.5	0.4		4.5	20.7	0.6
28		5.8	18.9	2.6		7.5	18.4	8.2		5.2	22.2	0.0
29		6.0	18.8	0.4		3.6	19.2	0		6.6	20.6	0.0
30		4.5	20.6	0.0		8.6	20.3	1.8		9.1	17.8	2.8
31		7.7	20.1	1.6		14	20.5	9				
Total				65.1				80.1				75.3

Year: 2013

Location: Northam, Western Australia

	October 2013			November 2013			December 2013		
	Min °C	Max °C	mm	Min °C	Max °C	mm	Min °C	Max °C	mm
1	2.9	20.5	0	14.8	32.2	0			
2	8.1	25.2	0	16.6	28.9	0			
3	8.2	34.7	0	13.5	31.9	0			
4	12.2	22.2	0	19	37.8	0			
5	10	23.9	0	18.5	28.2	0			
6	8.4	24.2	0	12.7	26.9	0			
7	6.5	26.4	0	13.3	27	0			
8	7.5	25.9	0	Assess	11.6	29.4	0		
9	11.5	19.7	12.6		13.9	33.4	0		
10	4.8	22.2	1.5		15.6	36.2	0		
11	6.5	22.4	0		13.1	37.3	0		
12	8.8	19.9	0		16.9	34.9	0		
13	5.6	21	0		14.8	30.5	0		
14	6.8	26.7	0		14.7	32.3	0		
15	Assess	4	25.4	0		13.6	33.3	0	
16		10.1	23.5	0		18	38.5	0	
17		7.6	26	0		20.1	32.4	0	
18		6.8	26	0		16.6	22.9	0	
19		14.1	24	0		11.3	24.3	0	
20		6	18.3	8.2	Harvest	11.1	27.5	0	
21		5.8	20.7	0		14	31	0	
22		7.1	23.7	0		19.7	31.8	0	
23		9.1	25.9	0		15.4	32.8	0.2	
24		13	25.2	2.4		16.6	27.4	0	
25		10.1	28	0		10.1	27.2	0	
26		11.2	28.1	0		13.1	32.7	0	
27		12	29.1	0		15.2	34.7	0	
28		12.9	30.4	0		18.4	35.5	0	
29		14	34	0		15.8	28.5	0	
30		15.2	40	0		13.8	25	0	
31		14.7	32.5	0					
Total			24.7				0.2		

Data collected approximately 12 km from trial site.

