

**Table (1):** Mean square estimates of ordinary and combining ability analysis for root characteristics, some physiological, yield and yield components under water deficit and normal conditions.

S.O.V	d.f	Root length		Number of roots/plant		Root volume		Root /shoot ratio	
		N	D	N	D	N	D	N	D
<b>Replications</b>	2	0.85	0.87	2.89	2.13	2.36	1.84	0.09	0.01
<b>Genotypes</b>	22	43.80**	21.15**	11991.76**	6405.60**	1104.61**	452.45**	0.62	0.26
<b>Parents</b>	7	41.45**	22.49**	3540.14**	926.14**	185.95**	47.52**	0.74	0.04
<b>Parents vs. Crosses</b>	1	11.91**	5.54*	115897.00**	78144.12**	2846.74**	2087.03**	1.90	0.18
<b>Crosses</b>	14	47.25**	21.59**	8795.77**	4021.14**	1439.51**	538.17**	0.46	0.37
<b>Lines (female gca)</b>	4	24.08**	18.70**	4181.20**	4857.50**	245.17**	96.19**	0.60	0.22
<b>Testers (male gca)</b>	2	38.25**	2.57	9504.80**	6068.60**	4633.09**	1762.02**	0.48	0.31
<b>Lines x Testers (sca)</b>	8	61.09**	27.80**	10925.80**	3091.10**	1238.28**	453.19**	0.39	0.46
<b>Error</b>	45	0.39	0.43	2.08	1.46	2.59	2.42	0.10	0.04

\*and \*\* significant at 0.05 and 0.01 probability levels, respectively

**Table (1): Cont....**

S.O.V	d.f	Flag leaf area		Chlorophyll content		Relative water content		No. of panicles /plant	
		N	D	N	D	N	D	N	D
<b>Replications</b>	2	0.17	1.94	1.75	1.62	2.05	2.79	1.09	0.39
<b>Genotypes</b>	22	267.77**	92.75**	34.19**	36.49**	513.90**	636.62**	162.75**	19.54**
<b>Parents</b>	7	257.53**	75.97**	36.60**	40.39**	421.22**	972.68**	51.38**	11.79**
<b>Parents vs. Crosses</b>	1	115.92**	19.53**	96.40**	0.94	620.39**	1.41	1430.01**	42.61**
<b>Crosses</b>	14	283.74**	106.37**	28.54**	37.07**	552.64**	513.96**	127.91**	21.77**
<b>Lines (female gca)</b>	4	36.60**	90.37**	29.44**	8.56**	387.24**	150.75**	35.70**	16.20**
<b>Testers (male gca)</b>	2	1169.40**	90.98**	53.06**	13.64**	679.51**	229.69**	704.60**	34.20**
<b>Lines x Testers (sca)</b>	8	185.89**	118.21**	21.96**	57.19**	603.61**	766.64**	29.85**	21.45**
<b>Error</b>	45	0.07	0.63	1.65	1.69	0.87	0.77	0.97	2.16

**Table (1): Cont....**

S.O.V	d.f	1000 grain weight		No. of filled grains / panicle		Fertility %		Grain yield/ plant	
		N	D	N	D	N	D	N	D
<b>Replications</b>	2	0.16	0.68	0.54	0.70	1.08	2.23	1.20	0.97
<b>Genotypes</b>	22	20.75**	19.39**	3961.30**	4254.78**	23.62**	262.80**	225.07**	231.84**
<b>Parents</b>	7	22.96**	18.53**	3712.23**	7769.95**	24.98**	121.88**	144.00**	104.04**
<b>Parents vs. Crosses</b>	1	1.53	48.40**	122.96**	126.39**	8.95**	120.49**	3064.78**	2308.08**
<b>Crosses</b>	14	21.01**	17.75**	4359.99**	2792.09**	23.98**	343.42**	62.77**	147.44**
<b>Lines (female gca)</b>	4	30.04**	12.03**	2142.92**	2105.80**	37.13**	230.85**	58.16**	33.85**
<b>Testers (male gca)</b>	2	37.83**	21.78**	12020.62**	2568.20**	8.60**	51.97**	162.76**	478.03**
<b>Lines x Testers (sca)</b>	8	12.30**	19.61**	3553.37**	3191.20**	21.26**	472.57**	40.07**	121.59**
<b>Error</b>	45	0.37	1.94	7.01	6.10	2.07	1.29	2.63	3.03

\*and \*\* significant at 0.05 and 0.01 probability levels, respectively.

**Table(3):** Estimates of general combining ability (GCA) effects for root characteristics, some physiological traits, yield and yield components traits under water deficit and normal conditions

Genotypes	Root Length		Number of roots /plant		Root volume		Root /shoot ratio	
	N	D	N	D	N	D	N	D
L1- IR 69432	-1.50**	0.75**	-16.27**	-24.00**	5.33**	-2.42**	0.21*	0.23**
L2- IR 6500-127	-1.16**	-1.53**	-16.93**	-19.00**	-7.33**	-3.98**	-0.16	0.05
L3- IR 12 G 3222	2.50**	1.78**	27.07**	26.00**	-2.44**	3.24**	-0.18	0.00
L4- IR 12 G 3213	0.72**	0.43	19.73**	22.67**	4.56**	-0.09	0.35**	-0.13
L5- 11 L 236	-0.57*	-1.43**	-13.60**	-5.67**	-0.11	3.25**	-0.21*	-0.15*
S.E (g <sub>i</sub> )	0.21	0.22	0.48	0.40	0.54	0.52	0.10	0.07
S.E (g <sub>i</sub> -g <sub>j</sub> )	0.29	0.31	0.68	0.57	0.76	0.73	0.15	0.10
<b>L.S.D at 0.05</b>	0.42	0.44	0.97	0.81	1.09	1.05	0.20	0.14
<b>at 0.01</b>	0.57	0.59	1.30	1.08	1.46	1.40	0.27	0.19
T1- GZ 1368	1.34**	-0.20	-14.53**	-20.53**	19.49**	11.84**	0.21*	0.09
T2- Nerica 7	0.43*	-0.28	-14.53**	0.87**	-4.84**	-2.42**	-0.09	0.07
T3- Giza 178	-1.77**	0.48**	29.07**	19.67**	-14.64**	-9.42**	-0.11	-0.17**
S.E (g <sub>i</sub> )	0.16	0.17	0.37	0.31	0.42	0.40	0.08	0.05
S.E (gt-g <sub>j</sub> )	0.23	0.24	0.53	0.44	0.59	0.57	0.11	0.08
<b>LS D at 0.05</b>	0.32	0.34	0.75	0.63	0.85	0.81	0.16	0.10
<b>at 0.01</b>	0.43	0.46	1.00	0.84	1.13	1.08	0.22	0.14

\*and \*\* significant at 0.05 and 0.01 probability levels, respectively

**Table 3 : Cont.**

Genotypes	Flag leaf area		Chlorophyll content		Relative water content		No. of panicles /plant	
	N	D	N	D	N	D	N	D
L1- IR 69432	2.07**	-3.41**	1.63**	0.80	6.91**	-3.47**	0.80	0.60
L2- IR 6500-127	1.08**	2.51**	0.45	-1.03*	-7.34**	-0.61*	-1.87**	-2.07**
L3- IR 12 G 3222	0.95**	3.13**	-1.91**	0.14	4.36**	0.04	0.13	-0.07
L4- IR 12 G 3213	-2.93**	1.12**	-1.89**	-0.97*	2.72**	-2.80**	1.80**	1.60**
L5- 11 L 236	-1.16**	-3.35**	1.73**	1.07*	-6.64**	6.84**	-0.87	-0.07
S.E (g <sub>i</sub> )	0.09	0.27	0.43	0.43	0.31	0.29	0.44	0.49
S.E (g <sub>r</sub> -g <sub>i</sub> )	0.12	0.38	0.61	0.61	0.44	0.41	0.63	0.69
<b>L.S.D at 0.05</b>	0.18	0.55	0.87	0.87	0.63	0.59	0.88	0.98
<b>at 0.01</b>	0.24	0.73	1.16	1.16	0.84	0.78	1.18	1.32
T1- GZ 1368	4.38**	1.77**	-0.60	0.40	4.89**	-1.81**	-0.20	0.20
T2- Nerica 7	5.79**	1.05**	-1.51**	0.69	-7.68**	-2.68**	-1.40**	-1.60**
T3- Giza 178	-10.16**	-2.81**	2.11**	-1.09**	2.79**	4.49**	1.60**	1.40**
S.E (g <sub>i</sub> )	0.07	0.21	0.33	0.34	0.24	0.23	0.34	0.38
S.E (gt-g <sub>i</sub> )	0.09	0.29	0.47	0.47	0.34	0.32	0.49	0.54
<b>LS D at 0.05</b>	0.14	0.42	0.67	0.69	0.49	0.46	0.69	0.77
<b>at 0.01</b>	0.19	0.57	0.89	0.92	0.65	0.62	0.92	1.03

\*and \*\* significant at 0.05 and 0.01 probability levels, respectively.

**Table 3 : Cont.**

Genotypes	1000-grain Weight		No. of filled grains/ panicle		Fertility %		Grain yield/ plant	
	N	D	N	D	N	D	N	D
L1- IR 69432	-0.49*	-1.41**	-25.18**	-21.13**	-1.16*	1.78**	-2.58**	0.31
L2- IR 6500-127	3.01**	1.59**	4.49**	-5.80**	-0.68	-1.02*	-2.49**	-0.56
L3- IR 12 G 3222	0.14	0.40	-3.29**	-1.13	-1.16*	-8.27**	0.78	-2.33**
L4- IR 12 G 3213	-1.83**	-0.79	11.82**	19.53**	-0.60	2.83**	0.88	-0.43
L5- 11 L 236	-0.83**	0.21	12.16**	8.53**	3.60**	4.68**	3.41**	3.01**
S.E (g <sub>i</sub> )	0.20	0.46	0.88	0.82	0.48	0.38	0.54	0.58
S.E (g <sub>i</sub> -g <sub>j</sub> )	0.29	0.66	1.25	1.16	0.68	0.53	0.76	0.82
<b>L.S.D at 0.05</b>	0.44	0.92	1.78	1.66	0.97	0.77	1.09	1.17
<b>at 0.01</b>	0.54	1.24	2.38	2.21	1.30	1.03	1.46	1.57
T1- GZ 1368	-1.29**	-1.39**	-1.78**	-4.47**	0.87*	-0.68*	-3.20**	2.31**
T2- Nerica 7	-0.48**	0.77*	29.16**	14.73**	-0.50	2.11**	-0.19	-6.43**
T3- Giza 178	1.77**	0.62	-27.38**	-10.27**	-0.37	-1.43**	3.38**	4.13**
S.E (g <sub>i</sub> )	0.16	0.36	0.68	0.64	0.37	0.29	0.42	0.45
S.E (gt-g <sub>j</sub> )	0.22	0.51	0.97	0.90	0.53	0.41	0.59	0.64
<b>LS D at 0.05</b>	0.32	0.72	1.37	1.29	0.75	0.59	0.85	0.91
<b>at 0.01</b>	0.43	0.97	1.84	1.73	1.00	0.78	1.13	1.22

\*and \*\* significant at 0.05 and 0.01 probability levels, respectively.

**Table (4):** Estimates of specific combining ability (SCA) effects for the studied traits under water deficit and normal conditions

Crosses	Root Length		Number of roots /plant		Root volume		Root /shoot ratio	
	N	D	N	D	N	D	N	D
IR 69432 X GZ 1368	4.81**	3.86**	53.87**	17.20**	27.07**	4.16**	0.52**	0.77**
IR 69432 X Nerica 7	-5.45**	-1.72**	15.87**	15.80**	-18.60**	-1.58	-0.15	-0.46**
IR 69432 X Giza 178	0.65	-2.14**	-69.73**	-33.00**	-8.47**	-2.58**	-0.07	-0.31*
IR 6500-127 X GZ 1368	1.04**	-4.12**	-15.47**	7.20**	-9.27**	-4.96**	-0.02	-0.31*
IR 6500-127 X Nerica 7	-3.55**	1.47**	74.53**	20.80**	-4.60**	-8.02**	0.11	0.28*
IR 6500-127 X Giza 178	2.51**	2.65**	-59.07**	-28.00**	13.87**	12.98**	-0.39*	0.03
IR 12 G 3222 X GZ 1368	0.72	-1.75**	-17.47**	-12.80**	9.84**	16.49**	-0.25	-0.25*
IR 12 G 3222 X Nerica 7	1.63**	0.67	-59.47**	-39.20**	-15.82**	-13.24**	0.15	0.18
IR 12 G 3222 X Giza 178	-2.35**	1.08**	76.93**	52.00**	5.98**	-3.24**	0.10	0.07
IR 12 G 3213 X GZ 1368	-0.49	3.27**	-12.13**	-9.47**	-5.16**	-6.18**	0.55**	-0.13
IR 12 G 3213 X Nerica 7	3.75**	-0.64	-12.13**	-10.87**	12.18**	7.09**	-0.29	0.05
IR 12 G 3213 X Giza 178	-3.25**	-2.63**	24.27**	20.33**	-7.02**	-0.91	-0.27	0.07
11 L 236 X GZ 1368	-6.08**	-1.26**	-8.80**	-2.13**	-22.49**	-9.51**	-0.51**	-0.08
11 L 236 X Nerica 7	3.63**	0.22	-18.80**	13.47**	26.84**	15.76**	0.19	-0.06
11 L 236 X Giza 178	2.44**	1.04**	27.60**	-11.33**	-4.36**	-6.24**	0.32	0.14
S.E (S <sub>ij</sub> )	0.36	0.38	0.83	0.70	0.93	0.90	0.18	0.12
S.E (S <sub>ij</sub> - S <sub>kl</sub> )	0.51	0.53	1.18	0.99	1.31	1.27	0.26	0.17
<b>LS D at 0.05</b>	0.73	0.77	1.68	1.41	1.88	1.82	0.36	0.24
<b>at 0.01</b>	0.97	1.03	2.24	1.89	2.51	2.43	0.49	0.32

\*and \*\* significant at 0.05 and 0.01 probability levels, respectively

**Table 4 : Cont.**

Crosses	Flag leaf area		Chlorophyll content		Relative water content		No. of panicles /plant	
	N	D	N	D	N	D	N	D
IR 69432 X GZ 1368	0.93**	1.87**	2.23**	-2.08**	-5.35**	-21.82**	-3.80**	-4.20**
IR 69432 X Nerica 7	4.03**	-6.13**	-1.48*	3.18**	-6.23**	-6.05**	3.40**	3.60**
IR 69432 X Giza 178	-4.95**	4.26**	-0.75	-3.09**	11.58**	27.87**	0.40	0.60
IR 6500-127 X GZ 1368	-7.44**	1.40**	0.95	-5.95**	21.46**	0.76	-1.13	-1.53
IR 6500-127 X Nerica 7	11.25**	5.97**	-0.94	2.86**	-1.89**	8.20**	1.07	1.27
IR 6500-127 X Giza 178	-3.80**	-7.37**	-0.01	3.09**	-19.57**	-8.96**	0.07	0.27
IR 12 G 3222 X GZ 1368	8.85**	3.14**	0.16	2.18**	-1.65**	8.68**	1.87**	1.47
IR 12 G 3222 X Nerica 7	-6.13**	2.77**	0.46	-3.55**	6.04**	2.77**	-1.93*	-1.73*
IR 12 G 3222 X Giza 178	-2.72**	-5.92**	-0.62	1.37	-4.39**	-11.45**	0.07	0.27
IR 12 G 3213 X GZ 1368	1.49**	-3.60**	0.69	4.31**	-13.68**	-3.30**	3.20**	2.80**
IR 12 G 3213 X Nerica 7	-5.07**	2.30**	-2.61**	-4.80**	11.25**	1.11*	-2.60**	-2.40**
IR 12 G 3213 X Giza 178	3.57**	1.31**	1.92*	2.49**	2.43**	2.19**	-0.60	-0.40
11 L 236 X GZ 1368	-3.83**	-2.81**	-4.03**	1.55*	-0.78	15.69**	-0.13	1.47
11 L 236 X Nerica 7	-4.08**	-4.91**	4.58**	2.31**	-9.15**	-6.04**	0.07	-0.73
11 L 236 X Giza 178	7.91**	7.72**	-0.55	-3.85**	9.93**	-9.65**	0.07	-0.73
S.E (S <sub>p</sub> )	0.15	0.46	0.74	0.75	0.54	0.51	0.77	0.85
S.E (S <sub>p</sub> - S <sub>d</sub> )	0.21	0.65	1.05	1.06	0.76	0.72	1.09	1.20
<b>LSD at 0.05</b>	0.30	0.93	1.50	1.52	1.09	1.03	1.56	1.72
<b>at 0.01</b>	0.41	1.24	2.00	2.03	1.46	1.38	2.08	2.30

\*and \*\* significant at 0.05 and 0.01 probability levels, respectively

**Table 4 : Cont.**

Crosses	1000 grain Weight		No. of filled grains/ panicle		Fertility %		Grain yield/ plant	
	N	D	N	D	N	D	N	D
IR 69432 X GZ 1368	1.29**	1.46	17.78**	10.13**	1.56	6.21**	4.02**	-6.81**
IR 69432 X Nerica 7	-2.52**	-0.37	-34.16**	-15.07**	1.53	1.73*	-5.09**	6.43**
IR 69432 X Giza 178	1.23**	-1.08	16.38**	4.93**	-3.10**	-7.94**	1.07	0.37
IR 6500-127 X GZ 1368	0.79*	-1.43	-10.89**	-5.20**	0.48	10.11**	2.03*	-5.94**
IR 6500-127 X Nerica 7	1.06**	3.87**	-18.82**	-38.40**	0.30	-1.67*	-3.28**	5.30**
IR 6500-127 X Giza 178	-1.85**	-2.44**	29.71**	43.60**	-0.78	-8.44**	1.25	0.64
IR 12 G 3222 X GZ 1368	-1.34**	-0.80	-16.11**	-28.87**	-4.34**	-24.10**	-2.74**	3.43**
IR 12 G 3222 X Nerica 7	-0.16	-1.96*	24.62**	41.93**	0.73	9.18**	2.36*	-6.23**
IR 12 G 3222 X Giza 178	1.50**	2.76**	-8.51**	-13.07**	3.60**	14.91**	0.38	2.81**
IR 12 G 3213 X GZ 1368	0.63	1.39	-32.22**	-5.53**	1.10	6.06**	-2.94**	5.13**
IR 12 G 3213 X Nerica 7	-1.19**	-2.77**	39.84**	19.27**	-2.13*	-6.67**	2.96**	-6.43**
IR 12 G 3213 X Giza 178	0.56	1.38	-7.62**	-13.73**	1.04	0.61	-0.02	1.31
11 L 236 X GZ 1368	-1.37**	-0.61	41.44**	29.47**	1.20	1.71*	-0.37	4.19**
11 L 236 X Nerica 7	2.81**	1.23	-11.49**	-7.73**	-0.43	-2.57**	3.06**	0.93
11 L 236 X Giza 178	-1.44**	-0.62	-29.96**	-21.73**	-0.76	0.86	-2.68**	-5.13**
S.E (S <sub>ij</sub> )	0.35	0.80	1.53	1.43	0.83	0.66	0.94	1.00
S.E (S <sub>ij</sub> - S <sub>kl</sub> )	0.50	1.14	2.16	2.02	1.17	0.93	1.32	1.42
<b>LS D at 0.05</b>	0.71	1.62	3.09	2.89	1.68	1.33	1.90	2.02
<b>at 0.01</b>	0.95	2.16	4.13	3.86	2.24	1.78	2.54	2.70

\*and \*\* significant at 0.05 and 0.01 probability levels, respectively



**Table (5):** Estimates of heterosis as a deviation from mid and better parent of the fifteen rice crosses for root characteristics, physiological traits, yield and yield components traits under normal and deficit water conditions

No.	Genotype	Root Length				Number of roots/plant			
		M.P		B.P		M.P		B.P	
		N	D	N	D	N	D	N	D
1	IR 69432 X GZ 1368	14.87**	17.51**	8.02**	8.70**	83.33**	29.03**	37.50**	11.11**
2	IR 69432 X Nerica 7	-33.47**	-13.85**	-33.61**	-17.70**	62.45**	86.91**	13.75**	33.33**
3	IR 69432 X Giza 178	1.28	-0.74	-18.89**	-16.15**	2.56**	16.13**	-12.50**	0.00
4	IR 6500-127 X GZ 1368	14.36**	-21.40**	8.27**	-28.39**	25.00**	68.14**	-6.25**	46.15**
5	IR 6500-127 X Nerica 7	-16.27**	7.56**	-25.33**	-4.95*	114.22**	200.91**	50.00**	170.83**
6	IR 6500-127 X Giza 178	28.63**	37.67**	13.49**	36.76**	9.89**	76.99**	-6.25**	53.85**
7	IR 12 G 3222 X GZ 1368	20.49**	9.52**	18.72**	2.78	115.73**	105.13**	95.92**	84.62**
8	IR 12 G 3222 X Nerica 7	12.71**	18.64**	7.28**	7.88**	85.11**	154.42**	53.06**	121.15**
9	IR 12 G 3222 X Giza 178	12.47**	44.46**	-6.48**	39.04**	212.80**	284.62**	192.04**	246.15**
10	IR 12 G 3213 X GZ 1368	12.95**	16.49**	9.70**	10.73**	97.92**	92.00**	69.64**	84.62**
11	IR 12 G 3213 X Nerica 7	18.80**	-7.42**	8.51**	-9.02**	115.82**	184.54**	69.64**	133.33**
12	IR 12 G 3213 X Giza 178	7.94	-3.33	-9.79**	-15.11**	281.25**	425.00**	138.94**	216.67**
13	11 L 236 X GZ 1368	-24.17**	-18.87**	-28.59**	-24.60**	77.78**	98.00**	60.00**	52.31**
14	11 L 236 X Nerica 7	3.73*	-14.59**	3.34	-18.01**	82.85**	270.56**	50.00**	254.14**
15	11 L 236 X Giza 178	14.15**	5.42*	-8.47**	-10.57**	125.35**	160.00**	112.39**	100.00**
<b>L.S.D 0.05</b>		0.89	0.93	1.02	1.08	2.06	1.73	2.38	2.00
<b>0.01</b>		1.19	1.25	1.37	1.44	2.75	2.31	3.18	2.67

\*and \*\* significant at 0.05 and 0.01 probability levels, respectively.

**Table (5): Cont.**

No.	Genotype	Root volume				Root /shoot ratio				
		M.P		B.P		M.P		B.P		
		N	D	N	D	N	D	N	D	
1	IR 69432 X GZ 1368	122.22**	91.11**	100.00**	79.17**	279.22**	373.68**	186.27**	257.14**	
2	IR 69432 X Nerica 7	-25.00**	24.32**	-40.00**	-4.17	12.86	-42.53	-30.70	-44.44	
3	IR 69432 X Giza 178	-29.46**	-25.00**	-39.33**	-37.50**	5.59	-52.82	-37.04	-63.49	
4	IR 6500-127 X GZ 1368	50.00**	74.77**	27.50**	53.97**	183.33*	-6.76	66.67	-17.86	
5	IR 6500-127 X Nerica 7	8.05*	3.45	4.44	-6.25	10.57	119.18**	-40.35	77.78	
6	IR 6500-127 X Giza 178	25.00**	81.25**	11.11**	81.25**	-36.11	21.57	-65.93**	10.71	
7	IR 12 G 3222 X GZ 1368	94.81**	197.56**	87.50**	190.48**	66.67	-8.28	17.65	-22.58	
8	IR 12 G 3222 X Nerica 7	-25.37**	3.03	-32.43**	-15.00*	3.70	71.05	-38.60	44.44	
9	IR 12 G 3222 X Giza 178	1.37	11.11	0.00	0.00	-19.23	12.35	-53.33**	-2.15	
10	IR 12 G 3213 X GZ 1368	103.03**	70.73**	67.50**	66.67**	481.82**	-8.28	213.75**	-22.58	
11	IR 12 G 3213 X Nerica 7	114.29**	106.06**	100.00**	70.00**	33.90	5.26	-30.70	-11.11	
12	IR 12 G 3213 X Giza 178	0.00	10.00	-13.89**	-5.00	13.67	-58.06	-41.48*	-41.94	
13	11 L 236 X GZ 1368	28.57**	105.88**	12.50**	66.67**	-13.89	56.00	-39.22	21.88	
14	11 L 236 X Nerica 7	133.33**	253.85**	133.33**	253.85**	5.19	-8.77	-37.72	-42.22	
15	11 L 236 X Giza 178	-12.12**	17.24*	-19.44**	6.25	5.13	25.71	-39.26*	-4.35	
<b>L.S.D</b>		<b>0.05</b>	2.30	2.22	2.66	2.57	0.45	0.30	0.52	0.35
		<b>0.01</b>	3.07	2.97	3.55	3.43	0.60	0.40	0.69	0.46

\*and \*\* significant at 0.05 and 0.01 probability levels, respectively.

**Table (5):** Cont.

No.	Genotype	Flag leaf area				Chlorophyll content			
		M.P		B.P		M.P		B.P	
		N	D	N	D	N	D	N	D
1	IR 69432 X GZ 1368	24.62**	-12.89**	3.90**	-13.88**	15.43**	6.58*	3.22	-6.41*
2	IR 69432 X Nerica 7	14.45**	-29.02**	13.85**	-83.22**	-3.25	12.41**	-6.59**	7.54**
3	IR 69432 X Giza 178	-31.41**	-19.26**	-41.14**	-21.28**	7.39**	-9.15**	2.66	-10.58**
4	IR 6500-127 X GZ 1368	-11.28**	1.84	-31.16**	-2.80	11.69**	-11.87**	1.43	-23.98**
5	IR 6500-127 X Nerica 7	16.05**	40.57**	5.51**	9.27**	-2.97	4.43	-4.73*	-2.05
6	IR 6500-127 X Giza 178	-38.50**	-41.32**	-51.04**	-44.73**	8.32**	-5.33*	5.28*	-5.78*
7	IR 12 G 3222 X GZ 1368	69.29**	12.12**	61.26**	9.28**	11.56**	22.49**	7.64**	11.61**
8	IR 12 G 3222 X Nerica 7	3.05**	33.86**	-10.08**	5.71*	1.17	-2.92	-3.33	-3.25
9	IR 12 G 3222 X Giza 178	-15.63**	-32.88**	-16.84**	-35.47**	8.41**	-0.77	4.62	-6.20*
10	IR 12 G 3213 X GZ 1368	10.90**	-4.36	-8.61**	-15.13**	4.44*	20.43**	-5.84*	6.16*
11	IR 12 G 3213 X Nerica 7	-18.03**	48.40**	-19.64**	32.65**	-12.67**	-12.80**	-14.94**	-16.22**
12	IR 12 G 3213 X Giza 178	-23.67**	-3.43	-35.30**	-11.52**	12.51**	-18.78**	2.68	-11.02**
13	11 L 236 X GZ 1368	-4.60**	-18.08**	-24.41**	-27.85**	9.73**	20.47**	5.52*	7.68**
14	11 L 236 X Nerica 7	-16.61**	-8.99**	-22.16**	2.28**	19.31**	13.19**	14.38**	10.42**
15	11 L 236 X Giza 178	-13.77**	6.96**	-29.83**	-4.62	16.97**	-13.61**	13.26**	-16.64**
<b>L.S.D 0.05</b>		0.38	1.14	0.44	1.31	1.83	1.86	2.12	2.14
<b>0.01</b>		0.51	1.52	0.58	1.76	2.45	2.48	2.83	2.87

\*and \*\* significant at 0.05 and 0.01 probability levels, respectively

**Table (5): Cont.**

No.	Genotype	Relative water content				No. of panicles/plant			
		M.P		B.P		M.P		B.P	
		N	D	N	D	N	D	N	D
1	IR 69432 X GZ 1368	-3.02**	-8.35**	-4.83**	-12.38**	57.89**	-8.33	42.86**	-15.38
2	IR 69432 X Nerica 7	-28.40**	-12.99**	-33.70**	-43.89**	26.67**	54.55**	11.76	54.55**
3	IR 69432 X Giza 178	11.68**	38.66**	9.20**	-0.10	65.00**	25.93**	43.48**	6.25
4	IR 6500-127 X GZ 1368	11.49**	16.14**	7.60**	-1.62	43.75**	-4.35**	9.52	-15.38
5	IR 6500-127 X Nerica 7	-41.09**	-4.81**	-44.58**	-14.93**	116.67**	14.29	100.00**	9.09
6	IR 6500-127 X Giza 178	-46.41**	-23.39**	-46.71**	-35.02**	111.76**	7.69	56.52**	-12.50
7	IR 12 G 3222 X GZ 1368	17.13**	28.41**	10.40**	7.26**	51.35**	23.08**	33.33**	23.08*
8	IR 12 G 3222 X Nerica 7	-2.92**	-12.37**	-23.03**	-20.49**	37.93**	-8.33	25.00**	-15.38
9	IR 12 G 3222 X Giza 178	4.27**	-26.67**	-13.61**	-36.91**	94.87**	10.34	65.22**	0.00
10	IR 12 G 3213 X GZ 1368	-14.55**	6.48**	-17.90**	-9.08**	15.00**	40.74**	9.52	35.71**
11	IR 12 G 3213 X Nerica 7	-7.85**	-16.15**	-19.11**	-25.71**	37.50**	-4.00	15.79**	-14.29
12	IR 12 G 3213 X Giza 178	0.92	-29.11**	-7.23**	-25.80**	147.37**	28.57	52.17**	6.25
13	11 L 236 X GZ 1368	-5.40**	50.52**	-13.15**	24.92**	10.53*	18.52*	0.00	14.29
14	11 L 236 X Nerica 7	-42.79**	-15.56**	-51.78**	-22.82**	33.33**	-4.00	17.65**	-14.29
15	11 L 236 X Giza 178	2.29*	-16.96**	-9.52**	-28.07**	55.00**	0.00	34.78**	-6.25
<b>L.S.D 0.05</b>		1.33	1.25	1.54	1.45	1.74	2.10	2.01	2.42
<b>0.01</b>		1.78	1.67	2.05	1.93	2.32	2.81	2.68	3.24

\*and \*\* significant at 0.05 and 0.01 probability levels, respectively.

**Table (5): Cont.**

No.	Genotype	1000 grain weight				No. of filled grains/ panicle			
		M.P		B.P		M.P		B.P	
		N	D	N	D	N	D	N	D
1	IR 69432 X GZ 1368	4.17*	1.43	-3.85	3.51	1.66	-1.07	-11.11**	-17.26**
2	IR 69432 X Nerica 7	-15.38**	-6.50	-15.38**	-15.90**	-4.68**	3.91**	-21.26**	-20.83**
3	IR 69432 X Giza 178	3.70*	-10.55*	0.00	-19.54**	-15.59**	-6.23**	-24.15**	-23.81**
4	IR 6500-127 X GZ 1368	6.75**	-14.05*	-8.07**	-24.64**	7.25**	18.30**	-2.63*	13.93**
5	IR 6500-127 X Nerica 7	3.05	27.38**	-4.49**	12.68**	28.00**	19.05**	9.47**	2.46
6	IR 6500-127 X Giza 178	-2.75	-16.92**	-6.68**	-20.83**	12.68**	60.35**	5.26**	49.18**
7	IR 12 G 3222 X GZ 1368	-6.12**	-14.16**	-14.81**	-23.12**	-7.53**	-27.71**	-20.74**	-45.21**
8	IR 12 G 3222 X Nerica 7	-5.66**	-17.10**	-7.41**	-19.12**	38.45**	36.81**	12.29**	-4.11*
9	IR 12 G 3222 X Giza 178	5.13**	1.60	3.25	-0.88	-19.37**	-19.75**	-29.03**	-40.64**
10	IR 12 G 3213 X GZ 1368	0.00	-4.98	-4.17	-11.24*	-11.40**	1.55	-25.97**	-21.90**
11	IR 12 G 3213 X Nerica 7	-12.00**	-21.74**	-15.38**	-23.38**	49.73**	39.60**	18.61**	-0.95
12	IR 12 G 3213 X Giza 178	0.00	-9.31	-7.14**	-6.56	-24.24**	-7.14**	-26.41**	-28.57**
13	11 L 236 X GZ 1368	-2.22	-7.51	-4.35	-11.75*	29.63**	24.92**	9.87**	0.00
14	11 L 236 X Nerica 7	10.20**	1.93	3.85	-2.35	24.58**	23.19**	0.00	-9.57**
15	11 L 236 X Giza 178	-1.96	-6.85	-10.71**	-10.77*	-23.71**	-10.58**	-33.63**	-30.32**
<b>L.S.D 0.05</b>		1.95	1.99	1.00	2.26	3.78	3.53	4.37	4.07
<b>0.01</b>		2.61	2.66	1.34	3.02	5.06	4.72	5.84	5.45

\*and \*\* significant at 0.05 and 0.01 probability levels, respectively

**Table (5): Cont.**

No.	Genotype	Fertility %				Grain yield/ plant			
		M.P		B.P		M.P		B.P	
		N	D	N	D	N	D	N	D
<b>1</b>	IR 69432 X GZ 1368	0.23	1.69	-0.82	-0.02	29.04**	53.23**	25.37**	43.26**
<b>2</b>	IR 69432 X Nerica 7	3.46**	2.41*	-0.22	-1.92	34.55**	93.96**	10.49**	64.19**
<b>3</b>	IR 69432 X Giza 178	-3.39**	-14.57**	-5.14**	-16.73**	27.98**	77.68**	22.30**	70.82**
<b>4</b>	IR 6500-127 X GZ 1368	-0.51**	11.12**	-1.45	4.76**	42.11**	72.55**	28.02**	64.71**
<b>5</b>	IR 6500-127 X Nerica 7	2.50*	2.90**	-1.25	-0.46	64.65**	108.78**	52.26**	95.88**
<b>6</b>	IR 6500-127 X Giza 178	-0.39	-11.84**	-2.29	-16.19**	45.53**	94.54**	22.89**	68.24**
<b>7</b>	IR 12 G 3222 X GZ 1368	-7.26**	-45.20**	-7.40**	-46.89**	16.84**	54.53**	10.34**	23.87**
<b>8</b>	IR 12 G 3222 X Nerica 7	1.27	-2.16*	-3.45**	-7.59**	60.67**	-12.85*	28.97**	-35.48**
<b>9</b>	IR 12 G 3222 X Giza 178	2.78*	-1.34	-0.25	-5.19**	30.40**	45.86**	28.22**	27.74**
<b>10</b>	IR 12 G 3213 X GZ 1368	0.29	1.31	-0.71	-1.72	14.23**	75.00**	5.97*	43.34**
<b>11</b>	IR 12 G 3213 X Nerica 7	-0.11	-7.53**	-3.71**	-12.58**	58.81**	-1.81	25.66**	-25.94**
<b>12</b>	IR 12 G 3213 X Giza 178	3.49	-4.87**	-0.11	-8.49**	54.42**	93.52**	26.99**	36.52**
<b>13</b>	11 L 236 X GZ 1368	5.74**	8.29**	3.89**	1.63	30.43**	94.32**	24.41**	64.21**
<b>14</b>	11 L 236 X Nerica 7	7.42**	9.50**	4.32**	5.42**	72.44**	54.76**	39.51**	19.93**
<b>15</b>	11 L 236 X Giza 178	5.27**	7.31**	4.10**	1.54	30.75**	46.83**	27.26**	36.53**
<b>L.S.D</b>	<b>0.05</b>	2.06	1.62	2.37	1.87	2.32	2.48	2.67	2.87
	<b>0.01</b>	2.75	2.17	3.17	2.50	3.09	3.32	3.57	3.83

\*and \*\* significant at 0.05 and 0.01 probability levels, respectively.