Supplementary Table 1 Analysis of variance for yield and yield attributing traits of sorghum

Source of variation	Replication	Parents	Lines	Testers	Lines *vs* Testers	Parent *vs* crosses	Crosses	Error
df	1	13	9	3	27	1	39	53
DFF	1.33	132.78 **	181.56 **	30.67 **	0.12	107.85 **	41.57 **	3.81
PHT	14.01	6930.16 **	4308.6 **	1022.43 **	48247.49 **	972.54 **	5523.81 **	5.08
NL	0.24	8.53 **	8.56 **	4.33 *	20.85 **	25.49 **	7.24 **	1.08
LL	1.33	481.62 **	369.17 **	90.87 **	2666.06 **	24.97 *	327.88 **	5.89
DM	1.56	79.82 **	4.83	94.47 **	172.86 **	4.61	71.67 **	2.68
SD	1.01	36.34 **	42.59 **	18.489 **	33.65 **	5.07 **	18.24 **	0.62
EHL	0.71	40.12**	39.44 **	52.82 **	7.96	72.64 **	45.93 **	2.69
EHW	0.36	2.18 **	1.24 **	1.10 **	13.86 **	1.42 **	4.73 **	0.10
EHWT	25.66	1149.56 **	1216.15 **	1314.21**	56.16 **	6454.78 **	3588.52 **	7.66
NPP	1.36	99.20 **	128.21 **	44.86 **	0.26	251.64 **	95.17 **	4.68
HSW	0.06	0.50 **	0.58 **	0.25 *	0.51 *	0.04	10.07 **	0.08
GYPP	0.29	345.73 **	461.71 **	35.66 *	232.16 **	5369.02 **	1357.79 **	8.61

* Significant at p=0.05 and ** Significant at p=0.01. DFF, Days to fifty per cent flowering; PHT, Plant height (cm); NL, No. of leaves/plant; LL, Leaf length (cm); DM, Days to maturity; SD, Stem diameter (mm); EHL, Ear head length (cm); EHW, Ear head width (cm); EHWT, Ear head weight (g); NPP, Number of primary branches/panicle; HSW, 100-seed weight (g); GYPP, Grain yield/plant (g).

Supplementary Table 2 Analysis of variance for combining ability for yield and yield attributing traits in sorghum

Source of variation	df	DFF	PHT	NL	LL	DM	SD	EHL	EHW	EHWT	NPP	HSW	GYPP
Replicates	1	0.31	1.23	2.33	5.25	0.20	5.12	0.05	0.03	9.41	3.45	0.03	6.86
Crosses	39	41.58 **	5523.81 **	7.24 **	327.88 **	71.67 **	18.24 **	45.93 **	4.73**	3588.52 **	446.22**	0.77 **	1357.79 **
Line Effect	9	49.18	4532.20	7.71	287.15	67.38	25.95	20.07	4.59	3872.43	200.86	0.52	1172.30
Tester Effect	3	8.11	9850.31	1.55	59.04	267.76 **	3.56	125.76	1.58	2239.19	530.22	1.35	806.35
Line × Tester Effects	27	42.76 **	5373.63 **	7.72 **	371.33 **	51.31 **	17.30 **	45.68 **	5.13**	3643.82 **	518.67**	0.79 **	1480.89 **
Error	39	3.75	5.20	0.96	4.41	2.69	0.52	2.63	0.09	9.14	4.91	0.07	4.75
Total	79	22.38	2729.53	4.08	164.11	36.71	9.32	23.98	2.38	1776.18	222.75	0.42	672.74

* Significant at p=0.05; ** Significant at p=0.01. DFF, Days to fifty per cent flowering; PHT, Plant height (cm); NL, No. of leaves/plant; LL, Leaf length (cm); DM, Days to maturity; SD, Stem diameter (mm); EHL, Ear head length (cm); EHW, Ear head width (cm); EHWT, Ear head weight (g); NPP, Number of primary branches/panicle; HSW, 100-seed weight (g); GYPP, Grain yield/plant (g).

Supplementary Table 3 Estimates of general combing ability effects of lines and testers for yield and yield attributing traits in sorghum

Lines	DFF	PHT	NL	LL	DM	SD	EHL	EHW	EHWT	NPP	HSW
SOR 3350	0.24	-27.44**	-0.57	-2.84 **	-1.78 **	-0.23	0.71	-0.67**	3.58 **	0.45	-0.01
SOR 3289	-2.26 **	-34.37**	0.07	-0.96	1.98 **	1.87 **	3.26 **	0.41**	12.73**	8.36**	0.12
SOR 11938	4.36 **	31.83 **	1.59 **	7.08 **	5.72**	-1.31 **	-0.80	0.55**	-0.50	1.46	0.12
SOR 11942	0.86	12.03 **	1.34 **	9.03 **	-1.40 *	2.33 **	0.67	0.15	-14.78**	3.00**	0.24 *
SOR 11943	-0.39	2.04 *	0.62	1.73	-1.78 **	-2.06 **	-0.09	-0.44**	-15.37**	-0.65	-0.26 *
SOR 3182	-4.01 **	-4.97 **	-1.77 **	-6.99 **	-1.40 *	-0.81 **	-0.84	-0.67**	-40.17**	-6.06**	-0.13
SOR 6852	-2.51 **	-31.60**	-0.51	-8.59 **	-4.53**	-2.82 **	-0.38	-0.10	-0.83	-1.42	0.49**
SOR 5002	1.49 *	11.24 **	-0.18	1.73	-0.775	-0.27	-2.99**	-0.86**	1.17	0.565	-0.26 *
SOR 3570	-0.14	18.81 **	-0.26	5.08 **	2.10 **	1.36 **	0.71	1.68**	45.03**	3.80**	-0.006
SOR 4346	2.36 **	22.40 **	-0.36	-5.27 **	1.85 **	1.93 **	-0.25	-0.05	9.13 **	-9.52*	-0.32 **
SEM±	0.44	0.50	0.23	0.54	0.36	0.18	0.36	0.07	0.62	0.48	0.06
CD (p=0.05)	0.88	1.02	0.47	1.09	0.74	0.35	0.74	0.14	1.25	0.97	0.13
CD (p=0.05)	1.18	1.37	0.62	1.47	0.99	0.47	0.99	0.19	1.67	1.31	0.17
Testers	DFF	PHT	NL	LL	DM	SD	EHL	EHW	EHWT	NPP	HSW
279 B	-0.04	-5.53**	-0.39	-2.12**	-3.40 **	0.06	1.23 **	-0.28 **	7.664**	-6.86 **	0.34 **
463 B	-0.44	-17.58**	0.01	1.50 **	-1.40 **	-0.46 *	-2.31 **	-0.001	-9.91 **	0.31	-0.26 **
456 B	-0.44	-9.30**	0.24	1.29*	-0.35	-0.15	-1.85 **	0.38 **	10.52 **	5.62 **	-0.13 *
415 B	0.91*	32.42**	0.13	-0.12	5.15 **	0.54 **	2.93 **	-0.10	-8.27 **	0.93	0.04
SEM±	0.69	0.78	0.37	0.54	0.57	0.30	0.58	0.11	0.98	0.76	0.09
CD (p=0.05)	1.40	1.61	0.74	1.09	1.17	0.56	1.17	0.22	1.97	1.54	0.20
CD (p=0.05)	1.86	2.15	0.99	1.47	1.56	0.75	1.57	0.30	2.65	2.07	0.27

* Significant at p=0.05; ** Significant at p=0.01. DFF, Days to fifty per cent flowering; PHT, Plant height (cm); NL, No. of leaves/plant; LL, Leaf length (cm); DM, Days to maturity; SD, Stem diameter (mm); EHL, Ear head length (cm); EHW, Ear head width (cm); EHWT, Ear head weight (g); NPP, Number of primary branches/panicle; HSW, 100-seed weight (g); GYPP, Grain yield/plant (g).

Supplementary Table 4 Overall GCA status of parents

Sl.No	Parents	Total	GCA status
1	SOR 3350	70	L
2	SOR 3289	43	H
3	SOR 11938	55	H
4	SOR 11942	48	H
5	SOR 11943	76	L
6	SOR 3182	91	L
7	SOR 6852	78	L
8	SOR 5002	71	L
9	SOR 3570	35	H
10	SOR 4346	69	H

Final norm: 69; H: High overall general combiner, L: Low overall general combiner

Sl.No	Parents	Total	GCA status
1	279 B	31	L
2	463 B	33	L
3	456 B	24	H
4	415 B	29	H

Final norm: 29; H: High overall general combiner, L: Low overall general combiner

GCA, General combining ability.

Supplementary Table 5 Estimates of specific combining ability effects of hybrids for yield and yield attributing traits in sorghum

Sl no.	Hybrids	DFF	PHT	NL	LL	DM	SD	EHL	EHW	EHWT	NPP	HSW
1	279 A × SOR3350	-1.59	5.44 **	0.19	12.75 **	2.02	-0.90	3.44 **	0.94**	-10.10**	0.34	0.09
2	279 A × SOR 3289	-1.09	26.74**	-0.03	-3.98 *	-4.22 **	-1.34 *	-1.71	0.01	-1.352	-5.97**	0.28
3	279 A × SOR 11938	-0.71	12.98 **	1.24	-0.12	-6.48**	1.63 **	1.96	1.52**	63.44**	8.03**	0.28
4	279 A × SOR 11942	-4.21**	-49.52**	-1.71 *	-15.97 **	1.15	2.95 **	-0.86	-0.43	-14.84**	-12.61**	-0.34
5	279 A × SOR 11943	-2.96*	-31.33**	-0.78	-4.82 **	0.02	-1.77 **	1.24	-0.59*	20.75**	8.49**	-0.09
6	279 A × SOR 3182	4.66**	-23.37**	1.24	3.75 *	-1.35	-2.83 **	-2.11	-0.61 *	12.45**	0.01	-0.47*
7	279 A × SOR 6852	-1.84	-0.696	0.04	1.00	2.28	-0.61	-0.17	0.27	-18.39**	-0.08	0.41*
8	279 A × SOR 5002	-0.34	8.42 **	0.72	7.23 **	0.52	1.45 *	3.29 **	-0.22	-16.39**	1.98	0.41*
9	279 A × SOR 3570	8.79**	-21.66**	-2.91**	-15.12 **	8.15 **	-0.02	-10.21**	-3.01**	-82.10**	-17.01**	-0.84**
10	279 A × SOR 4346	-0.71	73.00 **	1.99**	15.28 **	-2.1	1.44 *	5.107 **	2.12**	46.55**	16.82**	0.47*
11	463 A × SOR 3350	7.81**	-1.7	3.11**	-19.81**	10.02**	-2.98 **	6.42 **	-1.94 **	-31.83 **	-31.32 **	-0.74 **
12	463 A × SOR 3289	-8.19**	-38.75**	-0.74	-8.10 **	-4.22 **	-0.78	-2.87 *	-1.02 **	-37.28 **	-15.18 **	-0.62 **
13	463 A × SOR 11938	4.19**	-17.07**	0.14	7.26 **	5.52 **	-3.60 **	-0.41	0.74 **	-10.74 **	12.57 **	-0.12
14	463 A × SOR 11942	3.19*	55.28 **	1.59*	7.91**	-2.35 *	2.41 **	1.20	0.99 **	10.20 **	5.13 **	0.51 *
15	463 A × SOR 11943	-3.06*	-72.13**	-1.19	-11.40 **	0.02	0.95	-0.82	-0.72 **	-2.78	-4.22 **	-0.49 *
16	463 A × SOR 3182	-1.44	48.73 **	0.50	4.74 **	-0.35	1.50 *	4.93 **	1.36 **	0.92	14.30 **	0.63 **
17	463 A × SOR 6852	-2.94*	-33.74**	-0.86	-10.86 **	2.28	2.31 **	-1.33	-1.01 **	-13.97 **	-5.64 **	-0.49 *
18	463 A × SOR 5002	3.56*	26.67 **	1.41	14.06 **	-0.98	-1.99 **	-1.42	0.25	31.93 **	0.82	0.51 *
19	463 A × SOR 3570	-1.81	-7.65 **	0.69	1.514	-3.85 **	-1.77 **	3.58 **	-0.39	10.57 **	9.03 **	0.51 *
20	463 A × SOR 4346	-1.31	40.36 **	1.59*	14.66 **	-6.10 **	3.96 **	3.54 **	1.74 **	42.97 **	14.51 **	0.32
21	456 A × SOR 3350	-1.19	-29.78**	1.36	1.74	-3.52 **	3.71 **	-2.47 *	0.08	-15.80 **	-3.23 *	0.13
22	456 A × SOR 3289	6.31**	8.22 **	-0.97	6.71 **	7.72 **	1.61 **	2.18	1.24 **	34.50 **	14.86 **	-0.24
23	456 A × SOR 11938	-1.81	-31.19**	-3.29**	-18.48**	1.98	-2.67 **	-4.51 **	-3.25 **	-68.87 **	-27.75**	-0.74**
24	456 A × SOR 11942	-2.81*	-79.49**	-1.54*	-8.48 **	-1.90	-2.81 **	-3.73 **	-1.05 **	-34.36 **	-5.43**	-0.62**
25	456 A × SOR 11943	1.94	61.95 **	1.18	9.82 **	-4.03 **	2.93 **	0.63	0.24	-12.95 **	-1.53	1.13 **
26	456 A × SOR 3182	-5.94**	28.71 **	-0.13	3.74 *	-1.40	0.89	6.78 **	0.53 *	-12.15 **	4.28 **	0.51 *
27	456 A × SOR 6852	6.56**	50.28 **	1.91*	13.44 **	0.72	2.60 **	0.37	1.25 **	65.26 **	16.24**	-0.12
28	456 A × SOR 5002	-2.44	40.00 **	1.68*	5.47 **	-2.53 *	-1.11	3.23 **	1.07 **	25.66 **	12.66**	0.13
29	456 A × SOR 3570	-2.31	-20.18**	0.96	1.07	-4.90 **	1.11	1.43	2.58 **	66.00 **	7.17 **	0.13
30	456 A × SOR 4346	1.69	-28.52**	-1.14	-15.03 **	7.85 **	-6.26 **	-3.91 **	-2.70 **	-47.30 **	-17.26**	-0.31
31	415 A × SOR 3350	-5.04**	26.04 **	1.57*	5.31 **	-8.53 **	0.17	5.44 **	0.91 **	57.73 **	34.21**	0.71**

Contd.

Supplementary Table 5 (*Concluded*)

Sl no.	Hybrids	DFF	PHT	NL	LL	DM	SD	EHL	EHW	EHWT	NPP	HSW
32	415 A × SOR 3289	2.96*	3.79 *	1.74*	5.38 **	0.73	0.52	2.39 *	-0.22	4.13 *	6.30 **	0.58 **
33	415 A × SOR 11938	-1.66	35.28 **	1.92*	11.34 **	-1.03	4.64 **	2.96 *	0.99 **	16.17 **	7.15 **	0.58 **
34	415 A × SOR 11942	3.84**	73.72**	1.67*	16.54 **	3.10 *	-2.55 **	3.39 **	0.49 *	38.99 **	12.91 **	0.46 *
35	415 A × SOR 11943	4.09**	41.52 **	0.79	6.39 **	3.98 **	-2.11 **	-1.06	1.08 **	-5.02 *	-2.74	-0.54 **
36	415 A × SOR 3182	2.71	-54.07**	-1.62*	-12.24 **	3.10 *	0.45	-9.61 **	-1.29 **	-1.22	-18.58 **	-0.67 **
37	415 A × SOR 6852	-1.79	-15.85**	-1.08	-3.59 *	-5.28 **	-4.29 **	1.13	-0.51 *	-32.91 **	-10.52 **	0.21
38	415 A × SOR 5002	-0.79	-75.08**	-3.81**	-26.76 **	2.98 *	1.65 **	-5.11 **	-1.10 **	-41.21 **	-15.46 **	-1.04 **
39	415 A × SOR 3570	-4.66**	49.49 **	1.27	12.54 **	0.6	0.67	5.19 **	0.81 **	5.53 **	0.81	0.21
40	415 A × SOR 4346	0.34	-84.85**	-2.43**	-14.91**	0.35	0.85	-4.74 **	-1.16 **	-42.22 **	-14.07 **	-0.48 *
SEM±		1.38	1.59	0.73	1.72	1.15	0.56	1.16	0.23	1.95	1.53	0.20
CD (p=0.05)		2.79	3.22	1.49	3.47	2.34	1.13	2.35	0.46	3.95	3.09	0.39
CD (p=0.01)		3.74	4.31	1.99	4.64	3.14	1.51	3.14	0.61	5.30	4.14	0.53

DFF, Days to fifty per cent flowering; PHT, Plant height (cm); NL, No. of leaves/plant; LL, Leaf length (cm); DM, Days to maturity; SD, Stem diameter (mm); EHL, Ear head length (cm); EHW, Ear head width (cm); EHWT, Ear head weight (g); NPP, Number of primary branches/panicle; HSW, 100-seed weight (g); GYPP, Grain yield/plant (g).

Supplementary Table 6 Overall SCA status of hybrids

Lines		Testers							
		279A (L)		463A(L)		456A(H)		415A(H)	
		Rank	SS	Rank	SS	Rank	SS	Rank	SS
SOR3350	(L)	55	H	86	L	65	L	38	H
SOR3289	(H)	66	L	81	L	56	H	58	H
SOR11938	(H)	36	H	75	L	106	L	47	H
SOR11942	(H)	79	L	42	H	91	L	39	H
SOR11943	(L)	72	L	78	L	48	H	56	H
SOR3182	(L)	73	L	49	H	52	H	87	L
SOR6852	(L)	70	L	85	L	40	H	74	L
SOR5002	(L)	50	H	66	L	43	H	100	L
SOR3750	(H)	107	L	57	H	43	H	50	H
SOR4346	(H)	26	H	31	H	103	H	98	H

Final norm: 64; H, High overall SCA status; L, Low overall SCA status; SS, SCA status; (H), High overall GCA status; (L), Low overall GCA status. SCA, Specific combining ability; GCA, General combining ability.

Supplementary Table 7a Estimates of standard heterosis for yield and yield attributing traits in sorghum

Sl. no.	Hybrids	DFF		PHT		NL		LL		DM		SD	
		CSH-30	CSH-14	CSH-30	CSH-14	CSH-30	CSH-14	CSH-30	CSH-14	CSH-30	CSH-14	CSH-30	CSH-14
1	279 A × SOR3350	11.38 **	12.30 **	-9.09 **	-4.52 **	11.84	0.00	33.85 **	15.56 **	1.90	7.50 **	21.85 **	-23.68 **
2	279 A × SOR 3289	8.13 *	9.02 **	-0.86	4.13 **	17.11	4.71	9.51 *	-5.46	-0.47	5.00 **	35.80 **	-14.95 **
3	279 A × SOR 11938	19.51 **	20.49 **	29.09 **	35.57 **	53.95 **	37.65 **	29.02 **	11.39 **	0.95	6.50 **	34.12 **	-16.00 **
4	279 A × SOR 11942	8.13 *	9.02 **	-17.94 **	-13.82 **	11.84	0.00	6.23	-8.29 *	1.42	7.00 **	75.80 **	10.11 *
5	279 A × SOR 11943	8.13 *	9.02 **	-13.26 **	-8.90 **	14.47	2.35	12.54 **	-2.84	0.00	5.50 **	-0.80	-37.87 **
6	279 A × SOR 3182	14.63 **	15.57 **	-12.71 **	-8.33 **	9.54	-2.06	12.30 **	-3.05	-0.95	4.50 **	0.76	-36.89 **
7	279 A × SOR 6852	6.50 *	7.38 *	-14.97 **	-10.70 **	10.53	-1.18	5.16	-9.21 *	-0.47	5.00 **	2.52	-35.79 **
8	279 A × SOR 5002	15.45 **	16.39 **	14.71 **	20.48 **	23.68	10.59	32.30 **	14.22 **	1.42	7.00 **	41.26 **	-11.53 **
9	279 A × SOR 3570	27.64 **	28.69 **	1.86	6.98 **	-25.00	-32.94 *	1.15	-12.67 **	11.37 **	17.50 **	42.65 **	-10.66 *
10	279 A × SOR 4346	16.26 **	17.21 **	58.00 **	65.94 **	38.16 **	23.53	34.02 **	15.70 **	1.42	7.00 **	59.71 **	0.03
11	463 A × SOR 3350	26.02 **	27.05 **	-20.06 **	-16.04 **	-26.32	-34.12 **	-13.61 **	-25.41 **	11.37 **	17.50 **	0.00	-37.37 **
12	463 A × SOR 3289	-4.07	-3.28	-45.17 **	-42.42 **	13.16	1.18	8.69 *	-6.16	1.42	7.00 **	36.13 **	-14.74 **
13	463 A × SOR 11938	26.83 **	27.87 **	5.03 **	10.31 **	44.74 **	29.41 *	47.05 **	26.95 **	14.22 **	20.50 **	-14.29 *	-46.32 **
14	463 A × SOR 11942	19.51 **	20.49 **	35.06 **	41.85 **	60.53 **	43.53 **	51.31 **	30.63 **	0.00	5.50 **	66.81 **	4.47
15	463 A × SOR 11943	7.32 *	8.20 *	-43.46 **	-40.62 **	14.47	2.35	7.70	-7.01 *	1.90	7.50 **	17.65 *	-26.32 **
16	463 A × SOR 3182	4.07	4.92	21.60 **	27.71 **	5.26	-5.88	19.84 **	3.46	1.90	7.50 **	32.77 **	-16.84 **

Contd.

Supplementary Table 7a (*Concluded*)

Sl. no.	Hybrids	DFF		PHT		NL		LL		DM		SD	
		CSH-30	CSH-14	CSH-30	CSH-14	CSH-30	CSH-14	CSH-30	CSH-14	CSH-30	CSH-14	CSH-30	CSH-14
17	463 A × SOR 6852	4.07	4.92	-40.74 **	-37.76 **	3.95	-7.06	-8.36 *	-20.88 **	1.42	7.00 **	22.69 **	-23.16 **
18	463 A × SOR 5002	21.14 **	22.13 **	18.26 **	24.20 **	38.16 **	23.53	49.43 **	29.01 **	1.90	7.50 **	7.98	-32.37 **
19	463 A × SOR 3570	9.76 **	10.66 **	2.97 *	8.15 **	27.63	14.12	34.34 **	15.99 **	1.90	7.50 **	23.53 **	-22.63 **
20	463 A × SOR 4346	14.63 **	15.57 **	32.46 **	39.11 **	38.16 **	23.53	38.93 **	19.95 **	-0.47	5.00 **	76.47 **	10.53 *
21	456 A × SOR 3350	11.38 **	11.38 **	-31.37 **	-27.92 **	35.53 *	21.18	21.39 **	4.81	-0.47	5.00 **	58.82 **	-0.53
22	456 A × SOR 3289	19.51 **	19.51 **	-13.60 **	-9.26 **	13.16	1.18	32.62 **	14.50 **	13.74 **	20.00 **	58.82 **	-0.53
23	456 A × SOR 11938	17.07 **	17.07 **	1.69	6.80 **	2.63	-8.24	4.51	-9.77 **	11.85 **	18.00 **	-3.78	-39.74 **
24	456 A × SOR 11942	9.76 **	9.76 **	-37.23 **	-34.07 **	22.37	9.41	24.10 **	7.14 *	1.42	7.00 **	25.63 **	-21.32 **
25	456 A × SOR 11943	15.45 **	15.45 **	37.89 **	44.82 **	48.68 **	32.94 *	42.13 **	22.71 **	-0.95	4.50 **	36.97 **	-14.21 **
26	456 A × SOR 3182	-3.25	-3.25	14.89 **	20.66 **	0.00	-10.59	17.87 **	1.76	1.90	7.50 **	30.25 **	-18.42 **
27	456 A × SOR 6852	19.51 **	19.51 **	12.00 **	17.63 **	43.42 **	28.24 *	31.15 **	13.23 **	0.95	6.50 **	27.73 **	-20.00 **
28	456 A × SOR 5002	11.38 **	11.38 **	30.60 **	37.16 **	44.74 **	29.41 *	35.00 **	16.55 **	1.42	7.00 **	18.07 **	-26.05 **
29	456 A × SOR 3570	8.94 **	8.94 **	0.54	5.60 **	34.21 *	20.00	33.28 **	15.07 **	1.90	7.50 **	50.42 **	-5.79
30	456 A × SOR 4346	19.51 **	19.51 **	-2.17	2.75 *	5.26	-5.88	-10.08 *	-22.37 **	13.74 **	20.00 **	-6.72	-41.58 **
31	415 A × SOR 3350	7.32 *	8.20 *	24.37 **	30.62 **	36.84 *	22.35	24.02 **	7.07 *	0.00	5.50 **	34.87 **	-15.53 **
32	415 A × SOR 3289	16.26 **	17.21 **	7.71 **	13.13 **	47.37 **	31.76 *	27.21 **	9.83 **	12.32 **	18.50 **	55.46 **	-2.63
33	415 A × SOR 11938	19.51 **	20.49 **	63.51 **	71.73 **	69.74 **	51.76 **	50.16 **	29.64 **	14.22 **	20.50 **	63.45 **	2.37
34	415 A × SOR 11942	22.76 **	23.77 **	74.17 **	82.93 **	63.16 **	45.88 **	61.89 **	39.76 **	11.37 **	17.50 **	33.61 **	-16.32 **
35	415 A × SOR 11943	21.14 **	22.13 **	50.06 **	57.60 **	42.11 **	27.06 *	33.28 **	15.07 **	11.85 **	18.00 **	0.42	-37.11 **
36	415 A × SOR 3182	13.01 **	13.93 **	-8.57 **	-3.98 **	-21.05	-29.41 *	-11.56 **	-23.64 **	11.37 **	17.50 **	32.35 **	-17.11 **
37	415 A × SOR 6852	8.13 *	9.02 **	-1.94	2.99 *	2.63	-8.24	0.00	-13.66 **	0.47	6.00 **	-24.37 **	-52.63 **
38	415 A × SOR 5002	16.26 **	17.21 **	-11.31 **	-6.86 **	-28.95 *	-36.47 **	-21.07 **	-31.85 **	11.85 **	18.00 **	47.06 **	-7.89
39	415 A × SOR 3570	7.32 *	8.20 *	64.20 **	72.45 **	36.84 *	22.35	48.85 **	28.51 **	12.32 **	18.50 **	52.52 **	-4.47
40	415 A × SOR 4346	19.51 **	20.49 **	-10.51 **	-6.02 **	-13.16	-22.35	-13.11 **	-24.99 **	11.85 **	18.00 **	58.82 **	-0.53

DFF, Days to fifty per cent flowering; PHT, Plant height (cm); NL, No. of leaves/plant; LL, Leaf length (cm); DM, Days to maturity; SD, Stem diameter (mm).

Supplementary table 7b Estimates of standard heterosis for yield and yield attributing traits in sorghum

S. no.	Hybrids	EHL		EHW		EHWT		NPP		HSW	
		CSH-30	CSH-14	CSH-30	CSH-14	CSH-30	CSH-14	CSH-30	CSH-14	CSH-30	CSH-14
1	279 A × SOR3350	0.32	22.78 **	11.71 *	20.39 **	4.5	-12.16 **	13.06 **	3.55	-7.69	-7.69
2	279 A × SOR 3289	-7.89	12.74	14.41 *	23.30 **	23.25 **	3.60	16.33 **	6.54	7.69	7.69
3	279 A × SOR 11938	-9.15	11.20	44.14 **	55.34 **	77.23 **	48.97 **	30.82 **	19.81 **	7.69	7.69
4	279 A × SOR 11942	-13.41 *	5.98	1.80	9.71	-19.69 **	-32.49 **	-8.16	-15.89 **	-7.69	-7.69
5	279 A × SOR 11943	-9.15	11.20	-11.71 *	-4.85	16.96 **	-1.69	27.45 **	16.73 **	-15.38	-15.38
6	279 A × SOR 3182	-22.08 **	-4.63	-16.22 **	-9.71	-17.70 **	-30.82 **	-0.92	-9.25 *	-23.08 *	-23.08 *
7	279 A × SOR 6852	-14.51 **	4.63	9.91	18.45 **	-8.80 **	-23.34 **	8.37	-0.75	23.08 *	23.08 *
8	279 A × SOR 5002	-11.83 **	7.92	-12.61 *	-5.83	-4.61	-19.82 **	16.63 **	6.82	0.00	0.00
9	279 A × SOR 3570	-42.74 **	-29.92 **	-17.12 **	-10.68	-27.49 **	-39.05 **	-15.51 **	-22.62 **	-30.77 **	-30.77 **
10	279 A × SOR 4346	2.52	25.48 **	44.14 **	55.34 **	69.63 **	42.59 **	26.33 **	15.70 **	0.00	0.00
11	463 A × SOR 3350	-41.96 **	-28.96 **	-35.14 **	-30.10 **	-36.65 **	-46.75 **	-36.94 **	-42.24 **	-46.15 **	-46.15 **
12	463 A × SOR 3289	-22.71 **	-5.41	0.90	8.74	-32.77 **	-43.49 **	12.14 **	2.71	-38.46 **	-38.46 **
13	463 A × SOR 11938	-27.76 **	-11.58	35.14 **	45.63 **	-18.85 **	-31.79 **	54.69 **	41.68 **	-23.08 *	-23.08 *
14	463 A × SOR 11942	-18.06 **	0.29	32.43 **	42.72 **	-11.86 **	-25.92 **	42.65 **	30.65 **	0.00	0.00
15	463 A × SOR 11943	-26.81 **	-10.42	-9.01	-1.94	-26.07 **	-37.86 **	16.12 **	6.36	-46.15 **	-46.15 **
16	463 A × SOR 3182	-11.04 *	8.88	24.32 **	33.98 **	-48.17 **	-56.43 **	42.86 **	30.84 **	-7.69	-7.69
17	463 A × SOR 6852	-29.34 **	-13.51 *	-8.11	-0.97	-22.57 **	-34.91 **	11.63 *	2.24	-23.08 *	-23.08 *
18	463 A × SOR 5002	-37.85 **	-23.94 **	0.90	8.74	27.59 **	7.25 **	28.88 **	18.04 **	-15.38	-15.38
19	463 A × SOR 3570	-10.41	9.65	35.14 **	45.63 **	51.15 **	27.05 **	52.24 **	39.44 **	-7.69	-7.69
20	463 A × SOR 4346	-13.56 *	5.79	42.34 **	53.40 **	47.49 **	23.97 **	36.22 **	24.77 **	-23.08 *	-23.08 *
21	456 A × SOR 3350	-28.08 **	-11.97	8.11	16.50 *	1.52	-14.67 **	31.22 **	20.19 **	-15.38	-15.38
22	456 A × SOR 3289	-5.36	15.83 *	48.65 **	60.19 **	63.77 **	37.66 **	84.29 **	68.79 **	-23.08 *	-23.08 *
23	456 A × SOR 11938	-39.27 **	-25.68 **	-29.73 **	-24.27 **	-58.32 **	-64.97 **	-16.73 **	-23.74 **	-38.46 **	-38.46 **
24	456 A × SOR 11942	-32.18 **	-16.99 *	2.70	10.68	-37.12 **	-47.15 **	31.94 **	20.84 **	-30.77 **	-30.77 **
25	456 A × SOR 11943	-20.82 **	-3.09	15.32 *	24.27 **	-15.34 **	-28.84 **	32.45 **	21.31 **	7.69	7.69

Contd.

Supplementary Table 7b (*Concluded*)

S. no.	Hybrids	EHL		EHW		EHWT		NPP		HSW	
		CSH-30	CSH-14	CSH-30	CSH-14	CSH-30	CSH-14	CSH-30	CSH-14	CSH-30	CSH-14
26	456 A × SOR 3182	-3.79	17.76 **	16.22 **	25.24 **	-40.47 **	-49.96 **	33.27 **	22.06 **	-7.69	-7.69
27	456 A × SOR 6852	-22.56 **	-5.21	39.64 **	50.49 **	81.78 **	52.80 **	67.14 **	53.08 **	-7.69	-7.69
28	456 A × SOR 5002	-21.77 **	-4.25	22.52 **	32.04 **	42.41 **	19.70 **	63.88 **	50.09 **	-23.08 *	-23.08 *
29	456 A × SOR 3570	-15.77 **	3.09	95.50 **	110.68 **	130.58 **	93.81 **	59.29 **	45.89 **	-15.38	-15.38
30	456 A × SOR 4346	-35.65 **	-21.24 **	-30.63 **	-25.24 **	-25.65 **	-37.51 **	-17.76 **	-24.67 **	-38.46 **	-38.46 **
31	415 A × SOR 3350	11.99 *	37.07 **	14.41 *	23.30 **	58.85 **	33.52 **	98.06 **	81.40 **	7.69	7.69
32	415 A × SOR 3289	10.41	35.14 **	13.51 *	22.33 **	12.30 **	-5.60 *	57.24 **	44.02 **	7.69	7.69
33	415 A × SOR 11938	-0.63	21.62 **	37.84 **	48.54 **	11.05 **	-6.66 **	44.90 **	32.71 **	7.69	7.69
34	415 A × SOR 11942	5.36	28.96 **	21.62 **	31.07 **	20.00 **	0.87	59.80 **	46.36 **	7.69	7.69
35	415 A × SOR 11943	-11.04 *	8.88	21.62 **	31.07 **	-26.70 **	-38.39 **	20.41 **	10.28 *	-38.46 **	-38.46 **
36	415 A × SOR 3182	-40.38 **	-27.03 **	-25.23 **	-19.42 **	-48.69 **	-56.87 **	-22.96 **	-29.44 **	-38.46 **	-38.46 **
37	415 A × SOR 6852	-5.05	16.22 *	-0.90	6.80	-40.68 **	-50.14 **	2.96	-5.70	7.69	7.69
38	415 A × SOR 5002	-32.97 **	-17.95 **	-25.23 **	-19.42 **	-47.28 **	-55.68 **	-3.06	-11.21 **	-53.85 **	-53.85 **
39	415 A × SOR 3570	11.20 *	36.10 **	54.95 **	66.99 **	47.59 **	24.06 **	36.73 **	25.23 **	-7.69	-7.69
40	415 A × SOR 4346	-23.19 **	-5.98	-11.71 *	-4.85	-40.00 **	-49.57 **	-20.82 **	-27.48 **	-38.46 **	-38.46 **

EHL, Ear head length (cm); EHW, Ear head width (cm); EHWT, Ear head weight (g); NPP, Number of primary branches/panicle; HSW, 100-seed weight (g); GYPP, Grain yield/plant (g).

Supplementary Table 8 Overall heterotic status of hybrids

Lines		Testers							
		279A (L)		463A (L)		456A(H)		415A(H)	
		Rank	HS	Rank	HS	Rank	HS	Rank	HS
SOR3350	(L)	64	H	101	L	67	L	36	H
SOR3289	(H)	54	H	79	L	43	H	47	H
SOR11938	(H)	40	H	76	L	98	L	42	H
SOR11942	(H)	78	L	43	H	91	L	46	H
SOR11943	(L)	74	L	77	L	65	H	67	L
SOR3182	(L)	71	L	53	H	56	H	97	L
SOR6852	(L)	67	L	81	L	50	H	73	L
SOR5002	(L)	54	H	64	H	52	H	94	L
SOR3570	(H)	102	L	43	H	43	H	46	H
SOR4346	(H)	34	H	36	H	95	H	91	H

Final norm: 64; H, High overall SCA status; L, Low overall SCA status; HS, Heterotic status; (H), High overall GCA status; (L), Low overall GCA status. SCA, Specific combining ability; GCA, General combining ability.