

Supplementary Table 1. List of genotypes and their sources

Sr. No.	Genotype Name	Pedigree of genotype	Source
1	GISV- 39	[{(G. 6 × <i>G. anomatum</i>) × <i>G. tomentosum</i> } × G. Cot. 10] F ₈ × Surat dwarf	Main Cotton Research Station, Surat
2	GISV- 216	G. Cot. 10 × GISV - 152	Main Cotton Research Station, Surat
3	GISV- 269	LRA – 5166 × IGM - 42 - F ₄	Main Cotton Research Station, Surat
4	GISV- 313	GSHV - 612 × GISV - 197	Main Cotton Research Station, Surat
5	GISV- 318	GJHV - 502 × GISV - 206	Main Cotton Research Station, Surat
6	GISV- 319	GJHV - 397 × GISV - 197	Main Cotton Research Station, Surat
7	GISV- 322	GISV - 103 × GSH - 2/734	Main Cotton Research Station, Surat
8	GISV- 323	GISV - 103 × GSHV - 99/307 - 749	Main Cotton Research Station, Surat
9	GISV- 324	GISV - 103 × GSHV - 01/1338/715	Main Cotton Research Station, Surat
10	GISV- 375	G. Cot. 16 × GISV - 296/397	Main Cotton Research Station, Surat
11	GISV- 380	GISV - 25/1699 × 123 - CO2 - 13/356	Main Cotton Research Station, Surat
12	GISV- 382	GISV - 25/1699 × 170 - CO2 - 2 - 126 - 1/174	Main Cotton Research Station, Surat
13	GISV- 384	GISV - 25/1699 × 134 - CO2 - C - W - 5	Main Cotton Research Station, Surat
14	GISV- 385	GISV - 218 × 125 - CO2 - 18	Main Cotton Research Station, Surat
15	GISV- 386	GISV - 218 × 134 - CO2 - C - W - 5	Main Cotton Research Station, Surat

Sr. No.	Genotype Name	Pedigree of genotype	Source
16	GISV- 387	GISV - 267 × ISC - 67 - 13 - 7	Main Cotton Research Station, Surat
17	GISV- 389	GISV - 278 × 170 - CO2 - 10 - 1(H)	Main Cotton Research Station, Surat
18	GISV- 391	GISV - 264 (BB) × 123 - CO2 - 13	Main Cotton Research Station, Surat
19	GISV- 392	GISV - 264 (BB) × 170 - CO2 - 2 - 126 - 1	Main Cotton Research Station, Surat
20	GISV- 393	GISV - 264 (BB) × 134 - CO2 - C - W - 5	Main Cotton Research Station, Surat
21	GISV- 394	GISV - 264 (BB) × ISC - 67 - 13 - 7	Main Cotton Research Station, Surat
22	GISV- 395	GISV - 310 (HGP) × 125 - CO2 - 18	Main Cotton Research Station, Surat
23	GISV- 396	GISV - 310 (HGP) × 170 - CO2 - 2 - 126 - 1	Main Cotton Research Station, Surat
24	GISV- 397	GISV - 310 (HGP) × 170 - CO2 - 10 - 1(H)	Main Cotton Research Station, Surat
25	GISV- 398	GISV - 310 (HGP) × 134 - CO2 - C - W - 5	Main Cotton Research Station, Surat
26	GISV- 399	GISV - 310 (HGP) × ISC - 67 - 1 - 2	Main Cotton Research Station, Surat
27	GISV- 400	GISV - 316 (HGP) × 125 - CO2 - 18(HDPS)	Main Cotton Research Station, Surat
28	GISV- 401	GISV - 316 (HGP) × 170 - CO2 - 10 - 1(H)	Main Cotton Research Station, Surat
29	GISV- 402	GISV - 316 (HGP) × 134 - CO2 - C - W - 5	Main Cotton Research Station, Surat
30	GISV- 403	GISV - 316 (HGP) × 134 - CO2 - M - 21 - 4	Main Cotton Research Station, Surat

Supplementary Table 2. Mean performance and range for various characters in cotton

Sr. No.	Genotypes	Characters											
		DF	PH (cm)	MPP	SPP	BPP	BW (g)	SI (g)	SCY/P (g)	GOT (%)	UHML (mm)	FS (g/tex)	FF (mv)
1	GISV-39	63.67	128.13	1.73	17.00	32.29	4.10	9.00	131.33	34.00	25.53	28.43	4.60
2	GISV-216	62.67	123.13	1.67	15.60	25.67	3.57	8.83	91.53	30.19	26.43	28.10	4.70
3	GISV-269	57.00	106.87	1.73	14.93	36.34	3.73	8.83	135.90	31.00	25.73	26.30	4.50
4	GISV-313	55.33	92.60	1.53	12.60	31.12	3.47	8.33	108.33	36.77	25.70	26.00	4.90
5	GISV-318	56.33	131.07	1.60	16.00	30.54	3.70	8.33	112.60	36.05	25.27	26.93	4.30
6	GISV-319	56.33	134.53	1.47	16.87	33.84	3.63	8.67	121.07	33.88	24.87	26.03	5.10
7	GISV-322	57.33	122.20	2.00	11.67	18.04	4.03	9.17	72.90	33.44	26.70	28.83	4.70
8	GISV-323	61.33	113.13	2.20	13.20	22.84	3.63	8.17	83.00	35.94	24.37	27.27	5.23
9	GISV-324	59.67	138.33	1.67	14.07	21.55	3.07	8.83	65.83	38.04	25.57	27.63	5.20
10	GISV-375	59.67	122.87	2.27	13.80	32.41	4.50	8.83	145.33	37.94	27.23	28.70	3.70
11	GISV-380	58.67	141.13	1.93	15.53	22.50	4.53	9.33	102.47	37.95	26.00	27.40	4.40
12	GISV-382	62.33	132.13	2.13	16.00	28.38	4.17	8.50	117.87	36.99	24.83	26.53	4.80
13	GISV-384	57.33	118.40	1.60	13.93	25.53	3.77	9.33	96.67	36.14	25.97	27.50	4.53
14	GISV-385	61.33	148.60	2.33	16.40	35.27	3.83	8.33	133.33	35.85	24.83	26.37	4.60
15	GISV-386	56.00	136.20	1.67	16.67	26.42	4.87	9.17	127.33	36.18	23.13	26.03	5.10
16	GISV-387	60.00	122.00	2.33	13.47	26.41	4.63	8.83	122.23	33.66	26.43	28.03	5.83
17	GISV-389	55.00	136.93	2.53	14.47	35.71	4.07	9.17	144.00	35.49	26.33	27.67	5.50
18	GISV-391	59.00	152.60	1.87	15.60	24.38	4.27	9.33	103.80	35.74	28.03	28.37	4.80
19	GISV-392	55.33	115.00	1.93	14.47	24.90	4.50	8.83	112.20	36.98	26.13	26.80	5.10
20	GISV-393	60.67	121.60	2.00	14.60	30.41	3.53	9.33	106.57	35.03	26.83	27.37	4.80
21	GISV-394	56.67	142.13	1.93	15.80	27.29	4.03	9.17	109.10	35.30	26.33	27.43	4.77
22	GISV-395	53.67	134.60	2.33	14.67	30.62	4.10	8.83	125.53	35.64	27.53	28.03	5.07

Sr. No. Genotypes		Characters											
		DF	PH (cm)	MPP	SPP	BPP	BW (g)	SI (g)	SCY/P (g)	GOT (%)	UHML (mm)	FS (g/tex)	FF (mv)
23	GISV-396	58.67	114.93	2.27	13.33	26.37	3.73	8.33	98.73	37.09	24.17	26.60	4.80
24	GISV-397	58.33	121.67	2.13	13.60	29.28	3.87	9.17	113.00	34.46	23.83	26.17	5.30
25	GISV-398	53.00	135.67	3.40	13.93	30.42	4.10	8.33	123.77	38.55	24.67	27.13	5.17
26	GISV-399	56.67	147.40	2.23	14.40	31.01	4.40	8.67	135.33	38.03	23.30	24.57	4.70
27	GISV-400	59.00	128.87	1.80	14.60	35.62	4.17	8.67	148.00	37.09	24.20	25.43	4.90
28	GISV-401	63.67	116.40	1.80	14.87	34.37	3.87	8.33	132.00	35.83	25.13	25.53	4.90
29	GISV-402	60.00	135.07	2.20	14.40	28.59	4.23	8.83	120.23	37.22	22.53	24.50	5.20
30	GISV-403	60.33	135.87	1.73	15.40	28.09	4.20	9.17	118.13	35.90	26.93	27.20	5.60
	General mean	58.50	128.34	2.00	14.73	28.87	4.01	4.01	115.27	35.74	25.49	26.96	4.89
Range	Maximum	63.67	152.60	3.40	17.00	36.34	4.87	9.33	148.00	38.55	28.03	28.83	5.83
	Minimum	53.00	92.60	1.47	11.67	18.04	3.07	8.17	72.90	30.19	22.53	24.50	3.70
	S. Em±	1.77	7.28	0.12	0.88	1.81	0.16	0.16	7.01	0.81	0.19	0.22	0.16
	C. D. at 5%	5.01	20.60	0.33	2.49	5.13	0.45	0.45	19.84	2.30	0.54	0.63	0.47
	CV %	5.23	9.82	10.21	10.33	10.88	6.9	4.82	10.53	3.93	1.3	1.4	5.82
DF	= Days to 50 % flowering			BPP	= Bolls per plant			GOT	= Ginning outturn (%)				
PH	= Plant height (cm)			BW	= Boll weight (g)			UHML	= Upper half mean length (mm)				
MPP	= Monopodia per plant			SI	= Seed index (g)			FS	= Fibre strength (g/tex)				
SPP	= Sympodia per plant			SCY/P	= Seed cotton yield per plant (g)			FF	= Fibre fineness (mv)				

Supplementary Table 3. Eigen value, cumulative variance and factor loading of the five major factors obtained from the PCA of 12 quantitative traits

Variable	PC 1	PC 2	PC 3	PC 4	PC 5
Eigen value	2.81	2.06	1.90	1.33	1.07
% Variance	23.49	17.24	15.90	11.14	8.97
% Cumulative variance	23.49	40.73	56.63	67.77	76.74
DF	-0.08	0.00	-0.38	-0.28	-0.17
PH	0.13	0.46	0.19	-0.39	-0.09
MPP	0.18	0.00	0.49	0.28	-0.08
SPP	0.19	0.43	-0.36	-0.29	0.00
BPP	0.42	0.07	-0.32	0.41	0.06
BW	0.18	0.40	0.30	0.00	0.04
SI	-0.26	0.44	0.08	-0.10	0.28
GOT	0.23	-0.06	0.42	-0.21	-0.48
UHML	-0.39	0.30	-0.01	0.40	-0.08
FS	-0.45	0.26	0.09	0.28	-0.16
FF	0.04	-0.11	0.25	-0.13	0.78
SCY/P	0.47	0.27	-0.11	0.36	0.06

Supplementary Table 4. PCA scores of 30 genotypes

	PC 1	PC 2	PC 3	PC 4	PC 5	PC 6	PC 7	PC 8	PC 9	PC 10	PC 11	PC 12
1	-0.19	1.81	-2.32	-0.03	-0.35	0.87	0.86	-0.05	-0.11	0.96	-0.46	0.00
2	-2.65	0.01	-2.51	-0.20	0.47	1.10	0.20	-1.24	-0.02	-0.23	0.20	-0.08
3	0.36	-0.38	-2.64	2.11	0.94	-0.96	-0.08	-0.98	0.45	-0.13	0.32	-0.05
4	-0.20	-3.36	-0.59	1.46	-0.01	-1.63	-0.43	0.96	-0.65	-0.06	0.04	0.04
5	0.45	-0.29	-1.26	-0.13	-1.36	-0.59	-1.41	-0.58	-0.88	-0.10	-0.29	0.03
6	1.07	0.19	-1.92	-0.53	1.14	-0.33	-1.70	-0.28	-0.54	-0.05	-0.14	0.08
7	-4.07	-0.71	1.50	0.31	-0.02	-0.54	0.65	-1.06	0.50	-0.67	-0.37	0.06
8	-1.10	-3.01	0.51	-0.66	-0.29	1.32	0.67	-0.32	-0.58	0.20	-0.15	0.00
9	-2.44	-1.60	0.51	-2.18	-0.50	0.68	-1.67	1.07	0.29	0.14	-0.41	-0.08
10	0.07	1.51	0.22	2.39	-3.01	-0.44	1.28	0.35	0.25	0.05	-0.34	-0.04
11	-0.91	1.89	1.08	-1.38	-1.30	-0.97	0.47	-0.04	0.02	0.16	0.40	0.06
12	0.99	0.10	-0.39	-1.01	-0.90	0.97	0.70	0.06	-0.51	0.20	0.36	-0.03
13	-1.92	-0.19	-0.12	-0.10	-0.44	-1.57	-0.14	0.28	0.66	0.41	-0.03	0.00
14	2.21	0.63	-1.10	-0.27	-1.09	1.76	-0.62	-0.36	0.23	-0.37	0.02	0.08
15	1.60	1.52	0.47	-1.81	1.09	-1.67	0.62	-0.81	-0.73	0.63	-0.28	0.00
16	-0.79	0.33	1.27	0.95	1.93	1.21	1.76	0.07	-0.80	-0.35	-0.24	0.03
17	0.95	1.36	1.18	1.83	1.54	0.63	-0.88	0.54	0.66	0.28	-0.34	0.01
18	-1.95	2.71	0.58	-0.66	-0.36	0.27	-0.46	0.36	-0.13	-0.64	0.14	0.03
19	-0.28	-0.12	1.26	0.27	0.37	-1.26	0.49	0.19	-1.27	0.16	0.51	-0.03
20	-1.44	0.21	-0.85	0.47	0.12	0.24	-0.18	0.79	1.24	0.43	0.61	0.05
21	-0.73	1.47	0.13	-0.42	0.08	-0.24	-1.00	-0.26	0.12	-0.02	0.19	-0.05
22	-0.24	1.11	1.24	1.71	0.39	0.18	-1.23	0.04	-0.57	-0.23	0.06	-0.05
23	0.09	-2.46	0.68	-0.09	-0.85	0.24	0.25	-0.34	-0.04	0.27	0.03	0.01
24	0.20	-0.97	0.28	-0.22	1.57	-0.25	0.43	-0.26	1.27	0.34	-0.12	0.02
25	2.04	-0.72	3.45	1.35	-0.43	1.37	-1.08	-0.81	-0.03	0.57	0.29	0.00
26	3.09	0.00	1.11	-0.99	-0.50	-0.76	0.00	-0.38	0.69	-0.89	-0.06	-0.04
27	2.58	-0.18	-0.64	0.13	0.07	-0.61	0.43	0.76	0.25	-0.32	-0.48	-0.03
28	1.52	-1.21	-1.93	0.11	-0.25	0.69	1.01	0.95	-0.19	-0.38	0.28	0.01
29	2.31	-0.94	0.73	-1.82	0.60	-0.14	0.85	-0.08	0.89	-0.14	0.18	-0.02
30	-0.61	1.32	0.07	-0.61	1.35	0.43	0.22	1.41	-0.48	-0.21	0.09	-0.02