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2017 Cotton Performance Results for the Regional Breeder Testing Network

MISSISSIPPI STATE UNIVERSITY™
MS AGRICULTURAL AND FORESTRY EXPERIMENT STATION

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2017 Cotton Performance Results for the Regional Breeder Testing Network

INTRODUCTION

A key step in the development of improved cotton breeding lines is their evaluation across a range of environments. This multilocation testing is valuable in assessing line adaptation and performance stability. The Regional Breeder Testing Network (RBTN) was established in 2002 to pool the resources of public cotton breeders to allow for multilocation testing of elite lines across the major cotton producing states in the U.S. in an efficient and scientifically rigorous manner. University and federal scientists (and one private breeder) participate by submitting their best breeding lines and by agreeing to conduct a trial at their location. Furthermore, each organization joining the RBTN must participate in a material transfer agreement (MTA) that defines the terms of the RBTN to facilitate the use and exchange of germplasm among participants. Long-term test sites have been established, and testing protocols have been refined with a primary goal of assisting breeders in their efforts to characterize and identify superior-performing breeding lines. In addition to multilocation yield testing, breeding lines are also evaluated for pest resistance and characterized for several morphological traits. The RBTN also serves as a vehicle for addressing issues important to the public cotton breeding community, such as adventitious presence of GMO traits and germplasm exchange. In addition, the RBTN can provide scientists an ongoing trial for conducting miscellaneous short-term research projects. Any elite breeding line included in the RBTN can be used as parental germplasm by other participating breeders for use in population development to address future yield, quality, and agronomic needs, and helps broaden genetic diversity useful in breeding. Results of the RBTN are used by breeders in determining the merits of their most advanced breeding lines, and as supporting evidence for germplasm releases, crop registrations, and activity reports.

TESTING PROTOCOL

Cooperators in the RBTN were requested to evaluate 30 elite cotton breeding lines along with four check cultivars in a replicated yield trial. Elite breeding lines and check cultivars (34 entries) were arranged in a randomized complete block design with four replications of two-row plots ranging from 35–45 feet in length. Procedures used to evaluate additional traits (disease resistance, insect tolerance, and morphological characters) were determined by cooperators offering to conduct these additional evaluations. Cooperators managed each trial according to local recommendations to maximize production. Prior to harvest, 25–50 bolls were hand harvested from each plot within all replications for use in estimating lint percentage and yield components and to provide lint samples for High Volume Instrument (HVI) measurements of fiber quality. Seed cotton weights of each plot were acquired by plot-type mechanical harvest equipment. Lint yield was estimated based upon seed cotton weights and average lint percentage values. The following variables (lint yield, yield components, and fiber quality traits) were determined for each yield trial.

Lint Yield and Yield Components

Lint Yield — pounds of lint per acre (lb/A)
Lint Percent — ratio of lint weight to seed cotton weigh (%)
Lint Index — weight of lint from 100 fuzzy seeds (grams)
Boll Size — seed cotton weight of a single boll (grams)
Seed per Boll — average number of seeds per boll
Seed Index — weight of 100 fuzzy seeds (grams)

HVI Fiber Quality Traits

MIC (Micronaire) — measure of the air permeability of compressed cotton fibers; used as an indication of fiber fineness and maturity.

UHM (Upper Half Mean) — instrument measure of fiber length expressed in hundredths of an inch. Length is measured as the average of the longest 50% of the fibers (%).

UI (Uniformity Index) — measure of fiber length uniformity; measured as the ratio of the average fiber length to upper half mean fiber length (%).

STRN (Strength) — the force, in grams, required to break a bundle of fibers one tex unit in size (grams/tex).

ELO (Elongation) — percent elongation a bundle of fibers will undergo before breaking (%).

SFC (Short Fiber Content) — percentage of fibers shorter than ½ inch (%).

QS1, QS2, and QS3 (Quality Score) – a measurement very similar to a selection index, adds the weighted values of selected fiber traits (length, mic, UI, strength) to provide a single measure (0-100) of desirable fiber qualities, and was calculated by weighting selected fiber traits as follows: QS1 — fiber length (0.50), mic (0.25), UI (0.15), and strength (0.10); QS2 — fiber length (0.20), mic (0.10), UI (0.40), and strength (0.30); and QS3 — fiber length (0.45), mic (0.25), UI (0.00), and strength (0.30).

Statistical Analysis

Each RBTN yield trial was arranged in a randomized complete block design with three to five replications. Data was analyzed using PROC GLM from SAS (V 9.4) to obtain the analysis of variance (ANOVA) and F-tests. The F-test ($\alpha = 0.05$) was used to assess significant effects and variance components, and LSD (.05) multiple comparisons (from LSMEANS) were used to test for differences between pairs of means as appropriate. The coefficient of variation CV (%) is reported for each variable to provide an indication of the relative level of variation within a trial while R-Square values represent the percentage of variation for a variable that can be explained. The design and analyses of additional trials (response to pathogens, insects, water stress, etc.) were determined by the cooperator conducting the trial.

BREEDING LINES EVALUATED

Entry	Designation	Breeder	Entry	Designation	Breeder
1	LA14063046	Myers	18	Ark 0921-31ne	Bourland
2	LA14063101	Myers	19	Ark 0911-13	Bourland
3	LA14063038	Myers	20	Ark 0908-60	Bourland
4	LA14063001	Myers	21	NM 16-13P1088B	Zhang
5	LA14063083	Myers	22	NM 13R1015	Zhang
6	TAM 13S-03	Smith	23	Acala 1517-08	Zhang
7	TAM WK-11L	Hague	24	TAM LBB130218	Dever
8	TAM 13Q-51	Smith	25	TAM LBB131001	Dever
9	Tamcot G11	Smith	26	AU 90098	Koebernick
10	TAM 13Q-18	Smith	27	GA 2012141	Chee
11	PD 2013016	Campbell	28	GA 2015032	Chee
12	PD 07040	Campbell	29	GA 2015073	Chee
13	PD 08028	Campbell	30	GA 2015090	Chee
14	PD 09084	Campbell	31	DP 393 CK	Check
15	PD 09046	Campbell	32	DP 493 CK	Check
16	Ark 0921-27ne	Bourland	33	FM 958 CK	Check
17	Ark 0912-18	Bourland	34	UA 222 CK	Check

TRIAL LOCATION NOTES

Trial location	Cooperator	Affiliation	Planting date	Harvest date	Soil type	Irrigated	Trial notes
Alexandria, LA	Gerald Myers	LSU		—	Commerce sl	no	Weather damage - trial dropped
College Station, TX	Lori Hinze	USDA-ARS	April 27	Oct. 18	Belk c	yes	—
Florence, SC	Todd Campbell	USDA-ARS	—		Norfolk ls	no	Hurricane damage - trial dropped
Jackson, TN	Tyson Raper	Univ. of Tenn.	May 13	Oct. 27	Memphis sl	no	—
Keiser, AR	Fred Bourland	Univ. of Ark.	May 10	Oct. 31	Sharkey c	yes	Additional trials (TPB, Xcm, Morph)
Las Cruces, NM	Jinfa Zhang	NMSU	May 16	Dec. 11	Armijo cl	yes	—
Lubbock, TX	Jane Dever	TAMU	May 24	Nov. 24	Acuff l	yes	Additional trial (Verticillium wilt)
Maricopa, AZ	Alison Thompson	USDA-ARS	May 10	Nov. 15	Casa Granda scl	yes	Additional trials (wet vs. dry)
Mississippi State, MS	Jack McCarty	USDA-ARS	May 17	Oct. 31	Leeper sc	no	—
Stoneville, MS (USDA-1)	Lenghe Zeng	USDA-ARS	May 5	Oct. 10	Bosket vfsl	yes	—
Stoneville, MS (USDA-2)	Jodi Scheffler	USDA-ARS	May 10	Oct. 13	Bosket vfsl	yes	—
Suffolk, VA	Hunter Frame	VT	May 19	Nov. 29	Emporia lfs, Nansemond fsl	no	—
Tallassee, AL	Jenny Koebernick	AU	May 11	Oct. 3	Kalmia ls	yes	Hurricane-related damage
Tifton, GA	Peng Chee	UGA	May 8	Jan. 8	Tifton ls	yes	Hurricane-related damage
WestSide, CA	Hutmacher & Ulloa	UC Davis	April 20	Oct. 18	Panoche cl	yes	Additional trials (FOV-4)

2017 PERFORMANCE RESULTS

Table 1. Least square means for lint yield, yield components, and fiber quality traits over 11 locations in the 2017 RBTN.[1,2]

Entry	Lint yield	Lint pct.	Lint index	Boll size	Seed per boll	Seed index	MIC	UHM	UI	STRN	ELO	SFC	QS1[3]	QS2[3]	QS3[3]
	lb/A	*%*	*g*	*g*	*#*	*g*	*mic*	*in*	*%*	*g/tex*	*%*	*%*			
Ark 0912-18	**1551**	42.34	**8.14**	5.66	29.59	10.73	**4.92**	1.24	**85.75**	32.34	**7.29**	7.09	67.68	**76.12**	68.41
LA14063083	**1536**	42.86	7.66	5.64	31.67	9.88	4.66	1.23	84.42	32.21	6.89	7.55	65.48	66.95	70.34
Ark 0911-13	1457	41.75	7.77	5.47	29.41	10.52	4.79	1.25	84.37	30.61	7.15	7.47	68.54	67.07	72.25
LA14063101	1451	**44.57**	**7.90**	5.12	28.98	9.48	**4.83**	1.22	84.31	32.34	6.18	7.59	58.59	63.45	64.10
Ark 0908-60	1447	42.80	7.63	5.32	30.02	9.69	**4.87**	1.24	84.14	31.24	6.41	7.70	63.02	63.88	68.26
LA14063001	1442	43.20	7.89	5.55	30.39	9.98	4.57	1.23	83.84	31.97	6.32	7.69	63.32	61.77	69.74
LA14063046	1433	42.34	7.68	5.57	30.80	10.14	4.66	1.24	84.25	32.34	6.66	7.52	64.80	65.39	69.85
LA14063038	1417	41.48	6.97	5.54	**39.12**	9.52	4.66	1.26	83.65	**33.33**	5.59	7.60	70.93	64.37	77.48
Ark 0921-31ne	1412	40.48	7.09	5.30	30.27	10.12	4.60	1.21	84.54	31.44	**7.41**	7.33	60.06	65.20	64.91
GA 2015073	1397	43.25	7.71	5.53	31.07	9.75	4.77	1.20	84.10	31.43	6.08	7.41	54.96	60.23	61.55
DP 393 CK	1384	41.49	7.58	5.62	30.88	10.40	**4.85**	1.19	84.39	32.02	6.84	7.49	49.75	60.08	55.68
UA 222 CK	1375	41.54	7.83	5.50	29.33	10.71	4.74	1.23	83.83	30.62	7.13	7.61	59.83	60.15	66.35
TAM 13Q-51	1357	39.45	6.96	5.12	29.06	10.37	4.71	1.29	85.01	**33.75**	6.58	7.06	**80.20**	**77.28**	82.31
FM 958 CK	1353	40.36	7.53	5.69	30.55	10.77	4.71	1.21	84.01	32.70	5.23	7.69	58.22	61.13	64.68
GA 2015032	1349	42.36	7.11	5.34	31.96	9.34	4.75	1.22	84.30	31.92	5.86	7.59	61.45	64.11	66.67
Ark 0921-27ne	1345	39.90	6.88	5.37	31.20	10.09	4.64	1.20	84.30	32.59	6.16	7.46	57.54	63.02	63.48
AU 90098	1338	43.81	7.79	5.14	28.92	9.64	4.65	1.21	83.96	31.17	5.44	7.82	58.44	60.66	64.89
GA 2012141	1335	41.84	7.60	5.29	29.28	10.29	4.68	1.22	84.34	31.03	6.05	7.63	60.78	64.09	65.89
PD 07040	1325	39.08	7.11	5.61	30.96	10.77	4.65	1.21	84.06	31.16	6.03	7.66	58.57	61.53	64.84
DP 493 CK	1316	43.90	7.07	5.02	31.49	8.78	**4.87**	1.14	82.36	30.24	5.34	**8.70**	31.25	38.25	43.80
TAM 13S-03	1304	40.03	7.35	5.31	28.97	10.70	4.50	1.20	84.33	30.83	7.07	7.53	58.15	63.02	63.82
Tamcot G11	1276	39.32	7.82	**6.14**	30.97	**11.75**	4.32	**1.31**	83.27	31.74	5.37	7.41	**81.24**	65.44	**87.49**
GA 2015090	1274	42.03	7.25	5.20	30.17	9.67	4.60	1.23	84.20	33.12	6.21	7.54	65.27	65.79	70.98
PD 08028	1236	38.69	6.79	5.81	33.31	10.50	4.57	1.22	84.54	**33.57**	6.06	7.27	63.97	67.91	69.38
TAM 13Q-18	1223	39.96	7.05	5.45	30.97	10.33	4.58	1.19	82.68	31.38	6.04	8.17	48.84	48.76	59.69
TAM WK-11L	1208	39.73	6.92	5.36	30.85	10.20	4.59	1.17	84.27	30.75	6.49	7.68	46.23	57.74	52.98
NM 13R1015	1176	40.02	6.72	5.04	30.07	9.76	4.77	1.18	84.07	32.95	5.91	7.20	47.73	57.54	55.20
Acala 1517-08	1133	39.40	6.90	5.27	30.19	10.25	4.67	1.20	84.20	**33.53**	6.01	7.38	56.03	62.14	62.94
TAM LBB131001	1131	41.13	6.69	5.11	31.59	9.23	4.19	1.24	83.03	32.51	5.85	8.10	64.92	57.08	73.66
PD 2013016	1127	41.25	7.31	5.52	31.31	10.10	4.63	1.26	84.12	**33.84**	5.18	7.51	71.17	67.58	76.61
PD 09046	1065	36.11	6.08	5.19	30.93	10.46	4.22	1.28	83.44	33.28	5.04	7.56	**78.03**	65.60	**84.72**
TAM LBB130218	1062	38.11	6.78	5.40	30.59	10.73	4.37	1.19	82.95	32.31	5.36	7.99	51.40	51.35	61.57
NM 16-13P1088B	967	38.68	6.99	5.52	30.58	10.75	4.47	1.19	84.29	**33.62**	6.32	7.36	57.20	63.29	63.95
Mean	1309	41.01	7.29	5.42	30.77	10.16	4.64	1.22	84.04	32.12	6.17	7.59	60.71	62.36	66.92
Entry LSD (.05)	65	0.51	0.24	0.22	3.82	0.29	0.09	0.01	0.39	0.54	0.14	0.18	4.76	4.12	3.98
Entry (P>F)	<0.0001	<0.0001	<0.0001	<0.0001	0.0032	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Location (P>F)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0695	<0.0001
Entry x Loc. (P>F)	<0.0001	<0.0001	<0.0001	<0.0001	0.5052	<0.0001	<0.0001	0.1774	0.0023	<0.0001	<0.0001	<0.0001	0.0210	0.0135	0.0170
CV (%)	12.09	2.91	7.57	9.58	28.89	6.50	4.13	2.48	1.02	3.71	5.15	5.42	17.38	14.67	13.18
R-Square	0.87	0.86	0.68	0.64	0.33	0.76	0.87	0.83	0.80	0.75	0.94	0.84	0.65	0.57	0.67
Reps	44	42	42	42	42	42	38	38	38	38	38	38	38	38	38

[1]Values in bold are not significantly different from highest value according to LSD (0.05).

[2]Means for fiber traits based upon 10 locations. Fiber data not available for Las Cruces, New Mexico, location. Data from Tallassee, Alabama, and Tifton, Georgia, locations were excluded from over-location analysis due to excess variability.

[3]QS1, QS2, and QS3 (Quality Score) — This measurement is very similar to a selection index. It adds the weighted values of selected fiber traits (length, mic, UI, strength) to provide a single measure (0–100) of desirable fiber qualities and was calculated by weighting selected fiber traits as follows:

QS1 — fiber length (0.50), mic (0.25), UI (0.15), and strength (0.10)
QS2 — fiber length (0.20), mic (0.10), UI (0.40), and strength (0.30)
QS3 — fiber length (0.45), mic (0.25), UI (0.00), and strength (0.30).

Table 2. Least square means for lint yield in the 2017 RBTN conducted at 11 locations.[1,2]

Entry	Overlocs [3]		CollegeStnTX		JacksonTN		KeiserAR		LasCrucesNM		LubbockTX		MaricopaAZ		MissState		StonevilleMS USDA		StonevilleMS USDA-1		SuffolkVA USDA-2		WestSideCA	
	lb/A	r	lb/A	r	lb/A	r	lb/A	r	lb/A	r	lb/A	r	lb/A	r	lb/A	r	lb/A	r	lb/A	r	lb/A	r	lb/A	r
Ark 0912-18	**1551**	1	1221	5	1570	9	**1049**	2	**1615**	1	1599	9	**1823**	4	**1616**	9	**1158**	7	**1540**	4	**1622**	2	**2249**	1
LA14063083	**1536**	2	980	25	**1719**	2	**1101**	1	**1533**	2	1616	7	**1929**	3	**1848**	1	**1159**	6	**1487**	6	**1494**	6	2029	4
Ark 0911-13	1457	3	970	29	**1637**	3	925	7	**1318**	6	1396	20	**1729**	10	**1679**	5	1101	11	**1609**	1	**1565**	3	**2101**	2
LA14063101	1451	4	991	20	1471	18	870	11	**1487**	3	1366	25	**1986**	1	**1699**	3	**1168**	5	**1477**	7	1371	14	**2074**	3
Ark 0908-60	1447	5	1141	10	**1745**	1	927	6	1157	25	**1659**	5	1527	25	**1669**	7	**1269**	1	**1561**	3	**1469**	7	1790	18
LA14063001	1442	6	981	24	**1627**	5	944	4	**1419**	4	1503	13	**1946**	2	**1670**	6	**1133**	8	1349	13	1266	21	2020	6
LA14063046	1433	7	1079	11	**1608**	7	940	5	1265	11	1543	11	**1784**	7	1498	14	997	19	**1525**	5	**1638**	1	1885	12
LA14063038	1417	8	1344	1	1400	23	837	15	1281	9	**1665**	4	**1760**	8	1559	13	1114	9	1399	10	**1422**	13	1809	15
Ark 0921-31ne	1412	9	1043	15	**1625**	6	889	10	1264	12	1611	8	1549	23	1308	26	**1231**	3	**1581**	2	**1458**	9	1976	7
GA 2015073	1397	10	1231	4	1525	11	815	18	1185	23	**1831**	1	1678	15	1477	16	1070	13	1312	15	1288	20	1950	8
DP 393 CK	1384	11	1150	8	1564	10	848	13	1072	29	1622	6	**1719**	12	1423	18	1112	10	1365	12	1325	17	2027	5
UA 222 CK	1375	12	987	21	1428	21	920	8	1252	15	1403	19	1688	14	1493	15	**1237**	2	1383	11	**1446**	10	1889	11
TAM 13Q-51	1357	13	971	28	1442	20	853	12	**1406**	5	1452	14	1659	16	1276	29	**1186**	4	1447	9	1361	15	1873	13
FM 958 CK	1353	14	1059	13	**1629**	4	839	14	1041	30	**1761**	2	1653	18	1423	19	1064	14	1188	22	**1427**	12	1793	17
GA 2015032	1349	15	995	19	1502	14	803	19	1196	22	1440	15	1635	20	**1725**	2	1050	15	1245	17	**1468**	8	1779	19
Ark 0921-27ne	1345	16	996	18	1471	17	830	16	1207	20	1433	18	1691	13	1321	24	1085	12	1462	8	**1563**	4	1741	21
AU 90098	1338	17	1243	3	1487	16	652	23	1258	13	1350	27	1656	17	**1578**	11	1029	17	1204	20	**1540**	5	1716	25
GA 2012141	1335	18	1001	17	**1587**	8	**982**	3	1094	28	1389	21	1476	27	**1686**	4	992	21	1327	14	**1427**	11	1719	24
PD 07040	1325	19	1078	12	1425	22	829	17	1266	10	1436	17	**1792**	6	1325	23	919	23	1235	18	1328	16	1937	10
DP 493 CK	1316	20	1261	2	1360	27	607	27	1245	16	**1752**	3	**1813**	5	1570	12	1023	18	1212	19	1120	27	1509	29
TAM 13S-03	1304	21	1165	6	1515	12	748	20	1287	7	1563	10	**1733**	9	1298	27	959	22	1087	25	1179	26	1809	16
Tamcot G11	1276	22	967	31	1504	13	549	30	1255	14	1439	16	1648	19	1445	17	871	26	1164	23	1251	23	1946	9
GA 2015090	1274	23	1158	7	1489	15	689	22	992	32	1227	31	1462	28	**1617**	8	994	20	1278	16	1264	22	1845	14
PD 08028	1236	24	1148	9	1463	19	626	25	1233	18	1339	28	1525	26	1326	22	881	25	973	27	1324	18	1760	20
TAM 13Q-18	1223	25	973	27	1386	24	642	24	1244	17	1503	12	1452	29	1333	21	819	27	1104	24	1316	19	1682	26
TAM WK-11L	1208	26	978	26	1263	31	901	9	1111	27	1246	30	1559	22	1041	33	1034	16	1198	21	1227	25	1735	22
NM 13R1015	1176	27	983	23	1249	32	716	21	1196	21	1174	32	**1728**	11	**1586**	10	775	28	982	26	992	32	1551	27
Acala 1517-08	1133	28	967	30	1338	28	538	31	1282	8	1382	22	1579	21	1257	31	678	31	927	28	1002	31	1513	28
TAM LBB131001	1131	29	1050	14	1288	30	560	28	1129	26	1371	24	1528	24	1298	28	747	30	793	30	1235	24	1440	30
PD 2013016	1127	30	985	22	1367	25	555	29	1037	31	1121	33	1336	33	1420	20	902	24	875	29	1067	28	1733	23
PD 09046	1065	31	1020	16	1361	26	514	32	1217	19	1358	26	1370	32	1274	30	652	32	724	33	976	33	1246	32
TAM LBB130218	1062	32	779	32	1304	29	618	26	1170	24	1377	23	1409	30	1313	25	614	33	770	31	1023	30	1307	31
NM 16-13P1088B	967	33	769	33	995	33	437	33	944	33	1277	29	1390	31	1081	32	756	29	751	32	1041	29	1192	33
Mean	1309		1050		1465		774		1232		1461		1643		1459		993		1228		1318		1776	
Entry LSD (.05)	65		ns		164		150		311		199		268		270		153		142		216		213	
Entry (P>F)[2]	<0.0001		0.0654		<0.0001		<0.0001		0.0199		<0.0001		<0.0001		<0.0001		<0.0001		<0.0001		<0.0001		<0.0001	
CV (%)	12.09		19.49		7.96		15.44		18.00		9.72		9.99		13.21		10.95		8.21		11.67		8.54	
R-Square	0.87		0.68		0.77		0.72		0.38		0.66		0.63		0.60		0.79		0.90		0.72		0.80	
Reps	44		4		4		5		4		4		3		4		4		4		4		4	

[1]Values in bold are not significantly different from highest value according to LSD (0.05).
[2]Data from Tallassee, Alabama, and Tifton, Georgia, locations were excluded from the over-location analysis due to excess variability.
[3]Location and Entry x Location were significant (P>F = 0.0001) in Overlocs analysis.

Table 3. Least square means for lint yield, yield components, and fiber quality traits in the 2017 RBTN at College Station, Texas (Cooperator: Lori Hinze).[1]

Entry	Lint yield	Lint pct.	Lint index	Boll size	Seed per boll	Seed index	MIC	UHM	UI	STRN	ELO	SFC	QS1[2]	QS2[2]	QS3[2]
	lb/A	*%*	*g*	*g*	*#*	*g*	*mic*	*in*	*%*	*g/tex*	*%*	*%*			
LA14063038	1344	43.04	7.22	4.88	29.15	9.30	4.94	1.19	**84.20**	32.38	6.63	7.58	66.00	**68.75**	69.25
DP 493 CK	1261	**44.74**	6.35	4.23	**29.82**	7.68	**5.50**	1.08	82.00	30.20	5.20	**8.80**	20.75	31.75	30.50
AU 90098	1243	**45.48**	**7.62**	4.48	26.81	8.94	5.25	1.16	82.90	30.70	5.20	8.30	46.00	52.00	54.75
GA 2015073	1231	**44.36**	6.95	4.79	**30.67**	8.54	4.92	1.17	83.63	32.33	5.85	7.75	58.25	62.00	64.50
Ark 0912-18	1221	43.28	**8.04**	4.73	25.47	10.40	5.20	1.21	**84.75**	32.68	6.70	7.35	68.75	**73.75**	69.50
TAM 13S-03	1165	41.34	6.97	4.69	27.68	9.88	4.78	1.16	**84.35**	30.28	6.78	7.75	60.50	**68.00**	64.50
GA 2015090	1158	42.30	6.53	4.48	29.04	8.74	4.87	1.21	**83.88**	**33.13**	5.70	7.78	71.00	**69.75**	75.75
DP 393 CK	1150	42.32	7.29	4.90	28.43	9.80	5.26	1.12	83.28	31.18	6.75	7.90	36.00	50.25	44.25
PD 08028	1148	38.74	6.31	**5.31**	**32.66**	9.86	4.76	1.16	**83.78**	32.23	5.73	7.63	59.25	63.25	65.00
Ark 0908-60	1141	**44.90**	6.93	4.74	**30.82**	8.38	5.24	1.18	83.50	30.05	6.03	8.05	54.00	59.25	60.00
LA14063046	1079	42.03	6.93	4.95	**30.03**	9.44	5.02	1.19	83.40	32.38	6.38	7.90	62.75	62.00	68.50
PD 07040	1078	40.20	6.82	4.93	29.13	10.00	5.02	1.16	83.48	30.23	5.98	7.93	54.25	59.25	60.75
FM 958 CK	1059	40.12	7.00	**5.10**	29.26	10.34	4.98	1.18	83.70	32.38	4.78	7.88	59.50	63.25	65.00
TAM LBB131001	1050	43.49	6.51	4.45	**29.80**	8.32	4.49	1.18	82.13	31.48	5.53	**8.65**	61.00	52.50	71.50
Ark 0921-31ne	1043	42.04	7.25	4.73	27.50	9.80	5.03	1.14	**84.40**	32.33	**7.25**	7.30	50.25	64.25	54.75
PD 09046	1020	35.85	5.66	4.29	27.17	9.96	4.66	1.23	82.80	**34.05**	4.90	8.00	**77.75**	**65.50**	**85.25**
GA 2012141	1001	41.60	6.92	4.74	28.53	9.60	4.96	1.17	**83.80**	30.98	5.98	8.00	58.00	63.00	63.25
Ark 0921-27ne	996	40.44	6.73	4.65	28.09	9.72	4.89	1.18	**84.50**	32.33	5.73	7.38	64.75	**70.25**	67.75
GA 2015032	995	43.23	6.19	4.41	**30.79**	8.06	4.95	1.16	**84.08**	32.40	5.68	7.90	56.75	64.50	61.50
LA14063101	991	**45.06**	**7.67**	4.51	26.67	9.22	5.16	1.18	83.68	32.43	5.83	7.70	58.00	62.25	63.25
UA 222 CK	987	41.00	7.04	4.82	28.09	9.94	5.16	1.18	83.63	30.85	6.55	7.60	57.25	61.50	63.00
PD 2013016	985	40.08	6.31	**5.04**	**32.00**	9.30	4.82	1.23	**84.00**	**34.98**	4.95	7.68	**80.50**	**75.50**	**84.75**
NM 13R1015	983	41.60	6.63	4.52	28.39	9.20	5.01	1.14	83.75	32.55	5.38	7.65	49.25	59.00	55.50
LA14063001	981	**44.51**	**7.38**	**4.98**	**30.18**	9.02	5.00	1.17	82.78	31.05	5.93	8.38	55.50	54.75	63.50
LA14063083	980	42.42	6.65	4.94	**31.79**	8.80	4.90	1.23	83.08	**34.38**	5.08	8.20	**75.00**	**66.75**	**82.50**
TAM WK-11L	978	41.53	6.75	4.81	29.59	9.36	5.04	1.14	**83.83**	30.60	6.38	7.55	47.75	59.00	54.00
TAM 13Q-18	973	40.24	6.52	4.70	29.09	9.52	4.93	1.12	80.98	30.35	5.80	**9.05**	38.25	39.00	52.00
TAM 13Q-51	971	40.68	6.55	4.45	27.65	9.40	5.18	1.21	83.70	32.85	6.25	7.90	66.25	**66.75**	71.50
Ark 0911-13	970	42.39	**7.69**	4.70	26.05	9.92	5.14	1.18	83.73	30.00	**6.83**	7.78	57.25	62.25	62.50
Acala 1517-08	967	40.05	6.66	4.51	27.21	9.74	4.86	1.16	**84.23**	**33.30**	5.53	7.50	57.50	**65.75**	61.75
Tamcot G11	967	38.47	7.20	**5.15**	27.59	**11.34**	4.46	**1.29**	82.80	32.83	4.80	7.68	**86.25**	**67.00**	**92.00**
TAM LBB130218	779	37.42	6.44	4.67	27.23	**10.58**	4.79	1.16	82.50	32.30	4.88	8.15	53.50	52.25	62.75
NM 16-13P1088B	769	39.92	6.44	4.74	29.60	9.52	4.81	1.16	**84.35**	**33.95**	6.08	7.48	60.50	**69.00**	65.75
Mean	1050	41.66	6.85	4.73	28.85	9.44	4.97	1.17	83.50	32.00	5.85	7.88	58.43	61.33	64.58
LSD (.05)	ns	1.39	0.71	0.34	2.97	0.86	0.21	0.04	0.99	1.90	0.44	0.50	13.80	10.49	12.62
Entry (P>F)	0.0654	<0.0001	<0.0001	<0.0001	0.0003	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
CV (%)	19.49	2.36	7.21	5.08	7.11	6.21	3.01	2.58	0.84	4.23	5.30	4.53	16.83	12.18	13.92
R-Square	0.68	0.88	0.57	0.63	0.50	0.69	0.74	0.70	0.67	0.59	0.86	0.69	0.71	0.70	0.71
Reps	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

[1]Values in bold are not significantly different from highest value according to LSD (0.05).

[2]QS1, QS2, and QS3 (Quality Score) — This measurement is very similar to a selection index. It adds the weighted values of selected fiber traits (length, mic, UI, strength) to provide a single measure (0–100) of desirable fiber qualities and was calculated by weighting selected fiber traits as follows:

QS1 — fiber length (0.50), mic (0.25), UI (0.15), and strength (0.10)

QS2 — fiber length (0.20), mic (0.10), UI (0.40), and strength (0.30)

QS3 — fiber length (0.45), mic (0.25), UI (0.00), and strength (0.30).

Table 4. Least square means for lint yield, yield components, and fiber quality traits in the 2017 RBTN at Jackson, Tennessee (Cooperator: Tyson Raper).[1]

Entry	Lint yield	Lint pct.	Lint index	Boll size	Seed per boll	Seed index	MIC	UHM	UI	STRN	ELO	SFC	QS1[2]	QS2[2]	QS3[2]
	lb/A	*%*	*g*	*g*	*#*	*g*	*mic*	*in*	*%*	*g/tex*	*%*	*%*			
Ark 0908-60	**1745**	**44.35**	**8.51**	4.64	24.56	10.38	**5.13**	1.25	85.05	30.88	4.25	7.40	59.50	63.25	64.25
LA14063083	**1719**	**43.01**	**8.08**	**8.42**	45.05	10.47	**4.93**	1.24	85.75	30.63	**5.00**	7.08	63.50	69.75	66.50
Ark 0911-13	**1637**	41.69	**7.96**	5.36	28.12	10.89	**4.91**	1.25	84.58	30.23	**4.85**	7.18	64.75	62.00	70.75
FM 958 CK	**1629**	41.81	**8.42**	5.50	27.47	11.30	**4.93**	1.23	84.68	**33.95**	3.20	7.25	57.50	60.50	64.25
LA14063001	**1627**	**43.48**	**8.87**	6.24	30.60	11.25	4.63	1.25	84.38	32.23	4.08	7.45	67.75	62.00	74.50
Ark 0921-31ne	**1625**	40.29	7.27	6.13	34.06	10.46	4.70	1.22	85.25	31.00	**4.88**	7.07	61.24	65.23	66.20
LA14063046	**1608**	42.38	**8.70**	6.10	29.90	11.46	**4.89**	1.25	85.13	32.08	4.48	7.13	63.50	65.50	68.25
GA 2012141	**1587**	**42.71**	**8.65**	5.59	27.96	11.19	**4.97**	1.22	84.68	31.85	3.88	7.48	53.00	57.75	59.75
Ark 0912-18	1570	41.13	**8.87**	6.58	30.71	12.41	**5.16**	1.26	**87.00**	32.78	**4.90**	6.60	67.25	**78.50**	66.25
DP 393 CK	1564	40.79	7.71	**7.76**	41.99	10.93	**5.00**	1.20	85.30	31.88	4.40	7.08	49.50	61.00	55.00
GA 2015073	1525	42.40	**8.08**	**7.06**	37.37	10.66	**4.96**	1.21	85.08	31.93	3.88	7.28	53.75	61.00	59.25
TAM 13S-03	1515	40.51	7.78	6.13	31.95	11.10	4.72	1.23	85.65	30.85	**4.85**	7.13	65.00	70.00	68.50
Tamcot G11	1504	38.30	**8.85**	**7.82**	34.01	**13.97**	4.73	**1.32**	85.05	31.93	3.40	6.40	**86.50**	**74.25**	**89.50**
GA 2015032	1502	**43.27**	7.56	5.29	30.32	9.65	**4.96**	1.24	85.20	32.43	3.68	7.23	60.25	65.00	65.25
GA 2015090	1489	41.93	7.79	6.05	32.58	10.46	4.88	1.24	84.65	**33.80**	3.85	7.18	62.75	62.25	69.00
AU 90098	1487	**43.44**	**8.23**	6.41	34.02	10.45	4.84	1.21	84.43	30.95	3.23	7.45	53.25	56.75	61.00
Ark 0921-27ne	1471	39.94	7.46	**6.76**	36.76	10.96	4.52	1.22	84.80	33.00	4.25	7.33	58.75	62.00	65.75
LA14063101	1471	**44.24**	**8.86**	5.12	25.97	10.71	**5.02**	1.21	84.60	31.40	3.80	7.38	49.00	56.00	56.75
PD 08028	1463	39.23	6.96	**6.97**	40.94	10.61	4.83	1.24	85.43	**33.88**	4.03	6.85	65.50	68.75	69.50
TAM 13Q-51	1442	39.30	7.17	**7.32**	40.02	10.89	4.82	**1.32**	**86.85**	**33.40**	4.40	6.15	**91.00**	**87.50**	**88.50**
UA 222 CK	1428	40.82	**7.94**	5.25	27.03	11.17	4.86	1.25	84.78	30.53	**5.00**	7.13	65.50	63.75	71.00
PD 07040	1425	38.63	7.42	6.68	34.92	11.52	4.86	1.23	85.05	31.45	3.80	7.23	60.25	63.75	65.75
LA14063038	1400	40.61	7.18	**6.84**	38.77	10.23	4.74	**1.28**	84.40	**33.58**	3.48	7.28	74.50	65.75	**81.00**
TAM 13Q-18	1386	39.65	7.44	6.47	34.39	11.00	4.86	1.19	83.03	31.98	3.78	7.80	43.50	43.00	56.25
PD 2013016	1367	41.80	**8.01**	6.42	33.55	10.89	**4.93**	1.27	84.33	**34.25**	3.10	7.30	67.25	62.00	74.50
PD 09046	1361	36.49	6.76	5.52	29.97	11.45	4.45	**1.28**	83.85	**33.45**	3.05	7.15	**75.25**	61.75	**83.00**
DP 493 CK	1360	41.39	7.27	5.92	34.45	9.98	**4.95**	1.15	82.45	32.00	3.05	**8.55**	28.25	33.75	43.25
Acala 1517-08	1338	39.69	6.87	5.82	33.62	10.11	**4.95**	1.20	84.88	**34.73**	3.93	6.90	49.25	59.50	57.50
TAM LBB130218	1304	37.57	6.87	6.27	34.91	11.03	4.67	1.21	83.45	**34.08**	3.20	7.55	53.25	51.00	64.50
TAM LBB131001	1288	40.91	6.56	6.52	40.87	9.26	4.42	1.26	84.15	32.73	3.88	7.53	70.00	61.25	77.25
TAM WK-11L	1263	39.03	7.14	6.14	33.58	10.86	4.70	1.18	85.00	31.45	4.15	7.20	47.25	58.00	54.25
NM 13R1015	1249	39.09	7.24	6.38	35.48	10.93	**5.08**	1.20	84.05	32.90	3.55	7.08	44.25	50.25	53.50
NM 16-13P1088B	995	37.71	7.50	5.92	30.03	12.04	4.59	1.20	84.93	**34.28**	3.95	7.15	56.25	62.00	63.50
Mean	1465	40.84	7.76	6.28	33.51	10.93	4.84	1.23	84.78	32.38	3.97	7.21	60.24	61.96	66.48
LSD (.05)	164	1.91	1.02	1.71	ns	1.21	0.27	0.04	1.22	1.53	0.35	0.55	15.87	13.88	12.78
Entry (P>F)	<0.0001	<0.0001	<0.0001	0.0152	0.0642	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
CV (%)	7.96	3.34	9.41	19.43	23.70	7.89	3.99	2.35	1.02	3.34	6.29	5.43	18.67	15.88	13.63
R-Square	0.77	0.75	0.55	0.38	0.34	0.55	0.56	0.69	0.60	0.65	0.88	0.59	0.62	0.56	0.63
Reps	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

[1]Values in bold are not significantly different from highest value according to LSD (0.05).

[2]QS1, QS2, and QS3 (Quality Score) — This measurement is very similar to a selection index. It adds the weighted values of selected fiber traits (length, mic, UI, strength) to provide a single measure (0–100) of desirable fiber qualities and was calculated by weighting selected fiber traits as follows:

QS1 — fiber length (0.50), mic (0.25), UI (0.15), and strength (0.10)

QS2 — fiber length (0.20), mic (0.10), UI (0.40), and strength (0.30)

QS3 — fiber length (0.45), mic (0.25), UI (0.00), and strength (0.30).

Table 5. Least square means for lint yield, yield components, and fiber quality traits in the 2017 RBTN at Keiser, Arkansas (Cooperator: Fred Bourland).[1]

Entry	Lint yield	Lint pct.	Lint index	Boll size	Seed per boll	Seed index	MIC	UHM	UI	STRN	ELO	SFC	QS1[2]	QS2[2]	QS3[2]
	lb/A	*%*	*g*	*g*	*#*	*g*	*mic*	*in*	*%*	*g/tex*	*%*	*%*			
LA14063083	**1101**	**43.45**	8.26	**5.73**	**30.19**	10.41	5.00	1.24	85.20	29.88	7.02	7.08	54.60	59.60	61.00
Ark 0912-18	**1049**	41.92	**8.59**	**5.38**	26.23	11.54	**5.21**	1.26	**87.40**	30.50	7.92	6.70	63.00	**77.80**	62.40
GA 2012141	**982**	40.96	8.17	5.14	25.79	11.57	**5.14**	1.25	85.06	29.50	6.18	7.32	53.40	58.00	60.00
LA14063001	944	**42.96**	8.28	**5.55**	**28.81**	10.68	5.00	1.29	85.44	30.80	6.38	6.90	67.80	66.60	72.40
LA14063046	940	41.85	8.01	**5.79**	**30.26**	10.79	**5.12**	1.27	85.60	30.86	6.52	7.18	60.40	64.60	64.80
Ark 0908-60	927	42.19	7.83	**5.54**	**29.82**	10.36	**5.15**	1.27	85.08	30.18	6.62	7.38	58.00	60.20	64.80
Ark 0911-13	925	41.09	8.16	**5.39**	27.17	11.38	**5.21**	1.30	85.52	29.20	6.90	6.94	67.60	66.00	70.60
UA 222 CK	920	41.00	**8.67**	**5.72**	27.05	12.07	**5.19**	1.27	85.10	29.84	7.18	7.24	59.60	60.60	65.20
TAM WK-11L	901	38.98	7.40	**5.42**	**28.53**	11.22	4.97	1.23	85.78	30.14	6.34	7.08	53.00	62.80	58.00
Ark 0921-31ne	889	39.43	7.73	4.99	25.51	11.58	**5.08**	1.25	86.20	30.20	**8.32**	6.66	58.00	**67.80**	60.80
LA14063101	870	**43.56**	7.94	**5.47**	**29.99**	10.05	**5.11**	1.25	85.16	31.32	6.22	7.04	54.60	59.20	61.00
TAM 13Q-51	853	39.17	7.56	5.11	26.48	11.32	**5.22**	**1.31**	86.04	**33.12**	6.58	6.68	70.60	**72.00**	73.20
DP 393 CK	848	41.73	7.91	**5.47**	**28.92**	10.88	**5.23**	1.22	85.66	30.78	6.80	6.94	46.40	59.40	51.60
FM 958 CK	839	39.71	8.14	**5.88**	**28.68**	11.91	**5.06**	1.26	85.62	31.54	5.34	7.10	58.20	63.80	63.00
LA14063038	837	40.20	7.31	5.29	**29.10**	10.49	5.05	**1.31**	85.20	31.62	5.36	6.94	**71.80**	66.60	76.20
Ark 0921-27ne	830	38.63	7.14	**5.47**	**29.55**	11.02	5.04	1.24	85.86	**32.04**	6.18	6.80	54.80	64.20	59.40
PD 07040	829	38.54	7.83	**5.39**	26.59	12.09	**5.07**	1.26	85.06	30.38	6.02	7.06	56.80	59.60	63.00
GA 2015073	815	42.31	8.02	**5.46**	**28.91**	10.62	5.02	1.23	85.74	30.14	6.10	6.74	51.20	61.80	56.40
GA 2015032	803	41.56	7.29	**5.46**	**31.14**	10.02	**5.11**	1.25	84.80	30.54	5.78	7.32	52.60	55.80	60.00
TAM 13S-03	748	39.16	7.49	4.86	25.45	11.35	4.83	1.22	85.08	29.48	6.78	7.18	49.80	56.60	57.40
NM 13R1015	716	39.85	7.16	4.90	27.24	10.51	5.00	1.21	85.36	31.32	6.38	6.62	44.40	56.40	51.20
GA 2015090	689	41.25	7.56	4.98	27.23	10.53	4.96	1.27	84.68	31.12	6.14	7.24	61.20	58.60	68.00
AU 90098	652	42.42	7.88	5.06	27.22	10.32	4.75	1.26	85.16	30.72	5.50	7.12	61.20	62.00	67.40
TAM 13Q-18	642	39.56	7.80	5.27	26.72	11.66	4.97	1.22	83.44	29.86	6.00	7.70	43.60	43.40	55.60
PD 08028	626	37.22	7.08	**5.89**	**31.04**	11.66	4.88	1.27	85.70	**32.14**	6.00	6.80	66.60	**67.80**	71.00
TAM LBB130218	618	38.13	7.46	5.08	26.00	11.80	4.64	1.19	83.82	30.70	5.52	7.40	42.40	45.20	54.40
DP 493 CK	607	**42.87**	7.20	4.94	**29.48**	9.20	**5.07**	1.17	83.98	28.74	5.34	**8.30**	30.20	41.40	42.20
TAM LBB131001	560	40.27	7.18	5.02	**28.17**	10.31	4.61	1.29	84.44	31.22	5.94	7.54	71.40	61.20	78.60
PD 2013016	555	41.16	7.78	5.13	27.18	10.76	5.01	1.30	85.10	**32.32**	5.32	6.96	70.40	65.20	75.80
Tamcot G11	549	39.19	**8.50**	**5.83**	26.91	**12.86**	4.69	**1.34**	83.90	30.08	5.56	6.76	**82.80**	62.40	**90.60**
Acala 1517-08	538	39.07	7.34	4.98	26.50	11.03	4.85	1.23	85.26	**32.14**	6.42	6.84	52.40	59.80	59.80
PD 09046	514	35.30	6.39	4.92	27.19	11.37	4.50	**1.33**	84.36	31.48	5.12	6.68	**82.40**	64.80	**89.20**
NM 16-13P1088B	437	37.85	7.21	5.30	27.85	11.55	4.64	1.22	85.28	**32.20**	6.76	6.96	54.60	60.00	61.20
Mean	774	40.38	7.71	5.33	27.97	11.06	4.98	1.26	85.18	30.79	6.26	7.07	58.36	60.95	64.43
LSD (.05)	150	0.95	0.33	0.56	3.09	0.48	0.17	0.03	1.03	1.20	0.39	0.43	11.00	10.53	8.78
Entry (P>F)	<0.0001	<0.0001	<0.0001	0.0005	0.0014	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
CV (%)	15.44	1.87	3.46	8.47	8.83	3.44	2.75	1.91	0.97	3.12	5.03	4.83	15.07	13.81	10.89
R-Square	0.72	0.89	0.82	0.37	0.36	0.83	0.73	0.76	0.52	0.59	0.87	0.57	0.67	0.49	0.73
Reps	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

[1]Values in bold are not significantly different from highest value according to LSD (0.05).

[2]QS1, QS2, and QS3 (Quality Score) — This measurement is very similar to a selection index. It adds the weighted values of selected fiber traits (length, mic, UI, strength) to provide a single measure (0–100) of desirable fiber qualities and was calculated by weighting selected fiber traits as follows:

QS1 — fiber length (0.50), mic (0.25), UI (0.15), and strength (0.10)

QS2 — fiber length (0.20), mic (0.10), UI (0.40), and strength (0.30)

QS3 — fiber length (0.45), mic (0.25), UI (0.00), and strength (0.30).

Table 6. Least square means for lint yield and yield components in the 2017 RBTN at Las Cruces, New Mexico (Cooperator: Jinfa Zhang).[1,2]

Entry	Lint yield	Lint pct.	Lint index	Boll size	Seed per boll	Seed index
	lb/A	*%*	*g*	*g*	*#*	*g*
Ark 0912-18	**1615**	41.90	**7.95**	5.28	27.96	**9.90**
LA14063083	**1533**	**42.47**	**7.31**	5.28	30.90	9.10
LA14063101	**1487**	**43.91**	**7.40**	5.09	30.26	8.70
LA14063001	**1419**	40.00	**7.10**	**5.80**	32.70	9.30
TAM 13Q-51	**1406**	38.27	6.70	4.90	27.98	**9.90**
Ark 0911-13	**1318**	40.39	**7.30**	**5.73**	31.82	9.60
TAM 13S-03	1287	39.28	**7.06**	**5.87**	32.63	**10.10**
Acala 1517-08	1282	39.52	**7.33**	**6.13**	33.39	**10.10**
LA14063038	1281	39.58	6.45	5.68	**34.79**	9.00
PD 07040	1266	37.78	6.61	5.27	30.17	**10.10**
LA14063046	1265	40.38	6.98	**5.83**	33.75	9.40
Ark 0921-31ne	1264	39.18	6.67	5.50	32.29	9.60
AU 90098	1258	**44.39**	**7.76**	5.46	31.20	8.90
Tamcot G11	1255	38.89	**7.12**	**5.99**	33.08	**10.10**
UA 222 CK	1252	**42.40**	**7.36**	5.59	32.80	9.30
DP 493 CK	1245	**42.83**	5.80	5.17	**38.51**	7.40
TAM 13Q-18	1244	41.32	**7.10**	5.61	32.69	9.70
PD 08028	1233	39.86	7.01	**6.05**	**34.42**	**10.00**
PD 09046	1217	35.72	5.76	5.13	31.82	9.50
Ark 0921-27ne	1207	38.51	6.62	5.41	31.57	**9.80**
NM 13R1015	1196	39.30	6.68	5.60	32.74	9.40
GA 2015032	1196	41.85	6.79	**5.90**	**36.23**	8.60
GA 2015073	1185	**42.56**	**7.79**	**5.93**	32.56	9.40
TAM LBB130218	1170	39.35	**7.15**	**5.84**	32.34	**9.80**
Ark 0908-60	1157	39.83	6.85	**6.12**	**35.65**	9.00
TAM LBB131001	1129	38.48	6.26	**5.83**	**35.82**	9.10
TAM WK-11L	1111	38.47	6.38	5.38	32.47	9.50
GA 2012141	1094	40.09	6.91	**5.91**	**34.31**	9.60
DP 393 CK	1072	41.04	**7.11**	5.61	32.40	9.60
FM 958 CK	1041	39.15	**7.50**	**6.44**	33.56	**10.60**
PD 2013016	1037	41.16	**7.76**	5.59	29.93	**10.20**
GA 2015090	992	41.42	6.90	5.29	31.72	8.80
NM 16-13P1088B	944	40.23	**7.11**	**6.03**	**34.26**	9.50
Mean	1232	40.29	6.99	5.64	32.69	9.47
LSD (.05)	311	2.31	0.90	0.75	4.40	0.85
Entry (P>F)	0.0199	<0.0001	0.0002	0.0196	0.0064	<0.0001
CV (%)	18.00	4.09	9.13	9.51	9.58	6.38
R-Square	0.38	0.65	0.51	0.44	0.46	0.59
Reps	4	4	4	4	4	4

[1]Values in bold are not significantly different from highest value according to LSD (0.05).
[2]Fiber data was not available for the Las Cruces, New Mexico, location.

Table 7. Least square means for lint yield, yield components, and fiber quality traits in the 2017 RBTN at Lubbock, Texas (Cooperator: Jane Dever).[1]

Entry	Lint yield	Lint pct.	Lint index	Boll size	Seed per boll	Seed index	MIC	UHM	UI	STRN	ELO	SFC	QS1[2]	QS2[2]	QS3[2]
	lb/A	*%*	*g*	*g*	*#*	*g*	*mic*	*in*	*%*	*g/tex*	*%*	*%*			
GA 2015073	**1831**	**42.87**	7.59	5.11	28.85	8.95	**4.15**	1.16	**81.65**	29.30	6.95	8.90	64.50	**72.00**	67.50
FM 958 CK	**1761**	37.59	6.91	5.22	28.39	**10.20**	3.62	1.17	80.55	**31.15**	5.95	9.95	60.50	63.00	66.50
DP 493 CK	**1752**	**43.89**	8.20	5.04	27.21	**9.75**	3.55	1.10	78.25	28.25	6.55	**12.00**	31.50	35.00	46.00
LA14063038	**1665**	39.67	6.87	5.42	31.28	9.25	3.62	**1.23**	80.05	**32.25**	6.20	9.45	**75.00**	65.00	**81.00**
Ark 0908-60	**1659**	38.40	6.38	4.32	26.01	8.20	3.64	1.18	80.50	29.80	7.50	9.70	63.00	63.50	68.50
DP 393 CK	1622	40.93	7.51	5.19	28.25	9.55	**3.78**	1.16	80.80	30.05	7.70	9.45	59.00	64.00	64.00
LA14063083	1616	39.98	8.12	5.19	25.95	**10.65**	3.58	1.18	**81.65**	30.30	**7.95**	9.10	**66.50**	**73.00**	68.50
Ark 0921-31ne	1611	38.97	6.74	4.81	27.80	9.45	3.46	1.17	80.05	29.60	**7.95**	9.50	55.00	57.00	63.00
Ark 0912-18	1599	41.33	7.31	5.75	33.73	9.40	**3.93**	1.21	**82.90**	30.60	**8.00**	8.80	**78.50**	**83.00**	**78.00**
TAM 13S-03	1563	37.45	7.65	5.65	28.13	**11.10**	3.25	1.18	80.70	30.20	7.65	9.35	56.50	62.50	61.50
LA14063046	1543	40.43	7.37	5.55	30.42	**9.85**	3.34	1.19	81.15	**31.65**	7.70	9.40	62.00	**68.00**	65.50
TAM 13Q-18	1503	37.20	6.74	4.81	26.54	**10.15**	3.58	1.16	79.35	30.45	7.10	10.20	52.50	51.00	62.00
LA14063001	1503	41.11	6.96	4.62	27.40	8.70	3.27	1.19	79.70	**31.25**	7.15	10.05	56.00	55.00	64.00
TAM 13Q-51	1452	36.32	6.52	4.85	27.09	**10.25**	3.51	**1.26**	80.60	**31.45**	6.80	9.35	**83.50**	**72.50**	**86.50**
GA 2015032	1440	40.81	7.05	5.02	29.17	8.90	3.48	1.16	80.90	**31.60**	7.15	9.65	56.50	63.50	62.00
Tamcot G11	1439	37.17	7.07	5.66	29.75	**11.00**	2.99	**1.23**	78.05	29.80	6.25	**10.95**	58.50	47.00	69.50
PD 07040	1436	38.07	6.67	4.86	27.73	**9.95**	3.30	1.16	80.45	29.85	6.75	9.50	52.00	59.00	58.50
Ark 0921-27ne	1433	38.47	6.44	4.86	28.98	9.35	3.54	1.14	81.00	30.00	7.00	9.65	51.00	62.50	56.00
UA 222 CK	1403	38.06	6.86	5.45	30.23	**9.85**	3.32	1.18	80.00	29.40	**8.00**	9.75	56.50	57.50	64.00
Ark 0911-13	1396	39.78	7.14	4.94	27.50	**9.80**	3.45	1.21	80.40	29.45	**8.30**	9.45	**67.50**	64.50	**72.50**
GA 2012141	1389	40.76	7.12	4.92	28.11	9.35	3.55	1.18	80.45	29.85	6.75	9.45	61.00	62.00	67.00
Acala 1517-08	1382	38.72	6.95	5.00	27.87	**9.80**	**3.85**	1.16	**81.55**	**31.15**	6.70	9.20	63.50	**71.50**	67.00
TAM LBB130218	1377	37.23	6.46	5.10	29.35	**10.25**	3.16	1.16	79.20	**31.10**	6.25	10.30	44.00	47.00	54.50
TAM LBB131001	1371	38.31	6.15	5.02	31.29	8.35	2.83	1.20	78.70	**31.90**	6.55	10.65	48.00	45.00	58.50
LA14063101	1366	41.60	7.30	4.98	28.27	8.95	3.27	1.21	80.50	**31.10**	6.80	9.60	64.00	64.50	69.50
PD 09046	1358	35.50	5.78	5.93	36.38	**9.90**	2.98	**1.23**	78.70	**31.90**	5.70	10.15	60.50	50.50	70.50
AU 90098	1350	39.37	6.82	4.51	25.98	9.00	3.36	1.16	80.00	29.50	6.30	10.30	52.00	55.50	59.50
PD 08028	1339	36.79	6.44	5.30	30.28	**10.10**	3.38	1.18	80.85	**31.15**	7.00	9.25	58.50	64.50	63.50
NM 16-13P1088B	1277	37.63	6.89	5.18	28.30	**10.35**	**3.89**	1.17	80.90	**31.70**	6.90	9.00	64.00	**67.00**	69.00
TAM WK-11L	1246	37.57	6.40	5.00	29.60	9.60	3.15	1.12	80.90	29.55	7.40	10.15	39.00	57.00	45.00
GA 2015090	1227	40.19	6.93	5.06	29.34	9.10	3.41	1.17	80.60	**31.20**	7.35	9.55	57.50	62.00	63.00
NM 13R1015	1174	38.35	6.62	4.22	24.46	9.25	3.50	1.13	**81.75**	**31.90**	7.10	8.50	49.50	**67.00**	53.50
PD 2013016	1121	38.37	6.72	5.13	29.33	9.65	3.20	1.20	80.40	**32.45**	6.10	9.60	61.50	62.00	67.00
Mean	1461	39.06	6.93	5.08	28.76	9.63	3.45	1.18	80.40	30.63	7.02	9.69	58.45	61.03	64.62
LSD (.05)	199	1.82	ns	ns	ns	1.41	0.49	0.03	1.54	1.60	0.48	1.23	18.45	16.28	14.39
Entry (P>F)	<0.0001	<0.0001	0.0655	0.3921	0.7815	0.0338	0.0029	<0.0001	0.0002	0.0004	<0.0001	0.0071	0.0050	0.0024	0.0017
CV (%)	9.72	2.29	8.08	10.09	12.85	7.17	7.04	1.43	0.94	2.56	3.33	6.24	15.94	13.09	10.93
R-Square	0.66	0.90	0.64	0.53	0.43	0.67	0.74	0.89	0.79	0.78	0.94	0.74	0.74	0.75	0.76
Reps	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2

[1]Values in bold are not significantly different from highest value according to LSD (0.05).

[2]QS1, QS2, and QS3 (Quality Score) — This measurement is very similar to a selection index. It adds the weighted values of selected fiber traits (length, mic, UI, strength) to provide a single measure (0–100) of desirable fiber qualities and was calculated by weighting selected fiber traits as follows:

QS1 — fiber length (0.50), mic (0.25), UI (0.15), and strength (0.10)

QS2 — fiber length (0.20), mic (0.10), UI (0.40), and strength (0.30)

QS3 — fiber length (0.45), mic (0.25), UI (0.00), and strength (0.30).

Table 8. Least square means for lint yield, yield components, and fiber quality traits in the 2017 RBTN at Maricopa, Arizona (Cooperator: Alison Thompson).[1]

Entry	Lint yield	Lint pct.	Lint index	Boll size	Seed per boll	Seed index	MIC	UHM	UI	STRN	ELO	SFC	QS1[2]	QS2[2]	QS3[2]
	lb/A	*%*	*g*	*g*	*#*	*g*	*mic*	*in*	*%*	*g/tex*	*%*	*%*			
LA14063101	**1986**	**46.82**	**7.34**	4.90	**31.28**	8.11	**5.44**	1.16	**83.03**	32.70	6.50	8.27	58.33	62.33	63.00
LA14063001	**1946**	44.61	**7.60**	**4.94**	29.10	9.31	5.07	1.17	82.87	32.50	6.70	7.97	**66.67**	64.33	**72.00**
LA14063083	**1929**	43.64	**7.36**	4.81	28.68	9.39	4.88	1.17	**83.60**	**33.77**	**7.27**	8.07	**73.67**	**72.67**	**76.67**
Ark 0912-18	**1823**	44.22	**7.60**	**4.95**	28.78	9.33	**5.45**	1.15	**83.60**	**34.40**	**7.50**	7.47	57.33	66.67	61.67
DP 493 CK	**1813**	**46.03**	6.39	4.44	**32.13**	7.29	**5.40**	1.08	80.97	30.23	5.60	**9.40**	32.00	37.33	45.33
PD 07040	**1792**	41.35	**7.46**	**4.94**	27.43	**10.29**	5.15	1.14	82.83	30.70	6.40	8.43	57.67	60.67	63.67
LA14063046	**1784**	**45.25**	**7.63**	**5.18**	**30.81**	9.12	5.18	1.14	**83.17**	33.30	6.93	7.90	57.33	63.00	62.67
LA14063038	**1760**	43.37	6.65	4.83	**31.54**	8.59	5.06	**1.20**	**82.93**	33.10	5.77	7.97	**68.00**	66.33	**73.33**
TAM 13S-03	**1733**	42.69	6.82	4.67	29.26	8.96	5.16	1.11	82.13	30.33	**7.27**	8.43	46.67	51.33	56.00
Ark 0911-13	**1729**	43.01	**7.73**	4.82	26.83	**10.35**	**5.27**	**1.20**	**83.73**	31.30	**7.43**	8.00	**76.00**	**74.67**	**77.67**
NM 13R1015	**1728**	42.61	6.55	4.48	29.22	8.76	**5.29**	1.12	**83.13**	32.37	6.07	7.40	50.67	60.00	56.33
DP 393 CK	**1719**	42.33	6.97	**4.92**	29.85	9.31	5.09	1.13	**83.50**	33.33	6.83	7.67	58.33	65.67	62.67
Ark 0921-27ne	1691	40.48	6.75	4.78	28.67	**9.83**	**5.24**	1.17	**83.00**	32.97	6.10	8.13	**66.33**	66.00	**71.67**
UA 222 CK	1688	43.51	**7.38**	4.85	28.62	9.41	**5.29**	1.12	82.83	30.97	**7.33**	7.93	50.67	57.67	57.33
GA 2015073	1678	**46.14**	**7.59**	4.81	29.24	8.75	**5.27**	1.11	**82.93**	31.60	6.27	7.73	46.67	57.00	53.33
TAM 13Q-51	1659	41.53	6.59	4.37	27.53	9.09	**5.26**	**1.24**	**84.40**	**35.80**	**7.10**	7.13	**81.67**	**83.00**	**82.67**
AU 90098	1656	**45.51**	**7.65**	4.72	28.19	9.05	**5.34**	1.16	**83.20**	31.33	5.87	8.30	60.67	64.33	65.00
FM 958 CK	1653	41.31	**7.33**	**5.11**	28.79	**10.32**	5.12	1.17	82.70	32.97	5.23	8.33	**66.00**	63.00	**71.33**
Tamcot G11	1648	41.77	**7.61**	**5.28**	28.99	**10.47**	4.96	**1.21**	82.00	32.13	5.37	8.40	**75.33**	62.00	**82.33**
GA 2015032	1635	44.19	7.09	4.87	**30.35**	8.85	5.04	1.15	**83.50**	32.30	6.37	7.83	**64.67**	**68.00**	**68.67**
Acala 1517-08	1579	41.37	6.55	4.56	28.84	9.13	5.12	1.13	**83.83**	**34.33**	6.50	7.40	57.67	**69.33**	62.33
TAM WK-11L	1559	42.15	6.43	4.76	**31.17**	8.77	**5.30**	1.09	**83.67**	29.80	6.87	8.07	42.33	60.33	47.33
Ark 0921-31ne	1549	41.26	6.62	4.34	27.07	9.21	5.17	1.16	**83.43**	32.83	**7.60**	7.87	**65.33**	**67.67**	**69.33**
TAM LBB131001	1528	44.18	6.30	4.73	**33.12**	7.83	4.61	1.12	81.50	31.30	6.17	**8.73**	57.00	52.33	67.00
Ark 0908-60	1527	43.86	**7.66**	**5.09**	29.14	9.36	4.96	**1.20**	**83.07**	33.20	6.37	8.03	**77.67**	**70.33**	**81.33**
PD 08028	1525	41.78	6.78	**4.96**	**30.71**	9.20	5.12	1.14	**84.17**	**34.37**	6.70	7.47	**62.33**	**74.33**	66.33
GA 2012141	1476	44.20	6.67	4.58	**30.40**	8.35	5.03	1.14	**83.30**	32.17	6.53	8.30	59.67	64.67	64.67
GA 2015090	1462	43.76	7.09	4.77	29.56	8.91	4.87	1.17	**83.13**	**34.70**	6.53	7.90	**71.00**	**70.33**	**77.00**
TAM 13Q-18	1452	41.99	6.71	4.83	**30.19**	9.20	5.09	1.11	81.53	30.40	6.13	**9.10**	49.00	52.67	58.00
TAM LBB130218	1409	40.71	6.97	**4.95**	29.07	**10.01**	4.86	1.12	82.13	31.63	5.63	8.60	54.33	54.33	63.00
NM 16-13P1088B	1390	41.61	6.91	4.74	28.57	9.59	4.91	1.09	**83.23**	32.40	7.03	7.70	49.67	60.67	56.00
PD 09046	1370	37.68	5.47	4.36	30.11	8.87	4.74	**1.20**	82.83	32.73	5.33	8.17	**79.67**	**69.67**	**84.00**
PD 2013016	1336	42.24	**7.17**	**5.12**	**30.25**	**9.69**	4.98	1.15	**83.73**	**34.13**	5.33	7.87	**66.00**	**71.33**	**70.00**
Mean	1643	42.94	7.01	4.80	29.50	9.17	5.11	1.15	83.02	32.49	6.44	8.06	60.80	63.76	66.35
LSD (.05)	268	2.02	0.58	0.37	3.00	0.82	0.26	0.07	1.52	2.40	0.50	0.75	19.91	16.13	17.07
Entry (P>F)	<0.0001	<0.0001	<0.0001	<0.0001	0.0242	<0.0001	<0.0001	0.0006	0.0091	0.0002	<0.0001	<0.0001	0.0005	0.0040	0.0004
CV (%)	9.99	2.88	5.05	4.75	6.24	5.50	3.18	3.54	1.12	4.54	4.80	5.68	20.07	15.51	15.77
R-Square	0.63	0.78	0.77	0.62	0.49	0.76	0.70	0.59	0.57	0.60	0.88	0.70	0.60	0.58	0.59
Reps	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

[1]Values in bold are not significantly different from highest value according to LSD (0.05).

[2]QS1, QS2, and QS3 (Quality Score) — This measurement is very similar to a selection index. It adds the weighted values of selected fiber traits (length, mic, UI, strength) to provide a single measure (0–100) of desirable fiber qualities and was calculated by weighting selected fiber traits as follows:

QS1 — fiber length (0.50), mic (0.25), UI (0.15), and strength (0.10)

QS2 — fiber length (0.20), mic (0.10), UI (0.40), and strength (0.30)

QS3 — fiber length (0.45), mic (0.25), UI (0.00), and strength (0.30).

Table 9. Least square means for lint yield, yield components, and fiber quality traits in the 2017 RBTN at Mississippi State, Mississippi (Cooperator: Jack McCarty).[1]

Entry	Lint yield	Lint pct.	Lint index	Boll size	Seed per boll	Seed index	MIC	UHM	UI	STRN	ELO	SFC	QS1[2]	QS2[2]	QS3[2]
	lb/A	*%*	*g*	*g*	*#*	*g*	*mic*	*in*	*%*	*g/tex*	*%*	*%*			
LA14063083	**1848**	44.43	**7.90**	**5.69**	**32.10**	9.90	**4.76**	1.24	84.68	34.05	7.58	7.33	61.75	62.50	68.50
GA 2015032	**1725**	42.88	7.13	5.31	**32.19**	9.50	**4.88**	1.26	**85.80**	33.18	6.63	7.13	66.00	71.25	68.50
LA14063101	**1699**	**45.49**	**8.09**	5.12	28.82	9.70	**4.94**	1.27	**85.90**	**35.10**	6.98	6.93	69.00	**74.75**	72.25
GA 2012141	**1686**	42.88	7.80	5.40	**29.96**	10.40	4.68	1.22	84.48	32.80	6.80	7.35	52.50	57.00	60.00
Ark 0911-13	**1679**	43.12	7.89	5.45	**29.91**	10.40	4.68	1.29	**85.48**	32.30	**8.25**	6.85	**77.00**	**73.50**	**79.75**
LA14063001	**1670**	44.25	**8.02**	**5.68**	**31.43**	10.10	4.64	1.25	84.43	33.60	6.95	7.40	63.50	61.25	71.00
Ark 0908-60	**1669**	44.37	7.41	5.31	**31.79**	9.30	**4.97**	1.27	**85.48**	33.15	7.28	7.05	65.75	69.25	69.00
GA 2015090	**1617**	43.49	7.46	5.06	29.48	9.70	**4.81**	1.26	**86.00**	**35.60**	7.35	7.05	69.00	**76.00**	72.25
Ark 0912-18	**1616**	43.33	**8.63**	**5.77**	28.98	**11.30**	**5.00**	1.26	**86.73**	33.43	**8.38**	6.65	66.50	**77.50**	66.75
NM 13R1015	**1586**	41.94	6.85	4.97	**30.55**	9.50	**5.07**	1.19	84.83	33.48	6.73	6.90	40.25	54.50	47.25
AU 90098	**1578**	**46.03**	7.84	4.94	29.11	9.20	4.70	1.23	84.73	32.88	6.18	7.23	60.25	61.50	66.75
DP 493 CK	1570	**45.07**	7.06	5.05	**32.27**	8.60	**4.99**	1.13	82.30	30.58	5.80	**8.23**	25.00	32.25	40.25
LA14063038	1559	42.53	7.40	5.17	**29.81**	10.00	4.68	1.28	83.98	**35.35**	6.33	7.25	69.75	62.25	78.50
LA14063046	1498	43.59	7.64	5.49	**31.46**	9.90	**4.84**	1.26	85.03	33.65	7.38	7.10	64.50	66.00	69.75
UA 222 CK	1493	43.44	7.60	5.32	**30.45**	9.90	4.45	1.25	83.60	31.33	**7.97**	7.40	61.50	54.25	71.00
GA 2015073	1477	**44.93**	**8.17**	5.44	**30.05**	10.00	**4.86**	1.22	83.70	33.60	6.83	7.25	50.00	50.75	60.00
Tamcot G11	1445	40.17	**7.97**	**6.05**	**30.47**	**11.90**	4.16	**1.36**	85.23	**34.75**	6.33	6.53	**88.75**	**77.25**	**92.00**
DP 393 CK	1423	42.23	**8.41**	5.40	27.35	**11.50**	**4.90**	1.22	85.15	34.43	7.70	7.08	54.75	63.25	61.00
FM 958 CK	1423	41.82	7.40	**5.78**	**32.67**	10.30	**4.87**	1.20	83.78	**34.73**	5.98	7.30	44.00	49.50	55.00
PD 2013016	1420	43.36	7.66	5.45	**30.95**	10.00	**4.93**	1.26	84.45	**35.10**	5.83	7.55	61.75	61.75	69.50
TAM 13Q-18	1333	39.92	7.25	5.33	29.43	**10.90**	4.53	1.23	83.60	33.63	6.83	7.45	58.25	53.00	68.50
PD 08028	1326	39.21	7.03	5.45	**30.47**	**10.90**	4.67	1.23	84.90	**36.33**	7.05	6.93	60.25	65.75	68.75
PD 07040	1325	39.40	6.76	5.57	**32.47**	10.40	4.69	1.23	84.80	33.25	6.78	6.78	59.00	61.50	65.00
Ark 0921-27ne	1321	40.52	6.53	5.24	**33.03**	9.60	4.41	1.22	85.00	**35.35**	7.20	6.78	59.00	64.75	66.25
TAM LBB130218	1313	38.19	6.67	5.54	**31.74**	10.80	4.44	1.22	83.48	34.43	6.13	7.38	57.00	54.50	67.25
Ark 0921-31ne	1308	41.03	6.75	5.12	**31.22**	9.70	4.34	1.24	85.25	33.13	**8.08**	6.93	65.75	67.50	70.50
TAM 13S-03	1298	40.12	7.56	5.13	27.21	**11.30**	4.63	1.23	**85.58**	32.50	**8.33**	6.98	62.00	68.00	66.00
TAM LBB131001	1298	42.89	6.92	4.95	**30.69**	9.20	4.36	1.25	83.33	33.48	6.70	**7.73**	64.00	53.25	74.25
TAM 13Q-51	1276	40.20	7.25	4.70	26.05	10.80	4.70	**1.33**	**86.38**	**35.60**	7.63	6.53	**90.00**	**86.00**	**90.75**
PD 09046	1274	36.18	6.07	5.20	**30.99**	10.70	4.12	**1.33**	84.78	**36.05**	5.83	6.73	**82.25**	**73.00**	**87.75**
Acala 1517-08	1257	39.94	7.04	5.15	29.38	10.60	4.67	1.22	83.98	**35.73**	6.53	7.50	53.50	55.75	64.25
NM 16-13P1088B	1081	39.02	6.91	5.42	**30.64**	10.80	4.30	1.22	84.93	**35.33**	6.78	6.85	60.50	64.50	67.50
TAM WK-11L	1041	39.95	7.24	5.31	29.49	**10.90**	4.58	1.18	85.20	32.10	7.33	7.35	46.00	58.75	52.50
Mean	1459	42.00	7.40	5.33	30.38	10.23	4.67	1.24	84.75	33.94	6.98	7.13	61.48	63.11	68.13
LSD (.05)	270	1.29	0.74	0.38	3.30	1.08	0.32	0.04	1.36	1.71	0.55	0.55	14.95	14.04	12.48
Entry (P>F)	<0.0001	<0.0001	<0.0001	<0.0001	0.0105	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
CV (%)	13.21	2.19	7.07	5.03	7.73	7.50	4.89	2.16	1.14	3.60	5.59	5.48	17.32	15.85	13.05
R-Square	0.60	0.90	0.62	0.60	0.41	0.56	0.62	0.78	0.57	0.64	0.83	0.53	0.66	0.59	0.67
Reps	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

[1]Values in bold are not significantly different from highest value according to LSD (0.05).

[2]QS1, QS2, and QS3 (Quality Score) — This measurement is very similar to a selection index. It adds the weighted values of selected fiber traits (length, mic, UI, strength) to provide a single measure (0–100) of desirable fiber qualities and was calculated by weighting selected fiber traits as follows:

QS1 — fiber length (0.50), mic (0.25), UI (0.15), and strength (0.10)

QS2 — fiber length (0.20), mic (0.10), UI (0.40), and strength (0.30)

QS3 — fiber length (0.45), mic (0.25), UI (0.00), and strength (0.30).

Table 10. Least square means for lint yield, yield components, and fiber quality traits in the 2017 RBTN at Stoneville, Mississippi, USDA location 1 (Cooperator: Linghe Zeng).[1]

Entry	Lint yield	Lint pct.	Lint index	Boll size	Seed per boll	Seed index	MIC	UHM	UI	STRN	ELO	SFC	QS1[2]	QS2[2]	QS3[2]
	lb/A	*%*	*g*	*g*	*#*	*g*	*mic*	*in*	*%*	*g/tex*	*%*	*%*			
Ark 0908-60	**1269**	41.35	7.61	5.60	30.46	10.65	**4.66**	1.32	85.63	32.13	6.25	6.58	69.25	65.00	75.00
UA 222 CK	**1237**	38.02	**8.01**	5.89	28.02	**12.93**	**4.61**	1.31	85.80	32.33	**6.98**	6.60	68.25	**65.75**	73.75
Ark 0921-31ne	**1231**	37.81	6.81	5.85	**32.48**	11.08	4.33	1.28	85.80	32.38	**7.10**	6.58	61.00	62.50	67.00
TAM 13Q-51	**1186**	37.15	6.66	4.80	26.77	11.13	4.33	1.33	**86.40**	**34.30**	6.75	6.38	**78.75**	**74.75**	**82.00**
LA14063101	**1168**	**43.29**	7.50	5.17	29.83	9.68	**4.56**	1.29	86.03	33.03	6.40	6.58	65.50	**66.25**	70.75
LA14063083	**1159**	40.70	7.59	5.56	29.88	10.93	**4.47**	1.30	**86.33**	33.88	**7.18**	6.53	68.50	**69.75**	72.75
Ark 0912-18	**1158**	39.31	**7.91**	6.03	29.90	12.10	**4.62**	1.30	**87.08**	33.38	**6.95**	6.53	**71.50**	**76.00**	73.25
LA14063001	**1133**	41.20	7.61	5.65	30.62	10.73	4.38	1.30	85.80	33.55	6.23	6.60	68.00	**65.75**	73.50
LA14063038	1114	38.88	6.80	5.84	**33.36**	10.55	**4.42**	**1.34**	85.10	**35.68**	5.35	6.50	**76.50**	**66.25**	**84.75**
DP 393 CK	1112	38.43	7.32	5.67	29.80	11.58	**4.65**	1.26	85.53	33.60	**6.85**	6.88	54.00	58.00	61.50
Ark 0911-13	1101	38.66	**7.77**	6.01	29.94	12.20	**4.66**	1.33	**86.25**	32.63	**7.03**	6.40	**74.00**	**71.00**	**77.50**
Ark 0921-27ne	1085	37.58	6.58	5.57	31.80	10.83	4.33	1.29	85.73	**34.48**	5.83	6.53	64.50	65.00	71.50
GA 2015073	1070	40.99	7.38	5.45	30.30	10.48	**4.46**	1.27	**86.28**	32.63	5.93	6.60	60.50	**65.75**	65.75
FM 958 CK	1064	37.30	7.08	5.75	30.27	11.75	**4.46**	1.29	85.98	33.48	5.15	6.70	63.50	65.00	69.00
GA 2015032	1050	39.88	6.62	5.69	**34.32**	9.88	**4.56**	1.30	86.05	32.98	5.58	6.63	67.25	**67.00**	72.50
TAM WK-11L	1034	37.31	6.49	5.39	31.00	10.78	4.19	1.23	**86.15**	33.60	6.38	6.88	49.25	60.75	56.25
AU 90098	1029	42.08	7.60	5.24	29.09	10.30	**4.48**	1.29	**86.35**	32.45	5.33	6.68	64.25	**68.25**	68.75
DP 493 CK	1023	41.60	6.71	4.98	30.87	9.28	**4.47**	1.23	84.80	32.70	5.38	**7.08**	44.75	49.50	55.50
LA14063046	997	39.27	7.39	5.68	30.19	11.28	**4.58**	1.29	86.05	34.05	6.45	6.68	63.00	**65.75**	68.25
GA 2015090	994	39.91	6.95	5.43	31.19	10.33	4.35	1.31	86.05	**34.88**	5.98	6.48	**71.00**	**70.00**	76.50
GA 2012141	992	38.37	7.39	5.86	30.45	11.75	**4.58**	1.31	**86.23**	31.75	5.90	6.50	69.50	**69.00**	73.50
TAM 13S-03	959	36.89	6.86	5.31	28.58	11.60	4.12	1.26	85.38	32.13	**7.18**	6.88	56.00	57.75	64.00
PD 07040	919	35.67	6.78	6.19	**32.59**	12.10	4.38	1.28	85.83	33.80	5.85	6.98	61.50	64.00	68.50
PD 2013016	902	38.77	6.84	5.73	**32.50**	10.68	**4.43**	**1.36**	85.90	**34.85**	5.33	6.18	**84.25**	**74.00**	**88.50**
PD 08028	881	35.55	6.61	5.75	30.98	11.85	4.27	1.32	**86.18**	**35.45**	5.83	6.40	**75.25**	**72.75**	**80.75**
Tamcot G11	871	36.85	**7.86**	**6.61**	30.99	**13.33**	4.04	**1.38**	84.48	33.40	5.28	6.35	**80.00**	63.00	**87.25**
TAM 13Q-18	819	36.82	6.76	5.76	31.36	11.48	4.32	1.27	84.18	32.85	5.55	**7.08**	54.50	49.00	65.75
NM 13R1015	775	37.50	6.22	4.95	29.86	10.20	**4.53**	1.26	85.10	**35.75**	5.78	6.58	52.00	56.25	62.50
NM 16-13P1088B	756	35.79	6.40	5.57	31.16	11.35	4.05	1.26	85.90	**35.35**	6.25	6.70	57.50	63.75	65.25
TAM LBB131001	747	38.99	6.64	4.12	24.18	10.23	4.04	1.27	84.30	**34.65**	5.93	**7.43**	56.00	51.25	67.25
Acala 1517-08	678	36.31	6.57	5.24	28.97	11.38	**4.47**	1.25	84.88	**34.30**	5.88	**7.08**	47.25	51.50	58.00
PD 09046	652	33.16	5.60	4.93	29.19	11.15	3.88	**1.36**	85.38	**34.88**	4.93	6.38	**82.00**	**69.50**	**88.25**
TAM LBB130218	614	34.02	6.11	5.05	28.19	11.73	3.94	1.25	84.65	34.18	5.25	6.98	50.25	51.25	61.25
Mean	993	38.34	7.00	5.52	30.28	11.13	4.38	1.29	85.68	33.68	6.06	6.66	64.52	63.97	71.11
LSD (.05)	153	1.17	0.38	0.38	2.39	0.61	0.24	0.04	1.00	1.51	0.34	0.42	13.46	10.79	11.20
Entry (P>F)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
CV (%)	10.95	2.18	3.84	4.91	5.62	3.88	3.89	2.17	0.83	3.20	3.96	4.49	14.86	12.02	11.22
R-Square	0.79	0.91	0.86	0.80	0.63	0.85	0.68	0.70	0.55	0.60	0.91	0.54	0.63	0.57	0.64
Reps	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

[1]Values in bold are not significantly different from highest value according to LSD (0.05).

[2]QS1, QS2, and QS3 (Quality Score) — This measurement is very similar to a selection index. It adds the weighted values of selected fiber traits (length, mic, UI, strength) to provide a single measure (0–100) of desirable fiber qualities and was calculated by weighting selected fiber traits as follows:

QS1 — fiber length (0.50), mic (0.25), UI (0.15), and strength (0.10)

QS2 — fiber length (0.20), mic (0.10), UI (0.40), and strength (0.30)

QS3 — fiber length (0.45), mic (0.25), UI (0.00), and strength (0.30).

Table 11. Least square means for lint yield, yield components, and fiber quality traits in the 2017 RBTN at Stoneville, Mississippi, USDA location 2 (Cooperator: Jodi Scheffler).[1]

Entry	Lint yield	Lint pct.	Lint index	Boll size	Seed per boll	Seed index	MIC	UHM	UI	STRN	ELO	SFC	QS1[2]	QS2[2]	QS3[2]
	lb/A	*%*	*g*	*g*	*#*	*g*	*mic*	*in*	*%*	*g/tex*	*%*	*%*			
Ark 0911-13	**1609**	44.53	**8.47**	5.79	30.54	10.52	4.84	1.29	85.40	30.83	7.50	7.15	67.00	**66.75**	71.25
Ark 0921-31ne	**1581**	42.71	7.73	5.59	30.87	10.37	4.60	1.25	**85.83**	31.73	**8.13**	6.75	62.25	**67.50**	66.50
Ark 0908-60	**1561**	**45.28**	**8.67**	5.83	30.52	10.47	**5.08**	1.29	85.48	31.93	6.80	7.03	61.75	65.00	66.00
Ark 0912-18	**1540**	44.84	**8.63**	5.72	29.72	10.61	4.82	1.28	**86.70**	31.60	**7.70**	6.70	67.50	**75.25**	69.00
LA14063046	**1525**	44.77	**8.25**	5.94	**32.30**	10.16	4.81	1.29	84.80	31.88	7.08	7.08	67.25	62.50	73.25
LA14063083	**1487**	**45.28**	7.98	5.50	31.26	9.64	4.76	1.26	84.85	32.53	7.50	7.20	59.25	59.75	66.25
LA14063101	**1477**	**46.81**	7.98	5.21	30.64	9.06	4.83	1.27	85.25	32.65	6.65	7.05	61.25	63.25	67.00
Ark 0921-27ne	1462	42.08	7.26	5.31	30.83	9.98	4.71	1.23	85.23	**33.23**	6.70	6.98	52.75	59.50	59.00
TAM 13Q-51	1447	41.79	7.57	5.36	29.59	10.55	4.76	1.31	85.53	**33.68**	7.03	6.53	**75.25**	**71.00**	79.00
LA14063038	1399	43.59	7.61	5.79	**33.21**	9.83	4.70	1.30	84.50	**34.25**	6.13	7.18	70.50	62.50	78.25
UA 222 CK	1383	43.36	**8.65**	5.86	29.43	11.29	4.81	1.27	84.58	30.63	**7.65**	7.20	59.50	57.75	66.75
DP 393 CK	1365	43.71	**8.26**	5.74	30.46	10.61	4.80	1.21	**85.95**	32.85	7.53	6.95	48.25	62.75	53.00
LA14063001	1349	**45.71**	**8.61**	5.92	31.48	10.22	4.64	1.28	85.25	31.88	6.73	6.95	66.75	**65.50**	72.00
GA 2012141	1327	43.68	**8.52**	5.36	27.48	10.98	4.63	1.28	**85.80**	31.30	6.30	6.93	69.50	**70.25**	73.00
GA 2015073	1312	44.89	**8.12**	5.59	30.88	9.97	4.78	1.24	84.73	**33.15**	6.43	6.85	51.00	56.00	59.50
GA 2015090	1278	43.67	7.81	5.42	30.36	10.07	4.56	1.29	85.68	32.60	6.48	6.90	74.00	**71.25**	77.25
GA 2015032	1245	44.23	7.56	5.41	31.80	9.51	4.82	1.28	85.23	31.65	6.10	7.15	64.25	64.00	69.25
PD 07040	1235	42.00	8.07	6.04	31.47	11.14	4.66	1.28	**86.08**	32.13	6.38	6.85	70.75	**73.00**	73.50
DP 493 CK	1212	**47.00**	7.74	5.04	30.71	8.72	**4.96**	1.18	83.85	31.05	5.68	**7.90**	31.00	41.50	43.25
AU 90098	1204	**45.46**	**8.34**	4.98	27.18	10.00	4.52	1.28	85.50	32.43	5.98	6.93	68.75	**68.00**	73.25
TAM WK-11L	1198	41.65	7.91	5.44	28.71	11.05	4.61	1.21	84.38	30.50	6.55	7.35	47.25	51.50	57.25
FM 958 CK	1188	42.67	7.97	5.70	30.59	10.70	4.67	1.26	85.40	**33.38**	5.60	7.03	61.50	64.75	67.25
Tamcot G11	1164	40.83	**8.62**	**6.59**	31.25	**12.49**	4.47	**1.38**	84.28	31.38	5.78	6.33	**85.50**	**66.25**	**91.75**
TAM 13Q-18	1104	42.24	7.90	5.60	29.93	10.81	4.59	1.24	83.98	31.95	6.78	7.40	51.75	51.25	62.75
TAM 13S-03	1087	41.83	7.97	5.35	28.12	11.07	4.55	1.24	84.65	30.55	7.43	7.05	55.00	56.75	63.25
NM 13R1015	982	41.32	6.69	4.95	30.60	9.50	4.74	1.23	84.50	32.95	6.23	6.90	49.25	53.50	58.75
PD 08028	973	40.04	7.13	6.05	**33.96**	10.68	4.60	1.26	**85.88**	**34.43**	6.30	6.65	65.50	**70.25**	70.00
Acala 1517-08	927	40.56	7.12	5.34	30.43	10.43	4.65	1.25	84.75	**33.35**	6.45	7.00	56.25	58.00	64.50
PD 2013016	875	44.10	7.88	5.79	**32.57**	9.96	4.72	1.31	85.08	**34.20**	5.65	6.90	74.00	**67.75**	79.50
TAM LBB131001	793	43.61	7.46	5.02	29.36	9.65	4.18	1.29	84.18	**33.28**	6.35	7.35	68.75	59.00	77.25
TAM LBB130218	770	39.55	7.36	5.75	30.96	11.24	4.32	1.26	84.88	32.95	5.70	7.28	61.50	61.25	69.25
NM 16-13P1088B	751	38.55	7.08	5.83	31.90	11.22	4.55	1.22	84.85	**34.50**	6.65	7.00	52.50	58.00	61.50
PD 09046	724	39.56	7.33	5.64	30.63	11.12	4.25	1.33	85.10	**34.33**	5.35	6.70	**84.00**	**72.00**	**88.50**
Mean	1228	43.09	7.89	5.59	30.60	10.41	4.67	1.27	85.09	32.47	6.58	7.00	62.46	62.83	68.72
LSD (.05)	142	1.86	0.58	0.29	1.95	0.35	0.19	0.03	0.98	1.50	0.49	0.40	10.97	10.06	9.00
Entry (P>F)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
CV (%)	8.21	3.08	5.23	3.68	4.54	2.38	2.90	1.72	0.82	3.24	5.28	4.04	12.51	11.40	9.33
R-Square	0.90	0.80	0.75	0.80	0.66	0.92	0.73	0.81	0.54	0.63	0.85	0.58	0.74	0.59	0.76
Reps	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

[1]Values in bold are not significantly different from highest value according to LSD (0.05).

[2]QS1, QS2, and QS3 (Quality Score) — This measurement is very similar to a selection index. It adds the weighted values of selected fiber traits (length, mic, UI, strength) to provide a single measure (0–100) of desirable fiber qualities and was calculated by weighting selected fiber traits as follows:
QS1 — fiber length (0.50), mic (0.25), UI (0.15), and strength (0.10)
QS2 — fiber length (0.20), mic (0.10), UI (0.40), and strength (0.30)
QS3 — fiber length (0.45), mic (0.25), UI (0.00), and strength (0.30).

Table 12. Least square means for lint yield, yield components, and fiber quality traits in the 2017 RBTN at Suffolk, Virginia (Cooperator: Hunter Frame).[1]

Entry	Lint yield	Lint pct.	Lint index	Boll size	Seed per boll	Seed index	MIC	UHM	UI	STRN	ELO	SFC	QS1[2]	QS2[2]	QS3[2]
	lb/A	*%*	*g*	*g*	*#*	*g*	*mic*	*in*	*%*	*g/tex*	*%*	*%*			
LA14063046	**1638**	**43.42**	**7.53**	5.13	29.62	9.60	4.46	1.25	**84.53**	29.93	7.08	7.35	**71.25**	**67.25**	76.50
Ark 0912-18	**1622**	40.86	**7.87**	5.83	30.28	**10.75**	**4.79**	1.24	**85.68**	29.65	**8.00**	6.85	66.00	**72.25**	67.25
Ark 0911-13	**1565**	42.15	**7.59**	5.62	31.24	10.24	**4.68**	1.26	**85.10**	27.93	**7.85**	7.20	67.75	**66.00**	68.25
Ark 0921-27ne	**1563**	40.95	6.81	5.26	31.72	9.61	**4.80**	1.20	84.40	30.75	6.73	7.20	50.50	58.00	57.75
AU 90098	**1540**	**43.71**	**7.98**	5.03	27.64	9.93	4.40	1.23	84.23	30.40	6.03	7.55	63.50	**62.25**	70.25
LA14063083	**1494**	**43.36**	**7.72**	5.28	29.93	9.77	**4.52**	1.25	**84.78**	29.80	**7.73**	7.23	**69.75**	**68.25**	74.00
Ark 0908-60	**1469**	41.78	**7.50**	5.42	30.19	10.04	**4.67**	1.24	**84.60**	28.70	7.03	7.45	65.00	**65.25**	70.50
GA 2015032	**1468**	41.44	6.83	5.53	33.59	9.18	**4.54**	1.23	**84.75**	29.90	6.53	7.08	66.00	**66.50**	70.75
Ark 0921-31ne	**1458**	41.01	**7.04**	5.42	31.59	9.90	4.42	1.22	**85.53**	29.88	**8.05**	6.90	66.75	**72.25**	69.50
UA 222 CK	**1446**	41.25	**8.08**	5.72	29.50	**11.28**	**4.63**	1.24	84.35	28.93	**7.80**	7.33	63.25	**62.50**	69.50
GA 2012141	**1427**	41.90	**7.48**	5.35	30.05	9.95	4.38	1.24	**84.95**	28.53	6.55	7.25	68.75	**69.00**	73.00
FM 958 CK	**1427**	40.48	**7.35**	5.78	32.33	**10.51**	4.37	1.25	**84.90**	**32.18**	6.15	7.10	**71.25**	**69.25**	75.25
LA14063038	**1422**	42.23	5.48	5.44	107.45	7.22	**4.55**	1.25	84.00	**32.23**	6.03	7.63	68.75	**62.50**	75.50
LA14063101	1371	**44.38**	**7.76**	5.17	29.43	9.26	**4.60**	1.23	**85.00**	29.98	6.85	7.28	63.50	**67.25**	68.00
TAM 13Q-51	1361	40.44	**7.57**	5.33	28.63	**11.04**	**4.82**	**1.28**	**85.25**	**31.58**	7.08	7.15	**74.00**	**73.00**	76.00
PD 07040	1328	38.79	**7.37**	5.78	30.47	**11.21**	**4.63**	1.23	83.85	29.20	6.43	7.53	61.50	58.75	69.50
DP 393 CK	1325	40.10	**7.23**	5.24	29.04	**10.49**	**4.65**	1.19	84.23	29.58	7.18	7.58	46.75	55.00	54.75
PD 08028	1324	38.51	6.71	5.83	33.53	**10.40**	**4.51**	1.22	84.40	30.43	6.53	7.30	60.25	**61.75**	66.75
TAM 13Q-18	1316	40.07	6.77	5.60	33.35	9.82	4.34	1.19	83.28	29.43	6.55	7.78	47.75	48.75	58.50
GA 2015073	1288	40.49	6.84	5.42	32.11	9.49	4.45	1.22	**84.60**	29.15	7.25	7.10	62.50	**64.25**	68.25
LA14063001	1266	**43.02**	**7.98**	5.74	31.02	10.12	4.35	1.23	84.20	**31.05**	6.93	7.38	64.75	**62.00**	71.25
GA 2015090	1264	42.16	**7.02**	5.56	33.43	9.54	4.44	1.23	84.40	30.08	6.98	7.30	65.25	**63.75**	71.50
Tamcot G11	1251	39.67	**8.04**	6.01	29.79	**11.74**	4.23	**1.31**	83.78	29.43	6.10	7.03	**82.25**	**66.50**	**88.50**
TAM LBB131001	1235	40.15	6.19	4.97	32.32	8.92	3.94	**1.28**	84.40	30.90	6.35	7.48	**78.50**	**69.00**	**83.25**
TAM WK-11L	1227	38.98	6.85	5.31	30.27	10.12	4.41	1.17	84.28	29.48	7.25	7.50	47.75	55.50	55.75
TAM 13S-03	1179	39.87	**7.51**	5.51	29.31	**11.21**	4.27	1.24	**85.28**	29.30	**7.65**	7.05	68.25	**71.25**	71.50
DP 493 CK	1120	**42.65**	6.69	5.10	32.57	8.62	**4.59**	1.16	82.40	28.38	5.83	**8.35**	35.25	35.75	47.25
PD 2013016	1067	41.87	**7.27**	5.26	30.56	10.00	4.30	**1.28**	**84.70**	**31.58**	5.53	7.13	**81.25**	**72.00**	**84.75**
NM 16-13P1088B	1041	38.44	**7.44**	5.74	29.72	**11.42**	4.31	1.21	84.48	**31.88**	6.83	7.18	58.75	**61.50**	65.00
TAM LBB130218	1023	38.83	6.79	5.42	31.45	**10.69**	4.05	1.21	83.40	30.53	6.35	7.68	55.00	53.00	64.75
Acala 1517-08	1002	38.74	6.84	5.33	30.47	**10.45**	**4.65**	1.21	**84.85**	**31.95**	6.43	6.85	59.50	**64.50**	64.75
NM 13R1015	992	39.69	6.46	4.85	29.97	9.66	4.45	1.17	83.63	**31.18**	6.80	7.18	46.00	50.75	56.00
PD 09046	976	35.89	5.94	5.49	33.14	**10.32**	4.09	**1.30**	83.20	30.35	5.48	7.53	**78.00**	61.25	**86.25**
Mean	1318	40.83	7.17	5.44	33.20	10.08	4.46	1.23	84.40	30.13	6.78	7.32	63.49	62.93	69.40
LSD (.05)	216	2.06	1.15	ns	ns	1.48	0.32	0.04	1.14	1.24	0.43	0.52	12.55	11.70	10.12
Entry (P>F)	<0.0001	<0.0001	0.0012	0.0531	0.4402	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	<0.0001
CV (%)	11.67	3.59	11.41	8.09	79.63	10.44	5.09	2.20	0.97	2.94	4.56	5.10	14.08	13.25	10.39
R-Square	0.72	0.69	0.45	0.46	0.28	0.52	0.56	0.70	0.50	0.69	0.87	0.46	0.67	0.55	0.69
Reps	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

[1]Values in bold are not significantly different from highest value according to LSD (0.05).

[2]QS1, QS2, and QS3 (Quality Score) — This measurement is very similar to a selection index. It adds the weighted values of selected fiber traits (length, mic, UI, strength) to provide a single measure (0–100) of desirable fiber qualities and was calculated by weighting selected fiber traits as follows:

QS1 — fiber length (0.50), mic (0.25), UI (0.15), and strength (0.10)

QS2 — fiber length (0.20), mic (0.10), UI (0.40), and strength (0.30)

QS3 — fiber length (0.45), mic (0.25), UI (0.00), and strength (0.30).

Table 13. Least square means for lint yield, yield components, and fiber quality traits in the 2017 RBTN at Tallassee, Alabama (Cooperator: Jenny Koebernick).[1,2]

Entry	Lint yield	Lint pct.	Lint index	Boll size	Seed per boll	Seed index	MIC	UHM	UI	STRN	ELO	SFC	QS1[3]	QS2[3]	QS3[3]
	lb/A	*%*	*g*	*g*	*#*	*g*	*mic*	*in*	*%*	*g/tex*	*%*	*%*			
LA14063083	**957**	44.00	**7.38**	4.58	27.29	9.28	**4.27**	1.20	**84.88**	**36.08**	**7.30**	6.88	**72.50**	**71.75**	**78.50**
Ark 0908-60	**891**	43.61	**7.13**	4.45	27.24	9.09	**4.75**	1.20	**84.70**	34.15	6.65	7.08	60.25	64.00	64.75
Ark 0911-13	**873**	42.46	**6.95**	**4.79**	29.48	9.33	**4.29**	1.22	**85.30**	32.93	**7.20**	7.18	**80.50**	**76.25**	**82.75**
Ark 0912-18	**781**	42.27	**7.49**	**4.97**	27.66	**10.14**	**4.52**	1.21	**85.65**	34.65	7.03	6.63	**72.75**	**76.25**	75.00
LA14063101	**767**	**46.31**	**6.93**	4.19	27.91	7.94	**4.50**	1.16	83.88	34.05	6.35	7.08	53.75	56.00	62.25
GA 2015073	**735**	41.97	6.32	4.13	27.46	8.62	**4.24**	1.15	**85.08**	35.28	6.13	6.90	60.25	**67.75**	66.00
TAM 13Q-18	**731**	40.23	**7.29**	**5.95**	32.61	**10.72**	3.89	**1.29**	84.40	34.45	5.08	6.58	**86.00**	**73.25**	**90.75**
UA 222 CK	**730**	42.54	**7.05**	4.51	28.27	9.41	4.18	1.18	**84.95**	33.98	**7.70**	6.88	67.25	**68.50**	71.75
TAM 13S-03	**730**	39.72	6.46	3.78	23.26	**9.68**	3.98	1.18	**84.48**	32.98	**7.38**	6.98	65.50	64.25	71.25
LA14063046	716	41.65	**6.75**	4.31	26.72	9.36	4.11	1.17	83.95	35.58	6.65	7.45	58.50	59.25	67.50
AU 90098	701	43.41	**6.95**	3.73	23.24	8.96	4.14	1.16	**84.48**	33.70	5.63	7.13	55.75	60.75	62.25
Ark 0921-27ne	697	40.03	5.72	4.54	31.80	8.46	4.05	1.17	84.05	35.38	6.45	7.18	60.75	61.00	69.25
GA 2012141	673	42.65	**7.23**	**5.29**	31.16	**9.65**	**4.45**	1.20	**85.10**	35.60	5.83	7.00	**72.75**	**73.50**	**77.50**
DP 493 CK	665	44.02	6.43	3.83	26.31	8.04	**4.89**	1.09	83.14	33.42	5.74	**7.53**	24.80	40.33	36.26
GA 2015032	645	41.52	6.60	4.63	29.11	9.18	**4.81**	1.18	**84.73**	35.55	6.10	6.88	57.25	64.25	63.50
PD 08028	645	39.42	5.68	4.16	28.86	8.65	3.97	1.18	83.95	35.43	6.03	7.15	65.25	62.00	73.75
LA14063038	638	41.62	5.94	4.17	29.22	8.26	3.94	1.20	84.08	**37.65**	5.73	7.23	66.25	65.25	75.25
Ark 0921-31ne	620	41.02	6.31	4.18	27.07	8.98	**4.41**	1.17	**85.40**	35.15	**7.60**	6.50	52.75	**67.00**	56.75
TAM LBB131001	611	41.53	6.25	**4.98**	33.60	8.70	4.20	1.18	84.00	34.35	6.20	7.23	65.75	62.50	73.75
NM 13R1015	606	40.08	6.24	3.66	23.48	9.28	4.21	1.18	84.18	35.55	6.18	7.03	63.75	63.00	71.50
FM 958 CK	589	40.61	**7.14**	**5.34**	30.60	**10.33**	**4.58**	1.15	**84.45**	**36.20**	5.53	7.08	54.50	62.25	63.00
PD 07040	582	38.81	6.10	4.38	27.85	9.56	4.11	1.18	**84.70**	34.00	6.20	7.00	64.75	66.50	70.50
DP 393 CK	582	40.05	6.03	4.46	29.75	8.93	4.22	1.12	**84.88**	34.60	**7.18**	7.08	51.50	62.25	58.25
GA 2015090	557	41.11	6.15	4.67	30.81	8.69	4.16	1.19	83.90	**36.83**	6.50	7.13	66.00	63.50	75.25
LA14063001	551	42.45	6.34	3.90	26.06	8.41	3.88	1.19	**84.73**	35.13	6.23	7.08	60.50	65.50	66.25
PD 2013016	550	40.15	**6.75**	**5.00**	29.95	**9.96**	**4.43**	1.24	**85.08**	**37.73**	5.05	6.78	**85.50**	**80.00**	**90.75**
Tamcot G11	539	40.81	6.11	4.18	27.98	8.68	3.83	1.13	82.60	33.20	5.55	**8.03**	32.25	38.50	45.25
TAM WK-11L	513	38.24	5.29	3.65	26.35	8.45	3.56	1.13	84.33	32.45	6.50	7.35	36.75	52.00	44.25
Acala 1517-08	504	38.28	5.70	4.13	27.78	9.07	4.12	1.13	83.53	34.03	5.73	7.20	43.00	49.25	53.25
TAM LBB130218	498	39.40	6.15	**4.80**	31.00	9.36	3.80	1.15	83.43	35.03	5.73	**7.70**	47.75	50.75	58.25
NM 16-13P1088B	471	38.23	6.18	**5.10**	31.55	**9.89**	4.21	1.11	83.70	34.73	6.15	6.95	44.75	51.50	55.00
PD 09046	422	36.76	5.59	4.43	29.26	9.53	3.97	1.21	**84.55**	**36.15**	5.38	7.08	**76.25**	**71.25**	**82.50**
TAM 13Q-51	322	37.46	5.27	3.40	24.06	8.71	3.51	1.21	**84.83**	**37.03**	5.93	7.05	66.25	**70.00**	72.75
Mean	639	40.98	6.42	4.43	28.33	9.13	4.19	1.18	84.39	34.94	6.26	7.09	60.37	63.03	67.44
LSD (.05)	233	1.98	0.88	1.22	ns	1.10	0.66	0.04	1.23	2.11	0.59	0.55	15.97	13.45	14.16
Entry (P>F)	0.0001	<0.0001	<0.0001	0.0307	0.5542	<0.0001	0.0155	<0.0001	0.0009	<0.0001	<0.0001	0.0011	<0.0001	<0.0001	<0.0001
CV (%)	25.84	3.43	0.97	19.40	18.89	8.55	11.22	2.33	1.03	4.27	6.65	5.54	18.66	15.07	14.83
R-Square	0.56	0.75	0.57	0.38	0.25	0.51	0.40	0.74	0.46	0.51	0.80	0.48	0.67	0.58	0.67
Reps	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

[1]Values in bold are not significantly different from highest value according to LSD (0.05).

[2]Caution, due to excessive plot-to-plot variability in harvest weights caused by late-season variables (root-knot nematode and target spot), which made plants highly susceptible to damage from hurricane-related weather conditions, results for this trial were excluded from the analysis over locations and should be viewed with caution. Although results for yield should be viewed with caution, variability (CV%) in yield components and fiber quality traits suggests these measurements may provide valid means separation for purposes of comparison.

[3]QS1, QS2, and QS3 (Quality Score) — This measurement is very similar to a selection index. It adds the weighted values of selected fiber traits (length, mic, UI, strength) to provide a single measure (0–100) of desirable fiber qualities and was calculated by weighting selected fiber traits as follows:

QS1 — fiber length (0.50), mic (0.25), UI (0.15), and strength (0.10)

QS2 — fiber length (0.20), mic (0.10), UI (0.40), and strength (0.30)

QS3 — fiber length (0.45), mic (0.25), UI (0.00), and strength (0.30).

Table 14. Least square means for lint yield, yield components, and fiber quality traits in the 2017 RBTN at Tifton, Georgia (Cooperator: Peng Chee).[1,2]

Entry	Lint yield	Lint pct.	Lint index	Boll size	Seed per boll	Seed index	MIC	UHM	UI	STRN	ELO	SFC	QS1[3]	QS2[3]	QS3[3]
	lb/A	*%*	*g*	*g*	*#*	*g*	*mic*	*in*	*%*	*g/tex*	*%*	*%*			
LA14063001	**898**	**41.99**	6.53	5.12	**32.90**	8.98	4.70	1.13	83.98	31.18	6.85	7.20	60.25	61.00	67.00
LA14063083	**792**	**42.21**	**6.95**	4.90	29.81	9.46	4.69	1.14	83.78	33.15	**7.23**	7.65	61.00	59.75	67.75
Ark 0908-60	**782**	**41.75**	6.25	5.09	**34.13**	8.65	**4.94**	1.16	**84.60**	30.88	6.55	7.35	64.50	**67.25**	69.00
GA 2015073	**757**	**41.44**	6.43	4.92	31.79	9.03	**4.85**	1.11	84.08	32.33	6.28	6.75	52.75	58.75	59.75
GA 2012141	**746**	**41.08**	**7.35**	**5.16**	28.89	10.47	**4.91**	1.16	84.05	31.95	6.10	7.65	65.00	63.50	70.50
DP 393 CK	**741**	39.71	6.06	4.70	30.79	9.12	**4.83**	1.11	84.19	31.53	7.12	7.55	52.00	59.50	58.75
GA 2015032	**739**	39.83	5.76	4.84	**33.49**	8.61	4.81	1.15	**84.75**	33.00	6.13	7.08	66.00	**68.50**	69.75
Tamcot G11	**731**	38.77	**7.36**	**5.70**	30.06	**11.55**	4.42	**1.26**	83.88	32.33	5.43	7.43	**87.25**	**71.25**	**91.75**
TAM LBB130218	**729**	35.29	5.69	5.07	31.52	10.35	4.25	1.14	83.93	32.13	5.53	7.45	66.50	63.50	73.25
TAM LBB131001	**724**	39.82	5.79	4.50	31.02	8.66	4.29	1.13	83.20	31.40	6.25	**7.98**	60.50	55.75	69.75
TAM 13Q-18	**721**	37.98	6.11	5.08	31.58	9.91	4.67	1.10	81.98	30.33	6.30	**8.50**	45.50	42.50	58.50
PD 07040	**709**	36.69	5.90	**5.25**	**32.65**	10.10	4.78	1.12	83.20	31.73	6.30	7.53	54.75	53.75	64.25
Ark 0912-18	**693**	39.09	6.34	**5.27**	**32.66**	9.78	4.79	1.13	**85.18**	32.48	**7.68**	7.03	57.75	**68.75**	61.00
FM 958 CK	**682**	38.27	6.35	**5.39**	**32.43**	10.11	4.72	1.12	84.18	32.83	5.58	7.43	57.50	61.75	64.25
LA14063038	**671**	40.14	5.98	4.84	**32.50**	8.83	4.71	1.16	84.23	33.35	5.95	7.50	69.75	67.00	75.00
TAM WK-11L	**666**	36.96	5.82	**5.18**	**32.93**	9.78	4.58	1.11	**85.05**	31.18	6.75	6.95	56.00	66.75	60.25
GA 2015090	**658**	39.90	5.78	4.63	**31.96**	8.64	4.71	1.14	84.05	**33.63**	6.48	7.30	61.25	63.00	67.75
NM 13R1015	**655**	38.35	5.94	4.23	27.18	9.48	**4.86**	1.11	82.90	31.83	6.25	7.48	47.50	48.50	58.00
LA14063046	647	**40.85**	6.52	4.81	30.16	9.37	4.48	1.16	83.83	33.28	6.75	7.75	68.00	63.00	74.25
TAM 13Q-51	646	37.34	6.08	4.99	30.62	10.11	**5.19**	1.17	**85.35**	**35.40**	**7.48**	6.58	66.50	**75.50**	69.75
PD 09046	622	35.73	5.36	4.60	30.75	9.60	4.61	1.17	**84.43**	**33.88**	5.45	7.53	75.00	**71.00**	79.50
Acala 1517-08	605	35.45	5.66	4.54	28.24	10.23	4.37	1.12	83.73	**34.20**	6.40	7.28	53.00	58.50	62.25
TAM 13S-03	597	36.46	5.74	4.59	29.22	9.92	4.30	1.11	84.20	30.80	**7.25**	7.30	58.00	61.75	64.50
Ark 0921-31ne	592	37.39	6.00	4.81	29.98	9.97	4.61	1.13	**85.15**	31.25	**7.55**	7.00	63.75	**70.75**	66.75
PD 08028	578	35.53	5.53	**5.48**	**35.34**	9.94	4.69	1.13	**84.68**	33.53	6.45	7.08	59.75	66.00	64.75
Ark 0921-27ne	575	37.61	5.88	4.64	29.71	9.65	4.77	1.14	**85.28**	32.85	6.30	6.98	64.25	**71.50**	66.50
AU 90098	574	40.49	6.10	4.55	30.33	8.86	**4.83**	1.11	83.03	31.55	5.65	7.85	48.75	49.75	58.75
DP 493 CK	547	**42.27**	5.85	4.55	**32.98**	7.90	**5.20**	1.05	82.80	29.33	5.75	**8.13**	24.50	38.50	37.00
PD 2013016	544	37.58	5.74	4.93	**32.29**	9.43	4.68	1.16	**84.85**	**34.58**	5.45	7.35	72.00	**73.25**	76.00
LA14063101	515	**42.30**	6.34	4.61	30.75	8.60	4.81	1.12	**84.50**	33.05	6.35	7.38	55.75	63.25	61.25
Ark 0911-13	484	40.25	6.73	4.76	28.56	9.60	4.46	1.21	**84.83**	31.20	**7.33**	7.40	**87.00**	**77.75**	**88.75**
NM 16-13P1088B	484	34.89	5.87	4.87	29.04	**10.92**	4.30	1.11	83.63	**35.18**	6.50	7.08	56.25	59.25	66.00
UA 222 CK	266	39.38	6.11	4.30	27.78	9.31	**4.85**	1.11	83.63	31.43	**7.47**	7.68	51.25	55.00	59.75
Mean	648	38.87	6.12	4.88	31.03	9.54	4.68	1.13	84.09	32.38	6.45	7.40	60.29	62.29	66.73
LSD (.05)	244	1.64	0.61	0.54	3.48	0.84	0.36	0.03	1.08	1.78	0.46	0.52	11.72	10.52	10.41
Entry (P>F)	0.0154	<0.0001	<0.0001	<0.0001	0.0007	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
CV (%)	26.84	3.00	7.08	7.84	8.00	6.24	5.51	2.05	0.92	3.91	5.13	5.04	13.86	12.03	11.12
R-Square	0.62	0.84	0.68	0.62	0.48	0.70	0.66	0.78	0.65	0.63	0.84	0.68	0.73	0.70	0.70
Reps	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

[1]Values in bold are not significantly different from highest value according to LSD (0.05).

[2]Caution, due to excessive plot-to-plot variability in harvest weights caused by hurricane-related weather conditions, results for this trial were excluded from the analysis over locations and should be viewed with caution. Although results for yield should be viewed with caution, variability (CV%) in yield components and fiber quality traits suggests these measurements may provide valid means separation for purposes of comparison.

[3]QS1, QS2, and QS3 (Quality Score) — This measurement is very similar to a selection index. It adds the weighted values of selected fiber traits (length, mic, UI, strength) to provide a single measure (0–100) of desirable fiber qualities and was calculated by weighting selected fiber traits as follows:

QS1 — fiber length (0.50), mic (0.25), UI (0.15), and strength (0.10)

QS2 — fiber length (0.20), mic (0.10), UI (0.40), and strength (0.30)

QS3 — fiber length (0.45), mic (0.25), UI (0.00), and strength (0.30).

Table 15. Least square means for lint yield, yield components, and fiber quality traits in the 2017 RBTN at Westside, California (Cooperator: Bob Hutmacher).[1]

Entry	Lint yield	Lint pct.	Lint index	Boll size	Seed per boll	Seed index	MIC	UHM	UI	STRN	ELO	SFC	QS1[2]	QS2[2]	QS3[2]
	lb/A	*%*	*g*	*g*	*#*	*g*	*mic*	*in*	*%*	*g/tex*	*%*	*%*			
Ark 0912-18	**2249**	**43.60**	**8.08**	**6.22**	**33.72**	10.30	**5.06**	1.23	**85.63**	**34.40**	**6.88**	7.23	**70.50**	**80.50**	70.00
Ark 0911-13	**2101**	42.46	7.81	**6.32**	**34.39**	10.45	**5.04**	1.24	83.55	32.25	**6.55**	**7.80**	66.50	64.00	71.75
LA14063101	**2074**	**45.11**	**9.06**	5.56	27.68	10.80	**5.41**	1.17	**84.00**	**33.73**	5.75	**8.08**	42.75	58.75	49.50
LA14063083	2029	42.76	7.32	5.59	**32.64**	9.60	4.80	1.20	**84.25**	32.88	**6.65**	7.68	62.25	67.50	66.75
DP 393 CK	2027	42.76	7.71	5.94	**33.15**	10.20	**5.19**	1.16	**84.48**	32.58	**6.65**	7.43	44.50	61.50	49.00
LA14063001	2020	**44.33**	**8.43**	5.88	30.94	10.30	4.75	1.18	83.60	31.78	6.13	**7.88**	56.50	60.50	63.25
Ark 0921-31ne	1976	41.50	7.35	5.77	32.56	10.15	4.84	1.18	83.68	31.35	**6.73**	**7.78**	55.00	60.25	61.50
GA 2015073	1950	**43.82**	**8.29**	5.83	30.81	10.40	4.83	1.18	82.68	30.53	5.33	**7.93**	51.25	51.75	61.00
Tamcot G11	1946	41.23	7.18	**6.59**	**37.87**	10.10	4.48	**1.30**	83.10	31.65	4.85	7.73	**86.50**	**68.75**	**91.50**
PD 07040	1937	39.43	6.39	**6.08**	**37.56**	9.70	4.71	1.17	83.23	30.60	5.98	**8.33**	52.00	55.75	60.25
UA 222 CK	1889	**44.07**	**8.54**	**6.02**	31.37	10.65	**5.12**	1.20	83.60	31.45	**6.82**	**7.90**	56.25	60.25	62.00
LA14063046	1885	42.42	7.99	5.63	30.03	10.60	4.39	1.24	83.70	**33.63**	**6.60**	7.50	**76.00**	**69.25**	**81.00**
TAM 13Q-51	1873	39.12	6.41	5.19	31.83	9.75	4.46	**1.31**	**84.95**	**35.73**	6.18	6.85	**91.00**	**86.25**	**93.00**
GA 2015090	1845	42.28	7.66	5.04	27.93	10.25	4.92	1.17	82.95	**34.08**	5.78	**8.08**	50.00	54.00	59.50
LA14063038	1809	42.62	7.67	5.73	31.89	10.25	4.82	**1.25**	82.13	32.90	4.60	**8.28**	68.50	57.75	**77.00**
TAM 13S-03	1809	41.16	7.17	5.21	30.35	10.05	4.72	1.19	**84.53**	32.73	**6.80**	7.48	61.75	68.00	65.50
FM 958 CK	1793	42.02	7.75	**6.28**	**34.03**	10.55	**5.07**	1.15	82.85	31.25	4.93	**8.23**	40.25	49.25	50.25
Ark 0908-60	1790	**44.53**	**8.54**	5.96	31.22	10.50	**5.24**	1.21	83.08	32.40	6.03	**8.33**	56.25	57.75	63.25
GA 2015032	1779	42.58	**8.07**	5.83	31.69	10.60	**5.14**	1.23	82.73	32.25	5.10	**8.00**	60.25	55.50	68.25
PD 08028	1760	38.61	6.60	**6.38**	**37.46**	10.30	4.69	1.21	**84.13**	**35.35**	5.48	7.43	66.25	**70.00**	72.25
Ark 0921-27ne	1741	41.27	7.31	5.70	32.22	10.25	4.89	1.18	83.48	31.78	5.88	**7.88**	53.00	58.00	59.75
TAM WK-11L	1735	41.41	7.15	**6.03**	**34.93**	10.00	4.95	1.15	83.50	30.28	6.23	7.65	42.75	53.75	49.50
PD 2013016	1733	40.81	7.01	**6.09**	**35.63**	10.00	4.97	1.23	83.48	**34.55**	4.65	**7.98**	64.75	64.25	71.75
GA 2012141	1719	43.05	7.99	5.38	29.07	10.45	4.94	1.20	**84.70**	31.63	5.65	7.75	62.50	**70.25**	64.75
AU 90098	1716	**44.00**	7.99	5.70	31.62	10.00	4.87	1.19	83.10	30.33	4.83	**8.35**	54.50	56.00	62.25
TAM 13Q-18	1682	40.57	6.53	5.94	**36.95**	9.45	4.65	1.15	83.45	32.95	5.90	**8.15**	49.25	56.50	57.50
NM 13R1015	1551	38.99	6.79	5.59	32.27	10.45	**5.06**	1.17	**84.60**	**35.15**	5.10	7.18	51.75	67.75	57.50
Acala 1517-08	1513	39.45	6.66	5.94	**35.47**	10.00	4.65	1.20	83.83	**34.38**	5.73	7.58	63.50	65.75	69.50
DP 493 CK	1509	**44.79**	**8.40**	5.26	28.37	10.10	**5.19**	1.13	82.63	30.25	4.95	**8.38**	33.75	44.25	44.50
TAM LBB131001	1440	41.18	7.42	5.59	31.91	10.40	4.41	1.24	83.20	**34.23**	5.15	**7.90**	**74.50**	66.00	**81.75**
TAM LBB130218	1307	38.18	6.31	5.76	**35.22**	10.10	4.82	1.14	81.98	31.18	4.65	**8.60**	42.75	43.75	54.00
PD 09046	1246	35.87	6.10	5.71	**33.65**	10.75	4.56	**1.25**	83.43	**33.55**	4.68	**8.10**	**78.50**	68.00	**84.50**
NM 16-13P1088B	1192	38.71	7.01	**6.21**	**34.37**	10.90	4.68	1.18	**84.10**	**34.65**	6.03	7.60	57.75	66.50	64.75
Mean	1776	41.66	7.48	5.82	32.75	10.25	4.86	1.20	83.58	32.68	5.73	7.85	58.89	61.76	65.41
LSD (.05)	213	1.85	1.01	0.62	5.23	ns	0.39	0.07	1.66	2.37	0.50	0.84	21.83	18.18	18.47
Entry (P>F)	<0.0001	<0.0001	<0.0001	0.0001	0.0026	0.8748	<0.0001	<0.0001	0.0137	<0.0001	<0.0001	0.0266	<0.0001	0.0067	<0.0001
CV (%)	8.54	3.16	9.62	7.63	11.37	7.92	5.76	3.93	1.42	5.17	6.22	7.65	26.41	20.97	20.12
R-Square	0.80	0.79	0.60	0.50	0.42	0.32	0.53	0.55	0.43	0.55	0.85	0.41	0.52	0.45	0.54
Reps	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

[1]Values in bold are not significantly different from highest value according to LSD (0.05).

[2]QS1, QS2, and QS3 (Quality Score) — This measurement is very similar to a selection index. It adds the weighted values of selected fiber traits (length, mic, UI, strength) to provide a single measure (0–100) of desirable fiber qualities and was calculated by weighting selected fiber traits as follows:

QS1 — fiber length (0.50), mic (0.25), UI (0.15), and strength (0.10)

QS2 — fiber length (0.20), mic (0.10), UI (0.40), and strength (0.30)

QS3 — fiber length (0.45), mic (0.25), UI (0.00), and strength (0.30).

Table 16. 2017 evaluation of RBTN entries in a field infested by Race 4 Fusarium (FOV-4) in Tulare County near Tipton, California, conducted by University of California and USDA-ARS (Hutmacher, Ulloa et al.).[1]

Entry	Foliar disease severity index[2]		Vascular root staining[3]		Main stem nodes		Plant height		Plant survival[4]	
		σ		0–5σ	no.	σ	cm	σ		σ %
LA 1406 3046	0.20	0.20	1.27	0.76	28.6	2.8	15.0	1.2	97.9	0.1
LA 1406 3101	0.53	0.61	1.33	0.31	29.2	1.6	15.9	0.4	93.4	4.6
LA 1406 3038	0.20	0.20	1.13	0.46	25.7	1.5	15.6	0.4	88.9	8.5
LA 1406 3001	0.87	0.81	1.60	1.06	28.5	1.5	15.0	0.5	93.7	5.3
LA 1406 3083	0.07	0.12	1.13	1.01	28.7	0.6	15.6	0.2	90.6	9.9
TAM 13S-03	0.60	0.60	2.07	0.12	25.3	1.2	15.6	1.3	86.1	0.7
TAM WK-11L	0.60	0.60	2.20	0.87	26.1	3.0	15.1	0.6	88.4	2.6
TAM 13Q-51	0.60	0.20	2.07	0.42	24.1	1.5	15.3	0.5	90.5	3.6
Tamcot G-11	0.07	0.12	1.67	0.81	23.9	3.7	14.1	0.8	88.0	3.8
TAM 13Q-18	0.53	0.42	1.67	0.42	27.7	1.7	15.8	0.2	90.5	6.9
PD 201 3016	0.00	0.00	1.40	1.00	28.3	0.8	15.1	1.7	90.4	8.4
PD 07040	0.20	0.20	1.20	1.11	28.7	3.6	14.8	1.0	93.6	1.3
PD 08028	0.40	0.20	2.27	0.70	26.2	0.7	14.7	0.5	86.5	5.5
PD 09084	0.13	0.23	1.80	0.53	25.7	1.5	14.6	0.4	93.5	4.1
PD 09046	0.15	0.30	1.50	0.58	25.7	1.7	15.1	0.8	94.5	5.9
Ark 0921-27 ne	0.47	0.50	1.33	0.64	33.3	1.6	16.1	0.4	95.3	2.3
Ark 0912-18	0.20	0.35	1.07	1.01	27.8	1.8	14.9	1.0	90.4	4.8
Ark 0921-31 ne	0.27	0.31	1.27	1.10	29.5	3.3	14.3	0.6	96.0	2.0
Ark 0911-13	0.27	0.46	1.13	0.90	27.8	1.0	15.7	1.3	92.4	6.5
Ark 0908-60	0.27	0.46	1.53	0.42	27.4	1.6	14.8	0.5	94.6	5.4
NM 16-13P 1088B	0.27	0.31	1.60	1.11	27.9	1.8	14.0	0.6	83.4	0.9
NM 13R1015	0.13	0.23	0.67	0.42	34.0	1.0	15.1	0.3	94.6	6.6
Acala 1517-08	0.00	0.00	0.87	0.42	29.4	2.6	14.2	1.6	93.0	1.0
TAM LBB 130218	0.20	0.20	1.20	0.40	23.9	2.8	14.3	1.5	94.6	5.0
TAM LBB 131001	0.47	0.42	1.40	0.87	28.9	1.6	14.9	0.3	98.3	1.7
AU 90098	1.33	0.70	2.33	0.50	26.7	0.6	14.5	0.6	92.4	1.7
GA 2012141	0.27	0.31	0.93	0.50	28.5	2.6	16.4	1.1	91.4	7.3
GA 2015032	0.00	0.00	0.80	0.35	25.8	1.8	13.9	0.9	83.9	10.2
GA 2015073	0.30	0.42	1.60	0.57	27.7	1.6	15.3	0.4	98.0	2.9
GA 2015090	0.60	0.53	1.40	1.00	28.7	1.2	15.1	0.8	92.9	6.7
DP 393 CK	0.40	0.35	1.47	1.29	26.7	1.7	14.0	1.6	100.0	0.0
DP 493 CK	0.40	0.31	1.47	0.64	28.7	0.5	15.5	0.4	89.7	1.5
FM 958 CK	0.13	0.23	1.20	0.92	24.4	2.2	15.0	0.5	96.8	4.1
UA 222 CK	0.67	0.50	1.40	0.53	24.7	2.1	15.3	0.1	89.1	4.8
Phy 725 RF[5]	0.47	0.31	1.87	0.12	28.3	4.0	15.9	1.1	88.2	4.7
Phy 764 RF[5]	0.07	0.12	0.67	0.50	27.7	4.1	14.8	0.5	89.5	4.0
DP-744[6]	3.44	0.39	3.71	0.64	6.9	1.7	6.1	2.4	17.6	11.2
DP-340[6]	2.76	0.57	2.43	0.51	15.9	3.8	12.3	2.7	57.9	10.4
Phy-802 RF[6]	0.00	0.00	0.73	0.23	22.9	1.4	13.7	0.8	87.2	1.0
DP-358 RF[6]	0.00	0.00	0.27	0.23	24.3	0.9	14.2	0.9	97.3	2.5

[1]Averages and standard deviations (σ) are shown for disease severity index, root staining, number of mainstem nodes, plant height, and plant survival. The Tulare County location is a naturally infested field site where presence of race 4 of the Fusarium pathogen has been confirmed in pathology studies. Evaluations were conducted approximately 7 to 9 weeks after emergence (multiple dates in July and August). Destructive measurements were collected from five plants within three replications. A moderate development of FOV-4 symptoms was observed in 2017, the second year of evaluations at this test site. Observed symptoms were more severe compared to 2016. All but the most susceptible entries (susc. checks) experienced high survival rates (>80%) in 2017. In terms of screening for resistance to FOV-4, our suggestion would be that genotypes with a root stain index <1.0 in 2017 at this test site warrant further evaluation as a potential source of resistance to FOV-4.

[2]Foliar Disease Severity Index scale: 0 = no symptoms, 1 = epinasty and slight dwarfing, 2 = 1–30% of leaves chlorotic, 3 = 31–80% of leaves chlorotic and severe stunting, 4 = 81–100% of leaves chlorotic, and 5 = plant death.

[3]Vascular Root Staining Scale: 0 = no vascular root staining evident, 1 = light vascular root staining evident as spotty areas, 2 = more continuous than 1 but light-colored staining covering an area between one quarter and one half of the stem cross-section, 3 = moderate brown/black staining evident in a band encircling most of the stem cross section, 4 = brown/black staining evident across most vascular tissue in stem cross section, and 5 = plant severely damaged or plant death with staining evident throughout a cross-section of root tissue (Ulloa et al. 2006, 2009a).

[4]The percentage of plant survival (PS) was calculated by dividing the total number of surviving plants on sample date by the initial plant count after plant establishment, and multiplying by 100.

[5]Check cultivars moderately susceptible to FOV-4

[6]Pima check cultivars: DP-744 (highly susceptible), DP-340 (moderately susceptible), and Phy-802 RF and DP-358 RF (moderate to higher resistance)

Table 17. 2017 evaluation of RBTN entries in a field infested by Race 4 Fusarium (FOV-4) in Kern County, California, conducted by University of California and USDA-ARS (Hutmacher, Ulloa et al.).[1]

Entry	Foliar disease severity index[2]		Vascular root staining[3]		Main stem nodes		Plant height		Plant survival[4]	
		σ		0–5σ	no.	σ	cm	σ		σ %
LA 1406 3046	0.00	0.00	1.00	0.71	20.4	3.0	44.2	2.3	91.8	3.8
LA 1406 3101	1.40	0.89	2.20	1.30	21.6	1.1	51.0	5.8	93.8	5.3
LA 1406 3038	1.20	0.45	2.00	1.22	23.0	0.7	48.6	3.4	92.6	2.8
LA 1406 3001	0.20	0.45	1.60	1.52	16.2	1.9	32.4	3.4	93.6	9.1
LA 1406 3083	0.20	0.45	2.00	0.71	22.4	0.9	52.2	4.0	90.7	4.6
TAM 13S-03	1.20	0.84	2.80	0.45	21.6	4.0	41.8	3.8	90.3	2.5
TAM WK-11L	1.00	1.00	3.00	0.50	20.4	3.0	35.6	3.6	90.9	10.1
TAM 13Q-51	0.00	0.00	1.00	0.71	21.4	1.1	33.4	2.1	84.5	9.8
Tamcot G-11	0.40	0.55	1.80	1.10	21.6	0.9	48.2	2.1	81.5	2.6
TAM 13Q-18	0.40	0.55	2.60	0.89	24.8	2.9	49.2	5.4	76.9	3.3
PD 201 3016	0.00	0.00	1.80	1.10	17.2	1.6	37.2	3.0	90.9	12.9
PD 07040	0.00	0.00	1.00	0.71	20.0	2.0	41.2	2.2	94.6	3.8
PD 08028	0.00	0.00	2.00	0.71	21.6	1.1	50.8	1.3	93.2	5.6
PD 09084	0.60	0.55	2.60	0.55	23.8	2.8	44.4	4.2	88.5	5.4
PD 09046	0.60	0.55	2.66	0.89	21.2	3.0	46.6	6.3	95.0	3.0
Ark 0921-27 ne	0.00	0.00	1.60	1.14	21.4	3.0	38.6	7.1	85.4	5.6
Ark 0912-18	0.60	0.89	1.60	1.52	21.8	1.8	34.6	2.7	86.1	5.8
Ark 0921-31 ne	0.00	0.00	2.60	0.89	17.4	1.5	36.0	2.5	86.8	1.5
Ark 0911-13	0.80	1.10	2.00	1.41	21.6	4.2	48.2	7.4	88.7	8.1
Ark 0908-60	1.00	1.00	1.40	0.89	20.8	2.2	34.0	5.2	91.8	1.9
NM 16-13P 1088B	0.60	0.55	3.00	0.77	22.0	2.7	51.2	5.2	81.6	12.6
NM 13R1015	0.00	0.00	0.60	0.89	21.0	1.6	57.2	6.8	94.7	4.5
Acala 1517-08	0.00	0.00	1.80	1.30	19.5	0.9	37.6	2.1	88.8	8.6
TAM LBB 130218	0.40	0.55	1.80	0.45	21.4	1.7	44.2	1.3	84.0	0.5
TAM LBB 131001	0.20	0.45	2.00	0.71	21.0	2.4	47.0	3.8	90.2	3.5
AU 90098	0.60	0.89	2.00	0.71	22.6	2.7	51.4	4.8	94.0	5.1
GA 2012141	0.00	0.00	1.40	0.89	23.0	1.2	47.6	5.6	90.8	1.2
GA 2015032	0.00	0.00	1.80	1.30	21.8	2.6	51.2	3.3	92.3	10.9
GA 2015073	0.20	0.45	1.20	1.10	20.2	3.0	46.4	3.8	95.0	7.1
GA 2015090	0.40	0.55	2.20	1.30	23.4	2.5	55.0	5.9	86.9	1.6
DP 393 CK	0.00	0.00	1.80	1.10	19.2	3.4	47.0	6.7	87.6	8.1
DP 493 CK	0.00	0.00	1.40	1.52	20.6	3.2	38.0	6.0	82.9	6.4
FM 958 CK	0.20	0.45	2.20	0.45	21.0	1.0	33.8	1.5	92.5	10.6
UA 222 CK	0.20	0.45	1.00	0.00	22.8	0.8	43.2	2.3	90.6	6.5
Phy 725 RF[5]	0.60	0.89	2.80	0.45	21.2	1.5	43.0	4.1	84.1	1.7
Phy 764 RF[5]	0.00	0.00	1.60	0.55	20.2	1.6	45.5	3.9	95.4	2.9
DP-744[6]	3.79	0.90	4.10	0.64	6.7	5.1	9.5	7.0	19.0	6.7
DP-340[6]	1.74	1.59	2.67	0.71	14.6	4.8	16.2	9.8	55.7	15.4
Phy-802 RF[6]	0.20	0.45	0.80	0.59	22.3	1.2	39.9	10.6	94.1	5.3
DP-358 RF[6]	0.40	0.55	1.38	0.64	24.8	2.9	49.4	2.1	91.0	0.7

[1]Averages and standard deviations (σ) are shown for disease severity index, root staining, number of mainstem nodes, plant height, and plant survival. The Kern County location is a naturally infested field site where presence of race 4 of the Fusarium pathogen has been confirmed in pathology studies. Evaluations were conducted approximately 7 to 9 weeks after emergence (multiple dates in July and August). Destructive measurements were collected from five plants within three replications. Moderate to moderately severe development of FOV-4 symptoms were observed in 2017, the second year of evaluations at this test site. Observed symptoms were more severe compared to 2016. All but the most susceptible entries (susc. checks) experienced high survival rates (>80%) in 2017. In terms of screening for resistance to FOV-4, our suggestion would be that genotypes with a root stain index <1.2 in 2017 at this test site warrant further evaluation as a potential source of resistance to FOV-4.

[2]Foliar Disease Severity Index scale: 0 = no symptoms, 1 = epinasty and slight dwarfing, 2 = 1–30% of leaves chlorotic, 3 = 31–80% of leaves chlorotic and severe stunting, 4 = 81–100% of leaves chlorotic, and 5 = plant death.

[3]Vascular Root Staining Scale: 0 = no vascular root staining evident, 1 = light vascular root staining evident as spotty areas, 2 = more continuous than 1 but light-colored staining covering an area between one quarter and one half of the stem cross-section, 3 = moderate brown/black staining evident in a band encircling most of the stem cross section, 4 = brown/black staining evident across most vascular tissue in stem cross section, and 5 = plant severely damaged or plant death with staining evident throughout a cross-section of root tissue (Ulloa et al. 2006, 2009a).

[4]The percentage of plant survival (PS) was calculated by dividing the total number of surviving plants on sample date by the initial plant count after plant establishment, and multiplying by 100.

[5]Check cultivars moderately susceptible to FOV-4

[6]Pima check cultivars: DP-744 (highly susceptible), DP-340 (moderately susceptible), and Phy-802 RF and DP-358 RF (moderate to higher resistance)

Table 18. Plant height, open bolls, seed per acre, fibers per seed, fiber density, and bacterial blight ratings for entries in the 2017 RBTN at Keiser, Arkansas (Cooperator: Fred Bourland).[1]

Entry	Plant height		Open bolls		Seed/ acre		Fibers/ seed[2]		Fiber density[3]		Bacterial blight[4]	Bacterial blight[4]
	cm		r	%	mil.		r no.		no.		%sus	class
LA14063046	126	20	48	25	4.618	6	14429	18	135	12	18	res
LA14063101	122	25	50	11	4.309	14	14578	14	143		573	sus
LA14063038	123	23	46	29	4.510		13009	32	124	29		4res
LA14063001	122	24	49	19	4.493	10	15071		8142		645	sus
LA14063083	127	18	49	19	5.264		15610		3150		3	8res
TAM 13S-03	121	27	55		3933	20	14985		9136	11	94	sus
TAM WK-11L	119	29	50	11	4.803		14134	22	129	25		0res
TAM 13Q-51	118	30	53		4650	12	12888	33	117	32		3res
Tamcot G11	131	16	47	28	2.501	32	16172		1134	15	42	sus
TAM 13Q-18	134	12	49	19	3.214	27	15405		6137		976	sus
PD 2013016	138		49	19	2.776	31	14022	26	131	23	39	int
PD 07040	125	22	49	19	4.173	17	14449	17	125	28	59	sus
PD 08028	131	15	50	11	3.452	23	13278	30	118	31	78	sus
PD 09084	139		46	29	2.117	34	13054	31	113	34	24	int
PD 09046	137		52		3841	28	12689	34	115	33		0res
Ark 0921-27ne	117	31	52		4579		13322	29	123	30		3res
Ark 0912-18	115	33	53		4826		14933	12	134	18		0res
Ark 0921-31ne	136		58		4.549		14123	23	126	27		6res
Ark 0911-13	116	32	54		4569	11	14069	25	127	26		0res
Ark 0908-60	126	21	50	11	4.665		14117	24	136	10		0res
NM 16-13P1088B	134	11	48	25	2.338	33	14916	13	133	20	59	sus
NM 13R1015	142		55		3933	21	13911	27	133	21	64	sus
Acala 1517-08	135	10	51	10	2.858	30	14479	15	134	19	82	sus
TAM LBB130218	121	26	49	19	3.242	25	16048		2141		719	res
TAM LBB131001	128	17	44	31	3.041	29	14289	20	138		888	sus
AU 90098	135		43	32	3.235	26	15520		4150		269	sus
GA 2012141	136		50	11	4.747		14958	11	134	17		9res
GA 2015032	139		40	34	4.328	13	13490	28	133	22	11	res
GA 2015073	133	13	48	25	3.990	19	15163		7143		455	sus
GA 2015090	144		50	11	3.574	22	14175	21	135	13	22	int
DP 393 CK	120	28	42	33	4.218	15	14428	19	134	14		6res
DP 493 CK	127	19	57		3289	24	14454	16	150		1	0res
FM 958 CK	131	14	50	11	4.049	18	14973	10	131	24	13	res
UA 222 CK	110	34	50	11	4.179	16	15426		5134	16		4res
Mean	128		50		3.878		14428		133		32	
LSD (0.10)	9		7		0.480		653				622	
C.V.(%)	6.5		14.1		15.9		4.3		4.2		50.6	
R2*100	60.8		50.5		68.5		72.2		78.2		85.7	

[1]Planted May 10, harvested October 31 on a Sharkey clay soil in northeast Arkansas.
[2]Estimated number of fiber per seed produced = (LI/100) / ((UHM(UI/100))*(Mic/1000000)).
[3]Fiber density estimated as number of fibers per square mm. Fden = FPS / (35.74 + (6.59*SI))
[4]Cultivars/breeding lines were planted in flats (three replications, 13 seed/plot) in greenhouse, and scratch inoculated with *Xanthomonas citri pv. malvacearum*. The inoculum was obtained from naturally infected leaves collected at the 2015 Manila location. Scratches were examined for water soaking, and percent of susceptible plants (%sus) were determined. Response for each entry was classified (class) as resistant (res), intermediate (int), or susceptible (sus) based upon %sus plants as follows: res (1–20%), int (21–40%), and sus (41–100%).

Table 19. Leaf and stem pubescence, bract trichomes, and response to tarnished plant bugs of entries in the 2017 RBTN at Keiser, Arkansas (Cooperator: Fred Bourland).[1]

Entry	Leaf pub.[2]		Stem pub.[2]		Bract tric.[3]		Dam. flws[4]		r
	rate		rate		no.		r	%	
LA14063046	4.3	18	6.5	10	42.2	31	33		5
LA14063101	3.9	14	6.3		38.9	27	36	12	
LA14063038	3.6	12	6.8	21	31.3		50	34	
LA14063001	4.7	21	6.7	19	37.1	24	41	21	
LA14063083	6.0	31	6.4		43.0	32	33		4
TAM 13S-03	5.5	27	6.5	11	39.0	28	38	18	
TAM WK-11L	4.3	19	7.0	32	29.2		41	22	
TAM 13Q-51	6.1	32	6.8	24	35.4	18	37	13	
Tamcot G11	3.5	11	6.7	18	34.2	15	45	27	
TAM 13Q-18	4.0	16	6.5		29.8		45	28	
PD 2013016	3.3		6.7	16	33.6	14	46	30	
PD 07040	3.3		6.9	27	32.8	11	41	23	
PD 08028	5.6	28	7.0	33	35.9	21	40	20	
PD 09084	2.6		6.6	12	28.1		41	24	
PD 09046	4.7	22	6.6	13	38.2	26	49	32	
Ark 0921-27ne	5.9	30	6.8	23	35.2	16	33		7
Ark 0912-18	6.1	33	6.8	25	45.7	34	33		6
Ark 0921-31ne	5.3	25	6.7	20	35.4	17	45	29	
Ark 0911-13	4.1	17	7.0	31	29.5		35		8
Ark 0908-60	2.1		6.1		23.3	13	36	10	
NM 16-13P1088B	3.9	15	6.1		30.4		39	19	
NM 13R1015	4.7	23	6.1		32.0		46	31	
Acala 1517-08	5.3	26	6.9	28	35.8	20	36	11	
TAM LBB130218	2.7		7.0	30	32.9	12	43	26	
TAM LBB131001	2.3		6.7	15	24.2		38	17	
AU 90098	5.6	29	6.9	29	44.2	33	31		2
GA 2012141	2.9		5.4		26.0		29	33	
GA 2015032	2.1		6.3		38.0	25	35		9
GA 2015073	2.8		6.9	26	32.4	10	38	14	
GA 2015090	4.7	24	6.6	14	37.1	23	38	16	
DP 393 CK	3.6	13	6.5		39.2	29	28		1
DP 493 CK	3.3	10	6.7	17	35.7	19	42	25	
FM 958 CK	4.3	20	6.8	22	39.9	30	38	15	
UA 222 CK	6.1	34	7.0	34	36.2	22	32		3
Ark 0628fgRF[5]		—			—		92	36	
Ark 0628fgRF[5]		—			—		92	35	
Mean	4.2		6.6		35.0		42		
LSD (0.10)	1.1		0.6		4.4		10		
C.V.(%)	25.9		9.1		10.8		30.1		
R2*100	62.9		31.1		73.7		57.2		

[1]Separate agronomic and tarnished plant bug tests were evaluated on a Sharkey clay soil at Keiser in northeast Arkansas. Pubescence and trichome data were collected from agronomic test (two-row x 14 m plots, four reps) planted May 10, harvested Oct 31. The tarnished plant bug test (one row x 7.5 m, eight reps) was planted on May 15 in a different field and terminated after flower data were collected.

[2]Leaf and stem pubescence rated at Keiser irrigated test (six plants per plots, six reps) using scale of 1 (smooth leaf) to 9 (pilose, very hairy).

[3]A bract from a first-position white flower was sampled from six random plants per plot as plants approached physiological cutout. Marginal bract trichome density was determined by counting number of trichomes visible through prescribed area.

[4]Response to tarnished plant bug populations was evaluated at Keiser by examining white flowers (six flowers/plot/day for 6 days) for presence of anther damage. Accumulative percentage of damaged flower ("dirty flowers") was determined for each plot.

[5]Ark 0628fgRF (a frego bract, Round-Up Flex breeding line) was included as susceptible check.

Table 20. Least square means for lint yield grown with two irrigation treatments (wet vs. dry) in the 2017 RBTN conducted at Maricopa, Arizona (Cooperator: Alison Thompson).[1]

Entry	Mean	Irrigation treatment		Treatment difference	Treatment difference
		Wet[2]	Dry[3]		
	lb/A	*lb/A*	*lb/A*	*lb/A*	*P-value* [4]
Acala 1517-08	1376	1579	1173	-406	0.00
Ark 0908-60	1468	1527	1409	-117	0.31
Ark 0911-13	1593	1729	1458	-271	0.02
Ark 0912-18	1665	1823	1507	-316	0.01
Ark 0921-27ne	1529	1691	1367	-323	0.01
Ark 0921-31ne	1467	1549	1384	-165	0.16
AU 90098	1539	1656	1422	-233	0.05
DP 393 CK	1558	1719	1396	-323	0.01
DP 493 CK	1762	1813	1711	-102	0.38
FM 958 CK	1476	1653	1300	-354	0.00
GA 2012141	1452	1476	1428	-47	0.68
GA 2015032	1520	1635	1404	-231	0.05
GA 2015073	1609	1678	1539	-139	0.23
GA 2015090	1422	1462	1381	-80	0.49
LA14063001	1758	1946	1569	-377	0.00
LA14063038	1607	1760	1454	-306	0.01
LA14063046	1701	1784	1619	-165	0.16
LA14063083	1721	1929	1513	-416	0.00
LA14063101	1727	1986	1468	-518	<0.0001
NM 13R1015	1553	1728	1377	-352	0.00
NM 16-13P1088	1266	1390	1143	-247	0.03
PD 07040	1550	1792	1307	-485	<0.0001
PD 08028	1386	1525	1248	-277	0.02
PD 09046	1291	1370	1211	-159	0.17
PD 09084	967	970	964	-6	0.96
PD 2013016	1330	1336	1325	-11	0.92
TAM 13Q-18	1485	1452	1517	65	0.57
TAM 13Q-51	1503	1659	1348	-311	0.01
TAM 13S-03	1605	1733	1477	-256	0.03
TAM LBB130218	1350	1409	1292	-117	0.31
TAM LBB131001	1426	1528	1323	-205	0.08
TAM WK-11L	1418	1559	1277	-282	0.02
Tamcot G11	1564	1648	1480	-168	0.15
UA 222 CK	1591	1688	1493	-195	0.09
Mean	1507	1623	1391		—
Entry (P>F)	<.0001		—	——	—
Treatment (P>F)	0.0041		—	——	—
Entry x Trt. (P>F)	0.0481		—	——	—
Reps	3	—	—	—	—

[1]Entries were grown in a 0,1 alpha lattice design with three replicates per treatment planted (May 10, 2017). The dry treatment started at first flower (July 14, 2017) and continued to the last day of irrigation (September 8, 2017). Data was analyzed in SAS v9.4 using a mixed model.
[2]Wet treatment = 1,230.1 mm total water from May to September
[3]Dry treatment = 1,058.0 mm total water from May to September
[4]P-values from Tukey comparison of lsmeans difference

Table 21. Target Spot ratings for entries in the 2017 RBTN conducted at Fairhope, Alabama (Cooperator: Jenny Koebernick).

Entry	Target Spot rating[1,2]
LA14063001	**3.99**
LA14063038	**4.06**
NM 16-13P1088B	**4.13**
NM 13R1015	**4.25**
PD 08028	**4.44**
GA 2015090	**4.46**
LA14063046	**4.50**
Ark 0908-60	**4.50**
AU 90098	**4.50**
Tamcot G11	**4.63**
PD 09084	**4.65**
Ark 0912-18	**4.67**
TAM 13Q-51	**4.69**
Ark 0921-31ne	**4.71**
LA14063083	**4.75**
TAM 13Q-18	**4.75**
PD 07040	**4.75**
TAM WK-11L	**4.81**
TAM 13S-03	**4.88**
GA 2012141	**4.88**
GA 2015073	**4.88**
TAM LBB131001	4.94
DP 493 CK	4.94
Ark 0921-27ne	5.00
Acala 1517-08	5.00
Ark 0911-13	5.06
GA 2015032	5.06
LA14063101	5.17
PD 2013016	5.31
FM 958 CK	5.31
PD 09046	5.44
DP 393 CK	5.46
TAM LBB130218	5.50
PHY499WF	5.63
Mean	4.81
LSD (0.05)	0.89
Entry (P>F)	0.0283

[1]Values in bold are not significantly different from highest value according to LSD (0.05).
[2]Leaf spot rating where score of 1 = no disease, 2 = very few lesions in canopy, 3 = few lesions noticed in lower and upper canopy, 4 = some lesions seen and < 10% defoliation, 5 = lesions noticeable and < 25% defoliation, 6 = lesions numerous and < 50% defoliation, 7 = lesions very numerous and < 75% defoliation, 8 = numerous lesions on few remaining leaves and < 90% defoliation, 9 = very few remaining leaves covered with lesions and < 95% defoliation, and 10 = plants defoliated (Chiteka et al. 1988).

Table 22. Least square means for percentage wilted and defoliated plants in a Verticillium-infested soil for entries in the 2017 RBTN trial conducted at Halfway, Texas. (Cooperator: Jane Dever).[1]

Entry	Verticillium Wilt[2]		Defoliation[3]
	Aug. 17	Aug. 31	
	%	%	%
TAM LBB130218	**8.7**	**20.4**	**16.5**
PD 09084	20.3	50.9	**16.6**
DP 493 CK	**3.0**	**10.9**	**18.6**
TAM LBB131001	**5.6**	**12.7**	**21.9**
LA14063038	**13.6**	**29.6**	**22.3**
Ark 0921-31ne	**5.8**	**16.4**	**24.4**
PD 07040	**7.1**	**25.0**	**27.7**
PD 09046	**4.5**	**16.3**	**28.9**
Ark 0921-27ne	**6.3**	**17.8**	**29.7**
LA14063001	**8.1**	**29.7**	**31.0**
NM 16-13P1088B	**6.1**	**16.6**	**31.8**
LA14063083	**9.0**	**19.1**	**31.8**
NM 13R1015	**7.9**	**22.4**	32.6
LA14063101	**8.5**	**22.6**	34.7
GA 2012141	**17.7**	40.0	35.1
Acala 1517-08	**6.1**	**18.1**	35.1
AU 90098	**15.7**	**34.0**	36.8
Tamcot G11	**5.5**	**16.1**	37.2
UA 222 CK	**11.2**	**30.3**	37.2
TAM WK-11L	**4.8**	**12.3**	38.4
GA 2015073	**8.7**	**23.9**	38.4
FM 958 CK	**13.2**	**31.6**	38.8
GA 2015090	**10.2**	38.0	40.9
GA 2015032	**8.2**	**23.6**	41.7
LA14063046	**13.7**	**30.2**	41.7
PD 2013016	**10.5**	**27.7**	42.1
Ark 0908-60	**13.5**	37.1	43.4
TAM 13Q-18	21.3	37.8	44.2
TAM 13S-03	**6.4**	**14.9**	45.0
Ark 0912-18	**9.7**	**25.9**	45.4
PD 08028	**8.3**	**25.1**	46.2
Ark 0911-13	**6.6**	**14.5**	46.2
DP 393 CK	**9.3**	**15.3**	46.2
TAM 13Q-51	**13.4**	**29.9**	63.6
Mean	9.7	24.6	35.6
MSD(0.05)	15.5	25.5	16.0

[1]Values in bold are not significantly different (P=0.05) using Waller-Duncan k-ratio t-test.
[2]MSD=Minimum Significant Difference (P=0.05) between any two means within a column using Waller-Duncan k-ratio t-test. Percentage Verticillium-wilted plants = (number of wilted plants/total number of plants) x 100 within a 29-foot plot. Test planted May 16, number of wilted plants recorded August 17 and August 31.
[3]Each plot was rated on a scale of 0–3 at 10 different sites within a plot, where 0 = no defoliation, 1 = 1-33% defoliation, 2 = 34–66% defoliation, and 3 = 67–100% defoliation. Ratings were then converted into percent defoliation by taking the midpoint of a rating such that rating 0 = 0, 1 = 16.5, 2 = 49.5, and 3 = 83.5. Converted values from each plot were averaged to obtain the percent defoliation in a plot.

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