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GENOTYPE X ENVIRONMENT INTERACTION ANALYSIS FOR FIBER QUALITY, SEED COTTON YIELD AND IT'S CONTRIBUTING TRAITS IN BT BGII COTTON (*GOSSPIUM HIRSUTUM* L.)

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ABSTRACT

Field experiment were undertaken to assess stability of some new Bt BGII cotton strains under three different agro-environments. 32 crosses, 8lines and 4testers along with NHH-44 BGII and MRC 7347 BGII checks were planted under three different environmental conditions of Marathwada region *viz.*, Nanded, Parbhani and Somnthpur. Fiber quality, Seed cotton yield and it's contributing traits data were recorded from each location and stability analysis were performed. The combined analysis of variance for varieties, location and varieties x location interaction showed highly significant for most of the traits. The pooled analysis of variance showed that both the linear and non-linear components were significant indicating presence of both predictable and unpredictable components. The cross NH-2292 BGII x NH-2289 BGII was well adapted over the environments and NH-2230 BGII x NH-2247 was adapted to unfavorable environment while crosses *viz.*, NH-2260 BGII x NH-2236 BGII and NH-22126 BGII x NH-2236 were adapted to all the environment for seed cotton yield per plant.
***Keywords* :** Bt cotton, stability, seed cotton yield.

Introduction

Cotton is a vital crop having significant economic, social, and industrial importance worldwide. It serves as a primary source of natural fiber for the textile industry, producing fabrics used in clothing, household textiles, and industrial applications. Additionally, cotton cultivation provides livelihoods for millions of farmers and supports rural economies in various regions. Beyond textiles, cotton seed is valuable for oil production (18-24%), animal feed (Protein 22-24%), and bio-fuel. Moreover, cotton plays a crucial role in global trade and agricultural economies, making it a cornerstone of sustainable development and food security efforts.

Genotype x Environment (G x E) interaction profoundly impacts cotton breeding, as it accounts for how genetic traits express differently across diverse environmental conditions. Cotton traits such as yield, fiber quality, and disease resistance exhibit varying responses to environmental factors. Evaluating G x E interaction entails conducting multi-location trials across different regions and seasons to capture environmental variability. This comprehensive assessment enables breeders to identify genotypes with broad adaptability and stability, crucial for sustainable cotton production. By understanding G x E interaction, breeders can tailor breeding strategies to develop cultivars optimized for specific growing conditions (Bhatade *et al.*, 1992). The Eberhart and Russell model (1966) aids in identifying cotton genotypes with consistent performance across diverse environments. By assessing genotype-environment interactions, it identifies stable genotypes suitable for various growing conditions. This stability analysis is crucial for selecting cotton varieties resilient to environmental fluctuations. The model enables breeders to prioritize genotypes with predictable performance, ensuring reliable yields and quality across different locations and seasons. Overall, it enhances the efficiency and effectiveness of cotton breeding programs.

Material and Method

The experimental material for the present study consists of a complete set of 46 entries, including 32 F_1 hybrids, 8 lines, 4 testers, and 2 checks. Evaluation of these entries took place during the *Kharif* season of 2023-24 at three different environments, namely: Cotton Research Station, Nanded (E1), Cotton Research Station at Mahboob Baugh Farm, Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani (E2), and Agricultural Research Station, Somnathpur (E3). This multi-location evaluation aims to assess the performance and stability of the F_1 hybrids across varied environmental conditions. Complete set of 46 entries comprising of 32 F_1, 8 lines, 4 tester and 2 checks were evaluated in Randomized Block Design with two replications with spacing 120 x 45 (for hybrid) and 90 x 30 (for parents). Observations for all traits were recorded on five randomly chosen competitive plants within each entry, replication, and environment, except for traits such as days to 50 percent flowering and days to maturity, which were recorded on plot basis. The mean data were used for the statistical analysis. Stability parameters were estimated by the method described by Eberhart and Russell (1966).

Result and Discussion

The analysis of variance for stability (Table 1.) revealed significant variance due to genotypes for all the characters while environment non-significant for the traits *viz.,* boll weight and fibre fineness value. The G x E interaction was found significant for most the characters except days to 50% flowering, boll weight, seed yield per plant, seed index, lint index, ginning outturn, upper half mean length and uniformity ratio pooled deviation, which have been the criteria to extend the data for stability analysis using Eberhart and Russell (1966) model.

The mean square due to environment (linear) revealed to have most of traits significant except *viz.,* boll weight, fiber fineness which indicates the difference on environments will generate disparities on cultivar responses. Whereas, G x E (linear) interaction was highly significant for days to 50% flowering, no. of sympodia per plant, no. of bolls per plant, seed cotton yield per plant, fiber fineness, fiber strength which means that there is genetic divergence among genotypes taking into account their responses variation of environmental conditions. This reveals the importance of both linear and nonlinear components in determining interaction of the genotypes with environment in the present study. Kavithamani *et al.* (2011), Taranjit *et al.* (2012), Patel *et al.* (2013) and Dewdar (2013) also reported similar results in cotton.

The Eberhart and Russell stability model identifies stable genotypes by examining their adaptability and response to environmental changes. According to this model, a stable genotype is characterized by a high mean performance, a regression coefficient (bi) close to unity, and a low deviation from regression (S^2di). These parameters provide insights into the genotypes performance consistency across different environments. High mean performance indicates the genotypes overall productivity. Regression coefficient (bi) of approximately 1 signifies average stability, meaning the genotype performs consistently across diverse environments without being overly sensitive or insensitive to changes. Low mean square deviation (S^2di) reflects minimal fluctuation from the expected performance based on regression, ensuring predictability. The type of stability is largely governed by the regression coefficient and mean values. A genotype with a bi value equal to 1 is considered to exhibit average stability, maintaining consistent performance across all tested environments. Conversely, bi values significantly greater or smaller than 1 indicate (good performance) in average environments and (good performance in poor environments) respectively. The results of the stability analysis character wise are presented in Table 2.

Table 1 : Analysis of variance for stability parameters of genotypes over three environments

Source of variation	df	Days to 50% flowering	Days to maturity	Plant height (cm)	No. of sympodia per plant	No. of bolls per plant	Boll weight (g)	Seed cotton yield per plant (g)
Varieties	**45**	26.56**	97.80**	511.07**	63.26**	90.89**	0.75**	4016**
Env.+ (Var. x Env.)	**92**	8.55**	6.93**	46.41	18.16**	5.70**	0.06	23.42
Environments	**2**	238.82**	232.51**	204.18*	565.10**	216.70**	0.41	107.01**
Var. x Env.	**90**	3.43	1.92*	42.90	6.00**	1.01**	0.05	21.56
Environments (Lin.)	**1**	477.65**	465.02**	408.36**	1130.21**	433.40**	0.82	214.03**
Var. x Env. (Lin.)	**45**	4.56**	2.77	30.99	10.61**	1.63**	0.05	26.78*
Pooled Deviation	**46**	2.26	1.05	53.63**	1.37	0.38	0.06	16.00
Pooled Error	**135**	3.28	2.96	6.68	1.56	1.90	0.14	29.88

Source of variation	df	Seed Index (g)	Lint Index (g)	Ginning outturn (%)	UHML (mm)	Fibre fineness (µg/ inch)	Fibre strength (g/ tex)	Uniformity Ratio (%)
Varieties	**45**	1.89 **	1.81**	13.93 **	5.03 **	0.45**	5.39**	5.58**
Env.+ (Var. x Env.)	**92**	0.96	0.45	3.81	1.31 *	0.16*	0.78 **	0.23
Environments	**2**	3.49 *	1.78 *	24.82 **	29.04**	0.11	9.91 **	1.82**
Var. x Env.	**90**	0.90	0.42	3.35	0.69	0.16*	0.58 *	0.20
Environments (Lin.)	**1**	6.98 **	3.57 **	49.64 **	58.09**	0.23	19.82**	3.65**
Var. x Env. (Lin.)	**45**	0.89	0.42	3.17	0.57	0.23**	0.80**	0.17
Pooled Deviation	**46**	0.89 *	0.41	3.44 **	0.80	0.09	0.35	0.22
Pooled Error	**135**	0.54	0.30	1.42	1.02	0.12	0.71	0.92

*, **-Significant at 5 per cent and 1 per cent level, respectively

The trait days to 50 % flowering, crosses NH-2260 BGII x NH-2212 BGII (x= 72.50, bi= 1.08, S^2di= -2.95) and NH-2260 BGII x NH-2236 BGII (x=69.00, bi= 1.08, S^2di= -2.95) showed low mean, bi=1 with least non-significant deviation. Early flowering is one of the most important characters in cotton for earliness, thus the hybrids reported stable performance over the environments. Similar results were noticed by Deshmukh *et al.,* (2015), Chinchane *et al.,* (2018), Sirisha *et al.,* (2019). Total twenty-seven crosses were found stable with low mean than hybrid mean for days to maturity. The hybrids NH-2230 BGII x NH-2212 BGII (x= 169.66, bi= 0.90, S^2di= -2.66), NH-2292 BGII x NH-2212 BGII (x= 169.66, bi= 1.00, S^2di= -3.09), NH-2274 BGII x NH-2289 BGII (x= 167.50, bi= 1.11, S^2di= -3.05) and NH-22105 BGII x NH-2247 BGII (x= 169.33, bi= 1.11, S^2di= -3.05) showed low mean, marked bi value near to unity (bi=1) and least S^2di thus, well adopted over all the environments. Similar results were noticed by Patel *et al.,* (2006) and Sirisha *et al.,* (2019). For plant height Cross, NH-2230 BGII x NH-2289 (x= 121.60, bi= 1.04, S^2di= -28.75) noted bi=1 and least non-significant deviation from regression thus found well adopted over the environments, six crosses were found stable with above hybrid mean and minimum non-significant S^2di value for plant height Pinki *et al.,* (2018). Total three crosses were found to be stable with high mean and non-significant deviation from regression for number of sympodia per plant. Among the crosses, NH-2224 BGII x NH-2236 BGII (x=16.20, bi= 1.31, S^2di= -1.48) and NH-2292 BGII x NH-2289 BGII (x=16.21, bi= 1.48, S^2di= -1.62) expressed high mean, bi value greater to unity (bi>1) and least deviation from regression whereas, NH-2230 BGII x NH-2289 BGII (x=16.26, bi= 0.91, S^2di= 0.94) expressed higher mean, bi value less than unity and least deviation. The cross NH-2230 BGII x NH-2289 BGII was adapted over the environments. Whereas, NH-2292 BGII, NH-22105 BGII and NH-2236 BGII parents and crosses NH-2224 BGII x NH-2236 BGII and NH-2292 BGII x NH-2289 BGII were well adapted over the favorable environments Satish *et al.,* (2009) and Sirisha *et al.,* (2019). For number of bolls per plant hybrids, NH-2202 BGII x NH-2236 BGII and NH-2224 BGII x NH-2212 were noticed to be well adapted over the environments because they noted high mean with bi close to unity and non-significant deviation from regression. Sixteen crosses were found stable for the boll weight. They exhibited higher mean than parental and hybrid mean, respectively with non-significant deviation from regression approaching zero. NH-2202 BGII x NH-2236 BGII (x=4.73, bi= 0.98, S^2di= -0.14) noticed to have high mean, bi value lesser to unity and non-significant deviation from regression for boll weight. Cross NH-2224 BGII x NH-2247 BGII (x= 4.42, bi= 1.18, S^2di= -0.12) have high mean, bi value greater than unity and non-significant deviation from regression.

For seed cotton yield per plant fifteen crosses were found to be stable with high mean population mean, with minimum non-significant deviation from regression. The cross *viz.,* NH-2260 BGII x NH-2236 BGII (x=167.30, bi= 1.13, S^2di= -28.58) and NH-22126 BGII x NH-2236 BGII (x=154.90, bi= 1.02, S^2di= -18.38) recorded high mean, bi value equal to unity and non-significant deviation from regression for seed cotton yield per plant whereas, NH-2230 BGII x NH-2247 (x=119.30, bi= 0.79, S^2di= -25.65) recorded high mean, bi value low to unity and non-significant deviation from regression and cross NH-2292 BGII x NH-2289 BGII x=139.90, bi= 1.31, S^2di= -23.64) observed to have high mean, bi value more than one and non-significant deviation from regression for seed cotton yield per plant. The cross NH-2292 BGII x NH-2289 BGII was well adapted over the environments and NH-2230 BGII x NH-2247 was adapted to unfavorable environment while crosses *viz.,* NH-2260 BGII x NH-2236 BGII and NH-22126 BGII x NH-2236 were adapted to all the environment Pinki *et al.,* (2018) and Teodoro *et al.,* (2019).

The crosses NH-22126 BGII x NH-2236 BGII possessed high mean, bi value greater than unity and minimum deviation from regression thus, cross was well adopted for favourable environment for seed index. For lint index Cross NH-2230 BGII x NH-2236 BGII (x=6.87, bi= 0.95, S^2di= -0.29) was adapted for favourable environment because cross have high mean, bi value equal to unity and non-significant deviation from regression. The only cross NH-22126 BGII x NH-2236 BGII (x=38.31, bi= 0.89, S^2di= -1.50) reported high mean, bi value near to unity and non-significant deviation from regression which was showed that cross was adapted to unfavorable environment for ginning outturn (%). Among the crosses *viz.,* NH-2260 BGII x NH-2247 BGII (x=30.30, bi= 0.97, S^2di= -0.99), NH-2292 BGII x NH-2247 BGII(x=29.76, bi= 1.14, S^2di= -0.79) and NH-22126 BGII x NH-2236 BGII (x=30.53, bi= 1.11, S^2di= -0.85) noted high mean coupled with bi value near to unity and non-significant deviation from regression so the crosses were well adapted over the environments for upper half mean length. Stability for the fiber fineness was observed in four crosses, which exhibited lower mean than parental mean and hybrid mean, respectively with non-significant S^2di value. Among the crosses, the cross NH-2260 BGII x NH-2236 BGII (x=4.10, bi= 1.04, S^2di= -0.11) showed low mean, bi values equal to unity coupled with non-significant deviation and was well adapted to all the environments. Crosses NH-2202 BGII x NH-2212 BGII, NH-2230 BGII x NH-2236 BGII were adapted to unfavorable environment and crosses NH-22126 BGII x NH-2247 BGII and NH-2230 BGII x NH-2212 well adapted over the environment and favorable environment, respectively for fiber strength Ng *et al.,* (2013). Stability for fiber uniformity was reported in six parents and eleven crosses with high mean and non-significant S^2di value. Among the crosses, cross NH-2274 BGII x NH-2247 BGII (x=85.18, bi= 0.73, S^2di= -0.92) and NH-22126 BGII xNH-2289 BGII (x= 85.61, bi= 0.88, S^2di= -0.92) showed high mean, bi values lesser to unity coupled with non-significant deviation from regression. Above mentioned crosses were well adapted to less favorable environment Deshmukh *et al.,* (2014), Singh *et al.,* (2014).

Conclusion

Treatments NH-22126 BGII x NH-2236 BGII, NH- 2260 BGII x NH-2236 BGII were well adapted over all the environments for seed cotton yield per plant. While, crosses NH-2230 BGII x NH-2247 BGII, NH-2260 BGII x NH-2236 BGII were adapted over all the environment for upper half mean length and could be utilized further for yield improvement in cotton.

Table 2.: Stability parameters of parents and crosses for days to 50% flowering, days to maturity and plant height (cm)

Sr. no.	Treatments	Days to 50% flowering			Days to maturity			Plant height (cm)		
		Mean	bi	S^2di	Mean	bi	S^2di	Mean	bi	S^2di
	Crosses									
1	NH-2202 BGII x NH-2212 BGII	69.50	0.78	-3.29	166.50	0.14	0.19	99.30	0.42	-2.00
2	NH-2202 BGII x NH-2236 BGII	69.33	0.61	-2.11	163.50	0.54	-2.58	124.70	1.90	-6.08
3	NH-2202 BGII x NH-2247 BGII	66.33	0.90	-3.22	163.16	1.20	-1.55	95.50	-0.37	6.50
4	NH-2202 BGII x NH-2289 BGII	71.83	0.47	-3.01	166.66	1.52	0.56	115.70	0.22	10.30
5	NH-2224 BGII x NH-2212 BGII	71.50	0.86	-3.09	165.00	0.30	0.49	100.70	-0.54	3.85
6	NH-2224 BGII x NH-2236 BGII	69.00	0.86	-3.09	166.0	1.21	-2.39	118.10	1.52	-6.54
7	NH-2224 BGII x NH-2247 BGII	73.00	0.92	3.37	168.33	0.22	-2.95	112.50	0.57	-5.72
8	NH-2224 BGII x NH-2289 BGII	70.16	1.24	-3.21	169.00	0.88	-3.06	128.90	0.28	-6.22
9	NH-2230 BGII x NH-2212 BGII	70.83	1.20	-3.11	169.66	0.90	-2.66	111.50	1.97	30.68 *
10	NH-2230 BGII x NH-2236 BGII	71.83	0.98	-3.20	167.16	-0.07	-2.92	121.50	2.97	-0.60
11	NH-2230 BGII x NH-2247 BGII	70.66	1.39	-2.34	166.33	1.31	-1.97	108.60	-0.73	17.69
12	NH-2230 BGII x NH-2289 BGII	70.83	0.98	-3.20	170.00	1.57	-2.21	121.60	1.04	-28.75
13	NH-2260 BGII x NH-2212 BGII	72.50	1.08	-2.95	169.50	0.66	-3.07	107.30	-0.49	327.41**
14	NH-2260 BGII x NH-2236 BGII	69.00	1.08	-2.95	161.33	0.89	-3.03	109.60	6.37	318.51**
15	NH-2260 BGII x NH-2247 BGII	70.33	0.76	-3.27	166.00	1.43	-2.32	103.20	8.85	173.4 **
16	NH-2260 BGII x NH-2289 BGII	73.16	1.02	-3.12	165.33	0.89	-3.03	99.20	1.44	95.28 **
17	NH-2274 BGII x NH-2212 BGII	72.00	2.50	-2.17	170.83	0.99	-2.94	123.30	0.26	7.65
18	NH-2274 BGII x NH-2236 BGII	71.50	2.22**	-3.32	168.83	0.67	-3.01	102.40	2.47	319.02**
19	NH-2274 BGII x NH-2247 BGII	71.00	2.50	-2.17	162.83	0.89	-3.03	122.3	0.15	27.33 *
20	NH-2274 BGII x NH-2289 BGII	70.50	1.22	-3.32	167.50	1.11	-3.05	127.50	0.907	114.97**
21	NH-2292 BGII x NH-2212 BGII	71.16	0.96	-2.76	169.66	1.00	-3.09	104.50	2.20	-6.03
22	NH-2292 BGII x NH-2236 BGII	72.83	0.69	-3.13	166.50	0.32	-2.64	115.30	1.40	4.74
23	NH-2292 BGII x NH-2247 BGII	72.50	1.22	-3.32	166.83	0.20	-2.36	108.10	0.55	-6.06

24	NH-2292 BGII x NH-2289 BGII	73.50	1.15	-1.71	166.00	0.52	0.65	110.20	-0.01	20.55 *
25	NH-22105 BGII x NH-2212 BGII	73.00	1.08	-2.95	170.16	1.10	-2.72	95.70	1.98	-6.31
26	NH-22105 BGII x NH-2236 BGII	71.66	2.03	-3.06	164.00	1.55	-3.01	104.90	1.36	-6.54
27	NH-22105 BGII x NH-2247 BGII	72.00	1.29	-2.79	169.33	1.11	-3.05	96.30	-0.54	10.68
28	NH-22105 BGII x NH-2289 BGII	73.33	0.77	1.06	169.16	1.56	-2.80	93.00	0.06	-5.04
29	NH-22126 BGII x NH-2212 BGII	72.66	2.38	4.53	164.16	0.78	-3.08	107.70	1.41	24.75*
30	NH-22126 BGII x NH-2236 BGII	69.33	0.55*	-3.31	169.83	1.24	-2.45	123.10	2.72	-5.64
31	NH-22126 BGII x NH-2247 BGII	72.66	0.59	-2.83	164.00	0.88	-3.06	112.20	0.50	-2.74
32	NH-22126 BGII x NH-2289 BGII	72.33	0.53	9.90 *	167.00	1.43	-2.32	125.20	1.36	-6.50
	Lines									
33	NH-2202 BGII	75.66	0.16	-2.43	177.50	0.51	9.77*	111.10	0.32	-6.26
34	NH-2224 BGII	75.66	1.54	2.05	178.50	1.89	-3.02	123.40	-1.95	38.96**
35	NH-2230 BGII	76.16	1.25	-0.97	178.33	-0.11*	-3.05	123.10	-2.77	96.77 **
36	NH-2260 BGII	74.83	-0.24	-0.80	180.33	1.56*	-3.07	101.00	-0.12	-3.96
37	NH-2274 BGII	79.83	0.77	1.06	177.33	1.56*	-3.07	156.70	1.25	-6.47
38	NH-2292 BGII	77.16	1.02	-3.12	176.16	2.03	-0.29	138.30	0.18	2.59
39	NH-22105 BGII	78.16	1.54	2.05	174.00	1.57	-2.21	109.10	-1.47	115.97**
	Testers									
40	NH-22126 BGII	78.83	0.56	0.56	177.50	1.45	-2.97	124.50	2.10	34.93 *
41	NH-2212 BGII	76.00	1.80	-0.64	177.83	0.25	-0.56	121.70	1.72	8.80
42	NH-2236 BGII	78.00	0.00**	-3.32	178.83	1.14	-1.05	133.60	1.73	-4.98
43	NH-2247 BGII	76.50	-0.30	3.72	181.00	1.35	-2.13	114.80	0.91	31.99 *
44	NH-2289 BGII	76.83	1.14	9.24	179.83	0.77	-2.97	139.80	1.28	74.13 **
	Checks									
45	NHH 44 BG II	75.66	-0.13	9.63	179.50	1.65	-2.25	114.00	0.10	121.10**
46	MRC 7347 BG II	75.50	-0.07	-2.88	177.00	1.21	-2.39	116.70	0.41	189.39**
	Population mean	**72.97**			**170.30**			**114.70**		
	SE (Mean)	**1.06**			**0.70**			**5.20**		

*,**- Significant at 5 per cent and 1 per cent level, respectively

Table 3 : Stability parameters of parents and crosses for number of sympodia per plant, number of bolls per plant and boll weight (g)

Sr. No.	**Treatments**	**Number of sympodia per plant**			**Number of bolls per plant**			**Boll weight (g)**		
		Mean	**bi**	**S^2di**	**Mean**	**bi**	**S^2di**	**Mean**	**bi**	**S^2di**
	Crosses									
1	NH-2202 BGII x NH-2212 BGII	14.39	0.91	-1.40	21.13	1.25	-1.97	4.26	2.26	-0.07
2	NH-2202 BGII x NH-2236 BGII	18.25	1.79	0.12	23.35	1.15	-1.74	4.73	0.98	-0.14
3	NH-2202 BGII x NH-2247 BGII	15.16	0.95	-1.58	19.81	1.13	-1.95	3.64	-1.41	-0.12
4	NH-2202 BGII x NH-2289 BGII	25.70	0.58	-0.32	28.28	1.43	-1.77	4.49	2.15	-0.11
5	NH-2224 BGII x NH-2212 BGII	15.58	1.33	-1.48	24.00	1.15	-1.92	4.58	1.85	-0.13
6	NH-2224 BGII x NH-2236 BGII	16.20	1.31	-1.52	23.38	0.78	-1.32	3.91	0.16	-0.12
7	NH-2224 BGII x NH-2247 BGII	14.33	1.90	-1.56	23.03	1.37	-1.81	4.42	1.18	-0.12
8	NH-2224 BGII x NH-2289 BGII	24.64	0.48*	-1.49	26.75	1.58	-1.79	5.12	0.87	-0.14
9	NH-2230 BGII x NH-2212 BGII	16.18	1.64	6.35*	21.50	0.70	-1.80	5.15	0.19	-0.12
10	NH-2230 BGII x NH-2236 BGII	24.29	0.20**	-1.62	23.93	1.58*	-1.97	5.15	1.96	-0.14
11	NH-2230 BGII x NH-2247 BGII	14.03	1.78	-1.01	23.36	1.41	-1.67	4.77	0.54	-0.05
12	NH-2230 BGII x NH-2289 BGII	16.26	0.91	0.94	26.63	0.60	-0.31	5.05	0.21	-0.13
13	NH-2260 BGII x NH-2212 BGII	15.17	1.33*	-1.60	23.45	0.86	-1.97	5.08	-0.84	-0.09
14	NH-2260 BGII x NH-2236 BGII	28.98	-0.42*	-1.51	29.28	1.43	-1.77	5.37	-1.99	-0.14
15	NH-2260 BGII x NH-2247 BGII	15.78	1.60	-0.21	22.05	0.74	-1.49	4.69	2.37	-0.13
16	NH-2260 BGII x NH-2289 BGII	22.88	-0.12	-0.10	20.80	1.22*	-1.97	5.21	0.44	-0.14
17	NH-2274 BGII x NH-2212 BGII	15.58	0.32**	-1.62	22.88	0.35	-1.42	4.36	-1.91	-0.03
18	NH-2274 BGII x NH-2236 BGII	15.39	1.17	-0.08	22.36	0.99	-1.92	4.67	-1.08*	-0.14
19	NH-2274 BGII x NH-2247 BGII	15.96	2.12	-0.95	24.75	1.60	-1.97	4.45	4.19	-0.09
20	NH-2274 BGII x NH-2289 BGII	16.09	1.61	-1.56	22.40	0.43	-1.24	4.64	1.80	-0.08
21	NH-2292 BGII x NH-2212 BGII	14.73	0.99	-1.61	22.90	1.23	-0.94	3.69	-0.21	-0.10

22	NH-2292 BGII x NH-2236 BGII	15.09	1.64	-0.39	22.31	0.97	-1.84	3.73	1.95	-0.13
23	NH-2292 BGII x NH-2247 BGII	16.00	2.17	-1.21	23.76	1.31	-1.38	4.16	0.79	-0.12
24	NH-2292 BGII x NH-2289 BGII	16.21	1.48**	-1.62	23.55	1.61	-1.36	4.83	2.23	-0.14
25	NH-22105 BGII x NH-2212 BGII	17.49	1.11	17.72 **	18.10	1.37	-1.84	4.07	1.45	0.01
26	NH-22105 BGII x NH-2236 BGII	15.36	0.90	1.40	25.76	0.66	-1.27	4.09	-2.50	-0.10
27	NH-22105 BGII x NH-2247 BGII	15.38	1.51	-1.51	23.63	1.25	-1.96	3.56	2.96	-0.08
28	NH-22105 BGII x NH-2289 BGII	12.91	1.42*	-1.60	19.51	0.89	-1.81	4.09	0.39	-0.04
29	NH-22126 BGII x NH-2212 BGII	14.26	2.25*	-1.48	26.43	0.85	-1.83	4.14	1.68	-0.14
30	NH-22126 BGII x NH-2236 BGII	23.05	0.64	-1.17	25.2	1.37	-1.74	4.56	2.85	-0.13
31	NH-22126 BGII x NH-2247 BGII	13.11	0.90	-1.31	25.15	1.33	-1.88	4.41	1.85*	-0.14
32	NH-22126 BGII x NH-2289 BGII	15.23	1.77	-0.78	23.51	1.23	-1.68	4.72	1.23	-0.14
					Lines					
33	NH-2202 BGII	11.16	1.10	3.18	14.80	0.11	-1.47	3.84	0.86	-0.14
34	NH-2224 BGII	11.25	-0.09	-0.48	10.49	0.11	-0.02	4.06	3.13	-0.03
35	NH-2230 BGII	13.65	0.17	-1.35	11.82	0.98	-1.84	4.70	4.00	0.36
36	NH-2260 BGII	11.03	0.55	-0.79	11.80	0.26	-1.67	4.53	1.34	-0.04
37	NH-2274 BGII	12.26	0.50	-1.32	11.31	1.21	-1.51	3.58	3.06	-0.06
38	NH-2292 BGII	11.54	0.71	-1.60	12.31	0.63	-0.67	3.72	-1.44	-0.14
39	NH-22105 BGII	11.03	1.39	-1.07	13.79	1.24	-1.80	4.23	2.12	-0.14
40	NH-22126 BGII	10.38	0.54**	-1.62	11.06	0.46	-0.42	4.60	-0.10	-0.14
					Testers					
41	NH-2212 BGII	10.07	0.32*	-1.61	9.59	0.24	-1.02	3.85	-2.95	-0.10
42	NH-2236 BGII	11.03	1.20	-1.07	12.63	1.26	-1.88	3.90	-0.41	-0.13
43	NH-2247 BGII	9.83	0.46	-0.02	10.15	0.53	-1.62	4.12	0.04	0.00
44	NH-2289 BGII	16.53	0.11	2.34	14.67	0.77	-1.67	3.61	2.43	-0.13
					Checks					
45	NHH 44 BG II	22.90	0.42	-1.32	20.20	1.34	-1.94	3.74	1.98	0.77 *
46	MRC 7347 BG II	25.50	0.44	1.07	19.98	1.10	-1.94	4.12	3.27	-0.14
	Population mean	**16.04**			**20.38**			**4.35**		
	SE (Mean)	**0.82**			**0.44**			**0.18**		

*,**- Significant at 5 per cent and 1 per cent level, respectively

Table 4: Stability parameters of parents and crosses for Seed cotton yield per plant (g), Seed index (g) and Lint index (g)

Sr. no.	Treatments	Seed cotton yield per plant (g)			Seed index (g)			Lint Index (g)		
		Mean	**bi**	**S^2di**	**Mean**	**bi**	**S^2di**	**Mean**	**bi**	**S^2di**
					Crosses					
1	NH-2202 BGII x NH-2212 BGII	100.70	1.34	-29.10	8.17	2.91	-0.29	4.65	1.99	-0.27
2	NH-2202 BGII x NH-2236 BGII	139.10	5.74	-22.13	7.42	-0.31	0.17	5.55	1.16	-0.16
3	NH-2202 BGII x NH-2247 BGII	101.60	6.48	-25.11	8.21	1.18	-0.30	4.87	-2.10	0.33
4	NH-2202 BGII x NH-2289 BGII	165.30	1.59	-29.66	8.53	-0.90	-0.39	6.15	4.70	-0.12
5	NH-2224 BGII x NH-2212 BGII	89.90	1.14	-29.66	8.79	3.53	0.085	5.64	5.78	-0.19
6	NH-2224 BGII x NH-2236 BGII	131.90	-0.04*	-29.66	8.79	2.42	0.20	5.86	0.08	-0.25
7	NH-2224 BGII x NH-2247 BGII	126.60	-0.49	73.14	8.53	1.49	-0.54	5.44	-0.49	-0.03
8	NH-2224 BGII x NH-2289 BGII	155.80	-0.71	-28.81	9.31	0.85	1.58	6.73	1.78	-0.30
9	NH-2230 BGII x NH-2212 BGII	117.70	0.02	11.28	7.44	-2.10	-0.20	5.50	-0.45	-0.18
10	NH-2230 BGII x NH-2236 BGII	152.10	0.55	0.05	8.79	2.83	-0.45	6.87	0.95	-0.29
11	NH-2230 BGII x NH-2247 BGII	119.30	0.79	-25.65	8.57	1.31	-0.27	6.20	1.50	-0.25
12	NH-2230 BGII x NH-2289 BGII	136.00	2.83	-18.89	8.09	1.03	-0.12	7.35	0.47	-0.24
13	NH-2260 BGII x NH-2212 BGII	103.20	0.95	22.53	9.37	4.52	-0.19	5.23	-0.24	0.09
14	NH-2260 BGII x NH-2236 BGII	167.30	1.13	-28.58	8.99	-1.59	0.67	6.77	3.31	-0.22
15	NH-2260 BGII x NH-2247 BGII	135.50	1.46	-27.53	9.94	6.81*	-0.54	6.28	2.31	0.05
16	NH-2260 BGII x NH-2289 BGII	148.40	2.82	-26.18	10.02	6.32	0.66	6.54	2.70	0.02
17	NH-2274 BGII x NH-2212 BGII	94.00	-10.81	-18.54	9.83	6.98	1.32	4.83	0.78	2.24**
18	NH-2274 BGII x NH-2236 BGII	109.90	1.67	-25.95	7.85	4.74	-0.52	6.35	-3.08	0.24
19	NH-2274 BGII x NH-2247 BGII	144.60	2.05	-26.27	7.35	0.74	-0.29	5.23	-0.68	0.30
20	NH-2274 BGII x NH-2289 BGII	145.30	1.97	-25.58	7.24	1.00	0.24	7.46	0.49	0.38
21	NH-2292 BGII x NH-2212 BGII	93.40	1.61	-21.80	9.60	2.95	0.05	5.44	-0.34	0.02

22	NH-2292 BGII x NH-2236 BGII	116.60	-0.23	-18.88	8.24	2.73	0.65	4.90	1.66	1.04*
23	NH-2292 BGII x NH-2247 BGII	143.90	2.06	-17.62	7.40	0.59	-0.39	4.73	3.50	-0.21
24	NH-2292 BGII x NH-2289 BGII	139.90	1.31	-23.64	7.58	1.04	0.48	5.75	0.30	-0.29
25	NH-22105 BGII x NH-2212 BGII	101.60	1.71	-24.97	8.81	1.34	-0.33	5.92	-2.51	1.11*
26	NH-22105 BGII x NH-2236 BGII	79.60	-2.68	265.48**	7.86	-0.41	-0.29	4.82	0.49	-0.30
27	NH-22105 BGII x NH-2247 BGII	145.40	-2.10	13.17	7.67	1.09	0.35	4.63	1.73*	-0.30
28	NH-22105 BGII x NH-2289 BGII	83.00	1.67	-24.97	7.95	-0.12	0.96	5.08	1.57	-0.29
29	NH-22126 BGII x NH-2212 BGII	129.00	2.37	-18.38	8.19	0.27	-0.49	7.13	0.38	-0.10
30	NH-22126 BGII x NH-2236 BGII	154.90	1.02	-25.53	8.73	1.28	-0.42	6.55	2.99	-0.23
31	NH-22126 BGII x NH-2247 BGII	144.10	2.41	-26.79	8.60	0.21	-0.53	6.42	1.58	0.33
32	NH-22126 BGII x NH-2289 BGII	126.60	1.84	-29.05	8.98	1.67	-0.50	7.07	-0.77	0.62
	Lines									
33	NH-2202 BGII	48.90	1.47	-27.63	8.38	-2.28	0.53	5.87	-2.88	0.37
34	NH-2224 BGII	55.50	1.10	-27.71	9.96	0.64	-0.53	4.72	1.56	0.53
35	NH-2230 BGII	65.60	0.22	-22.66	8.82	-0.70	1.13	5.10	-0.78	-0.18
36	NH-2260 BGII	66.80	2.50	-16.92	9.54	-0.07	1.92*	5.39	2.63	-0.17
37	NH-2274 BGII	35.60	0.93	-28.52	9.62	-4.30*	-0.53	6.01	1.49	0.45
38	NH-2292 BGII	83.40	1.74	-26.12	8.13	-2.08	-0.07	5.41	7.56	-0.27
39	NH-22105 BGII	62.10	1.63	-29.10	7.58	-0.44	0.36	6.27	6.33	1.05*
40	NH-22126 BGII	67.00	0.66	-27.17	8.44	2.81	1.81*	6.22	-1.59	0.47
	Testers									
41	NH-2212 BGII	38.50	-0.29	-29.61	7.32	-1.17	-0.04	5.63	-0.75	0.24
42	NH-2236 BGII	79.20	1.15	-28.09	9.27	2.53	0.94	6.30	0.96	-0.06
43	NH-2247 BGII	38.20	2.25	-19.74	9.53	-0.21	4.37**	4.87	-2.77	-0.23
44	NH-2289 BGII	92.60	1.64	-27.21	8.14	-2.14	1.69 *	5.18	3.83	-0.29
	Checks									
45	NHH 44 BG II	122.90	-2.06	-25.44	8.16	-0.97	0.53	5.37	-0.41	0.36
46	MRC 7347 BG II	130.70	1.57	-29.66	9.03	-2.09	3.76 **	6.32	-0.78	0.15
	Population mean	**109.3**			**8.54**			**5.80**		
	SE (Mean)	**2.80**			**0.66**			**0.45**		

*,**- Significant at 5 per cent and 1 per cent level, respectively

Table 5: Stability parameters of parents and crosses for Ginning outturn(%) UHML (mm) and Fibre fineness (µg/inch)

Sr. No.	**Treatments**	**Ginning outturn (%)**			**UHML (mm)**			**Fibre fineness (µg/inch)**		
		Mean	**bi**	**S^2di**	**Mean**	**bi**	**S^2di**	**Mean**	**bi**	**S^2di**
	Crosses									
1	NH-2202 BGII x NH-2212 BGII	33.69	0.71	8.99 **	30.93	0.78	-0.80	4.03	0.14	-0.02
2	NH-2202 BGII x NH-2236 BGII	33.91	1.00	-1.45	30.00	1.84	-0.82	3.46	-0.03	-0.12
3	NH-2202 BGII x NH-2247 BGII	35.31	-0.86	6.00 *	30.56	0.21	-0.17	3.56	-3.98	-0.12
4	NH-2202 BGII x NH-2289 BGII	35.79	3.18	-1.09	28.10	0.79	0.05	3.93	-12.86**	-0.13
5	NH-2224 BGII x NH-2212 BGII	35.45	-1.16	0.65	28.26	1.21	1.26	4.31	-10.43	-0.11
6	NH-2224 BGII x NH-2236 BGII	34.45	1.50	1.16	29.66	1.39	-0.74	4.76	3.81	-0.02
7	NH-2224 BGII x NH-2247 BGII	33.23	2.33	12.17 **	28.16	1.16	-1.00	4.63	-7.87	-0.12
8	NH-2224 BGII x NH-2289 BGII	37.27	-1.04	-1.45	29.73	0.25	-1.00	5.45	6.23	0.06
9	NH-2230 BGII x NH-2212 BGII	37.67	2.69	-1.241	30.46	-0.14	-0.93	4.80	2.80	0.00
10	NH-2230 BGII x NH-2236 BGII	38.43	-0.97	0.71	30.46	1.79	-0.60	4.53	5.75	0.04
11	NH-2230 BGII x NH-2247 BGII	37.12	0.56	-0.49	28.83	1.04	-0.35	4.70	-0.93	-0.11
12	NH-2230 BGII x NH-2289 BGII	42.12	-0.74*	-1.52	29.90	1.27	0.07	4.76	-1.07	-0.09
13	NH-2260 BGII x NH-2212 BGII	34.22	-0.26	9.79**	29.86	1.82*	-1.00	3.80	-4.99	-0.12
14	NH-2260 BGII x NH-2236 BGII	32.69	1.78	-0.76	30.30	0.97	-0.99	4.10	1.04	-0.11
15	NH-2260 BGII x NH-2247 BGII	33.21	1.09	-1.52	29.25	0.39	-0.81	4.00	0.21	0.10
16	NH-2260 BGII x NH-2289 BGII	35.19	-0.07	-1.019	29.06	1.38	-1.00	4.23	2.94	-0.13
17	NH-2274 BGII x NH-2212 BGII	38.75	0.24	10.93**	29.51	1.20	-0.75	4.46	3.08	-0.05
18	NH-2274 BGII x NH-2236 BGII	36.42	0.53	-0.94	31.23	3.32	6.93**	4.23	-1.00	-0.13
19	NH-2274 BGII x NH-2247 BGII	38.09	0.06	0.95	28.93	1.55	-0.83	4.36	4.85	-0.08
20	NH-2274 BGII x NH-2289 BGII	39.73	-0.79	5.37 *	27.30	1.20	-1.01	4.95	5.30	-0.03
21	NH-2292 BGII x NH-2212 BGII	32.81	0.47	-1.172	29.36	0.62	-0.90	4.66	-10.13	0.16

22	NH-2292 BGII x NH-2236 BGII	33.11	5.49	0.15	30.63	1.77	-0.93	4.58	1.49	-0.13
23	NH-2292 BGII x NH-2247 BGII	35.84	0.77	9.90**	29.76	1.14	-0.79	4.06	-3.77	0.04
24	NH-2292 BGII x NH-2289 BGII	38.27	2.31	4.62 *	28.73	1.56**	-1.01	4.26	1.94	-0.12
25	NH-22105 BGII x NH-2212 BGII	33.83	1.73	3.00	29.16	1.28	-0.91	4.50	6.97	-0.12
26	NH-22105 BGII x NH-2236 BGII	35.33	1.19	-1.31	29.76	0.50*	-1.01	4.30	4.88	-0.11
27	NH-22105 BGII x NH-2247 BGII	35.04	1.70	-0.33	28.86	1.22	1.34	4.35	-1.45	-0.12
28	NH-22105 BGII x NH-2289 BGII	36.64	2.91	-1.40	27.06	0.82	-0.95	4.41	9.32	-0.10
29	NH-22126 BGII x NH-2212 BGII	37.27	1.95	-0.84	28.73	1.67	-1.00	4.36	8.08	0.01
30	NH-22126 BGII x NH-2236 BGII	38.31	0.89	-1.50	30.53	1.11	-0.85	4.21	-1.85	-0.04
31	NH-22126 BGII x NH-2247 BGII	38.27	2.97	4.33	28.96	0.93	-0.90	3.50	-11.64	0.13
32	NH-22126 BGII x NH-2289 BGII	39.81	3.67	-1.31	27.56	-0.03*	-1.00	4.33	10.85	-0.12
Lines										
33	NH-2202 BGII	35.05	2.97	6.55 *	30.26	0.94	-0.99	3.86	-4.92	-0.13
34	NH-2224 BGII	35.20	-1.04*	-1.51	29.06	0.93	-0.79	4.83	-14.41	0.80**
35	NH-2230 BGII	34.57	1.85	21.97 **	27.33	0.26	14.60 **	4.93	10.74	-0.03
36	NH-2260 BGII	33.25	3.21	4.05	29.13	1.02	-1.00	4.16	10.78	-0.08
37	NH-2274 BGII	36.80	1.66	1.40	29.00	1.63**	-1.01	4.38	4.29	-0.00
38	NH-2292 BGII	36.69	0.28	0.10	30.00	0.86	-0.91	4.43	-0.07	-0.10
39	NH-22105 BGII	38.37	0.27	0.40	27.33	0.04	-0.88	4.33	-3.08	-0.05
40	NH-22126 BGII	37.13	1.92	-1.40	28.75	1.02	-0.82	4.40	13.83*	-0.13
Testers										
41	NH-2212 BGII	35.79	1.86*	-1.52	28.40	0.97	-0.99	4.10	6.97	-0.12
42	NH-2236 BGII	33.73	-3.49	-0.66	28.93	1.03	-0.86	4.03	10.13	0.16
43	NH-2247 BGII	33.78	-1.16	-0.86	26.90	0.80	0.36	4.60	2.80	0.00
44	NH-2289 BGII	36.67	3.52	-1.42	25.70	0.65*	-1.01	4.73	-1.72	0.19
Checks										
45	NHH 44 BG II	34.84	-1.56	-1.46	27.10	-0.98*	-0.98	4.30	8.01	-0.08
46	MRC 7347 BG II	37.75	-0.19	3.14	32.23	0.67	-0.86	4.26	-5.03	-0.09
	Population mean	**36.02**			**29.12**			**4.34**		
	SE (Mean)	**1.31**			**0.63**			**0.22**		

*,**- Significant at 5 per cent and 1 per cent level, respectively

Table 6: Stability parameters of parents and crosses for Fiber strength (g/tex) and uniformity ratio (%)

Sr. no.	**Treatments**	**Fiber strength (g/tex)**			**Uniformity Ratio (%)**		
		Mean	**bi**	**S^2di**	**Mean**	**bi**	**S^2di**
Crosses							
1	NH-2202 BGII x NH-2212 BGII	28.05	0.81	-0.44	80.93	1.12	-0.57
2	NH-2202 BGII x NH-2236 BGII	28.18	1.30	1.16	82.21	1.38	-0.62
3	NH-2202 BGII x NH-2247 BGII	29.43	0.19	-0.29	83.05	2.86	-0.91
4	NH-2202 BGII x NH-2289 BGII	24.75	-0.88**	-0.70	81.83	1.51	-0.92
5	NH-2224 BGII x NH-2212 BGII	23.73	-0.24	-0.52	82.88	2.73	-0.91
6	NH-2224 BGII x NH-2236 BGII	24.66	-1.17	-0.69	81.45	1.36	-0.71
7	NH-2224 BGII x NH-2247 BGII	26.60	2.96	-0.58	82.40	2.64	-0.60
8	NH-2224 BGII x NH-2289 BGII	27.50	4.64	-0.32	82.56	2.66	-0.92
9	NH-2230 BGII x NH-2212 BGII	27.00	1.18	-0.09	82.20	2.89	-0.61
10	NH-2230 BGII x NH-2236 BGII	28.25	0.88	-0.70	85.46	2.74	-0.71
11	NH-2230 BGII x NH-2247 BGII	26.85	1.79	-0.65	81.85	6.31	-0.45
12	NH-2230 BGII x NH-2289 BGII	28.01	0.33	-0.59	83.26	0.79	-0.89
13	NH-2260 BGII x NH-2212 BGII	28.58	-1.10	-0.23	85.15	-0.25**	-0.92
14	NH-2260 BGII x NH-2236 BGII	27.90	1.76	-0.67	83.25	2.08	-0.82
15	NH-2260 BGII x NH-2247 BGII	28.35	0.31	-0.70	84.00	-0.52	-0.91
16	NH-2260 BGII x NH-2289 BGII	27.85	2.21	-0.62	83.56	-0.34	-0.90
17	NH-2274 BGII x NH-2212 BGII	27.30	0.63	-0.70	85.75	0.27	-0.91
18	NH-2274 BGII x NH-2236 BGII	27.50	1.90	-0.64	85.83	-0.57	-0.87
19	NH-2274 BGII x NH-2247 BGII	29.45	-1.08	-0.64	85.18	0.73	-0.92
20	NH-2274 BGII x NH-2289 BGII	26.45	2.42	-0.69	84.08	5.40	0.30
21	NH-2292 BGII x NH-2212 BGII	28.00	1.73	1.48	84.78	0.17	-0.88

22	NH-2292 BGII x NH-2236 BGII	27.06	-0.04	-0.66	82.56	-0.00	0.38
23	NH-2292 BGII x NH-2247 BGII	27.18	1.29	-0.32	84.51	2.60	-0.76
24	NH-2292 BGII x NH-2289 BGII	26.80	3.66	-0.65	85.71	-0.12*	-0.92
25	NH-22105 BGII x NH-2212 BGII	27.61	0.85	1.09	85.18	0.01	-0.67
26	NH-22105 BGII x NH-2236 BGII	25.65	1.58	-0.66	84.66	0.26	-0.92
27	NH-22105 BGII x NH-2247 BGII	25.20	1.05	-0.68	82.51	0.26	-0.92
28	NH-22105 BGII x NH-2289 BGII	25.81	0.54	-0.57	82.50	0.50*	-0.92
29	NH-22126 BGII x NH-2212 BGII	26.80	0.13	-0.29	86.03	0.39	-0.92
30	NH-22126 BGII x NH-2236 BGII	28.00	0.43	-0.23	82.46	0.21	0.68
31	NH-22126 BGII x NH-2247 BGII	27.95	0.95	-0.69	83.55	0.50*	-0.92
32	NH-22126 BGII x NH-2289 BGII	27.38	0.44	-0.58	85.61	0.81	-0.92
	Lines						
33	NH-2202 BGII	28.05	4.53	-0.34	82.28	0.62	-0.92
34	NH-2224 BGII	27.51	-0.14	-0.34	83.78	0.87	-0.92
35	NH-2230 BGII	26.01	3.29	-0.58	82.20	-0.61	-0.69
36	NH-2260 BGII	27.45	1.79	-0.65	84.80	-0.50*	-0.92
37	NH-2274 BGII	27.25	2.70	0.03	82.95	0.44	-0.28
38	NH-2292 BGII	27.38	-0.26	-0.66	83.38	-0.35	-0.91
39	NH-22105 BGII	26.56	1.00	-0.61	83.96	1.69	1.08
40	NH-22126 BGII	26.13	0.73	0.68	83.41	-0.25	-0.92
	Testers						
41	NH-2212 BGII	26.58	0.50	-0.68	83.40	-0.89	-0.92
42	NH-2236 BGII	26.58	-0.60	0.05	82.48	0.76	-0.92
43	NH-2247 BGII	27.06	-0.16	0.80	82.46	0.40	-0.91
44	NH-2289 BGII	25.55	0.11	-0.57	82.41	0.88	-0.92
	Checks						
45	NHH 44 BG II	24.21	0.34	-0.53	82.33	0.87	-0.92
46	MRC 7347 BG II	30.51	0.54	-0.57	81.43	0.53	-0.90
	Population mean	**27.10**			**83.44**		
	SE (Mean)	**0.42**			**0.33**		

*,**- Significant at 5 per cent and 1 per cent level, respectively

References

Bhatade, S.S. Reddy, V. G. and Rajewar, S. R. (1992). Stability analysis of quality characters in upland cotton (*G. hirsutum* L). *Indian J. Agric. Sci*, **62**(6): 410-411.

Chinchane V. N., Deosarkar D. B. and Klapande H. V. (2018). Stability analysis for seed cotton yield and its component traits in hybrids of desi cotton (*Gossypium arboreum* L.). *Int. J. of Current Microbiology and Applied Sci.,* **7**(9), 1000-1012.

Deshmukh, J. D., and Deosarkar, D. B. (2015). Stability analysis in upland cotton (*Gossypium hirsutum* L.). *Multilogic in Sci.,* **4**(3), 155-166.

Deshmukh, J. D., Deosarkar, D. B. and Deshmukh, V. D. (2014). Heterosis for fibre quality traits in cotton (*Gossypium hirsutum* L). *J. Cott. Res. Dev*., **28**(2), 217-219.

Dewdar, Stability analysis and genotype x environment interactions of some Egyptian cotton cultivars, African Journal of Agricultural Research, 2013, **8** (41), 5156-5160.

Eberhart, S. A., and Russell, W. A. (1966). Stability parameters for comparing varieties. *Crop Sci*., **6**, 26-40.

Kavithamani, B.P. Amala, and S. Rajarthinam, Stability analysis of seed cotton yield and its components of *Gossypium barbadense* genotypes, Madras Agricultural Journal, 2011, 98 (10- 12), 321-326.

Ng, E-H., Jernigan, K., Smith, W., Hequet, E., Dever, E., Hague, S. and Ibrahim, A. M. H. (2013) Stability analysis of upland cotton in Texas *Crop Sci.,* **153**, 1347-1355.

Patel, A. D., and Patel, U. G. (2006). Studies on heterosis, combining ability and stability of performance in upland cotton (*G. hirsutum* L.). Ph.D. Thesis submitted to N.A.U., Navsari.

Patel N.N., K.G. Patel, and V. Kumar Genotype X environment interaction and stability analysis for yield and its component traits in BG II cotton hybrids, Cotton Research Journal, 2013, **4**(1), 51-56.

Pinki, Siwach S. S., Sangwan, R. S., Singh, S., Mor, V. S., Mandhania, S., Sunayana and Rohila, N. (2018). Stability analysis for seed cotton yield and its components in upland cotton (*Gossypium hirsutum* L.). *Int. J. Curr. Microbiol. App. Sci.,* **7**(4), 1630-1638.

Satish, Y., Jain, P. P. and Chhabra, B. S. (2009). Stability analysis for yield and its component traits in American cotton (*Gossypium hirsutum* L.). *J. Cott. Res. Dev*., **23**(2), 175-182.

Singh, S., Singh V. V. and Choudhary, A. D. (2014). Genotype x environment interaction and yield stability analysis in multi environment. *Tropical and Subtropical Agro ecosystems*, **17**, 477-482.

Sirisha, A. B. M., Lal Ahamed, M., Kumar, P. V. R., Ratnakumari, S. and Rao, V. S. (2019). Stability analysis for seed cotton yield and its component traits in upland cotton (*Gossypium hirsutum* L.). *Sci. Spectrum,* **4**(1-2), 18-27.

Taranjit, R.S. Sohu, Paramjit Singh, Pankaj Rathore, P.S. Sekhon, G.S. Buttar, H. Hassan, and Gurupreet Singh (2012). Stability analysis of Bt transgenic cotton hybrids of *Gossypium hirsutum* L. for lint yield and fibre quality traits, *Journal of Cotton Research and Development*, **26**(2), 163-166.

Teodoro, P. E., Farias, F. J., Carvalho, L. P., Ribeiro, L. P., Nascimento, M., Azevedo, C. F., Cruz, C. D. and Bhering, L. L. (2019). Adaptability and stability of cotton genotypes regarding fiber yield and quality raits. *Crop Sci*., 56, 1-7.