

Table 8. Least square means for yield and fiber quality traits in the 2023 RBTN at Miss. State. USDA. Planted on 21 May 2023 and harvested on 5 November 2023. (Cooperator: Jack McCarty)

Genotype	LINT YEILD	LINT PERCENT	MIC	HVI data				Fibrogram Data								QS1 <sup>1</sup>	QS2 <sup>1</sup>	QS3 <sup>1</sup>
				UHM	UI	STR	ELO	Short Fiber Index	UHMLf	MLf	UQLf	LHMLf	LQLf	Uif	SFCf			
units	lb/acre	%	units	in	%	g/tex	%	%	in	in	in	in	in	%	%			
Ark 1512-32	<b>1278</b>	<b>44.0</b>	<b>5.6</b>	<b>1.17</b>	83.5	31.9	6.1	<b>6.70</b>	1.112	0.842	1.078	0.594	0.635	75.69	20.72	42.50	60.75	50.50
Ark 1510-31	<b>1254</b>	41.9	<b>5.8</b>	<b>1.20</b>	84.4	33.2	5.6	<b>6.10</b>	1.145	<b>0.884</b>	<b>1.114</b>	0.642	0.709	77.12	17.41	50.25	66.25	54.50
Ark 1514-34	<b>1217</b>	40.7	5.3	<b>1.18</b>	83.5	30.5	5.7	<b>6.60</b>	1.115	0.846	1.082	0.602	0.653	75.85	19.48	48.25	62.75	55.75
UA 222 CK	1093	41.3	5.4	<b>1.21</b>	83.6	32.8	<b>6.7</b>	<b>6.70</b>	1.143	<b>0.860</b>	1.109	0.604	0.639	75.17	20.32	57.25	64.75	64.00
GA 2017126	1083	41.3	<b>5.6</b>	1.16	82.6	<b>33.8</b>	5.5	<b>7.10</b>	1.080	0.809	1.047	0.557	0.584	74.90	22.27	34.50	55.50	45.75
OA-23104	1061	<b>43.8</b>	5.0	<b>1.20</b>	83.9	<b>34.1</b>	5.0	<b>6.50</b>	1.133	<b>0.866</b>	1.104	0.613	0.691	76.38	19.15	<b>60.00</b>	69.25	66.50
GA 2018139	1043	41.9	5.2	<b>1.18</b>	83.8	32.3	5.7	<b>7.00</b>	1.115	0.835	1.084	0.579	0.613	74.91	20.73	49.75	64.50	56.75
DP 393 CK	1028	41.8	5.4	<b>1.18</b>	83.9	32.9	6.1	<b>6.60</b>	1.122	0.852	1.088	0.605	0.656	75.97	19.91	48.00	64.50	54.75
17020-22-9-9	1008	<b>42.4</b>	5.1	<b>1.21</b>	83.6	33.4	5.3	<b>6.30</b>	1.139	<b>0.877</b>	1.103	0.642	0.695	76.83	17.47	58.50	67.75	65.50
FM 958 CK	1002	40.3	5.3	<b>1.21</b>	84.0	33.0	5.3	<b>6.30</b>	1.141	<b>0.875</b>	1.110	0.623	0.701	76.60	19.38	58.00	68.75	64.25
Ark 1519-16	990	<b>43.0</b>	5.2	1.16	84.4	31.5	<b>6.9</b>	<b>6.10</b>	1.118	<b>0.863</b>	1.087	0.632	0.715	77.14	18.26	48.25	67.50	53.50
GA 2017024	982	41.8	5.4	<b>1.18</b>	83.2	32.8	5.2	<b>7.20</b>	1.106	0.822	1.080	0.561	0.592	74.31	21.58	47.25	61.75	56.50
GA 2017132	978	<b>42.7</b>	5.4	1.16	83.9	32.3	5.3	<b>6.40</b>	1.101	0.844	1.067	0.613	0.667	76.62	18.88	41.00	63.00	48.50
Ark 1510-28	977	40.9	5.5	<b>1.24</b>	85.1	32.9	5.6	5.50	<b>1.187</b>	<b>0.920</b>	<b>1.156</b>	0.676	0.762	77.50	15.98	<b>68.75</b>	<b>75.00</b>	<b>70.00</b>
PD 2017030	972	39.5	5.2	<b>1.24</b>	85.7	<b>35.3</b>	5.0	5.30	<b>1.194</b>	<b>0.931</b>	<b>1.163</b>	0.689	0.766	77.93	16.28	<b>73.75</b>	<b>84.00</b>	<b>75.00</b>
OA-23105	965	<b>43.2</b>	5.0	<b>1.24</b>	82.4	<b>34.0</b>	5.2	<b>6.10</b>	1.141	0.856	1.100	0.593	0.653	75.02	20.84	<b>59.75</b>	62.50	<b>69.50</b>
OA-23106	872	41.7	5.4	<b>1.22</b>	84.6	31.6	5.0	<b>6.20</b>	<b>1.156</b>	<b>0.879</b>	<b>1.128</b>	0.621	0.679	75.99	19.80	<b>61.50</b>	70.50	65.00
DP 493 CK	842	<b>42.5</b>	5.3	1.16	83.2	32.1	5.1	<b>7.00</b>	1.092	0.823	1.058	0.572	0.627	75.26	20.57	42.25	59.50	51.50
PD 20150002	761	37.8	5.3	<b>1.29</b>	84.5	<b>34.3</b>	5.4	5.00	<b>1.215</b>	<b>0.933</b>	<b>1.180</b>	0.674	0.757	76.73	17.13	<b>79.75</b>	<b>75.75</b>	<b>82.50</b>
PD 20150030	704	34.8	5.1	<b>1.23</b>	84.2	<b>34.1</b>	4.8	5.60	<b>1.171</b>	<b>0.910</b>	<b>1.134</b>	0.675	0.753	77.69	16.59	<b>68.50</b>	<b>71.50</b>	<b>73.25</b>
<b>Mean</b>	<b>1006</b>	<b>41.4</b>	<b>5.3</b>	<b>1.20</b>	<b>83.9</b>	<b>32.9</b>	<b>5.5</b>	<b>6.30</b>	<b>1.136</b>	<b>0.866</b>	<b>1.104</b>	<b>0.618</b>	<b>0.677</b>	<b>76.18</b>	<b>19.14</b>	<b>54.89</b>	<b>66.79</b>	<b>61.18</b>
<b>Entry (P&gt;F)</b>	<b>&lt;0.0001</b>	<b>&lt;0.0001</b>	<b>&lt;0.0001</b>	<b>0.0033</b>	<b>0.1072</b>	<b>0.0002</b>	<b>&lt;0.0001</b>	<b>0.0252</b>	<b>0.0082</b>	<b>0.0275</b>	<b>0.0095</b>	<b>0.0522</b>	<b>0.1348</b>	<b>0.1278</b>	<b>0.2228</b>	<b>0.0015</b>	<b>0.0278</b>	<b>0.0003</b>
<b>R-square</b>	<b>0.75</b>	<b>0.91</b>	<b>0.74</b>	<b>0.46</b>	<b>0.32</b>	<b>0.57</b>	<b>0.88</b>	<b>0.32</b>	<b>0.42</b>	<b>0.36</b>	<b>0.42</b>	<b>0.31</b>	<b>0.24</b>	<b>0.18</b>	<b>0.12</b>	<b>0.48</b>	<b>0.38</b>	<b>0.52</b>
<b>Entry LSD (0.05)</b>	<b>140</b>	<b>1.7</b>	<b>0.2</b>	<b>0.12</b>	<b>NS<sup>2</sup></b>	<b>1.8</b>	<b>0.3</b>	<b>1.22</b>	<b>0.066</b>	<b>0.074</b>	<b>0.066</b>	<b>NS</b>	<b>NS</b>	<b>NS</b>	<b>NS</b>	<b>20.00</b>	<b>13.25</b>	<b>15.50</b>
<b>CV (%)</b>	<b>14.4</b>	<b>5.1</b>	<b>3.6</b>	<b>2.9</b>	<b>0.9</b>	<b>3.4</b>	<b>10.1</b>	<b>9.6</b>	<b>3.1</b>	<b>4.1</b>	<b>3.2</b>	<b>6.3</b>	<b>8.2</b>	<b>1.4</b>	<b>9.6</b>	<b>21.5</b>	<b>9.7</b>	<b>16.1</b>

<sup>1</sup>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)

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

<sup>2</sup>NS- Not significant at the 0.05 level of probability.