

Table(1): Average performance of the parental varieties and their F₁ crosses (Upper values) and F₂ populations (Lower values) grown at two contrasted environments. { Red. P %=(P_{Fav.}-P_{Str.}/P_{Fav.})100 , Reduction C %=(C_{Fav.} - C_{Str.}/C_{Fav.})100 , Reduction P+C %=(P_{Fav.}+ C_{Fav.})-(P_{Str.} + C_{Str.})/(P_{Fav.} + C_{Fav.}) 100 }

Genotypes	Plant height (cm)		Number of Opened bolls		Number of Closed bolls	
	Favorable	Stress	Favorable	Stress	Favorable	Stress
P1(Giza-88)	98.39	43.75	25.56	11.38	4.66	2.75
P1 XP2	105.71	82.79	24.6	16.7	4.93	4.33
	109.44	69.55	23.45	8.76	6.25	4.55
P1 X P3	110	93.86	27.53	19.33	4.8	3.82
	112.83	82.39	25.07	8.25	6.18	4.52
P1 X P4	114.29	97.3	31.85	24.13	5.2	4.15
	111.12	70.72	22.78	8.49	6.8	4.21
P1xP5	105	93	29.38	24.2	4.4	3.5
	105.27	74.02	18.27	6.01	6.37	5.13
P1 X P6	108	92.5	25.7	24.38	4.8	3.75
	92.68	70.17	15.46	7.38	7.05	4
P2 (Giza-90)	100	63.25	15.37	12.42	5.33	4.12
P2 x P3	124.17	87.19	26.47	22.27	4.4	3.6
	118.19	79.93	18.46	6.19	8.09	3.73
P2 X P4	109	97.18	25.53	22.13	4.67	3.6
	104.52	61.81	15.83	9.27	5.5	3.71
P2X P5	110	86.75	29.5	14.95	4.67	2.5
	106.26	67.98	17.68	9.05	5.68	2.85
P2 XP6	108.86	82.09	36.3	12.45	5.53	3.7
	95.16	71.25	20.41	11.74	6.15	3.95

Table(1): continue.

Genotypes	Plant height (cm)		Number of Opened bolls		Number of Closed bolls	
	Favorable	Stress	Favorable	Stress	Favorable	Stress
P3 (Giza-87)	108.48	100	22.5	21.13	5.53	3.33
P3 X P4	131.5	101.91	34.13	13.75	6.13	4.67
	114.06	86.29	15.97	10.53	6.87	4.75
P3 X P5	134.17	85.83	32.93	15.58	5.6	2.46
	122.14	85.16	20.41	7.59	7.35	4.24
P3 X P6	132.5	102.17	27.6	9.75	5.9	3.54
	118.59	75.6	17.33	9.31	7.7	3.95
P4(Giza-89)	118.67	111.13	25.67	17.22	5.37	4.82
P4 XP5	116.57	76.48	39.5	21.25	5.33	3.04
	95.43	73.82	21.57	18.77	6.2	3.55
P4 XP6	124.5	89.92	33.8	16.34	6.53	3.6
	103.45	78.94	24.17	14.28	7.78	3.61
P5(Giza-91)	108.32	69.75	26	24.24	9.8	5.6
P5 X P6	131.5	95.29	30.6	15	7.2	3.1
	109.11	78.32	27.32	14	9.85	3.52
P6(Giza-83)	121.15	73.38	21	18.29	5.13	3.87
Parent means	109.17	76.88	22.68	17.44	5.97	4.08
Cross means	117.72	90.95	30.36	18.15	5.34	3.56
Red. P %	29.58 %		23.104 %		31.66 %	
Red. C %	22.74 %		40.22 %		33.33 %	
Red. P+C	26.03 %		32.9 %		32.45 %	

Table(2): The diallel analysis of variance of the F₁ (Upper values) and F₂ (Lower values) generations of the diallel cross grown in two contrasted environments.

Items	d.f.	Plant height (cm)		Number of Opened bolls		Number of Closed bolls	
		Favorable MS	Stress MS	Favorable MS	Stress MS	Favorable MS	Stress MS
Blocks	2	22.69** 115.88**	87.25** 159.09**	11.48** 10.96**	3.25* 5.16**	9.02** 17.78**	0.18 1.25
Genotypes	35	350.41** 224.83**	479.11** 374.17**	77.86** 42.3**	63.78** 62.95**	3.33** 4.95**	1.44 1.24
a #	5	1560.25** 549.35**	1161.48** 1487.48**	164.86** 56.91**	94.6** 148.93**	9.99** 12.14**	1.46 1.01
b	15	297.55** 341.48**	730.76** 377.24**	126.72** 79.72**	117.28** 97.24**	4.43** 7.5**	2.88** 2.55**
b1	1	1096.85** 24.68**	2971.16** 49.29**	884.76** 86.7**	7.41** 837.01**	5.97* 13.87**	4.13* 0.063
b2	5	306.71** 547.9**	987.64** 907.89**	46.96** 20.3**	171.51** 49.77**	8.39** 8.7**	6.17** 5.17**
b3	9	203.65** 261.96**	339.11** 118.88**	86.81** 111.96**	99.35** 41.42**	2.06* 6.13**	0.92 1.37
a X B	10	28.78 88.09	60.51 47.83	18.53 2.99	12.54 2.55	0.38 1.46	0.28 0.52
b X B	30	44.79 44.85	87.31 46.37	15.5 5.6	9.91 3.32	0.71 1.08	0.42 0.46

Table(2): continue.

Items	d.f.	Plant height (cm)		Number of Opened bolls		Number of Closed bolls	
		Favorable MS	Stress MS	Favorable MS	Stress MS	Favorable MS	Stress MS
b1 X B	2	29.92 152.89	2.36 7.17	2.18 0.84	9.6 7.23	1.13 1.46	1.99 1.22
b2 X B	10	17.89 26.74	61.28 29.75	4.78 4.09	9.62 5.8	0.74 0.87	0.61 0.7
b3 X B	18	61.39 42.9	111.21 59.95	22.94 6.98	10.1 1.51	0.65 1.15	0.14 0.24
Block interaction	70	23.31 31.8	46.06 26.7	9.29 2.83	6.04 1.79	0.36 0.67	0.22 0.27
W _r + V _r	5	13982.4** 18461.93**	221387.9** 174796.1**	738.54** 121.69**	701.37** 2450.9**	26.08** 15.31**	1.85 1.24
W _r - V _r	5	4332.17** 1906.17**	18170.5** 4354.1**	568.56** 78.78**	260.01** 212.94**	0.86 1.2	0.32 0.34

All items were tested among the pooled block interaction.

Table (3): Genetic parameters of the F₁ (Upper values) and F₂ (Lower values) generations in the two contrasting environments.

Genotypes	Plant height (cm)		Number of Opened bolls		Number of Closed bolls	
	Favorable	Stress	Favorable	Stress	Favorable	Stress
D	63.7±20 55.2±20.9	564.7±50.2 584.1±41.2	7.6±5.1 14.1±3.3	18.5±7.3 22.7±2.4	3.3±0.4 2.96±0.47	0.83±0.3 0.78±0.2
H1	204.4±50.8 264.6±53	583.8±127.5 382.02±104.5	70.14±12.8 50.1±8.5	100.2±18.6 71.1±5.9	3.86±1 5.15±1.2	2.7±0.7 2.13±0.4
H2	153±45.4 165.8±47.3	397.6±113.9 199.6±93.4	66.4±11.5 47.7±7.6	66.5±16.6 61.4±5.4	2.26±0.9 3.7±1.1	1.5±0.6 1.17±0.3
F	-49.3±48.9 105.4±50.9	639.8±122.7 611.6±100.6	-3.4±12.3 11.3±8.2	44.1±17.9 16.6±5.8	3.9±0.97 3.32±1.1	1.96±0.7 1.72±0.4
UV	0.19 0.16	0.17 0.13	0.24 0.24	0.17 0.22	0.15 0.18	0.14 0.14
Broad Heritability	0.84 0.67	0.77 0.83	0.72 0.84	0.77 0.93	0.75 0.69	0.65 0.52
Narrow Heritability	0.57 0.25	0.28 0.50	0.22 0.15	0.15 0.32	0.35 0.26	0.06 0.007
E	23.3±7.6 31.8±7.9	46.1±18.9 26.7±15.6	9.29±1.91 2.83±1.26	6.04±2.8 1.79±0.89	0.36±0.15 0.67±0.18	0.219±0.11 0.27±0.06
(H1/D) ^{1/2}	1.791 2.189	1.017 0.809	3.034 1.886	2.329 1.769	1.09 1.32	1.81 1.656