BREEDING CULTIVARS AND GERMPLASM WITH ENHANCED YIELD AND QUALITY, 2008

Edward L. Lubbers and Peng W. Chee
Department of Crop & Soil Science, University of Georgia, Tifton Campus

Introduction

The classical breeding component of the University of Georgia cotton improvement program works to develop germplasm with traits that can be used to meet the requirements of both producers and consumers. Higher and more stable yields combined with the fiber properties requested by the yarn and textile manufacturers are the goals for profitable production and processing to support the Georgia Cotton Industry. The objective of this report is to update progress made toward meeting these goals during the 2008 production season.

Materials and Methods

Our crosses mate elite University of Georgia breeding lines with promising germplasm and non-transgenic commercial cultivars to produce 10 sets of half-sib families. Fifty F_2-bulk populations from crosses made in 2007 and advanced at the counter-seasonal nursery in Tecoman, MX were evaluated for lint yield in 2-replicate, randomized complete block designs, with each set of half-sib F_2 families, the GA breeding line parent, and the check cultivar Deltapine DP 491 constituting a trial. Of the F_2-bulk populations evaluated in 2007, 16 were advanced in 2008 to F_3 for single plant selection. The first level of selection of the F_3 plants were decided by visual determination with more individuals selected from the better populations and none from the worst population. In other years, individual plants were selected from even the worst populations as a segregation of a desirable and non-desirable class was evident. Original F_3 plants with lint fractions less than 39% were discarded and then further selected on the basis of HVI fiber properties. Seven hundred and sixty-six F_3 plants selected in 2007 were advanced to F_4 progeny rows in Plains, GA, in 2008 for evaluation in an un-replicated grid design, with the middle row of each 9 row set of the trial assigned to Deltapine DP 147RF. The trial was machine harvested and the seed-cotton yield of each F_4 progeny row was compared with the seed-cotton yield of the nearest row of DP 147RF. Separate, late-planted seed increase plots that are grown in isolation near Tifton, GA allow additional visual selection and hand harvest of seed-cotton to maintain genetic purity of the F_4, F_5, F_6, and elite generation experimental lines. A small number of additional increases are planted at the University of Arizona's Maricopa Agriculture Center, Maricopa, AZ to provide excellent quality seed for the later generation field tests. Further selections of the F_4 are based mainly on the fiber quality measures of length, strength, and fineness and on lint percentage for promotion for testing in the F_5 preliminary yield trials (PTs) in 2009. The 2008 PTs were conducted at the William Gibbs Research Farm, UGA - Tifton campus, Tifton, GA in fields 04230, 04231, 04232, 04233, and 04234. Each PT had 18 F_5 breeding lines and 2 commercial conventional checks (FiberMax FM 966 and Deltapine DP 147RF) in three replicate,

randomized complete block designs for a total of 108 experimental entries. The F_6 Advanced Trials (ATs) were conducted at the University of Georgia - Tifton campus, Tifton, GA (AT1 at the William Gibbs Research Farm, fields 04250 and 04251) and Southwest Georgia Research and Education Center, Plains, GA (AT 1 and AT 2 in fields 39/40). The ATs each consisted of 22 experimental entries and two checks (Bayer CropScience FiberMax FM 966 and Monsanto Deltapine DP 147RF) planted in a three replicate, randomized complete block design for a total of 44 F_6 breeding lines tested. Prior to machine harvest of all trials except the F_2 and F_4 generations, 25 unweathered, open bolls from the middle of the fruiting zone were harvested from each plot, and subsequently ginned on a 10-saw laboratory model gin to determine lint percentage. Fiber samples of the PTs and ATs were submitted to the Starlab in Knoxville, TN for HVI fiber analysis. The elite (material > F_7) germplasm lines with high potential were tested in the 2008 University of Georgia Strains (UGA) Tests and Official Variety Trials (Day and Thompson, 2009)

Results and Discussion

Of the six elite lines, GA 2006053, GA 2006127, GA 2006168, GA 2006128, GA 2006106, and GA 2006109, that were advanced to the UGA Strains Trials for the 2008 season (Day and Thompson, 2009), none were statistically significant from each other for yield and all had acceptable fiber quality measures. The top three yielding lines, GA 2006053, GA 2006127, and GA 2006168, will be advanced to the 2009 GA Official Variety Trials (OVTs). GA 2004303, GA 2004143, and GA 2004230 tested well enough in 2008 to continue to compete in the OVTs and are expected to be released soon as cultivars or germplasm lines.

The ATs revealed a promising line, GA2007095, with a very good fiber quality package that yielded better than the checks averaged over the Tifton and Plains locations (Tables 1, 2, & 3). It will be advanced to the 2009 UGA Strains Trials. Of the fiber quality measures, micronaire (mic) was high this year in our plots. Mic, which is interrelated to both maturity and fineness, is correlated to yield; a high mic fiber is coarser, thereby heavier, so it generally yields more. To conform to the market discounts, mic is selected to be within a range from >3.5 to <5.0 and this often forces breeders to select against a high yielding line that would have steep discounts due to high mic. Our program had a large number of excellent yielding lines that will not be selected to be advanced because they also had very high mic. We will be using some of them as parents in our crossing block to develop new lines that will maintain the excellent yield potential along with a more acceptable mic. The ATs continue to show a lot of variability between Plains and Tifton that has been noticed previously. Both the lint yield and lint percentage showed significant interaction across the locations whereas none of the fiber quality measures showed any location by entry interaction (Table 2). Therefore, the lint yield and lint percentage should not be combined for analysis whereas the fiber quality measures can be combined. For the past 2 years the research material was divided into the two AT tests by putting the lines that were elite yielders with acceptable fiber quality into AT1 and the lines that had enhanced fiber quality with adequate yield

into AT2. This year the lines did not perform as expected in this regard and we are reevaluating the desirability of this particular protocol.

The plot work in both locations has had within-test variability that we could not pinpoint as to the cause. The coefficient of variance (CV) for yield for the AT1 trial in Plains was high without an obvious reason. The Tifton PTs also had very high CVs but in this case one obvious problem was that the defoliation/boll opening was not uniform; probably due to operator error. This type of abnormal variability makes selecting the lines to be advanced to the next stage of testing much more difficult. Thirty three lines were selected from the 2008 PTs (Tables 4, 5, and 6) for testing in the 2009 ATs based primarily on lint yield as compared to checks and also potential outstanding lint % or fiber qualities. Eleven additional lines will be added from the 2006 and 2007 PTs from lines that were only considered marginal because of the many excellent lines available from the populations in those tests.

Based chiefly on lint yield comparisons, 123 F_4 progenies will be further selected for placement in the 2009 PTs. About 500 single plants were selected in the F_3 populations to be placed in the F_4 plant-to-row yield test.

Fifty F_1 crosses that were made in the summer of 2008 were sent to the USDA-ARS Cotton Winter Nursery in Mexico for selfing to the F_2 generation. These will be placed in replicated yield tests to determine the suitability of the germplasms to be further tested.

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Literature Cited

Day, J.L. and L. Thompson. 2009. 2008 Cotton Variety Trials. pp. 59-74. *In* Toews, M, G. Ritchie and A. Smith (eds.) 2008 Georgia Cotton and Extension Report. UGA/CPES Research – Extension Publication No. 6. Georgia Cooperative Extension, University of Georgia College of Agricultural and Environmental Sciences, Athens. 164 pp.

Table 1. Results of 2008 advanced (F6) trial 1.

2008 AT 1 Tifton							2008 AT 1 Plains						
ENTRY	Lint Yield	Lint %	UHM in.	UI %	mic	Str g/tex	ENTRY	Lint Yield	Lint %	UHM in.	UI %	mic	Str g/tex
GA 2007095	**1418**	45.5	1.22	85.1	4.8	33.9	GA 2007094	1427	45.7	1.14	82.7	6.1	34.3
GA 2007094	**1357**	48.1	1.18	85.1	5.7	36.5	GA 2007068	1278	44.4	1.14	85.4	5.6	35.3
GA 2007072	**1347**	47.2	1.13	85.2	5.7	34.5	GA 2007007	1111	45.9	1.19	84.9	5.5	35.8
GA 2007108	**1284**	43.6	1.19	85.8	5.0	36.8	120-R1-B1	1099	45.2	1.18	85.6	5.0	31.7
GA 2007004	**1282**	47.6	1.10	83.2	5.6	34.0	GA 2007010	1094	44.3	1.18	86.4	5.3	35.0
GA 2007066	**1277**	47.3	1.16	84.3	5.3	31.6	GA 2007066	1092	43.5	1.19	84.6	5.5	34.3
GA 2007076	**1239**	42.9	1.16	85.3	5.2	36.0	GA 2007031	1081	44.3	1.17	84.6	5.5	34.6
GA 2007083	1236	44.5	1.15	85.2	5.3	34.8	FM 966	1079	41.3	1.13	84.5	5.1	36.3
GA 2007067	1224	47.1	1.18	84.4	5.0	32.4	GA 2007041	1029	44.4	1.18	85.5	5.5	35.8
GA 2007068	1188	45.4	1.16	85.4	5.4	34.9	GA 2007072	1026	44.2	1.16	86.1	5.7	33.3
GA 2007090	1164	44.6	1.17	84.7	5.2	35.0	GA 2007076	992	41.6	1.17	84.4	5.6	34.1
GA 2007041	1129	46.2	1.17	84.6	5.1	33.8	155-R1-B1	929	40.4	1.13	83.0	5.7	33.4
120-R1-B3	1123	47.4	1.18	85.2	5.1	31.7	GA 2007095	925	41.9	1.22	85.7	5.2	33.9
GA 2007079	1104	43.5	1.16	84.5	5.3	33.8	GA 2007079	900	41.6	1.16	84.9	5.3	33.1
GA 2007007	1078	47.4	1.13	83.7	5.0	37.2	GA 2007087	892	43.0	1.16	83.9	5.4	34.7
GA 2007087	1052	44.5	1.18	83.2	5.0	31.9	GA 2007004	875	45.3	1.17	85.6	5.7	34.6
120-R1-B1	1038	50.9	1.14	84.1	5.0	31.4	GA 2007104	872	40.2	1.17	85.5	5.2	35.4
GA 2007031	1015	46.9	1.13	84.1	5.6	33.9	GA 2007108	853	41.8	1.18	85.0	5.4	36.9
GA 2007010	988	46.7	1.11	85.0	5.4	32.5	GA 2007032	826	41.1	1.21	85.8	5.4	36.4
DP 147RF	983	44.1	1.18	84.5	4.9	34.1	GA 2007067	802	46.2	1.18	84.8	5.2	34.4
GA 2007032	949	43.3	1.12	83.9	5.7	32.8	GA 2007090	781	41.2	1.21	85.7	5.0	34.1
GA 2007104	942	42.8	1.16	84.7	5.2	35.6	DP 147RF	746	41.8	1.20	85.4	5.0	32.9
155-R1-B1	922	43.8	1.13	84.5	5.4	35.1	GA 2007083	715	42.3	1.16	85.4	5.5	35.7
FM 966	868	42.0	1.15	84.5	5.0	40.2	120-R1-B3	591	43.6	1.18	85.4	4.9	32.4
$LSD_{0.10}$	**114**	**1.3**	**NS**	**NS**	**0.3**	**2.4**	**$LSD_{0.10}$**	**NS**	**0.8**	**0.03**	**NS**	**0.3**	**1.7**

The bold type indicates the lint yields that are not significantly different from the top yielder.
DP147RF and FiberMax FM 966 are check varieties for comparison purposes.

Table 2. Results of 2008 advanced (F6) trial 1 over Tifton and Plains, GA.

ENTRY	Lint Yield	Lint %	UHM in.	UI %	mic	Str g/tex
GA 2007004	1078	46.50	1.13	84.38	5.65	34.28
GA 2007007	1095	46.68	1.16	84.28	5.23	36.45
GA 2007010	1041	45.52	1.15	**85.65**	5.33	33.73
GA 2007031	1048	45.61	1.15	84.33	5.53	34.20
GA 2007032	887	42.23	1.17	**84.85**	5.53	34.60
GA 2007041	1079	45.32	1.17	**85.05**	5.28	34.78
GA 2007066	1184	45.42	1.17	84.43	5.38	32.93
FM 966	974	41.65	1.14	84.48	5.00	**38.23**
GA 2007067	1013	46.62	1.18	84.58	5.10	33.38
GA 2007068	1233	44.92	1.15	**85.35**	5.50	35.10
GA 2007072	1187	45.69	1.15	**85.65**	5.65	33.88
GA 2007076	1116	42.25	1.17	**84.83**	5.35	35.05
GA 2007079	1002	42.56	1.16	84.65	5.25	33.43
GA 2007083	975	43.44	1.15	**85.25**	5.38	35.23
GA 2007087	972	43.75	1.17	83.53	5.18	33.25
DP 147RF	864	42.93	1.19	**84.95**	4.90	33.45
GA 2007090	973	42.92	1.19	**85.15**	5.05	34.50
GA 2007094	1392	46.94	1.16	83.88	5.85	35.38
GA 2007095	1172	43.68	**1.22**	**85.35**	4.98	33.88
GA 2007104	907	41.54	1.16	**85.08**	5.18	35.50
GA 2007108	1069	42.73	1.18	**85.38**	5.20	**36.80**
120-R1-B1	1069	48.07	1.16	**84.80**	4.98	31.53
120-R1-B3	857	45.51	1.18	**85.25**	4.98	32.05
155-R1-B1	926	42.12	1.13	83.73	5.53	34.25
location by entry interaction	†	*	**NS**	**NS**	**NS**	**NS**
$LSD_{0.10}$	**-**	**-**	**0.03**	**0.95**	**0.20**	**1.45**

When location by entry interaction is significant, the locations should not be combined to compare for significant differences; † **- 10%, * - 5%, NS – not significant.**

The bold type indicates the measures that are not significantly different from the best.

Acceptable micronaire (mic) is a range, so significant differences are not highlighted.

DP147RF and FiberMax FM 966 are check varieties for comparison purposes.

Table 3. Results of 2008 advanced (F6) trial 2, Plains, GA.

ENTRY	Lint Yield	Lint %	UHM in.	UI %	mic	Str g/tex
GA 2007036	**1415**	44.7	1.16	84.4	5.5	35.4
GA 2007029	**1396**	44.7	1.19	85.5	5.5	31.9
FM 966	**1392**	40.8	1.10	84.1	5.3	36.2
GA 2007071	**1390**	44.0	1.17	84.8	5.2	34.1
GA 2007015	**1389**	45.5	1.14	85.4	5.7	33.5
GA 2007001	**1383**	46.7	1.18	85.0	5.6	35.8
GA 2007016	**1366**	44.7	1.16	85.7	5.5	35.9
GA 2007003	**1334**	46.0	1.17	85.1	5.8	36.9
GA 2007075	**1333**	42.4	1.13	83.6	5.5	37.1
GA 2007017	**1315**	44.0	1.16	84.9	5.7	35.2
GA 2007044	**1309**	42.2	1.20	85.3	5.2	35.5
GA 2007062	**1294**	41.5	1.13	83.7	5.7	35.9
GA 2007065	**1281**	43.2	1.20	85.7	5.4	33.6
GA 2007021	1228	45.3	1.21	84.4	5.6	33.6
DP 147RF	1218	42.8	1.18	84.8	4.9	32.5
GA 2007045	1194	41.9	1.24	85.8	5.6	36.3
GA 2007030	1193	42.3	1.18	84.3	5.4	37.1
GA 2007037	1135	42.7	1.24	86.6	5.5	36.5
GA 2007061	1126	44.7	1.20	85.2	5.6	35.4
GA 2007025	1105	44.9	1.18	84.7	5.5	33.4
GA 2007089	1090	41.8	1.18	84.1	5.2	33.5
GA 2007035	1084	40.4	1.23	85.1	5.6	38.2
GA 2007098	1076	38.5	1.15	84.1	5.0	35.7
GA 2007088	951	44.4	1.17	83.6	5.4	34.4
LSD0.10	**177**	**0.9**	**0.04**	**NS**	**NS**	**1.3**

The bold type indicates the lint yields that are not significantly different from the top. DP147RF, DP491, and FiberMax FM 966 are check varieties for comparison purposes.

Table 4. Results of 2008 preliminary (F5) trials 1 and 2.

2008 PT1							2008 PT2						
ENTRY	**Lint Yield**	**Lint %**	**UHM in.**	**UI %**	**mic**	**Str g/tex**	**ENTRY**	**Lint Yield**	**Lint %**	**UHM in.**	**UI %**	**mic**	**Str g/tex**
GA2008001	**1198**	42.04	1.18	85.90	35.85	5.15	GA2008027	**2211**	45.57	1.17	85.40	32.35	5.25
GA2008014	**1143**	45.01	1.20	85.75	34.45	5.35	GA2008021	**1852**	45.15	1.22	86.65	33.35	5.20
GA2008010	**1137**	43.50	1.15	84.75	32.45	4.90	GA2008029	**1769**	44.65	1.19	86.50	35.95	5.50
GA2008011	**1054**	40.61	1.20	85.95	34.25	5.10	GA2008035	1683	43.05	1.20	85.65	34.85	5.15
GA2008007	**1044**	42.84	1.17	86.00	36.70	5.10	GA2008025	1600	45.04	1.23	86.55	33.70	5.15
GA2008018	**1042**	42.02	1.21	86.65	40.00	5.30	GA2008030	1556	44.05	1.21	86.15	34.80	5.00
GA2008005	**1029**	42.20	1.20	85.80	33.00	4.90	GA2008026	1479	45.02	1.18	85.80	35.00	5.20
GA2008003	978	43.79	1.19	85.30	33.60	4.95	GA2008028	1468	42.86	1.21	86.35	35.35	5.30
GA2008004	955	41.59	1.16	84.20	35.60	5.35	GA2008023	1462	41.80	1.24	86.50	36.55	5.05
GA2008008	946	42.28	1.19	85.70	37.85	5.00	GA2008033	1443	44.33	1.19	85.90	33.55	5.15
DP 147RF	937	41.87	1.22	85.75	34.25	4.65	DP 147RF	1440	41.11	1.25	85.95	34.55	4.60
FM 966	921	40.16	1.15	85.10	38.20	4.50	GA2008020	1424	45.19	1.18	85.10	32.50	5.20
GA2008002	899	42.94	1.21	86.15	32.75	4.90	GA2008022	1374	43.76	1.19	85.85	32.70	5.30
GA2008013	878	43.34	1.21	86.10	36.50	5.10	GA2008019	1280	44.27	1.16	85.15	35.70	5.30
GA2008015	823	39.87	1.20	86.60	38.10	5.50	GA2008034	1247	45.61	1.17	85.85	33.00	4.85
GA2008006	780	44.06	1.17	86.20	34.75	5.20	GA2008024	1146	44.68	1.22	86.45	34.10	5.10
GA2008016	715	42.54	1.24	87.20	37.50	5.15	FM 966	1054	39.60	1.15	85.30	39.35	4.80
GA2008012	714	38.85	1.23	86.75	37.80	5.20	GA2008036	1007	45.46	1.16	85.30	35.45	5.55
GA2008017	669	38.21	1.23	86.40	38.05	5.00	GA2008032	795	43.81	1.20	84.95	34.15	5.20
GA2008009	655	40.11	1.17	85.85	37.00	5.35	GA2008031	789	44.06	1.20	85.65	33.60	4.80
$LSD_{0.10}$	**196**	**0.97**	**0.03**	**0.96**	**2.18**	**0.25**	**$LSD_{0.10}$**	**492**	**1.32**	**0.03**	**NS**	**NS**	**0.31**

The bold type indicates the lint yields that are not significantly different from the top.
DP 147RF and FiberMax FM 966 are check varieties for comparison purposes.

Table 5. Results of 2008 preliminary (F5) trials 3 and 4.

2008 PT3							2008 PT4						
ENTRY	**Lint Yield**	**Lint %**	**UHM in.**	**UI %**	**mic**	**Str g/tex**	**ENTRY**	**Lint Yield**	**Lint %**	**UHM in.**	**UI %**	**mic**	**Str g/tex**
GA2008045	1750	41.50	1.19	86.05	35.75	5.20	GA2008063	1743	44.54	1.17	85.90	32.60	5.10
GA2008040	1458	42.43	1.18	86.15	35.55	5.05	DP 147RF	1697	41.74	1.20	85.75	34.65	4.65
GA2008037	1430	46.43	1.18	84.90	33.65	5.10	GA2008057	1549	44.85	1.23	86.95	36.55	5.10
GA2008038	1402	44.47	1.23	87.00	34.85	5.05	FM 966	1298	39.16	1.17	85.35	37.50	4.40
GA2008039	1367	41.17	1.23	86.30	37.00	4.75	GA2008060	1243	44.48	1.22	87.75	33.95	5.35
GA2008048	1364	41.13	1.18	85.60	35.35	4.90	GA2008058	1136	42.76	1.20	87.55	36.15	4.90
FM 966	1302	40.16	1.17	84.85	39.65	4.70	GA2008059	1115	41.41	1.16	85.90	31.45	5.10
GA2008054	1240	41.40	1.23	86.90	35.80	4.70	GA2008066	1073	43.68	1.17	86.45	31.15	5.05
GA2008047	1224	39.30	1.15	84.65	35.80	4.85	GA2008072	1006	43.77	1.18	86.25	34.55	5.25
GA2008049	1216	39.87	1.17	85.90	38.45	4.55	GA2008064	960	43.47	1.16	84.95	32.85	4.95
GA2008041	1161	38.77	1.21	85.70	36.80	4.60	GA2008062	888	41.95	1.23	87.20	37.70	4.65
GA2008042	1138	39.10	1.17	85.90	40.80	5.00	GA2008065	878	41.24	1.21	87.15	35.40	5.00
GA2008043	1058	38.00	1.23	87.05	39.10	5.10	GA2008067	876	40.60	1.21	86.45	35.05	4.70
GA2008050	1015	35.16	1.21	85.85	35.05	4.75	GA2008056	869	44.47	1.19	85.20	34.60	5.05
GA2008046	994	38.85	1.13	85.30	36.60	5.00	GA2008071	863	41.97	1.22	85.83	34.74	4.51
GA2008044	949	40.76	1.22	86.10	36.95	4.75	GA2008068	840	41.70	1.19	85.70	34.85	4.95
DP 147RF	886	39.79	1.21	85.95	33.95	4.55	GA2008069	814	43.48	1.14	84.70	31.95	5.10
GA2008053	754	38.13	1.22	86.90	39.75	5.00	GA2008070	796	44.73	1.17	86.15	32.45	5.20
GA2008051	740	40.52	1.21	85.60	36.40	4.45	GA2008061	735	42.61	1.18	86.70	32.75	5.15
GA2008052	725	41.03	1.23	86.55	34.60	4.40	GA2008055	699	42.61	1.24	86.50	34.90	4.50
$LSD_{0.10}$	**NS**	**2.47**	**0.03**	**NS**	**2.27**	**0.26**	**$LSD_{0.10}$**	**NS**	**1.66**	**0.04**	**NS**	**NS**	**0.34**

The bold type indicates the lint yields that are not significantly different from the top.
DP 147RF and FiberMax FM 966 are check varieties for comparison purposes.

Table 6. Results of 2008 preliminary (F5) trials 5 and 6.

2008 PT5							2008 PT6						
ENTRY	Lint Yield	Lint %	UHM in.	UI %	mic	Str g/tex	ENTRY	Lint Yield	Lint %	UHM in.	UI %	mic	Str g/tex
GA2008089	**704**	44.59	1.16	85.05	39.18	5.32	GA2008095	**445**	43.28	1.17	85.75	35.55	5.30
GA2008075	**666**	46.44	1.16	85.55	33.20	5.35	GA2008107	**398**	41.93	1.20	85.65	35.15	5.15
GA2008077	**650**	43.35	1.14	85.20	35.95	5.05	FM 966	**389**	39.20	1.13	84.75	40.55	4.75
GA2008078	**574**	38.13	1.13	84.70	32.95	4.60	GA2008098	**384**	44.09	1.18	84.25	35.45	4.95
GA2008076	**554**	42.61	1.14	86.65	35.80	5.30	GA2008101	**356**	41.20	1.11	84.40	32.05	5.35
GA2008085	**543**	43.49	1.12	84.05	36.20	5.45	DP 147RF	**352**	40.63	1.20	83.90	33.55	4.60
DP 147RF	**517**	41.27	1.19	84.20	33.35	4.70	GA2008102	**334**	42.17	1.18	85.45	34.75	4.75
GA2008079	**513**	39.29	1.15	85.30	35.15	4.95	GA2008094	277	43.24	1.14	84.65	36.20	5.25
GA2008087	493	44.80	1.09	83.45	35.05	5.35	GA2008106	273	41.44	1.16	85.80	36.00	5.20
GA2008083	469	47.25	1.14	84.90	34.45	5.40	GA2008104	268	44.35	1.18	85.35	35.05	5.00
FM 966	462	39.19	1.15	85.00	37.85	4.55	GA2008105	259	40.04	1.15	86.25	35.30	5.25
GA2008086	458	42.50	1.18	84.70	34.95	5.00	GA2008103	241	44.67	1.14	84.10	33.30	5.15
GA2008090	429	45.16	1.14	85.40	32.15	4.85	GA2008100	237	43.04	1.18	85.50	35.80	5.20
GA2008084	408	42.10	1.20	85.85	35.15	5.10	GA2008108	227	41.26	1.17	86.25	34.50	5.20
GA2008080	407	38.04	1.11	84.85	35.45	5.40	GA2008097	212	44.28	1.14	85.25	34.35	4.85
GA2008073	363	43.48	1.21	86.60	31.65	4.90	GA2008092	208	42.35	1.21	85.30	34.00	5.15
GA2008088	335	43.24	1.19	85.95	35.15	4.80	GA2008096	159	42.39	1.21	86.75	34.80	5.20
GA2008082	274	41.58	1.14	84.20	32.55	5.00	GA2008091	46	42.45	1.18	85.45	35.05	5.15
GA2008074	202	41.77	1.20	86.20	33.90	4.95	GA2008093	-	43.01	1.19	85.45	33.55	4.85
GA2008081	161	41.53	1.17	86.00	34.85	4.25	GA2008099	-	41.89	1.19	84.95	33.45	4.65
$LSD_{0.10}$	**204**	**1.57**	**0.03**	**1.08**	**1.45**	**0.32**	**$LSD_{0.10}$**	**135**	**1.16**	**0.03**	**NS**	**1.29**	**0.26**

The bold type indicates the lint yields that are not significantly different from the top.
GA2008089 has missing data for the fiber quality measures, so evaluate it cautiously; the lint yield and lint % is not missing.
DP 147RF and FiberMax FM 966 are check varieties for comparison purposes.