

# Supplementary Tables

**Table S1** Mean values of yield components and root attributes of the ten parental lines and 90 F<sub>2</sub> families of wheat based on grain yield under drought-stressed conditions.

No.	Genotype	DTH		DTM		PH		TN		SL		SPS		KPS		TKW	
		NS	DS	NS	DS	NS	DS	NS	DS	NS	DS	NS	DS	NS	DS	NS	DS
1	LM75	60.75	61.25	102.00	97.75	92.58	89.03	9.56	12.56	8.64	9.08	17.50	17.50	35.54	39.96	40.53	30.64
2	LM26 x BW140	53.75	59.75	103.75	106.00	80.88	75.20	10.78	13.31	8.80	9.10	16.63	16.00	37.33	36.00	36.90	34.20
3	BW140 x LM71	55.25	57.00	103.50	99.25	78.75	76.48	8.00	9.81	8.58	8.61	16.75	16.63	41.38	39.75	37.25	35.89
4	LM47 x BW152	59.25	59.50	107.00	100.00	83.30	92.13	10.19	10.13	9.48	9.38	16.88	17.63	35.79	40.88	39.66	30.35
5	LM70 x BW152	65.25	60.50	106.25	98.25	95.45	85.00	14.25	10.31	9.95	9.75	19.13	18.13	42.63	32.25	39.97	34.45
6	LM70 x BW141	56.50	54.50	106.50	95.00	90.45	83.73	7.63	10.38	9.85	8.67	18.38	17.25	45.21	40.21	42.48	36.82
7	BW162 x LM75	60.50	63.00	102.50	96.75	94.85	92.03	10.88	9.44	9.48	9.18	17.63	18.00	39.67	38.25	41.83	31.88
8	LM75 x BW141	59.00	54.50	104.25	98.25	86.23	79.55	11.88	12.31	9.56	8.58	19.38	17.38	41.96	34.29	42.45	35.37
9	BW152 x BW141	62.25	59.75	105.50	94.25	86.55	84.90	6.83	9.38	9.55	8.99	17.88	16.63	41.83	32.83	43.83	32.26
10	LM70 x BW162	62.50	60.25	103.50	96.00	84.58	78.58	9.94	12.13	8.93	9.45	16.88	18.00	36.33	33.88	43.85	33.33
11	BW141 x LM26	55.25	56.75	108.25	104.25	89.43	75.93	11.92	8.31	10.18	8.25	18.50	16.00	36.54	37.71	43.92	35.99
12	LM48 x BW140	57.50	58.00	111.50	103.25	85.58	72.13	12.94	6.81	10.13	7.43	21.63	14.63	48.42	33.88	37.21	32.84
13	LM75 x LM47	60.25	59.75	105.75	94.75	95.75	91.15	7.13	13.06	9.80	10.00	18.25	17.50	37.25	36.00	44.99	33.77
14	LM70 x LM26	55.75	58.33	106.00	105.00	85.60	83.67	7.38	9.33	9.59	9.88	17.25	18.50	34.96	40.17	39.51	39.38
15	LM47 x BW140	61.50	58.25	108.25	99.75	86.55	79.30	11.38	11.25	9.05	8.75	17.75	16.50	34.08	34.67	41.43	34.35
16	LM26 x LM71	60.75	57.00	107.75	100.00	93.13	87.20	9.88	10.75	9.39	9.43	17.75	18.00	36.75	34.83	36.35	29.67
17	BW141 x LM75	59.25	55.25	106.75	100.50	95.43	87.18	11.56	10.50	8.55	9.00	18.13	17.13	43.54	31.79	41.58	37.10
18	BW162 x LM26	59.25	55.50	108.00	95.25	83.45	84.83	9.31	12.44	9.08	9.19	18.63	19.00	42.38	34.25	38.49	31.47
19	LM26 x BW141	54.50	56.00	105.75	99.50	90.40	71.65	11.31	6.44	8.58	8.63	17.75	16.88	41.75	38.79	40.67	31.24
20	LM71 x LM26	55.75	56.00	110.25	98.00	88.70	78.38	13.63	7.63	10.50	8.83	20.25	17.50	35.21	31.21	40.26	29.62
21	BW152 x LM75	59.75	58.25	107.25	99.00	89.28	83.60	12.41	11.63	9.70	9.00	19.00	18.75	40.67	35.46	43.69	35.41
22	LM48 x BW162	69.50	61.67	112.00	101.33	98.80	84.33	6.50	7.67	9.57	8.16	19.00	16.38	38.67	36.50	45.00	37.29
23	LM75 x BW152	60.75	63.00	105.00	96.50	93.33	82.68	12.56	10.75	9.40	9.45	18.75	17.38	41.92	37.75	42.25	37.63
24	BW152 x LM26	56.25	57.50	106.75	99.75	81.58	75.48	9.31	7.75	8.38	7.15	17.75	15.00	30.33	30.17	36.58	36.86
25	BW140 x LM75	55.75	56.25	105.25	100.75	85.55	71.70	13.94	9.94	8.00	7.60	15.75	14.38	31.63	28.96	45.75	40.19
26	BW140 x BW152	58.75	57.50	109.50	98.75	85.00	80.60	11.81	13.94	8.50	7.88	18.25	16.63	36.42	28.29	43.45	34.48
27	BW162 x BW140	55.25	56.00	103.00	102.50	75.90	73.18	9.31	12.50	6.70	7.83	12.88	14.88	33.92	30.17	37.81	34.71
28	LM75 x BW140	56.50	56.75	112.00	100.50	86.10	78.30	9.13	9.31	8.98	6.33	19.38	13.38	38.92	25.92	40.09	36.42
29	LM71 x BW140	57.25	55.50	109.25	98.25	75.78	75.58	8.75	8.81	7.38	9.56	14.25	17.63	38.08	34.46	36.08	31.32
30	BW141 x LM70	58.75	60.75	103.75	96.25	96.38	91.18	12.38	11.31	9.46	9.24	17.13	17.75	38.83	34.63	46.73	35.31

DTH = days to 50% heading, DTM = days to 50% maturity, PH = plant height (cm), TN = tiller number, SL = spike length (cm), SPS = spikelets per spike, KPS = kernels per spike, TKW = thousand kernel weight (g), NS = non-stressed, DS = drought-stressed

Table S1 continued.

No.	Genotype	DTH		DTM		PH		TN		SL		SPS		KPS		TKW	
		NS	DS	NS	DS	NS	DS	NS	DS	NS	DS	NS	DS	NS	DS	NS	DS
31	LM75 x LM48	62.25	61.50	103.75	98.00	83.30	86.33	8.94	12.19	8.27	9.13	15.50	17.25	36.08	35.96	40.15	29.25
32	BW141 x BW152	61.50	59.75	111.00	100.25	99.40	82.03	12.50	7.19	9.57	8.00	18.67	16.50	38.63	33.43	39.06	31.39
33	LM75 x LM70	62.75	58.25	106.25	96.25	91.50	88.45	9.06	7.13	9.38	8.95	17.50	16.38	38.46	34.79	40.84	39.54
34	LM70 x LM47	59.25	64.25	101.50	98.75	96.28	92.75	11.94	10.06	9.63	9.50	17.88	16.75	43.67	34.25	48.34	34.76
35	LM26 x LM48	57.00	57.25	104.50	98.00	85.08	79.63	11.06	7.00	8.68	9.00	15.88	17.63	44.08	45.58	36.73	31.80
36	BW162	64.75	59.25	102.50	100.75	93.13	70.05	13.56	6.00	9.13	7.13	17.88	13.75	38.88	23.67	44.76	36.34
37	BW140 x LM70	55.25	55.50	105.00	102.00	79.50	80.60	8.38	8.50	8.80	8.95	16.50	17.25	39.46	33.92	42.24	39.23
38	LM70 x LM75	62.50	62.00	107.00	93.00	97.43	94.90	8.75	11.69	9.60	9.90	17.88	17.75	38.08	41.33	44.46	31.01
39	LM47 x LM70	63.75	63.75	104.50	102.50	85.93	85.78	8.75	11.69	8.05	8.89	14.63	16.38	28.33	31.08	40.11	34.72
40	LM47 x LM48	62.00	56.25	101.25	94.50	89.30	88.68	11.19	7.88	9.85	8.95	17.38	17.38	43.17	35.25	35.35	27.73
41	LM26 x BW162	55.25	59.50	105.25	97.50	88.08	78.15	11.56	10.00	9.00	9.45	16.63	18.00	43.75	34.17	40.40	31.43
42	LM48 x LM26	62.75	61.25	107.25	97.75	82.05	76.75	12.06	10.44	9.43	8.80	18.25	17.88	51.25	37.96	37.84	30.42
43	BW162 x LM48	60.75	59.25	101.50	94.00	85.03	80.43	9.06	8.88	10.14	8.75	18.75	15.88	47.75	35.54	34.12	31.78
44	BW141	55.50	57.25	104.75	96.75	74.60	74.95	9.88	11.31	7.88	7.69	16.13	16.63	35.63	34.04	38.94	33.60
45	LM75 x BW162	63.50	57.50	106.50	95.50	89.40	81.23	12.19	13.25	9.38	8.03	18.13	15.25	34.38	30.75	44.02	34.33
46	BW140 x BW162	51.33	53.75	104.67	96.75	84.70	74.30	13.43	7.75	7.77	8.28	15.83	16.13	32.89	36.08	40.60	37.15
47	LM71 x LM75	59.75	60.75	104.25	98.00	86.15	82.08	15.75	10.19	9.15	8.30	17.63	14.75	39.29	30.79	41.01	35.63
48	LM70 x BW140	58.75	58.25	107.75	97.50	86.00	81.80	8.19	6.81	9.13	8.45	17.13	15.25	33.42	26.46	43.10	40.40
49	LM26 x LM75	62.50	60.50	104.25	94.25	91.40	86.95	13.81	12.13	8.83	9.13	17.00	16.63	37.42	33.54	42.29	28.99
50	BW162 x BW141	55.25	59.00	105.75	98.25	95.23	84.93	9.16	10.38	9.88	9.05	18.63	18.75	38.88	32.71	44.88	32.01
51	BW140 x LM48	58.25	58.50	107.50	98.25	76.40	73.25	6.13	9.19	6.63	7.38	13.13	15.00	28.75	34.04	37.84	37.82
52	LM26	59.25	56.75	103.50	95.50	83.90	69.05	10.19	7.81	9.48	8.68	17.63	17.38	44.58	41.63	35.01	29.34
53	LM48 x BW141	60.75	59.00	111.75	102.50	88.63	70.08	10.56	9.56	9.23	7.68	17.75	14.63	36.38	34.46	38.41	32.13
54	LM47 x LM26	58.25	58.75	109.25	97.75	90.48	86.30	11.75	9.31	9.33	9.15	18.25	18.00	41.11	34.63	49.50	30.85
55	BW140 x BW141	53.00	56.25	106.00	101.75	74.90	61.03	10.31	10.81	6.88	7.00	14.38	13.50	30.71	29.75	45.38	36.47
56	BW152 x LM48	66.75	61.00	107.50	97.50	91.00	81.90	9.69	9.13	8.95	8.75	19.25	17.75	50.33	38.63	33.56	29.56
57	BW140	63.67	57.00	118.00	99.00	79.20	78.55	9.81	11.44	8.93	8.64	18.25	18.75	48.92	38.13	34.96	28.95
58	LM70 x LM71	62.25	61.00	108.25	92.25	81.88	89.70	11.31	10.31	11.88	10.19	22.63	19.00	45.06	35.08	41.67	29.27
59	LM26 x LM47	59.25	56.00	107.25	97.75	93.15	85.23	12.94	7.00	10.43	8.68	18.88	16.63	42.63	31.46	42.87	36.44
60	BW162 x BW152	60.00	62.50	100.25	97.75	90.60	80.48	11.00	9.81	9.56	9.50	18.13	18.13	37.92	31.04	41.82	32.61

DTH = days to 50% heading, DTM = days to 50% maturity, PH = plant height (cm), TN = tiller number, SL = spike length (cm), SPS = spikelets per spike, KPS = kernels per spike, TKW = thousand kernel weight (g), NS = non-stressed, DS = drought-stressed

Table S1 continued.

No.	Genotype	DTH		DTM		PH		TN		SL		SPS		KPS		TKW	
		NS	DS	NS	DS	NS	DS	NS	DS	NS	DS	NS	DS	NS	DS	NS	DS
61	LM71 x BW152	62.67	62.25	108.00	96.50	76.78	76.75	7.06	11.63	7.88	7.78	14.75	15.50	29.75	28.92	42.76	33.02
62	LM48 x LM47	64.25	60.50	104.50	96.50	96.33	75.65	11.38	12.56	10.00	8.69	18.13	15.50	36.83	28.38	40.00	36.33
63	BW140 x LM26	56.75	56.00	110.75	101.75	85.83	78.45	13.00	5.36	8.48	7.81	18.00	15.63	35.54	28.88	34.79	36.18
64	LM47 x LM75	57.67	61.00	100.00	95.75	87.90	82.05	11.33	8.75	9.00	8.91	17.17	16.38	33.56	26.08	47.41	34.13
65	LM26 x LM70	56.75	57.00	105.00	98.75	92.78	82.68	9.63	9.00	10.53	9.54	19.44	17.50	35.89	34.67	39.96	32.78
66	LM71 x LM70	62.00	58.25	104.00	95.75	74.63	78.40	6.75	7.69	8.30	9.00	14.00	16.13	28.54	25.83	46.39	36.87
67	LM48 x LM75	60.75	61.00	102.50	96.75	89.35	69.80	9.44	6.38	9.50	7.70	19.00	14.38	46.50	32.88	36.79	33.69
68	LM48 x LM70	61.50	63.25	104.00	96.25	88.75	85.33	7.75	10.38	9.73	9.00	17.50	17.38	39.50	37.21	43.72	30.69
69	LM48 x BW152	62.25	60.75	102.75	96.50	83.80	87.43	10.50	7.55	9.18	8.70	15.75	15.75	39.88	29.21	38.67	32.42
70	BW140 x LM47	61.00	60.25	108.75	97.25	91.88	79.45	13.75	9.81	8.65	8.20	15.38	16.25	32.96	26.88	41.38	34.61
71	LM71 x BW141	57.50	56.25	110.50	100.50	74.00	77.18	7.06	11.60	8.50	7.75	15.88	15.38	36.08	30.50	33.88	36.31
72	BW141 x LM71	56.75	54.75	107.00	96.75	84.18	65.05	7.81	9.13	8.53	6.70	17.13	13.25	31.04	26.83	41.82	35.33
73	LM70	64.00	62.25	105.00	95.50	91.08	84.98	11.06	9.81	10.25	9.74	18.75	18.38	44.21	36.25	43.99	32.07
74	BW152 x BW140	58.75	54.75	112.00	98.00	86.08	74.33	9.25	9.81	8.68	7.60	19.63	15.83	46.38	20.39	38.87	28.88
75	BW152 x BW162	63.33	64.00	105.25	96.75	80.85	73.40	6.63	8.00	7.98	7.95	16.38	17.38	38.17	28.13	38.56	32.80
76	LM26 x BW152	60.00	62.33	107.00	101.00	91.10	80.73	12.31	8.75	9.87	8.73	20.00	17.25	48.54	30.29	37.27	37.82
77	BW141 x LM48	55.00	61.00	104.00	104.33	84.13	72.60	15.69	7.50	8.08	7.53	15.88	14.88	41.50	32.44	39.37	44.97
78	LM70 x LM48	70.00	66.00	112.50	112.00	93.90	91.30	8.25	4.25	10.60	9.30	20.00	18.00	53.67	23.67	37.50	50.00
79	LM47 x BW141	56.00	56.00	102.75	99.25	98.75	79.88	11.13	8.94	8.51	8.81	16.38	18.13	37.00	27.75	43.16	33.01
80	LM71 x LM47	61.50	63.25	103.25	96.25	88.93	83.43	10.50	7.46	10.93	9.35	18.63	16.50	45.88	33.75	43.48	36.21
81	BW141 x LM47	58.25	61.25	108.00	97.00	98.40	71.38	11.44	4.63	9.73	8.03	18.38	14.38	33.00	28.63	43.22	37.56
82	BW162 x LM70	64.67	61.50	104.00	96.75	72.35	82.08	8.00	9.81	8.56	9.58	15.38	17.00	25.00	31.79	50.00	38.58
83	BW162 x LM47	64.50	60.50	107.00	96.25	84.50	81.45	12.94	9.25	7.63	8.03	14.63	15.25	35.42	28.17	39.60	34.66
84	BW152 x LM71	59.50	61.75	103.25	96.50	83.95	83.50	5.19	9.88	7.98	9.24	15.00	17.13	31.58	34.71	45.34	30.91
85	LM71 x BW162	63.00	61.00	105.00	97.00	88.75	78.70	14.06	9.56	9.20	9.40	18.13	16.25	35.75	29.75	39.93	32.92
86	BW152 x LM47	63.75	64.75	106.50	95.75	89.73	77.03	8.50	8.06	9.20	7.75	18.50	15.88	41.38	29.79	39.60	32.47
87	LM48 x LM71	64.25	61.00	109.25	98.00	89.50	79.65	10.81	10.81	10.29	8.60	19.38	16.50	56.13	33.67	37.01	28.32
88	LM75 x LM26	56.25	58.25	105.25	99.75	89.48	74.53	10.81	7.88	9.41	7.83	18.88	16.25	42.08	29.13	43.44	28.29
89	BW141 x BW162	56.75	56.25	102.50	98.25	85.73	69.03	9.38	12.31	9.75	7.85	18.38	15.00	40.63	26.83	43.12	31.56
90	LM71	62.00	61.75	105.50	94.75	73.38	77.50	10.17	7.31	9.75	8.20	17.25	15.13	27.00	27.00	34.88	33.81

DTH = days to 50% heading, DTM = days to 50% maturity, PH = plant height (cm), TN = tiller number, SL = spike length (cm), SPS = spikelets per spike, KPS = kernels per spike, TKW = thousand kernel weight (g), NS = non-stressed, DS = drought-stressed

Table S1 continued.

No.	Genotype	DTH		DTM		PH		TN		SL		SPS		KPS		TKW	
		NS	DS	NS	DS	NS	DS	NS	DS	NS	DS	NS	DS	NS	DS	NS	DS
91	LM48	63.00	62.00	104.00	96.00	82.40	67.25	7.88	7.13	8.00	7.60	15.25	13.88	38.63	30.00	31.09	26.75
92	BW141 × BW140	53.00	55.50	102.00	100.50	77.60	66.63	7.34	7.25	7.95	7.38	16.38	14.50	30.63	22.46	42.24	37.88
93	BW152 × LM70	60.50	61.25	99.50	94.00	94.23	85.00	10.25	12.06	9.99	9.25	18.13	17.13	40.46	25.21	43.14	30.54
94	LM47 × BW162	62.50	64.50	103.75	98.25	87.35	83.18	9.88	9.00	8.50	8.81	16.38	17.63	37.21	28.38	43.33	32.95
95	LM71 × LM48	58.25	64.50	105.75	97.75	92.48	87.98	13.56	9.00	9.89	9.50	19.13	18.13	39.79	38.29	37.62	29.97
96	BW162 × LM71	61.50	59.00	102.75	98.50	90.45	68.78	14.19	6.69	9.90	7.25	18.38	13.25	38.25	25.42	47.92	38.09
97	LM47 × LM71	63.25	63.00	103.75	94.75	93.55	76.50	9.38	7.63	9.50	8.10	18.38	14.63	37.42	29.75	42.37	27.64
98	LM47	64.50	65.25	106.25	98.00	90.13	71.33	10.13	6.63	9.73	8.49	17.25	15.63	34.33	24.42	45.13	38.10
99	LM75 × LM71	59.50	62.00	106.25	95.50	84.53	84.05	12.63	10.50	9.80	8.92	18.75	19.17	43.92	33.06	37.14	24.17
100	BW152	61.50	63.00	103.00	96.25	88.65	60.45	14.68	7.19	9.20	6.95	16.38	15.38	31.46	26.04	42.78	33.62
	Mean	59.90	59.44	105.90	98.17	87.27	79.76	10.47	9.42	9.14	8.58	17.53	16.51	38.69	32.45	40.89	33.82
	LSD	4.14	4.56	6.13	5.63	13.64	13.49	4.99	5.85	1.22	1.78	2.34	3.46	12.25	11.27	7.00	6.94
	SEM	0.35	0.29	0.31	0.30	0.64	0.71	0.23	0.21	0.09	0.08	0.17	0.14	0.58	0.48	0.37	0.39
	CV	5.90	4.85	2.93	3.04	7.27	8.85	21.66	21.79	9.78	9.46	9.52	8.69	14.96	14.71	9.10	11.39

DTH = days to 50% heading, DTM = days to 50% maturity, PH = plant height (cm), TN = tiller number, SL = spike length (cm), SPS = spikelets per spike, KPS = kernels per spike, TKW = thousand kernel weight (g), LSD = least significant difference, SEM = standard error of mean, %CV = coefficient of variation, NS = non-stressed, DS = drought-stressed

Table S1 continued.

No.	Genotype	SB		RB		PB		RS		GY	
		NS	DS	NS	DS	NS	DS	NS	DS	NS	DS
1	LM75	239.58	297.30	49.96	70.25	682.40	680.32	0.29	0.26	335.78	267.32
2	LM26 x BW140	233.25	199.69	27.20	54.92	572.95	536.96	0.17	0.29	267.10	241.33
3	BW140 x LM71	170.75	177.42	13.00	32.88	443.28	458.36	0.07	0.18	221.82	215.63
4	LM47 x BW152	191.85	301.13	13.29	53.94	417.31	594.91	0.06	0.18	209.51	204.99
5	LM70 x BW152	308.13	201.93	15.19	40.57	733.45	479.53	0.06	0.25	350.53	202.60
6	LM70 x BW141	158.63	188.03	27.72	30.77	584.77	448.72	0.41	0.15	340.52	196.52
7	BW162 x LM75	289.19	252.30	37.16	64.09	764.35	537.48	0.10	0.25	436.16	188.96
8	LM75 x BW141	231.36	212.91	33.32	28.82	669.32	457.69	0.15	0.12	345.85	184.58
9	BW152 x BW141	147.57	265.18	28.12	65.07	514.11	542.62	0.19	0.33	255.81	181.52
10	LM70 x BW162	214.65	173.67	26.08	53.36	468.07	438.48	0.21	0.38	223.02	180.73
11	BW141 x LM26	338.36	174.62	42.10	28.91	657.34	289.35	0.14	0.22	313.93	178.91
12	LM48 x BW140	369.12	155.91	48.37	32.60	962.54	396.74	0.11	0.21	465.86	177.98
13	LM75 x LM47	228.06	288.63	28.09	37.59	612.34	519.75	0.13	0.15	304.43	177.73
14	LM70 x LM26	197.57	242.52	15.81	54.35	441.47	515.55	0.08	0.28	194.95	172.00
15	LM47 x BW140	211.62	216.17	24.29	54.99	582.29	486.55	0.12	0.26	296.05	171.01
16	LM26 x LM71	306.70	231.70	41.22	45.08	640.76	476.35	0.14	0.21	290.47	170.58
17	BW141 x LM75	304.99	207.99	19.75	49.06	607.51	455.56	0.08	0.23	285.74	169.67
18	BW162 x LM26	240.26	243.97	38.05	54.59	544.58	427.52	0.16	0.22	227.57	166.10
19	LM26 x BW141	217.49	147.15	37.95	21.70	662.21	362.72	0.21	0.15	347.67	165.70
20	LM71 x LM26	388.93	199.61	41.80	50.42	1013.32	443.01	0.16	0.27	497.95	164.94
21	BW152 x LM75	302.57	211.06	44.54	32.87	836.91	435.93	0.13	0.20	418.63	164.10
22	LM48 x BW162	284.74	154.69	11.01	44.14	590.89	404.77	0.06	0.40	305.60	164.01
23	LM75 x BW152	264.24	200.45	31.95	41.28	768.67	396.66	0.13	0.22	403.83	163.14
24	BW152 x LM26	194.58	126.02	23.09	30.36	473.93	346.79	0.14	0.29	219.02	162.75
25	BW140 x LM75	327.32	174.01	68.54	30.95	851.62	391.42	0.23	0.16	394.29	159.36
26	BW140 x BW152	298.51	203.99	28.78	63.06	501.67	402.42	0.13	0.27	265.31	159.29
27	BW162 x BW140	168.03	170.87	16.06	57.73	479.04	417.75	0.10	0.30	252.10	158.99
28	LM75 x BW140	262.87	186.13	30.43	47.17	685.52	419.07	0.14	0.23	335.23	158.77
29	LM71 x BW140	329.99	204.43	31.23	28.99	699.22	418.77	0.12	0.17	295.56	158.42
30	BW141 x LM70	375.67	359.04	22.18	25.14	822.03	569.22	0.08	0.11	362.55	158.15

SB = shoot biomass (g m<sup>-2</sup>), RB = root biomass (g m<sup>-2</sup>), PB = total plant biomass (g m<sup>-2</sup>), RS = root to shoot ratio and GY = grain yield (g m<sup>-2</sup>), NS = non-stressed, DS = drought-stressed

Table S1 continued.

No.	Genotype	SB		RB		PB		RS		GY	
		NS	DS	NS	DS	NS	DS	NS	DS	NS	DS
31	LM75 x LM48	248.28	227.76	24.20	52.55	541.43	464.02	0.12	0.29	282.93	157.01
32	BW141 x BW152	354.91	175.07	38.04	34.05	737.05	392.32	0.13	0.22	294.10	156.58
33	LM75 x LM70	228.70	172.53	28.18	17.56	528.53	371.14	0.14	0.09	232.17	154.74
34	LM70 x LM47	275.18	286.85	28.72	36.80	842.77	484.41	0.09	0.14	374.15	154.45
35	LM26 x LM48	234.84	133.14	29.92	32.37	692.11	345.19	0.14	0.27	365.26	153.57
36	BW162	307.79	124.96	26.75	28.12	771.99	331.71	0.12	0.28	373.88	152.67
37	BW140 x LM70	228.48	143.97	28.62	47.66	540.94	369.63	0.13	0.65	242.60	152.14
38	LM70 x LM75	371.09	265.52	47.30	29.55	947.47	472.59	0.13	0.10	452.21	151.73
39	LM47 x LM70	181.44	246.43	24.38	38.46	412.26	461.89	0.14	0.16	176.44	151.28
40	LM47 x LM48	248.33	251.02	25.92	27.09	586.48	480.80	0.12	0.12	266.87	151.00
41	LM26 x BW162	264.61	272.42	34.58	50.50	737.26	498.24	0.14	0.19	374.41	149.85
42	LM48 x LM26	223.14	231.05	26.10	49.37	673.73	454.77	0.12	0.22	362.82	149.02
43	BW162 x LM48	270.60	218.48	34.92	56.46	647.42	446.25	0.13	0.29	292.22	146.42
44	BW141	167.72	164.62	15.23	23.32	411.06	358.36	0.10	0.16	194.97	145.66
45	LM75 x BW162	300.98	176.51	33.09	30.00	701.57	375.95	0.11	0.19	314.11	144.82
46	BW140 x BW162	244.74	115.98	38.52	16.51	667.47	299.28	0.19	0.20	328.38	142.56
47	LM71 x LM75	413.78	184.35	43.39	38.42	1019.04	389.43	0.16	0.27	480.24	142.45
48	LM70 x BW140	156.74	149.50	45.10	17.02	435.10	332.62	0.66	0.13	197.30	141.96
49	LM26 x LM75	350.90	211.09	40.12	53.31	954.03	429.96	0.15	0.28	481.21	141.50
50	BW162 x BW141	266.05	180.52	75.71	43.27	776.54	386.17	0.26	0.23	371.60	138.78
51	BW140 x LM48	112.54	125.04	7.14	23.04	278.22	308.84	0.07	0.22	151.68	137.40
52	LM26	291.13	122.65	17.21	28.51	674.12	276.83	0.07	0.60	312.63	137.19
53	LM48 x BW141	287.87	156.44	39.73	24.30	602.09	340.23	0.20	0.21	234.61	136.32
54	LM47 x LM26	282.00	192.87	51.35	28.92	804.19	380.20	0.17	0.16	449.20	135.81
55	BW140 x BW141	167.00	121.89	20.39	20.09	460.77	300.00	0.11	0.24	238.01	135.06
56	BW152 x LM48	267.76	178.29	22.87	38.54	692.08	374.66	0.09	0.16	343.12	134.90
57	BW140	281.02	169.50	27.62	42.47	656.31	365.69	0.09	0.27	353.33	131.38
58	LM70 x LM71	186.01	289.16	22.67	64.86	522.58	507.64	0.18	0.24	266.99	131.30
59	LM26 x LM47	322.08	166.32	37.34	36.65	768.22	356.54	0.12	0.28	349.40	131.25
60	BW162 x BW152	242.65	244.84	53.62	32.65	644.57	455.70	0.23	0.21	297.69	130.49

SB = shoot biomass (g m<sup>-2</sup>), RB = root biomass (g m<sup>-2</sup>), PB = total plant biomass (g m<sup>-2</sup>), RS = root to shoot ratio and GY = grain yield (g m<sup>-2</sup>), NS = non-stressed, DS = drought-stressed

Table S1 continued.

No.	Genotype	SB		RB		PB		RS		GY	
		NS	DS	NS	DS	NS	DS	NS	DS	NS	DS
61	LM71 × BW152	225.04	163.97	21.24	34.45	604.82	359.81	0.12	0.22	227.61	130.41
62	LM48 × LM47	299.65	120.72	26.80	30.80	552.61	303.67	0.10	0.34	235.58	130.04
63	BW140 × LM26	283.59	150.38	31.09	24.11	670.11	325.65	0.11	0.19	303.78	129.20
64	LM47 × LM75	254.44	212.38	33.94	31.35	634.92	393.28	0.13	0.16	296.19	127.82
65	LM26 × LM70	369.95	197.27	31.99	17.41	625.15	395.97	0.08	0.20	258.98	127.72
66	LM71 × LM70	138.22	146.78	18.28	41.87	411.76	337.39	0.15	0.26	233.06	127.13
67	LM48 × LM75	275.22	123.82	25.69	21.65	765.71	237.56	0.14	0.24	397.27	125.23
68	LM48 × LM70	337.22	181.24	18.41	59.07	800.17	385.80	0.08	0.30	379.95	124.35
69	LM48 × BW152	174.58	200.71	50.77	28.29	546.33	346.80	0.25	0.23	274.34	124.07
70	BW140 × LM47	184.46	230.98	46.98	69.38	556.07	444.20	0.46	0.29	277.45	122.94
71	LM71 × BW141	162.61	160.60	23.11	45.84	478.25	349.70	0.27	0.26	250.02	122.44
72	BW141 × LM71	173.86	96.06	20.55	18.39	427.39	231.54	0.13	0.14	199.13	119.20
73	LM70	365.06	245.33	19.11	42.40	847.96	426.63	0.07	0.17	396.39	118.71
74	BW152 × BW140	288.63	160.45	23.31	53.34	730.11	393.69	0.08	0.31	357.41	118.60
75	BW152 × BW162	170.07	131.74	18.00	17.57	450.42	272.57	0.10	0.22	224.23	117.65
76	LM26 × BW152	348.96	157.93	44.96	27.50	910.06	322.86	0.21	0.17	441.14	117.46
77	BW141 × LM48	229.43	119.85	23.30	18.31	683.91	280.77	0.11	0.25	356.58	117.25
78	LM70 × LM48	180.83	128.33	10.03	12.15	516.84	287.19	0.10	0.17	271.77	116.67
79	LM47 × BW141	253.48	179.62	31.28	73.29	595.31	387.78	0.12	0.44	265.43	115.28
80	LM71 × LM47	244.24	167.27	26.54	28.76	545.48	284.85	0.13	0.37	276.88	115.09
81	BW141 × LM47	236.86	104.70	32.00	25.11	598.02	262.04	0.18	0.41	281.34	113.02
82	BW162 × LM70	102.23	98.74	13.59	39.68	270.87	265.10	0.13	0.42	176.69	112.73
83	BW162 × LM47	226.81	205.60	33.90	39.29	595.36	374.49	0.21	0.19	292.67	110.77
84	BW152 × LM71	151.59	189.16	42.60	44.03	562.41	357.08	0.24	0.20	226.02	105.89
85	LM71 × BW162	374.76	162.53	31.60	30.87	830.54	296.63	0.09	0.30	362.54	104.44
86	BW152 × LM47	269.27	148.63	23.75	36.37	585.16	306.76	0.09	0.25	249.69	104.06
87	LM48 × LM71	326.32	221.77	36.43	82.97	897.12	424.90	0.19	0.38	456.72	102.69
88	LM75 × LM26	274.35	102.73	26.17	30.51	764.08	252.22	0.10	0.33	396.20	101.69
89	BW141 × BW162	186.70	153.22	25.53	33.58	525.70	304.95	0.17	0.24	267.93	100.99
90	LM71	216.93	130.79	36.02	28.57	593.20	277.39	0.14	0.20	241.39	100.87

SB = shoot biomass (g m<sup>-2</sup>), RB = root biomass (g m<sup>-2</sup>), PB = total plant biomass (g m<sup>-2</sup>), RS = root to shoot ratio and GY = grain yield (g m<sup>-2</sup>), NS = non-stressed, DS = drought-stressed

Table S1 continued.

No.	Genotype	SB		RB		PB		RS		GY	
		NS	DS	NS	DS	NS	DS	NS	DS	NS	DS
91	LM48	153.67	106.63	13.73	21.78	434.85	208.83	0.10	0.41	228.59	100.27
92	BW141 x BW140	165.03	125.72	24.59	27.37	462.64	270.09	0.15	0.34	233.34	100.01
93	BW152 x LM70	267.00	272.00	54.38	28.83	672.66	360.14	0.19	0.11	300.24	99.55
94	LM47 x BW162	204.81	176.25	41.11	36.82	510.12	329.31	0.23	0.21	225.81	99.36
95	LM71 x LM48	321.24	196.36	58.69	40.68	824.41	353.02	0.18	0.32	379.90	99.13
96	BW162 x LM71	334.12	103.75	25.92	14.65	809.10	225.54	0.09	0.18	432.71	91.57
97	LM47 x LM71	277.87	196.21	27.94	31.15	715.38	283.55	0.12	0.20	350.05	89.96
98	LM47	271.05	151.17	22.85	32.64	657.22	287.85	0.08	0.20	310.53	88.92
99	LM75 x LM71	323.36	347.87	46.38	73.42	763.69	505.65	0.15	0.21	336.71	72.11
100	BW152	399.15	121.55	31.00	23.24	922.43	199.76	0.09	0.32	420.74	67.00
	<b>Mean</b>	256.20	186.60	30.99	38.06	643.60	384.80	0.15	0.24	310.10	141.20
	<b>LSD</b>	141.90	142.30	31.26	33.76	342.70	250.60	0.23	0.23	183.10	95.90
	<b>SEM</b>	6.97	5.52	1.24	1.51	15.71	9.04	0.01	0.01	7.87	3.37
	<b>CV</b>	27.21	29.59	40.07	39.55	24.41	23.50	56.06	38.27	25.37	23.87

SB = shoot biomass (g m<sup>-2</sup>), RB = root biomass (g m<sup>-2</sup>), PB = total plant biomass (g m<sup>-2</sup>), RS = root to shoot ratio and GY = grain yield (g m<sup>-2</sup>), LSD = least significant difference, SEM = standard error of mean, %CV = coefficient of variation, NS = non-stressed, DS = drought-stressed



**Table S2.** Direct (bold face values) and indirect effects for yield components and root attributes on grain yield of 10 bread wheat parental lines and 90 F<sub>2</sub> progenies under drought-stressed conditions at two sites.

Traits	DTH	DTM	PH	TN	SL	SPS	KPS	TKW	SB	RB	PB	RS	GY
DTH	<b>-0.19</b>	0.06	-0.05	0.01	-0.05	-0.02	0.01	0.03	-0.03	-0.01	0.01	-0.01	-0.38***
DTM	-0.02	<b>0.06</b>	-0.02	-0.01	-0.02	-0.01	0.00	0.02	-0.01	0.00	0.00	0.01	0.24*
PH	0.01	-0.01	<b>0.03</b>	0.01	0.03	0.02	0.01	-0.01	0.02	0.01	0.02	-0.01	0.26**
TN	0.00	0.00	0.01	<b>0.03</b>	0.01	0.01	0.01	-0.01	0.02	0.02	0.02	0.00	0.34***
SL	0.00	0.00	0.00	0.00	<b>0.00</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24*
SPS	-0.02	0.02	-0.08	-0.04	-0.10	<b>-0.13</b>	-0.07	0.05	-0.07	-0.05	-0.07	0.02	0.26*
KPS	-0.01	-0.02	0.13	0.08	0.17	0.18	<b>0.34</b>	-0.10	0.14	0.08	0.17	-0.04	0.55***
TKW	-0.02	0.06	-0.03	-0.04	-0.04	-0.06	-0.05	<b>0.16</b>	-0.07	-0.06	-0.04	-0.01	0.09
SB	-0.06	0.09	-0.29	-0.22	-0.26	-0.24	-0.17	0.16	<b>-0.41</b>	-0.24	-0.36	0.13	0.39***
RB	-0.01	0.01	-0.06	-0.08	-0.06	-0.06	-0.04	0.05	-0.09	<b>-0.15</b>	-0.10	-0.06	0.28**
PB	-0.06	-0.03	0.60	0.57	0.54	0.55	0.50	-0.26	0.88	0.65	<b>1.00</b>	-0.19	0.68***
RS	0.00	0.00	-0.01	0.00	0.00	0.00	0.00	0.00	-0.01	0.01	-0.01	<b>0.03</b>	-0.14

\* significant at P < 0.05; \*\* P< 0.01, DTH = days to 50% heading, DTM = days to 50% maturity, PH = plant height (cm), TN = tiller number, SL = spike length (cm), SPS = spikelets per spike, KPS = kernels per spike, TKW = thousand kernel weight (g), SB = shoot biomass (g m<sup>-2</sup>), RB = root biomass (g m<sup>-2</sup>), PB = total plant biomass (g m<sup>-2</sup>), RS = root to shoot ratio and GY = grain yield (g m<sup>-2</sup>).

**Table S3.** Direct (bold face values) and indirect effects for yield components and root attributes on grain yield of 10 bread wheat parental lines and 90 F<sub>2</sub> progenies under non-stressed conditions at two sites.

Traits	DTH	DTM	PH	TN	SL	SPS	KPS	TKW	SB	RB	PB	RS	GY
DTH	<b>-0.02</b>	0.00	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
DTM	0.00	<b>0.03</b>	0.00	0.00	0.00	0.01	0.00	-0.01	0.00	0.00	0.00	0.00	0.02
PH	0.00	0.00	<b>0.00</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48***
TN	0.00	0.00	0.03	<b>0.08</b>	0.02	0.02	0.01	0.00	0.05	0.03	0.05	0.00	0.60***
SL	0.00	0.00	0.00	0.00	<b>-0.01</b>	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.41***
SPS	0.00	0.00	0.01	0.00	0.01	<b>0.01</b>	0.01	0.00	0.01	0.00	0.01	0.00	0.48***
KPS	0.02	0.01	0.04	0.02	0.06	0.08	<b>0.13</b>	-0.03	0.04	0.01	0.05	-0.02	0.48***
TKW	0.00	-0.02	0.02	0.00	0.01	0.00	-0.02	<b>0.08</b>	0.00	0.01	0.01	0.01	0.13
SB	-0.02	-0.02	-0.10	-0.11	-0.09	-0.09	-0.06	-0.01	<b>-0.19</b>	-0.07	-0.16	0.05	0.73***
RB	0.02	0.00	-0.04	-0.06	-0.03	-0.03	-0.01	-0.01	-0.05	<b>-0.13</b>	-0.07	-0.09	0.41***
PB	0.04	0.03	0.55	0.66	0.44	0.50	0.43	0.11	0.89	0.52	<b>1.06</b>	-0.05	0.94***
RS	-0.01	0.00	0.00	0.00	0.00	-0.01	-0.01	0.01	-0.02	0.04	0.00	<b>0.07</b>	-0.03

\* significant at P < 0.05; \*\* P< 0.01, DTH = days to 50% heading, DTM = days to 50% maturity, PH = plant height (cm), TN = tiller number, SL = spike length (cm), SPS = spikelets per spike, KPS = kernels per spike, TKW = thousand kernel weight (g), SB = shoot biomass (g m<sup>-2</sup>), RB = root biomass (g m<sup>-2</sup>), PB = total plant biomass (g m<sup>-2</sup>), RS = root to shoot ratio and GY = grain yield (g m<sup>-2</sup>).