

**Table S28 Summary of the non-linear relationship between canopy temperature and lint yield across cotton plant growth stages.** The  $r^2$  values are from fitted second order polynomial models of canopy temperature best linear unbiased estimators (BLUES) regressed on lint yield BLUES for years 2010-12 in the TM-1×NM24106 recombinant inbred line (RIL) population and its two parents under two irrigation regimes, water-limited (WL) and well-watered (WW), in Maricopa, AZ. All associations were significant at  $\alpha = 0.05$ , shown in bold.

Year	Cotton Plant Growth Stage	DOY <sup>a</sup>	TOD <sup>b</sup>	$r^2$ WL	$r^2$ WW
2010	Flowering/peak bloom	217	0700	<b>0.20</b>	0.06
		217	1300	<b>0.25</b>	<b>0.11</b>
	Boll development & fill	224	0700	<b>0.12</b>	0.01
		224	1000	<b>0.19</b>	<b>0.11</b>
		224	1300	<b>0.19</b>	0.03
		231	0700	<b>0.07</b>	0.03
		231	1000	0.05	0.04
231	1300	<b>0.10</b>	0.02		
2011	Flowering/peak bloom	188	0700	<b>0.39</b>	<b>0.28</b>
		188	1300	<b>0.34</b>	<b>0.22</b>
		195	0700	<b>0.24</b>	<b>0.19</b>
		195	1500	<b>0.30</b>	<b>0.18</b>
		202	0700	<b>0.17</b>	0.06
		202	1300	<b>0.13</b>	<b>0.15</b>
	Boll development & fill	216	0700	<b>0.09</b>	0.03
		216	1100	<b>0.09</b>	0.04
		216	1500	<b>0.09</b>	0.04
		223	0700	0.03	0.03
		223	1100	0.01	0.03
		223	1500	0.04	0.02
	Fiber development & elongation	230	0700	0.03	0.04
		230	1100	0.00	0.02
		230	1500	0.03	0.05
		237	0700	0.02	0.06
		237	1100	0.03	0.03
		237	1500	0.02	<b>0.07</b>
		244	0700	0.01	<b>0.08</b>
		244	1100	0.01	0.04
244		1500	0.01	0.03	
251		0700	0.05	<b>0.12</b>	
251	1100	0.06	0.06		
251	1500	<b>0.15</b>	<b>0.10</b>		
2012	Flowering/peak bloom	201	0700	<b>0.10</b>	<b>0.18</b>
		201	1000	<b>0.18</b>	<b>0.22</b>
		201	1300	<b>0.16</b>	<b>0.20</b>
		201	1500	<b>0.11</b>	<b>0.21</b>
	boll development & fill	208	1000	<b>0.18</b>	<b>0.24</b>
		208	1500	<b>0.12</b>	<b>0.23</b>
		215	1000	<b>0.08</b>	<b>0.12</b>
		215	1300	<b>0.12</b>	<b>0.16</b>
		222	0700	<b>0.07</b>	0.06
		222	1000	0.05	<b>0.15</b>
		222	1300	0.02	<b>0.08</b>
		222	1500	0.03	<b>0.11</b>
	Fiber development & elongation	243	0700	0.03	0.06
		243	1000	0.03	<b>0.08</b>
		243	1300	0.04	<b>0.10</b>
		243	1500	0.04	<b>0.08</b>
		250	0700	<b>0.09</b>	0.02
250		1000	<b>0.08</b>	0.05	
250		1300	0.03	0.05	
250	1500	<b>0.09</b>	<b>0.10</b>		

		258	0700	0.06	<b>0.08</b>
		258	1000	<b>0.07</b>	0.03
		258	1300	<b>0.08</b>	0.05
		258	1500	<b>0.06</b>	0.04

a. DOY, day of year – Julian calendar.

b. TOD, time of day within the day of year – MST.