N Management in Wheat 2016 – Tulloona Varieties

Trial ID: DK1604 **Location:** Tulloona **Trial Year:** 2016
Investigator: Denielle Kilby

Planting Date:	**14/06/2016**		
Planting Equipment:	**Small Plot Planter**		
Wheat Varieties:	**EGA Gregory & Lancer**		
Row Spacing:	**32cm**		
Target Plant Population:	**100 Plants /m²**		
Application Code:	**A**	**B**	**C**
Application Date:	**24/02/2016**	**14/06/2016**	**8/08/2016**
Target/Stage:	**Spread Surface Feb**	**Spread & IBS**	**Spread at GS 30**
Harvest Date:	**15/11/2016**		

Crop Name				**Wheat**				
Assessment Date				**1/07/2016**	**8/08/2016**	**10/10/2016**	**12/10/2016**	**15/11/2016**
Assessment Type				**EMERGENCE**	**NDVI**	**NDVI**	**HEADS**	**YIELD**
Assessment Unit				**/m²**	**RATIO**	**RATIO**	**/m²**	**t/ha**
Crop Stage Majority				**11**	**30**	**65**	**58**	**89**
Plant-Evaluation Interval				**17 DP1**	**55 DP1**	**118 DP1**	**120 DP1**	**154 DP1**
ARM Action Codes				**T1**	**ET20**	**ET13**	**T2**	**TY3**
Trt No.	**Treatment**	**Product Rate**	**Appln Code**					
1	Untreated EGA Gregory	-	-	67.8-	0.58c-f	0.51k	259-	4.10e
2	Urea EGA Gregory	109kg/ha	A	73.4-	0.66a	0.59j	279-	4.72a-d
3	Urea EGA Gregory	217kg/ha	A	69.7-	0.64ab	0.68ef	243-	4.85ab
4	Urea EGA Gregory	435kg/ha	A	65.6-	0.64ab	0.70de	281-	4.96a
5	Urea Urea EGA Gregory	109kg/ha 109kg/ha	A C	75.8-	0.62abc	0.68ef	262-	4.95ab
6	Urea EGA Gregory	109kg/ha	B	69.1-	0.64ab	0.62ij	261-	4.84ab
7	Urea EGA Gregory	217kg/ha	B	62.5-	0.64ab	0.65ghi	301-	4.87ab
8	Urea EGA Gregory	435kg/ha	B	61.1-	0.60a-d	0.72bcd	289-	4.81abc
9	Urea Urea EGA Gregory	109kg/ha 109kg/ha	B C	59.0-	0.59a-e	0.69def	270-	4.85ab
10	Urea EGA Gregory	109kg/ha	C	59.8-	0.55def	0.64hi	247-	4.70bcd
11	Urea EGA Gregory	217kg/ha	C	69.1-	0.63abc	0.68ef	227-	4.94ab
12	Urea EGA Gregory	435kg/ha	C	75.0-	0.60a-d	0.69def	284-	4.93ab
13	Untreated Lancer	-	-	63.3-	0.57c-f	0.57	243-	3.66f
14	Urea Lancer	109kg/ha	A	71.3-	0.57c-f	0.67fgh	261-	4.26e
15	Urea Lancer	217kg/ha	A	74.8-	0.59b-e	0.71cd	279-	4.58cd
16	Urea Lancer	435kg/ha	A	74.8-	0.59b-e	0.75a	283-	4.92ab
17	Urea Urea Lancer	109kg/ha 109kg/ha	A C	66.8-	0.56def	0.72bcd	288-	4.86ab

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Crop Name				Wheat				
Assessment Date				1/07/2016	8/08/2016	10/10/2016	12/10/2016	15/11/2016
Assessment Type				EMERGENCE	NDVI	NDVI	HEADS	YIELD
Assessment Unit				/m²	RATIO	RATIO	/m²	t/ha
Crop Stage Majority				11	30	65	58	89
Plant-Evaluation Interval				17 DP1	55 DP1	118 DP1	120 DP1	154 DP1
ARM Action Codes				T1	ET20	ET13	T2	TY3
Trt No.	Treatment	Product Rate	Appln code					
18	Urea Lancer	109kg/ha	B	53.9-	0.52f	0.70de	266-	4.56d
19	Urea Lancer	217kg/ha	B	73.4-	0.56def	0.73abc	270-	4.78a-d
20	Urea Lancer	435kg/ha	B	72.7-	0.55	0.75ab	309-	4.87ab
21	Urea Urea Lancer	109kg/ha 109kg/ha	B C	69.5-	0.55def	0.74ab	276-	4.86ab
22	Urea Lancer	109kg/ha	C	64.6-	0.54ef	0.67fg	245-	4.24e
23	Urea Lancer	217kg/ha	C	55.3-	0.52f	0.73abc	252-	4.53d
24	Urea Lancer	435kg/ha	C	75.2-	0.52f	0.75a	279-	4.73a-d
			LSD P=	nsd	0.062	0.028	nsd	0.256
			Treatment Prob.(F)=	0.0593	0.0001	0.0001	0.1508	0.0001
			CV=					3.9

Means followed by same letter do not significantly differ (P=.05, LSD)
t=Mean descriptions are reported in transformed data units, and are not de-transformed.
Mean comparisons performed only when AOV Treatment P (F) is significant at mean comparison OSL.
Missing data estimates are included in columns: Average = 8, 13, 29
nsd = No significant difference

N Management in Wheat 2016 – Tulloona Varieties

Trial ID: DK1604 **Location:** Tulloona **Trial Year:** 2016

Crop Name				Wheat			
Assessment Date				8/01/2017	8/01/2017	8/01/2017	8/01/2017
Assessment Type				PROTEIN	TEST WEIGHT	SCREENING	N RECOVERY
Assessment Unit				%	kg/hL	%	kg N/ha
ARM Action Codes						AL	T4
Trt No.	Treatment	Product Rate	Appln. Code				
1	Untreated EGA Gregory	-	-	9.3m	82.1-	5.5-	67.0j
2	Urea EGA Gregory	109kg/ha	A	9.9lm	83.2-	4.4-	81.9i
3	Urea EGA Gregory	217kg/ha	A	10.9ijk	81.9-	4.2-	92.7fgh
4	Urea EGA Gregory	435kg/ha	A	11.9de	82.8-	3.6-	103.3bc
5	Urea Urea EGA Gregory	109kg/ha 109kg/ha	A C	11.5e-i	81.4-	5.0-	99.2c-f
6	Urea EGA Gregory	109kg/ha	B	10.5kl	82.4-	4.6-	88.4ghi
7	Urea EGA Gregory	217kg/ha	B	11.0h-k	82.7-	5.2-	94.1efg
8	Urea EGA Gregory	435kg/ha	B	12.0de	81.1-	4.4-	100.7cde
9	Urea Urea EGA Gregory	109kg/ha 109kg/ha	B C	11.7efg	81.4-	4.2-	98.9c-f
10	Urea EGA Gregory	109kg/ha	C	10.4kl	82.8-	5.3-	85.7hi
11	Urea EGA Gregory	217kg/ha	C	11.8def	81.6-	4.0-	101.7cd
12	Urea EGA Gregory	435kg/ha	C	12.3cd	81.5-	4.1-	106.3abc
13	Untreated Lancer	-	-	10.7jk	83.3-	5.4-	68.8j
14	Urea Lancer	109kg/ha	A	11.2g-j	83.0-	4.6-	83.2i
15	Urea Lancer	217kg/ha	A	11.9de	82.1-	4.8-	95.3d-g
16	Urea Lancer	435kg/ha	A	12.7bc	81.5-	4.5-	109.5ab
17	Urea Urea Lancer	109kg/ha 109kg/ha	A C	11.9de	82.1-	4.5-	101.6cd
18	Urea Lancer	109kg/ha	B	11.6e-h	83.2-	4.9-	92.3fgh
19	Urea Lancer	217kg/ha	B	12.6bc	82.3-	3.9-	104.9abc
20	Urea Lancer	435kg/ha	B	13.1ab	82.4-	4.3-	111.6a
21	Urea Urea Lancer	109kg/ha 109kg/ha	B C	12.3cd	82.3-	4.7-	104.6abc

N Management in Wheat 2016 – Tulloona Varieties

Trial ID: DK1604 **Location:** Tulloona **Trial Year:** 2016

Crop Name				Wheat			
Assessment Date				8/01/2017	8/01/2017	8/01/2017	8/01/2017
Assessment Type				PROTEIN	TEST WEIGHT	SCREENING	N RECOVERY
Assessment Unit				%	kg/hL	%	kg N/ha
ARM Action Codes						AL	T4
Trt No.	Treatment	Product Rate	Appln. Code				
22	Urea Lancer	109kg/ha	C	11.3f-i	82.4-	4.7-	83.8i
23	Urea Lancer	217kg/ha	C	12.7bc	81.6-	5.5-	100.1cde
24	Urea Lancer	435kg/ha	C	13.5a	82.1-	4.5-	111.7a
			LSD P=	0.59	nsd	nsd	7.48
			Treatment Prob.(F)=	0.0001	0.2596	0.2090	0.0001

Pest Scientific Name				*Fusarium pseudograminearum*		*Bipolaris sorokiniana*
Pest Name				Crown Rot		Common Root Rot
Description				Severity	Incidence	Incidence
Part Assessed				Stubble	Crown	Crown
Assessment Type				CR SEVERITY	PRESENCE	PRESENCE
Assessment Unit				Rating	%	%
ARM Action Codes				AS		AS
Trt No.	Treatment	Product Rate	Appln. Code			
1	Untreated EGA Gregory	-	-	1.64de	17.0cd	0.6-
6	Urea EGA Gregory	109kg/ha	B	2.41cde	30.0bc	2.6-
7	Urea EGA Gregory	217kg/ha	B	4.11bc	22.0cd	4.0-
8	Urea EGA Gregory	435kg/ha	B	10.26a	43.0ab	0.0-
13	Untreated Lancer	-	-	0.99e	12.0d	2.1-
18	Urea Lancer	109kg/ha	B	3.65bcd	32.0bc	5.8-
19	Urea Lancer	217kg/ha	B	5.74b	32.0bc	4.6-
20	Urea Lancer	435kg/ha	B	12.60a	58.0a	2.1-
			LSD P=	0.623t	17.27	nsd
			Treatment Prob.(F)=	0.0001	0.0005	0.0982

N Management in Wheat 2016 – Tulloona Varieties

Trial ID: **DK1604** **Location:** **Tulloona** **Trial Year:** **2016**

Part Assessed
Stubble = stubble
Assessment Type
NDVI = Normalized difference vegetation index
N RECOVERY = Nitrogen recovery in grain kg N/ha
CR SEVERITY = % Basal browning x extent of browning
PRESENCE = % of samples infected
Crop Stage Majority
11 = First leaf unfolded
30 = Beginning of stem elongation: pseudostem & tillers erect, 1st internode elong.
65 = Full flowering: 50% of anthers mature
58 = 80% of inflorescence emerged
89 = Fully ripe: grain hard, difficult to divide with thumbnail
ARM Action Codes
ET20 = Excluded treatment 20
ET13 = Excluded treatment 13
AL = Automatic log transformation of X+1
AS = Automatic square root transformation of X+0.5
T1 = ([C1]/4)/.32
T2 = ([C4]/2)/.32
TY3 = 0.5555555*[C7]
T4 = [C8]*[C9]*1.75

DP1 = Days after Planting

Application Description			
	A	B	C
Application Date:	**24/02/2016**	**14/06/2016**	**8/08/2016**
Application Method:	**SPREAD**		
Application Timing:	**FEBRUARY**	**IBS**	**GS30**
Application Placement:	**SURFACE**	**INCORPN**	**TOPDRESS**
Dew Presence (Y/N):	**No**		
Soil Moisture:	**DRY**	**FAIR**	**FAIR**
% Cloud Cover:	**0**		
Next Moisture Occurred On:	**19/03/2016 – 1.4mm**	**20/06/2016 – 21.6mm**	

Application Equipment			
	A	B	C
Application Equipment:	**SPREAD**	**PLANTER**	**PLANTER**
Equipment Type:	**MANUAL**	**SMALL PLOT PLANTER**	**MANUAL**