

Table(1): Mean Squares for separate and the combined analysis over two water regimes for all studied traits.

S.V.	DF	Days to Heading		Plant Height		Spike Length		Number of spikes/plant		Biological yield/plant	
		Favorable	Stress	Favorable	Stress	Favorable	Stress	Favorable	Stress	Favorable	Stress
Blocks	2	4.7	5.45	7.13	19.1	0.62	0.012	0.6	3.92	7.68	34.33
Genotypes (G)	20	61.41**	52.93**	103.05**	325.02**	3.46**	3.74**	4.19**	8.61**	445.18**	248.86**
Parents (P)	5	100.65**	57.89**	158.32**	298.77**	4.45**	6.06**	5.82**	5.96**	239.499**	119.87**
Crosses (C)	14	46.12**	51.34**	77.95**	356.53**	1.93	2.61**	2.41**	6.51**	522.25**	289.54**
Par.vs. crosses	1	79.3	50.88	178.12	15.03	19.19	8.31	22.86	51.43	395.23	324.33
Error	40	3.85	1.29	17.31	19.74	0.802	0.54	0.54	0.94	8.88	33.98
Irrigation (I)	1	1844.61**		88880.48**		395.40**		151.14**		3425.80**	
R (I)	4	5.07		13.08		0.32		2.25		20.95	
Genotypes (G)	20	98.25**		309.50**		5.16**		8.84**		473.92**	
Parents (P)	5	153.84**		434.71**		9.93**		10.91**		344.76**	
Crosses (C)	14	76.22**		283.70**		1.91**		3.64**		502.62**	
Par.vs. crosses	1	128.57		44.8		26.75		71.42		220.13**	
G X I	20	16.10**		118.60**		2.043**		4.06**		717.11**	
P X I	5	4.60*		22.40		0.60		0.87		14.50	
C X I	14	21.23**		150.80**		2.62**		5.30**		309.16**	
Pooled error	80	2.57		18.53		0.80		0.74		21.43	
		Grain yield/ plant		Number of grains/spike		Grain weight/spike		1000-grain weight		Harvest index	
		Favorable	Stress	Favorable	Stress	Favorable	Stress	Favorable	Stress	Favorable	Stress
Blocks	2	0.22	.16	1.64	18.15	0.10	0.64	0.52	0.5	0.0005	0.002
Genotypes (G)	20	34.82**	35.99**	90.35**	91.58**	1.70**	1.87**	35.43**	43.46**	0.011**	0.02**
Parents (P)	5	11.53**	27.52**	9.56	1.46**	3.58*	5.96	25.10**	15.88**	0.006**	0.008**
Crosses (C)	14	38.31**	42.15**	105.75**	118.99**	1.84**	0.93	31.52**	55.69**	0.013**	0.02**
Par.vs. crosses	1	102.51	91.5	188.93	128.03	5.99	6.35	81.78	10.22	0.01	0.012
Error	40	0.91	5.12	2.53	21.24	0.17	0.42	1.12	2.26	0.0001	0.003
Irrigation (I)	1	1180.67**		2669.84**		9.50**		725.28**		0.10**	
R (I)	4	0.20		9.89		0.30		0.52		0.001	
Genotypes (G)	20	47.00**		119.71		2.61**		26.20**		0.022**	
Parents (P)	5	18.77**		23.92**		4.20**		31.71**		0.013**	
Crosses (C)	14	46.60**		314.01**		1.34**		20.74**		0.026**	
Par.vs. crosses	1	193.83**		140.04**		12.35**		74.9		0.02**	
G X I	20	23.82**		62.23**		0.96**		49.71**		0.005**	
P X I	5	0.45		11.16		0.85		9.30**		0.001	
C X I	14	33.86**		84.70		1.10**		66.47**		0.006**	
Pooled error	80	3.011		11.89		0.30		1.70		0.002	

*, ** Significant and highly significant at 5% and 1%, respectively.

Table(2): Mean performance of the parents and their crosses in F₁ for days to heading, plant height, spike length, no. of spikes/plant and biological yield grown under favorable and water stress conditions as well as their combined.

Genotypes	Days to heading			Plant height, cm			Spike length, cm			Number of spikes/plant			Biological yield, g		
	F	S	Comb.	F	S	Comb.	F	S	Comb.	F	S	Comb.	F	S	Comb.
Giza 160 (P ₁)	90.37	81.00	85.7	120.00	104.33	112.2	12.00	9.33	10.7	8.33	500	7.00	46.00	39.00	42.5
Sonora 64 (P ₂)	81.47	76.67	79.1	122.00	104.67	113.3	10.33	7.33	8.8	10.33	7.67	9.00	47.67	37.67	42.7
Leningradka (P ₃)	98.67	89.00	93.8	135.00	117.67	126.3	14.00	10.67	12.3	6.67	4.00	5.00	68.00	52.00	60.0
Sakha 8 (P ₄)	85.20	77.67	81.4	116.33	92.33	104.3	11.67	8.33	10.0	7.33	5.33	6.00	50.00	41.67	45.8
Sakha 69 (P ₅)	88.97	80.67	84.8	122.67	100.00	111.3	11.33	7.00	9.2	7.33	3.67	6.00	47.67	38.33	42.0
Chenab 70 (P ₆)	87.70	79.33	83.5	114.33	90.00	102.2	12.33	9.67	10.33	6.67	5.00	6.00	43.00	33.33	38.2
Mean (parents)	88.72	80.72	84.72	121.72	101.50	111.61	11.94	8.72	11.0	7.77	5.11	6.44	50.40	40.33	45.36
P ₁ x P ₂	83.33	76.00	79.7	118.33	108.00	113.2	12.83	10.90	11.9	8.67	6.67	8.00	56.67	47.47	52.1
P ₁ x p ₃	91.67	79.00	85.3	117.33	104.47	110.9	12.50	11.10	11.8	9.00	7.33	8.00	68.33	55.87	62.1
P ₁ x p ₄	81.67	79.46	80.7	103.00	90.00	96.5	14.17	9.87	12.0	10.00	5.33	8.00	69.00	56.20	42.4
P ₁ x p ₅	89.67	86.00	87.8	118.33	103.27	110.8	12.50	10.33	11.4	10.00	5.33	8.00	76.67	42.33	59.5
P ₁ x p ₆	88.00	82.00	85.0	121.33	120.67	121.0	13.83	10.27	12.1	7.33	6.67	7.00	40.00	38.33	39.2
P ₂ x p ₃	88.67	78.00	83.3	121.00	106.20	113.6	13.17	8.10	10.6	10.33	7.67	9.00	61.33	57.93	59.6
P ₂ x p ₄	82.33	72.67	77.5	116.33	87.33	101.8	12.83	9.60	11.2	8.33	6.33	7.00	46.13	34.33	40.2
P ₂ x p ₅	84.00	71.00	77.5	118.67	112.67	115.7	12.83	8.40	10.6	10.33	7.00	9.00	57.33	40.53	48.9
P ₂ x p ₆	79.67	76.00	77.8	111.67	96.33	101.0	14.83	9.73	12.3	8.33	6.67	8.00	45.00	33.93	39.5
P ₃ x p ₄	86.33	78.33	82.3	117.67	88.80	101.2	12.83	9.17	11.0	10.00	5.33	8.00	73.33	42.53	57.9
P ₃ x p ₅	91.67	84.00	87.8	123.00	99.67	111.3	12.17	9.63	10.9	9.67	8.67	9.00	55.00	47.13	51.1
P ₃ x p ₆	91.67	82.00	86.8	120.00	110.67	115.3	12.83	9.93	11.4	8.67	6.00	7.00	48.00	40.33	44.2
P ₄ x p ₅	86.67	78.67	82.7	121.67	86.00	103.8	13.50	8.87	11.2	8.67	8.00	8.00	49.33	20.93	35.1
P ₄ x p ₆	82.67	82.33	82.5	118.33	115.00	116.9	12.50	8.47	10.5	9.67	9.00	9.00	66.67	46.13	56.4
P ₅ x p ₆	85.67	75.33	80.5	124.00	109.00	116.5	14.50	8.40	11.4	10.00	8.33	9.00	56.87	45.67	51.3
Mean (crosses)	86.24	78.73	82.49	110.13	102.53	106.33	13.18	9.51	11.35	9.26	6.95	8.10	57.96	41.05	49.51
L.s.d ₀₅ par	2.275	2.269	1.49	8.959	4.732	4.73	1.228	1.314	0.84	1.182	1.869	1.03	4.716	4.317	2.97
L.s.d ₀₁ par	3.235	3.227	2.04	12.743	6.731	6.44	1.747	1.869	1.14	1.681	2.659	1.41	6.708	6.141	4.07
L.s.d ₀₅ cross	3.637	1.436	1.91	5.914	8.307	4.98	1.564	1.284	0.988	1.268	1.635	1.01	4.932	11.313	6.02
L.s.d ₀₁ cross	4.907	1.938	2.53	7.979	11.208	6.60	2.100	1.733	1.32	1.710	2.205	1.34	6.654	15.262	7.99

F = Favorable

S = Stress

Table (2) (cont.): Mean performance of the parents and their F₁ crosses for grain yield/plant, number of grains/spike, grain weight/spike, 1000-grain weight and harvest index grown under favorable and water stress conditions as well as their combined.

Genotypes	Grain yield/plant, g			Number of grains/spike			Grain weight/spike, g			1000-grain weight, g			Harvest index		
	F	S	Comb.	F	S	Comb.	F	S	Comb.	F	S	Comb.	F	S	Comb.
Giza 160 (P ₁)	14.73	9.23	12.0	60.00	54.33	57	2.01	1.54	1.77	47.93	40.33	44.13	0.32	0.24	0.28
Sonora 64 (P ₂)	14.63	11.23	13.9	59.33	51.67	56	1.78	0.93	1.36	42.70	42.43	42.57	0.35	0.30	0.32
Leningradka(P ₃)	19.97	13.13	16.5	57.00	49.67	53	5.57	3.09	3.33	41.80	37.87	39.83	0.29	0.25	0.27
Sakha 8 (P ₄)	15.37	9.37	12.4	62.00	53.33	58	2.45	1.34	1.89	43.57	41.70	42.63	0.31	0.22	0.27
Sakha 69 (P ₅)	18.47	12.57	15.5	61.33	52.00	57	3.75	2.92	3.33	48.00	43.57	45.78	0.39	0.33	0.36
Chenab 70 (P ₆)	17.67	11.23	14.4	66.00	52.33	59	3.22	1.93	2.58	41.93	38.23	40.08	0.41	0.34	0.38
Mean (parents)	17.13	11.12	14.13	60.94	52.22	56.58	2.66	2.09	2.38	44.33	40.68	42.51	0.34	0.28	0.31
P ₁ x P ₂	18.93	16.40	17.7	60.67	58.00	59	3.87	3.34	3.61	44.93	44.67	44.80	0.35	0.33	0.34
P ₁ x P ₃	24.30	18.73	21.5	79.33	56.67	68	4.13	3.43	3.78	52.33	35.10	43.72	0.36	0.36	0.36
P ₁ x P ₄	20.83	11.00	15.9	63.67	46.33	55	3.09	2.67	2.87	47.00	44.20	45.60	0.30	0.20	0.25
P ₁ x P ₅	24.23	14.20	19.2	62.67	56.33	60	3.57	3.13	3.35	50.00	37.53	43.77	0.34	0.32	0.33
P ₁ x P ₆	22.67	18.47	20.6	68.33	58.67	64	5.09	2.73	3.91	49.00	40.47	44.73	0.57	0.49	0.53
P ₂ x P ₃	21.23	17.27	19.3	64.67	63.667	64	3.49	2.99	3.24	47.03	46.67	46.85	0.35	0.30	0.32
P ₂ x P ₄	16.53	13.83	15.2	64.67	52.33	59	2.63	2.55	2.59	44.77	41.67	43.22	0.40	0.36	0.38
P ₂ x P ₅	19.13	12.60	15.9	60.00	58.67	59	2.78	2.71	2.74	46.63	44.33	45.48	0.33	0.31	0.32
P ₂ x P ₆	16.00	6.53	11.3	68.00	51.67	60	2.95	2.14	2.55	41.67	37.93	39.80	0.36	0.19	0.27
P ₃ x P ₄	24.50	11.20	17.9	91.00	64.33	68	3.63	3.25	3.44	45.33	41.07	43.20	0.33	0.26	0.30
P ₃ x P ₅	17.60	10.80	14.2	70.67	58.00	64	2.85	2.69	2.77	46.33	45.37	45.85	0.32	0.23	0.28
P ₃ x P ₆	17.73	14.30	16.0	65.00	55.33	60	2.57	2.50	2.54	45.33	38.77	42.05	0.37	0.35	0.36
P ₄ x P ₅	18.50	8.27	13.4	59.67	42.00	51	3.24	1.80	2.52	48.00	41.10	44.55	0.40	0.38	0.39
P ₄ x P ₆	24.00	13.87	18.9	57.00	56.33	57	4.07	2.47	3.27	52.33	33.43	42.88	0.36	0.30	0.33
P ₅ x P ₆	19.37	13.33	16.4	60.00	48.67	54	3.58	2.17	2.88	48.00	45.37	46.68	0.42	0.23	0.33
Mean (crosses)	20.37	13.79	17.17	64.98	55.13	60.05	3.43	2.70	3.06	47.24	41.18	44.21	0.37	0.31	0.34
L.s.d ₀₅ par	1.903	2.084	1.32	3.840	3.633	2.47	0.710	1.848	0.923	2.634	2.047	1.56	0.057	0.057	0.038
L.s.d ₀₁ par	2.707	2.965	1.80	5.462	5.169	3.36	1.010	2.628	1.26	3.746	2.911	2.12	0.82	0.082	0.052
L.s.d ₀₅ cross	1.393	4.259	2.19	2.280	8.912	4.49	0.681	0.917	0.506	1.507	2.707	1.51	0.053	0.105	0.055
L.s.d ₀₁ cross	1.879	5.746	2.90	3.076	12.024	5.95	0.920	0.970	0.671	2.034	3.652	2.00	0.071	0.142	0.073

F = Favorable

S = Stress

Table(4): Mean Squares of general (GCA) and specific combining ability (SCA) and its interaction with water regimes (I) for all studied traits.

Source	DF	Days to Heading		Plant Height		Spike Length		Number of spikes/plant		Biological yield/plant	
		Favorable	Stress	Favorable	Stress	Favorable	Stress	Favorable	Stress	Favorable	Stress
G.C.A	5	204.8**	115.27**	187.56**	425.30**	1.82	7.83**	5.18**	4.01	577.43**	258.16**
S.C.A	15	13.61**	32.15**	74.88**	291.6**	4.01**	2.38**	4.00**	10.15**	401.11**	245.76**
Error	40	3.85	1.29	17.31	19.74	0.802	0.54	0.54	0.94	8.88	33.98
GCA/ SCA	-	2.57	0.46	.37	0.17	0.04	0.5	0.17	0.04	0.18	0.13
GCA	5	152.37**		227.42**		3.58**		2.31**		354.52**	
SCA	15	14.71**		130.54**		2.25**		5.13**		197.77**	
GCA x I	5	167.7**		385.44**		6.07**		6.88**		481.07**	
SCA x I	15	31.05**		235.94**		4.14**		9.02**		449.1**	
Pooled error	80	2.57		18.53		0.80		0.74		21.43	
GCA/ SCA	-	1.41		0.23		0.21		0.052		0.23	
GCA x I/ SCA x I	-	0.7		0.32		0.20		0.10		0.13	
		Grain yield/ plant		Number of grains/spike		Grain weight/spike		1000-grain weight		Harvest index	
		Favorable	Stress	Favorable	Stress	Favorable	Stress	Favorable	Stress	Favorable	Stress
G.C.A	5	18.67**	25.27**	80.87**	61.92**	1.99*	2.38*	53.46**	63.14**	0.016*	0.005
S.C.A	15	40.21**	39.57**	103.51**	101.47**	1.64	1.69	25.41**	36.91**	0.01*	0.02
Error	40	0.91	5.12	2.53	21.24	5.99	0.42	1.12	2.26	0.001	0.003
GCA/ SCA	-	0.06	0.07	0.06	0.06	0.16	0.19	0.27	0.22	0	0.015
GCA	5	15.51**		43.25**		1.26		21.22**		0.01**	
SCA	15	26.16**		65.39**		1.32		10.37**		0.012**	
GCA x I	5	28.43**		69.54**		3.11*		95.38**		0.011**	
SCA x I	15	53.62**		139.59**		2.01**		51.94**		0.018**	
Pooled error	80	3.01		11.89		0.30		1.70		0.002	
GCA/ SCA	-	0.07		0.08		0.12		0.23		0.10	
GCA x I/ SCA x I	-	0.03		0.06		0.20		0.23		0.10	

*, ** Significant and highly significant at 5% and 1%, respectively.

Table (5): General (GCA) and specific (SCA) combining ability effects for days to heading, plant height, spike length, number of spikes/plant and biological yield under favorable and water stress conditions and their combined.

Genotypes	Days to heading			Plant height			Spike length			Number of spikes/plant			Biological yield		
	F	S	Comb.	F	S	Comb.	F	S	Comb.	F	S	Comb.	F	S	Comb.
Giza 160 (P ₁)	0.799*	1.194**	0.997	-1.972*	2.478**	0.253	0.000	0.762**	0.381	0.069	-0.556**	-0.243	2.778**	1.344	2.061
Sonora 64 (P ₂)	-3.468**	-3.514**	-3.491	-0.431	0.494	0.032	-0.333*	-0.454**	-0.394	0.694**	0.486**	0.590	-3.806**	-0.764	-2.285
Leningraqdka(P ₃)	4.832**	3.028**	3.930	4.444**	3.653**	4.049	0.208	0.529**	0.369	-0.014	-0.347	-0.181	6.736**	6.003**	6.369
Sakha 8 (P ₄)	-2.326**	-1.014**	-1.670	-2.972**	-8.014**	-5.493	-0.083	-3.00**	-0.192	-0.056	-0.056	-0.056	1.528**	-1.522	0.003
Sakha 69 (P ₅)	0.865*	0.153	0.509	2.194**	-0.664	0.765	-0.208	-0.675**	-0.442	0.069	0.069	0.069	-0.139	-2.872**	-1.506
Chenab 70 (P ₆)	-0.701*	0.153	-0.274	-1.264	2.053*	0.394	0.417*	0.137	0.227	-0.764**	0.403*	-0.181	-7.097**	-2.189*	-4.643
P ₁ x P ₂	-0.951	-0.982	-0.967	1.673	-2.755	2.214	0.333	1.301**	0.817	-0.827*	0.196	-0.315	3.345*	2.965	3.155
P ₁ x p ₃	-0.918	-4.524**	-2.721	-4.202*	-3.937	-4.070	-0.542	0.518	-0.12	0.214	1.696**	0.955	4.470**	4.599	4.535
P ₁ x p ₄	-3.760**	0.185	-1.787	-11.119**	-6.737**	-8.928	1.417**	0.114	0.765	1.256**	-0.595	0.330	10.345**	12.457**	11.401
P ₁ x p ₅	1.049	5.351**	3.200	-0.952	-0.820	-0.886	-0.125	0.955**	0.415	1.131**	-0.720	0.205	19.679**	-0.060	9.810
P ₁ x p ₆	0.949	1.351*	1.150	4.839*	14.530**	9.685	0.583	0.076	0.330	-0.702	0.280	-0.211	-10.030**	-4.743	-7.386
P ₂ x p ₃	0.349	-0.815	-0.233	2.077	-0.220	-1.149	0.458	-1.265**	-0.404	0.923*	0.988*	0.923	4.056**	8.774**	6.414
P ₂ x p ₄	1.174	-2.107**	-0.467	0.673	-7.420**	-3.374	0.417	1.064**	0.740	-1.036**	-0.637	-0.836	-17.738	4.499	-6.620
P ₂ x p ₅	-0.351	-4.940**	-2.646	-2.161	10.563**	4.201	0.542	0.239	0.390	0.839*	-0.095	0.372	6.929**	0.249	3.589
P ₂ x p ₆	-3.118**	0.060	-1.529	-5.702	-8.487**	-7.095	1.917**	0.760*	1.338	-0.327	-0.762	-0.545	1.554	-7.033*	-2.740
P ₃ x p ₄	-3.126**	2.982**	-3.054	-2.869	-9.112**	-5.990	-0.125	-0.353	-0.239	1.339**	-0.804	0.268	10.720**	-5.868*	2.426
P ₃ x p ₅	-0.985	1.518**	0.267	-2.702**	-5.595*	-4.149	-0.667	0.489	-0.089	0.881*	2.405**	1.643	-5.946**	0.082	-2.932
P ₃ x p ₆	0.582	-0.482	0.050	-2.244	2.688	+0.222	-0.625	-0.024	-0.324	0.714	-0.595	0.060	-13.655**	0.265	-6.695
P ₄ x p ₅	1.174	0.226	0.700	3.381	-7.595**	-2.107	0.958*	0.551	0.755	-0.077	1.446*	0.685	-6.405**	-18.593**	-12.499
P ₄ x p ₆	-1.260	3.893**	1.317	3.506	18.688**	11.097	-0.667	-0.661	-0.664	1.089**	2.780**	1.935	17.887**	5.924*	11.905
P ₅ x p ₆	-1.451	-4.274**	-2.862	4.006	5.338*	4.672	1.458**	-0.353	0.533	0.298	2.988**	1.643	-1.446	18.007**	8.280
S.E gi =	0.365	0.212	0.0457	0.775	0.828	0.3587	0.167	0.138	0.0091	0.136	0.180	0.0109	0.555	1.086	0.3432
S.E sij =	1.004	0.582	0.1098	2.129	2.273	0.8609	0.458	0.379	0.0219	0.375	0.495	0.0263	1.525	2.983	0.8237
S.E (gi-gj)	0.566	0.328	0.3450	1.201	1.282	2.7058	0.258	0.213	0.0687	0.211	0.279	0.0826	0.860	1.683	2.5888
S.E(sij-sik)	1.499	0.868	0.7684	3.177	3.393	6.0266	0.684	0.565	0.1531	0.560	0.739	0.1839	2.276	4.451	5.7659

F = Favorable

S = Stress

*, ** Significant and highly significant at 5% and 1%, respectively.

Table (5) (cont.): General (GCA) and specific (SCA) combining ability effects for grain yield/plant, number of grains/spike, grain weight/spike, 1000-grain weight and harvest index under favorable and water stress conditions and their combined.

Genotypes	Grain yield/plant			Number of grains/spike			Grain weight/spike			1000-grain weight			Harvest index		
	F	S	Comb.	F	S	Comb.	F	S	Comb.	F	S	Comb.	F	S	Comb.
Giza 160 (P ₁)	0.793**	0.754	0.774	0.778**	0.750	0.764	0.150*	0.089	0.120	2.000**	-0.797**	0.601	0.001	0.010**	0.005
Sonora 64 (P ₂)	-1.461**	0.071	-0.695	-1.597**	1.250	-0.174	-0.490**	-0.177	-0.333	-2.308**	2.111**	-0.099	-0.006	-0.002	-0.004
Leningradka(P ₃)	0.972**	1.346**	1.159	2.236**	2.125*	2.181	0.131*	0.447**	0.289	-0.408*	-0.776**	-0.592	-0.028**	-0.011**	-0.020
Sakha 8 (P ₄)	-0.211	-1.454**	-0.833	-0.722*	-1.667*	-1.194	-0.070	-0.337**	-0.204	-0.175	-0.164	-0.169	-0.016**	-0.020**	-0.018
Sakha 69 (P ₅)	0.120	-0.862*	-0.326	-1.264**	-1.708*	-1.486	-0.047	0.255*	0.104	1.225**	1.732**	1.478	0.003	0.006	0.004
Chenab 70 (P ₆)	-0.303	0.146	-0.078	0.569	-0.750	-0.090	0.326**	-0.278*	0.024	-0.333	-2.106**	-1.219	0.047**	0.017**	0.032
P ₁ x P ₂	0.446	2.542*	1.494	4.863**	4.190	-0.336	0.530*	1.363**	0.947	-1.149*	2.294**	0.573	-0.020	0.034	0.007
P ₁ x p ₃	3.379**	3.600**	3.490	12.637**	-0.685	5.976	0.783	0.292	0.498	4.618**	-4.652**	-0.017	0.023	0.058*	0.040
P ₁ x p ₄	1.096*	-1.333	-0.119	-0.071	-7.226**	-3.649	-0.147	0.317	0.085	-0.949	3.826**	1.443	-0.043**	-0.095**	-0.069
P ₁ x p ₅	4.075**	1.275	2.675	-0.530	2.815	1.143	0.321	0.188	0.254	0.651	-4.727**	-2.038	-0.048**	0.018	-0.015
P ₁ x p ₆	3.021**	4.533**	3.777	3.304**	4.190	3.747	1.462**	0.321	0.892	1.210*	2.044**	1.627	0.167**	0.160**	0.163
P ₂ x p ₃	21567**	2.817	2.692	-0.655	6.815	3.080	0.204	0.618	0.411	3.260**	4.373**	3.816	0.020	0.011	0.015
P ₂ x p ₄	3.650**	4.883**	0.617	3.304	-1.726	0.789	-0.037	0.543	0.253	-1.974	-0.707	-0.240	0.065	0.078	0.072
P ₂ x p ₅	1.229*	0.358	0.794	-0.821	4.649*	1.914	0.104	0.100	0.102	1.494	1.465	0.379	-0.023	0.004	-0.010
P ₂ x p ₆	1.392**	-6.717**	-4.054	5.345**	-3.310	1.018	-0.033	-0.003	-0.018	-1.815	-3.398**	-2.607	-0.045**	-0.126**	00.085
P ₃ x p ₄	4.583**	-1.725	1.429	5.804**	9.399**	9.601	0.418*	0.539	0.478	-0.207	0.682	0.237	0.018	-0.008	0.005
P ₃ x p ₅	2.738**	-2.717*	-2.727	6.012**	3.107	4.560	-0.537*	-0.447	-0.492	-0.607	3.086	1.239	-0.015	-0.065*	-0.040
P ₃ x p ₆	5.525**	3.208**	-1.158	-1.488	-0.518	-1.003	-1.103**	-0.194	-0.648	-0.049	0.323	0.137	-0.024	0.060*	0.018
P ₄ x p ₅	0.654	-2.450*	-1.552	-2.030*	-9.101**	-5.565	0.212	-0.713*	-0.250	0.826	-1.793*	-0.484	0.028*	0.107**	0.068
P ₄ x p ₆	5.358**	2.142	3.750	-6.530**	4.274	-1.128	0.671**	0.491	0.581	6.718**	-5.623**	0.548	0.030*	-0.002	-0.016
P ₅ x p ₆	0.304	1.017	0.660	-2.988**	-3.351	-3.170	0.159	-0.402	-0.122	0.985	4.415**	2.700	0.014	-0.092**	-0.039
S.E gi =	0.176	0.422	0.0648	0.296	0.859	0.2138	0.077	0.121	0.0054	0.197	0.280	0.345	0	0.01	0.0000
S.E sij =	0.484	1.158	0.1555	0.815	2.359	0.5131	0.213	0.337	0.0129	0.541	0.77	0.0827	1.0141	0.018	0.0001
S.E (gi-gj)	0.237	0.653	0.4888	0.459	1.330	1.6127	0.12	0.187	0.0405	0.305**	0.434	0.2600	0.01	0.017	0.0002
S.E(sij-sik)	0.723	1.729	1.0887	1.216	3.520	3.5918	0.317	0.496	0.0901	0.807	0.971	0.5790	0.02	0.043	0.0005

F = Favorable S = Stress *, ** Significant and highly significant at 5% and 1%, respectively.

Table(6): Estimates for genetic components and ratios derived from 6x6 half diallel analysis for all studied traits.

Item	Days to heading		Plant height		Spike length		Number of spikes/plant		Biological yield	
	Favorable	Stress	Favorable	Stress	Favorable	Stress	Favorable	Stress	Favorable	Stress
D	29.44** ± 3.41	18.19** ± 1.98	37.64** ± 8.77	79.37** ± 30.42	0.67** ± 0.6	1047** ± 0.49	1.4** ± 0.49	1.06** ± 0.86	71.13** ± 17.96	2.17** ± 0.76
H ₁	4.94 ± 8.56	42.08** ± 5.03	63.78** ± 22.26	398.91** ± 774	3.11** ± 1.54	1.85* ± 1.23	3.63** ± 1.24	10.45** ± 2.18	533.34** ± 45.6	225.17** ± 57.92
H ₂	6.54 ± 7.73	34.93** ± 4.50	52.93** ± 19.88	279.7** ± 68.99	2.33* ± 1.37	1.36* ± 1.1	2.83** ± 1.11	8.57** ± 1.95	467.04** ± 40.75	231.96** ± 51.74
F	5.23 ± 8.32	4.58 ± 4.84	24.85 ± 21.42	110.89 ± 74.33	1.51 ± 1.048	0.88 ± 1.19	1.6 ± 1.19	2.43 ± 2.1	20.95 ± 43.88	39.09 ± 55.74
(H ₁ /D) ^{1/2}	0.41	1.52	1.301	2.25	2.15	1.12	1.61	3.13	2.74	10.17
(H ₂ /4H ₁)	0.33	0.21	0.21	0.17	0.19	0.23	0.19	0.20	0.22	0.26
KD/KR	0.64	1.18	1.68	1.91	3.19	1.73	2.11	2.15	1.11	0.062
H broad	0.82	0.95	0.62	0.84	0.40	0.62	0.65	0.72	0.95	0.66
H Narrow	0.74	0.51	0.30	0.32	0.25	0.38	0.19	0.08	0.32	0.15
	Grain yield/plant		Number of grains/spike		Grain weight/spike		1000-grain weight		Harvest index	
	Favorable	Stress	Favorable	Stress	Favorable	Stress	Favorable	Stress	Favorable	Stress
D	3.04 ± 2.03	2.99 ± 3.64	6.97* ± 3.61	21.01* ± 1941	0.32* ± 0.16	0.87** ± 0.18	7.4** ± 1.8	2.94** ± 3.02	1.36 ± 2.89	1.10 ± 3.293
H ₁	52.38** ± 5.15	38.74** ± 9.24	144.63** ± 9.15	83.54* ± 39.3	1.77** ± 0.44	1.65** ± 0.46	31.25** ± 4.58	45.13** ± 7.67	1.08* ± 5.11	1.80* ± 0.744
H ₂	43.55* ± 406	34.42* ± 8.26	107.22** ± 8.17	69.04* ± 44.03	1.37** ± 0.39	1.37* ± 0.39	26.02** ± 4.1	41.67** ± 6.85	1.03* ± 0.519	1.81** ± 0.665
F	6.92 ± 4.95	3.35 ± 8.9	27.24 ± 8.8	11816 ± 47.42	0.4 ± 0.43	1.35 ± 0.44	2.43 ± 4.41	6.24 ± 7.38	0.856 ± 5.60	0.856 ± 5.60
(H ₁ /D) ^{1/2}	4.15	3.6	4.55	1.99	2.35	1.37	2.054	3.92	2.81	4.05
(H ₂ /4H ₁)	0.21	0.22	0.18	0.21	0.19	0.141	0.21	0.23	0.24	0.25
KD/KR	1.76	0.73	2.5	0.64	1.72	3.56	1.17	0.57	0.8	0.86
H broad	0.94	0.66	0.94	0.49	0.75	0.53	0.92	0.88	.83	0.55
H Narrow	0.17	0.14	0.23	0.12	0.24	0.18	0.41	0.33	0.28	0.03

*, ** Significant and highly significant at 5% and 1%, respectively.