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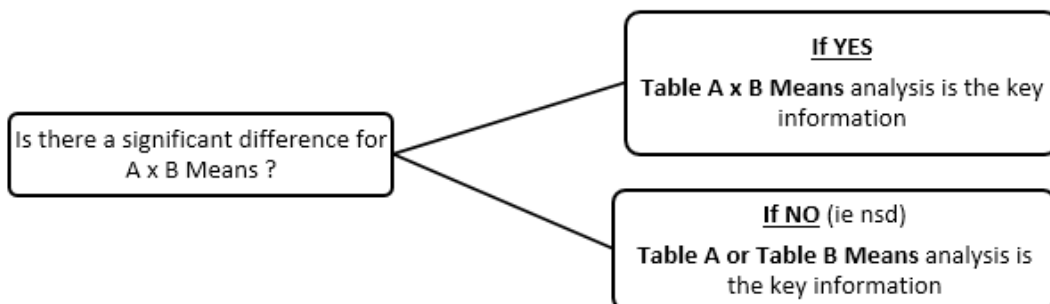
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Nitrogen Management in Wheat - Variety Comparison 2017

Trial ID: DK1702	Location: Billa Billa	Trial Year: 2017
	Investigator: Denielle Kilby	

Objective:	To compare nitrogen rate responses between wheat varieties
Planting Date:	5/05/2017
Planting Equipment:	Small Plot Tyne Planter
Wheat Varieties:	EGA Gregory, Lancer, Suntop, Gauntlet & Suntime
Row Spacing:	32cm
Target Plant Population:	90 plants /m ²
Application Date:	5/05/2017
Target/Stage:	Spread & Incorporated by sowing
Harvest Date:	28/10/2017
Keywords:	Nitrogen, wheat, variety

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



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Crop Name			Wheat			
Assessment Date			18/05/2017	3/07/2017	7/08/2017	28/10/2017
Assessment Type			EMERGENCE	NDVI	NDVI	YIELD
Assessment Unit			/m ²	RATIO	RATIO	t/ha
Crop Stage Majority			13 DAP	33	61	99
Treatment-Evaluation Interval				59 DAP	94 DAP	176 DAP
ARM Action Codes			T1			TY2
Trt No.	Treatment	Product Rate				
TABLE OF A MEANS (Variety)						
1	Suntop		48bc	0.47ab	0.38b	1.70a
2	Lancer		46c	0.50a	0.43a	1.65a
3	EGA Gregory		55ab	0.51a	0.39b	1.68a
4	Gauntlet		51abc	0.36c	0.33c	1.38b
5	Suntime		59a	0.45b	0.35c	1.62a
TABLE OF B MEANS (Nitrogen Rate)						
1	Untreated	-	52-	0.47-	0.36b	1.59-
2	Urea	109kg/ha	55-	0.48-	0.38ab	1.70-
3	Urea	217kg/ha	47-	0.43-	0.36b	1.49-
4	Urea	435kg/ha	53-	0.46-	0.40a	1.65-
TABLE OF A x B MEANS (Variety x Nitrogen Rate)						
1	Suntop		53-	0.49-	0.37-	1.83-
1a	Suntop		58-	0.53-	0.39-	1.97-
	Urea	109kg/ha				
1b	Suntop		39-	0.38-	0.34-	1.37-
	Urea	217kg/ha				
1c	Suntop		42-	0.47-	0.41-	1.65-
	Urea	435kg/ha				
2	Lancer		38-	0.50-	0.40-	1.59-
2a	Lancer		46-	0.54-	0.44-	1.67-
	Urea	109kg/ha				
2b	Lancer		40-	0.48-	0.42-	1.60-
	Urea	217kg/ha				
2c	Lancer		58-	0.49-	0.45-	1.72-
	Urea	435kg/ha				
3	EGA Gregory		57-	0.51-	0.35-	1.56-
3a	EGA Gregory		59-	0.52-	0.39-	1.81-
	Urea	109kg/ha				
3b	EGA Gregory		50-	0.48-	0.38-	1.61-
	Urea	217kg/ha				
3c	EGA Gregory		55-	0.54-	0.43-	1.75-
	Urea	435kg/ha				
4	Gauntlet		43-	0.36-	0.31-	1.37-
4a	Gauntlet		53-	0.34-	0.33-	1.30-
	Urea	109kg/ha				
4b	Gauntlet		50-	0.38-	0.34-	1.49-
	Urea	217kg/ha				
4c	Gauntlet		58-	0.36-	0.35-	1.36-
	Urea	435kg/ha				
5	Suntime		71-	0.49-	0.35-	1.59-
5a	Suntime		58-	0.46-	0.36-	1.75-
	Urea	109kg/ha				
5b	Suntime		56-	0.41-	0.32-	1.39-
	Urea	217kg/ha				
5c	Suntime		50-	0.44-	0.36-	1.76-
	Urea	435kg/ha				

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

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Crop Name Assessment Date Assessment Type Assessment Unit ARM Action Codes			Wheat			
			6/11/2017 PROTEIN %	6/11/2017 TEST WEIGHT kg/hL	6/11/2017 SCREENING % AS	6/11/2017 N RECOVERY kg/ha T3
Trt No.	Treatment	Product Rate				
TABLE OF A MEANS (Variety)						
1	Suntop		10.3c	76.8a	9.2t-	30.7-
2	Lancer		11.2a	76.7a	9.1t-	32.2-
3	EGA Gregory		10.0c	75.2c	8.1t-	29.4-
4	Gauntlet		10.8b	77.1a	10.2t-	26.2-
5	Suntime		10.9ab	75.9b	8.1t-	31.0-
TABLE OF B MEANS (Nitrogen Rate)						
1	Untreated	-	10.2c	75.9-	7.7t-	28.2-
2	Urea	109kg/ha	10.6b	76.6-	9.2t-	31.6-
3	Urea	217kg/ha	10.8ab	76.5-	10.1t-	27.9-
4	Urea	435kg/ha	11.0a	76.4-	8.8t-	32.0-
TABLE OF A X B MEANS (Variety x Nitrogen Rate)						
1	Suntop		9.9-	76.1-	8.7t-	31.4-
1a	Suntop Urea	109kg/ha	10.1-	76.9-	8.9t-	35.1-
1b	Suntop Urea	217kg/ha	10.7-	77.5-	9.0t-	25.4-
1c	Suntop Urea	435kg/ha	10.7-	76.7-	10.3t-	31.1-
2	Lancer		10.9-	76.8-	9.0t-	30.4-
2a	Lancer Urea	109kg/ha	11.3-	76.7-	8.6t-	32.6-
2b	Lancer Urea	217kg/ha	11.1-	76.7-	11.3t-	31.0-
2c	Lancer Urea	435kg/ha	11.5-	76.8-	7.8t-	34.7-
3	EGA Gregory		9.7-	74.7-	5.0t-	26.2-
3a	EGA Gregory Urea	109kg/ha	10.0-	75.5-	7.4t-	31.5-
3b	EGA Gregory Urea	217kg/ha	10.1-	75.5-	14.2t-	28.3-
3c	EGA Gregory Urea	435kg/ha	10.4-	75.3-	6.9t-	31.8-
4	Gauntlet		10.4-	76.6-	9.7t-	24.7-
4a	Gauntlet Urea	109kg/ha	10.8-	77.5-	13.1t-	24.9-
4b	Gauntlet Urea	217kg/ha	10.8-	77.0-	9.1t-	27.9-
4c	Gauntlet Urea	435kg/ha	11.3-	77.3-	8.9t-	27.1-
5	Suntime		10.2-	75.6-	6.4t-	28.2-
5a	Suntime Urea	109kg/ha	11.0-	76.4-	8.4t-	33.6-
5b	Suntime Urea	217kg/ha	11.2-	75.7-	7.4t-	27.1-
5c	Suntime Urea	435kg/ha	11.3-	75.9-	10.5t-	35.0-

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Assessment Type

NDVI = Normalized difference vegetation index

Crop Stage Majority

33 = Node 3 at least 2 cm above node 2

61 = Beginning of flowering: first anthers visible

99 = Harvested product

ARM Action Codes

AS = Automatic square root transformation of X+0.5

 $T1 = ([C1]/4) * (100/32)$ $TY2 = 0.617284 * [C8] * (100 - [C11]) / 87.5$ $T3 = [C9] * 1000 * ([C10] / 100) * .175$

DAP = Days after Planting

FACTORIAL/POOLED ERROR AOV Wheat 18/05/2017 EMERGENCE /m² 13 DAP T1						
Source	DF	Sum of Squares	Mean Square	F	Prob.(F)	LSD (.05)
Total	78	15301.934136				
R	3	1817.464193	605.821398	4.180	0.0097	
A	4	1824.557834	456.139459	3.148	0.0210	9
B	3	610.249837	203.416612	1.404	0.2513	8
AB	12	2934.163411	244.513618	1.687	0.0946	17
ERROR	56	8115.498861	144.919623			

FACTORIAL/POOLED ERROR AOV Wheat 3/07/2017 NDVI RATIO 59 DAP						
Source	DF	Sum of Squares	Mean Square	F	Prob.(F)	LSD (.05)
Total	79	0.596984				
R	3	0.028528	0.009509	2.023	0.1208	
A	4	0.227269	0.056817	12.088	0.0001	0.05
B	3	0.028848	0.009616	2.046	0.1176	0.04
AB	12	0.044432	0.003703	0.788	0.6606	0.10
ERROR	57	0.267908	0.004700			

FACTORIAL/POOLED ERROR AOV Wheat 7/08/2017 NDVI RATIO 94 DAP						
Source	DF	Sum of Squares	Mean Square	F	Prob.(F)	LSD (.05)
Total	79	0.264060				
R	3	0.032370	0.010790	6.207	0.0010	
A	4	0.095778	0.023945	13.774	0.0001	0.03
B	3	0.023180	0.007727	4.445	0.0071	0.03
AB	12	0.013641	0.001137	0.654	0.7869	0.06
ERROR	57	0.099090	0.001738			

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FACTORIAL/POOLED ERROR AOV Wheat 28/10/2017 YIELD t/ha 176 DAP TY2						
Source	DF	Sum of Squares	Mean Square	F	Prob.(F)	LSD (.05)
Total	79	10.390585				
R	3	1.863927	0.621309	5.952	0.0013	
A	4	1.108739	0.277185	2.655	0.0420	0.23
B	3	0.494022	0.164674	1.578	0.2048	0.20
AB	12	0.973759	0.081147	0.777	0.6708	0.46
ERROR	57	5.950138	0.104388			

FACTORIAL/POOLED ERROR AOV Wheat 6/11/2017 PROTEIN % 185 DAP						
Source	DF	Sum of Squares	Mean Square	F	Prob.(F)	LSD (.05)
Total	79	48.500000				
R	3	13.477000	4.492333	20.310	0.0001	
A	4	13.261250	3.315313	14.988	0.0001	0.3
B	3	7.492000	2.497333	11.290	0.0001	0.3
AB	12	1.661750	0.138479	0.626	0.8112	0.7
ERROR	57	12.608000	0.221193			

FACTORIAL/POOLED ERROR AOV Wheat 6/11/2017 TEST WEIGHT kg/hL 185 DAP						
Source	DF	Sum of Squares	Mean Square	F	Prob.(F)	LSD (.05)
Total	79	86.718875				
R	3	3.629375	1.209792	1.948	0.1321	
A	4	38.157000	9.539250	15.361	0.0001	0.6
B	3	5.117375	1.705792	2.747	0.0512	0.5
AB	12	4.417000	0.368083	0.593	0.8390	1.1
ERROR	57	35.398125	0.621020			

FACTORIAL/POOLED ERROR AOV Wheat 6/11/2017 SCREENING % 185 DAP AS						
Source	DF	Sum of Squares	Mean Square	F	Prob.(F)	LSD (.05)
Total	79	33.850363				
R	3	3.225740	1.075247	2.835	0.0461	
A	4	1.262027	0.315507	0.832	0.5105	0.4
B	3	1.636571	0.545524	1.439	0.2411	0.4
AB	12	6.110494	0.509208	1.343	0.2210	0.9
ERROR	57	21.615532	0.379220			

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FACTORIAL/POOLED ERROR AOV Wheat 6/11/2017 N RECOVERY kg/ha 185 DAP T3						
Source	DF	Sum of Squares	Mean Square	F	Prob.(F)	LSD (.05)
Total	79	3944.989845				
R	3	1094.310372	364.770124	10.553	0.0001	
A	4	340.602282	85.150570	2.463	0.0553	4.2
B	3	275.669123	91.889708	2.658	0.0568	3.7
AB	12	264.172476	22.014373	0.637	0.8019	8.3
ERROR	57	1970.235592	34.565537			

Application Description	
Application Date:	5/05/2017
Application Method:	SPREAD
Application Timing:	IBS
Application Placement:	SOIL