

Disclaimer:

This document is based on the results from an individual trial and may contain experimental use patterns that are currently off-label. **This document does not provide any interpretation and should not be taken as an endorsement of any unregistered use pattern.** Professional advice should be sought for specific recommendations to ensure access to the most up to date information and knowledge. **Any product referred to in this document must be used strictly as directed, and in accordance with all label or permit instructions. Always consult the label prior to use.**

N Management in Wheat - Variety Comparison

Trial ID: BD1702

Location: Mullalee
Investigator: Branko Duric

Trial Year: 2017

Objective:	To compare nitrogen rate responses between Wheat varieties
Planting Date:	11/05/2017
Planting Equipment:	Small Plot Tyne Planter
Wheat Varieties:	Lancer, Suntop ,DBA Bindaroi, Gauntlet, Suntime, DBA Lillaro, Caparoi
Row Spacing:	32cm
Target Plant Population:	100 plants /m ²
Application Date:	11/05/2017
Target/Stage:	Spread & Incorporated by sowing
Harvest Date:	12/11/2017
Keywords:	Nitrogen, wheat

Trial designed and analysed as a Factorial

	In Simple Terms
Table of A Means:	Mean of 'Nitrogen Rate' performance with ALL 'Variety' treatments
Table of B Means:	Mean of 'Variety' performance with ALL 'Nitrogen Rate' treatments
Table of A x B Means:	'Nitrogen performance with EACH 'Variety' treatment

Is there a significant difference for
A x B Means ?

If YES

Table A x B Means analysis is the key
information

If NO (ie nsd)

Table A or Table B Means analysis is
the key information

N Management in Wheat - Variety Comparison

Trial ID: BD1702

Location: Mullaley

Trial Year: 2017

Crop Name			Wheat				
Assessment Date			2/06/2017	25/07/2017	29/08/2017	27/10/2017	12/11/2017
Assessment Type			EMERGENCE	NDVI	NDVI	NDVI	YIELD
Assessment Unit			/m ²	Ratio	Ratio	Ratio	t/ha
Crop Stage Majority			12	31			
Plant-Evaluation Interval			22 DP1	75 DP1	110 DP1	169 DP1	185 DP1
ARM Action Codes			T1			AL	TY2
Trt No.	Treatment	Nitrogen Rate					
TABLE OF A MEANS (Nitrogen Rate)							
1	Untreated	-	86-	0.73-	0.73c	0.27td	2.65-
2	Urea	50kg N/ha	89-	0.72-	0.81b	0.34tc	2.79-
3	Urea	100kg N/ha	90-	0.74-	0.84a	0.40tb	2.73-
4	Urea	200kg N/ha	85-	0.74-	0.84a	0.46ta	2.56-
TABLE OF B MEANS (Variety)							
1	Suntop		83b	0.72c	0.80bc	0.46tb	2.90ab
2	Lancer		80b	0.74bc	0.83a	0.51ta	2.66bc
3	DBA Bindaroi		96a	0.74b	0.81ab	0.25tc	2.37c
4	Gauntlet		84b	0.72bc	0.76d	0.43tb	3.05a
5	Suntime		73c	0.67d	0.79cd	0.43tb	3.17a
6	DBA Lillaro		99a	0.74b	0.82ab	0.24tc	2.29c
7	Caparoi		97a	0.78a	0.83a	0.27tc	2.32c
TABLE OF A X B MEANS (Nitrogen Rate x Variety)							
1	Suntop	-	82-	0.71-	0.74-	0.31t-	2.75-
1a	Suntop	50kg/ha	79-	0.72-	0.82-	0.46t-	3.02-
1b	Suntop	100kg/ha	89-	0.74-	0.84-	0.53t-	3.11-
1c	Suntop	200kg/ha	82-	0.70-	0.81-	0.52t-	2.72-
2	Lancer	-	80-	0.74-	0.73-	0.33t-	2.56-
2a	Lancer	50kg/ha	83-	0.73-	0.86-	0.50t-	2.75-
2b	Lancer	100kg/ha	80-	0.72-	0.85-	0.56t-	2.78-
2c	Lancer	200kg/ha	80-	0.76-	0.87-	0.65t-	2.54-
3	DBA Bindaroi	-	96-	0.74-	0.74-	0.19t-	2.75-
3a	DBA Bindaroi	50kg/ha	94-	0.72-	0.81-	0.22t-	2.32-
3b	DBA Bindaroi	100kg/ha	102-	0.76-	0.84-	0.27t-	2.33-
3c	DBA Bindaroi	200kg/ha	91-	0.75-	0.85-	0.34t-	2.09-
4	Gauntlet	-	85-	0.73-	0.64-	0.31t-	2.67-
4a	Gauntlet	50kg/ha	85-	0.70-	0.79-	0.39t-	3.15-
4b	Gauntlet	100kg/ha	93-	0.72-	0.79-	0.45t-	2.81-
4c	Gauntlet	200kg/ha	74-	0.74-	0.84-	0.59t-	3.59-
5	Suntime	-	71-	0.67-	0.74-	0.36t-	3.12-
5a	Suntime	50kg/ha	76-	0.65-	0.77-	0.40t-	3.14-
5b	Suntime	100kg/ha	70-	0.68-	0.82-	0.43t-	3.28-
5c	Suntime	200kg/ha	75-	0.68-	0.81-	0.55t-	3.15-
6	DBA Lillaro	-	91-	0.72-	0.75-	0.18t-	2.33-
6a	DBA Lillaro	50kg/ha	105-	0.74-	0.80-	0.21t-	2.48-
6b	DBA Lillaro	100kg/ha	99-	0.76-	0.85-	0.29t-	2.51-
6c	DBA Lillaro	200kg/ha	98-	0.75-	0.85-	0.30t-	1.84-
7	Caparoi	-	93-	0.76-	0.75-	0.18t-	2.37-
7a	Caparoi	50kg/ha	102-	0.78-	0.83-	0.26t-	2.66-
7b	Caparoi	100kg/ha	97-	0.79-	0.85-	0.31t-	2.28-
7c	Caparoi	200kg/ha	95-	0.80-	0.87-	0.33t-	1.98-

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

N Management in Wheat - Variety Comparison

Trial ID: BD1702

Location: Mullaley

Trial Year: 2017

Crop Name Assessment Date Assessment Type Assessment Unit ARM Action Codes			Wheat				
			1/12/2017 PROTEIN %	1/12/2017 TEST WEIGHT kg/hL	1/12/2017 SCREENING % AL	1/12/2017 VITREOUS %	1/12/2017 N RECOVERY kg N/ha T3
Trt No.	Treatment	Nitrogen Rate					
TABLE OF A MEANS (Nitrogen Rate)							
1	Untreated	-	10.9d	82.2a	2.9t-	53.7d	50.2b
2	Urea	50kg/ha	12.4c	81.9a	3.3t-	57.9c	59.6a
3	Urea	100kg/ha	13.2b	81.4ab	3.2t-	60.7b	62.0a
4	Urea	200kg/ha	13.8a	80.6b	3.7t-	63.3a	60.5a
TABLE OF B MEANS (Variety)							
1	Suntop		12.1b	82.1bc	4.3t-	.	60.8ab
2	Lancer		12.8ab	80.7de	3.0t-	.	59.0bc
3	DBA Bindaroi		12.8ab	81.4bcd	2.9t-	59.8a	51.9d
4	Gauntlet		12.2b	83.4a	1.8t-	.	65.2ab
5	Suntime		12.2b	82.2b	4.1t-	.	67.1a
6	DBA Lillaroi		13.5a	81.0cd	3.4t-	61.2a	53.0cd
7	Caparoi		12.6b	79.8e	4.2t-	55.7b	49.7d
TABLE OF A x B MEANS (Nitrogen Rate x Variety)							
1	Suntop	-	11.2-	82.5-	3.1t-	.	53.9-
1a	Suntop	50kg/ha	11.7-	82.0-	3.3t-	.	61.6-
1b	Suntop	100kg/ha	12.3-	81.9-	5.4t-	.	66.0-
1c	Suntop	200kg/ha	13.0-	81.9-	6.0t-	.	61.7-
2	Lancer	-	11.3-	82.1-	6.3t-	.	50.5-
2a	Lancer	50kg/ha	12.8-	81.6-	2.1t-	.	61.4-
2b	Lancer	100kg/ha	13.5-	80.6-	1.9t-	.	64.9-
2c	Lancer	200kg/ha	13.4-	78.6-	2.7t-	.	59.2-
3	DBA Bindaroi	-	9.9-	82.5-	1.4t-	53.1-	47.6-
31	DBA Bindaroi	50kg/ha	12.9-	81.4-	4.3t-	61.2-	51.8-
3b	DBA Bindaroi	100kg/ha	13.7-	80.8-	4.0t-	60.8-	55.0-
3c	DBA Bindaroi	200kg/ha	14.7-	81.0-	2.6t-	64.4-	53.2-
4	Gauntlet	-	10.9-	83.3-	2.2t-	.	51.2-
4a	Gauntlet	50kg/ha	12.2-	84.2-	3.1t-	.	66.7-
4b	Gauntlet	100kg/ha	12.9-	83.3-	1.3t-	.	62.4-
4c	Gauntlet	200kg/ha	12.8-	82.6-	1.0t-	.	80.4-
5	Suntime	-	11.0-	82.7-	3.4t-	.	60.0-
5a	Suntime	50kg/ha	12.0-	82.6-	2.6t-	.	65.4-
5b	Suntime	100kg/ha	12.7-	82.2-	7.0t-	.	71.9-
5c	Suntime	200kg/ha	13.0-	81.5-	4.3t-	.	71.1-
6	DBA Lillaroi	-	11.5-	81.2-	2.3t-	57.7-	46.2-
6a	DBA Lillaroi	50kg/ha	13.2-	81.4-	4.7t-	59.3-	56.4-
6b	DBA Lillaroi	100kg/ha	13.9-	81.2-	1.7t-	63.5-	60.5-
6c	DBA Lillaroi	200kg/ha	15.3-	80.2-	5.9t-	64.2-	48.9-
7	Caparoi	-	10.4-	81.0-	3.3t-	50.3-	42.3-
7a	Caparoi	50kg/ha	11.9-	80.1-	3.9t-	53.2-	54.0-
7b	Caparoi	100kg/ha	13.6-	79.7-	4.1t-	57.9-	53.4-
7c	Caparoi	200kg/ha	14.3-	78.3-	6.0t-	61.3-	49.1-

N Management in Wheat - Variety Comparison

Trial ID: BD1702

Location:

Mullaley

Trial Year:

2017

FACTORIAL/POOLED ERROR AOV Wheat 2/06/2017 EMERGENCE /m² 12 22 DP1 T1						
Source	DF	Sum of Squares	Mean Square	F	Prob.(F)	LSD (.05)
Total	111	17607.400077				
R	3	265.481131	88.493710	1.098	0.3549	
A	3	499.332973	166.444324	2.065	0.1113	5
B	6	9007.088797	1501.181466	18.626	0.0001	6
AB	18	1307.155064	72.619726	0.901	0.5790	13
ERROR	81	6528.342111	80.596816			

FACTORIAL/POOLED ERROR AOV Wheat 25/07/2017 NDVI Ratio 31 75 DP1						
Source	DF	Sum of Squares	Mean Square	F	Prob.(F)	LSD (.05)
Total	111	0.221880				
R	3	0.008793	0.002931	2.982	0.0361	
A	3	0.006650	0.002217	2.255	0.0882	0.02
B	6	0.113182	0.018864	19.190	0.0001	0.02
AB	18	0.013632	0.000757	0.770	0.7274	0.04
ERROR	81	0.079623	0.000983			

FACTORIAL/POOLED ERROR AOV Wheat 29/08/2017 NDVI Ratio 110 DP1						
Source	DF	Sum of Squares	Mean Square	F	Prob.(F)	LSD (.05)
Total	111	0.456652				
R	3	0.025490	0.008497	7.118	0.0003	
A	3	0.245027	0.081676	68.424	0.0001	0.02
B	6	0.052274	0.008712	7.299	0.0001	0.02
AB	18	0.037174	0.002065	1.730	0.0504	0.05
ERROR	81	0.096687	0.001194			

FACTORIAL/POOLED ERROR AOV Wheat 27/10/2017 NDVI Ratio 169 DP1 AL						
Source	DF	Sum of Squares	Mean Square	F	Prob.(F)	LSD (.05)
Total	111	0.219343				
R	3	0.002161	0.000720	1.968	0.1253	
A	3	0.060498	0.020166	55.113	0.0001	0.01
B	6	0.118691	0.019782	54.063	0.0001	0.01
AB	18	0.008355	0.000464	1.269	0.2309	0.03
ERROR	81	0.029638	0.000366			

N Management in Wheat - Variety Comparison

Trial ID: BD1702

Location:

Mullaley

Trial Year:

2017

FACTORIAL/POOLED ERROR AOV Wheat Moisture Corrected 12/11/2017 YIELD t/ha 185 DP1 TY2						
Source	DF	Sum of Squares	Mean Square	F	Prob.(F)	LSD (.05)
Total	110	41.901127				
R	3	0.701299	0.233766	0.826	0.4835	
A	3	0.817806	0.272602	0.963	0.4145	0.28
B	6	12.845654	2.140942	7.562	0.0001	0.38
AB	18	4.887118	0.271507	0.959	0.5136	0.75
ERROR	80	22.649250	0.283116			

FACTORIAL/POOLED ERROR AOV Wheat 1/12/2017 PROTEIN %						
Source	DF	Sum of Squares	Mean Square	F	Prob.(F)	LSD (.05)
Total	110	280.100863				
R	3	14.090982	4.696994	4.351	0.0068	
A	3	133.521696	44.507232	41.233	0.0001	0.6
B	6	23.50405	3.851567	3.568	0.0035	0.7
AB	18	23.025595	1.279200	1.185	0.2934	1.5
ERROR	80	86.353185	1.079415			

FACTORIAL/POOLED ERROR AOV Wheat 1/12/2017 TEST WEIGHT kg/hL						
Source	DF	Sum of Squares	Mean Square	F	Prob.(F)	LSD (.05)
Total	110	391.550119				
R	3	4.284881	1.428294	0.595	0.6200	
A	3	42.605119	14.201706	5.918	0.0011	0.8
B	6	129.618452	21.603075	9.003	0.0001	1.1
AB	18	23.074881	1.281938	0.534	0.9331	2.2
ERROR	80	191.966786	2.399585			

FACTORIAL/POOLED ERROR AOV Wheat 1/12/2017 SCREENING % AL						
Source	DF	Sum of Squares	Mean Square	F	Prob.(F)	LSD (.05)
Total	110	9.224712				
R	3	0.028334	0.009445	0.119	0.9486	
A	3	0.082101	0.027367	0.345	0.7928	0.2
B	6	0.950872	0.158479	1.999	0.0755	0.2
AB	18	1.819527	0.101085	1.275	0.2271	0.4
ERROR	80	6.343878	0.079298			

N Management in Wheat - Variety Comparison

Trial ID: BD1702

Location:

Mullaley

Trial Year:

2017

FACTORIAL/POOLED ERROR AOV Wheat 1/12/2017 VITREOUS %						
Source	DF	Sum of Squares	Mean Square	F	Prob.(F)	LSD (.05)
Total	47	1384.749792				
R	3	14.163958	4.721319	0.366	0.7777	
A	3	605.498958	201.832986	15.661	0.0001	2.0
B	2	264.571667	132.285833	10.264	0.0003	2.6
AB	6	75.211667	12.535278	0.973	0.4590	5.2
ERROR	33	425.303542	12.887986			

FACTORIAL/POOLED ERROR AOV Wheat 1/12/2017 N RECOVERY kg/ha T3						
Source	DF	Sum of Squares	Mean Square	F	Prob.(F)	LSD (.05)
Total	110	15588.376705				
R	3	139.998939	46.666313	0.519	0.6706	
A	3	2380.892476	793.630825	8.822	0.0001	5.1
B	6	4390.033020	731.672170	8.133	0.0001	6.7
AB	18	1480.749179	82.263843	0.914	0.5637	13.4
ERROR	80	7196.703090	89.958789			

Assessment Type

NDVI = Normalized difference vegetation index

N RECOVERY = Nitrogen recovery in grain

Crop Stage Majority

12 = 2 Leaves unfolded

31 = First node at least 1 cm above tillering node

ARM Action Codes

AL = Automatic log transformation of X+1

T1 = ([C1]/4)/.32

TY2 = 0.5*[C6]*(100-[C12])/87.5

T3 = ([C7]*1000)*([C11]/100)*.175

DP1 = Days after Planting

Application Description	
Application Date:	11/05/2017
Application Method:	SPREAD
Application Timing:	IBS
Application Placement:	SOIL