

Table 4 The QTL detected with fiber quality in F₂ population and F_{2:3} population

Traits	QTL name	Gene-ration	Linkage group/ Chromosome	Position	Left marker	Right marker	LOD	Additive effect	Dominant effect	Contribution rate (%)
Fiber upper half	<i>qFL-1-1</i>	F ₂	1/A1	27	HAU1045	HAU3269	5.42	-0.20	0.66	5.35
		F _{2:3}	1/A1	27	HA7U1045	HAU3269	5.16	0.03	-0.23	2.92
mean length	<i>qFL-3-1</i>	F ₂	3/A6	19	HAU2710	HAU2888	4.67	-0.22	0.30	3.35
		F _{2:3}	3/A6	18	HAU2710	HAU2888	4.39	-0.05	0.42	2.94
Fiber strength	<i>qFL-4-1</i>	F ₂	4	13	HAU2349	HAU0250	2.79	-0.16	0.14	1.66
		F _{2:3}	4	14	HAU2349	HAU0250	2.68	0.08	0.26	1.61
	<i>qFL-4-2</i>	F ₂	4	79	HAU0667	HAU2119	2.94	-0.20	0.08	2.19
		F _{2:3}	1/A1	27	HAU1045	HAU3269	5.05	-0.04	0.31	1.49
	<i>qFS-1-1</i>	F ₂	1/A1	27	HAU1045	HAU3269	5.42	-0.09	0.65	2.93
		F _{2:3}	1/A1	26	HAU1045	HAU3269	5.42	-0.09	0.65	2.93
	<i>qFS-2-1</i>	F ₂	2/A10	1	HAU0773a	HAU0773b	3.08	-0.61	0.08	6.01
	<i>qFS-3-1</i>	F ₂	3/A6	49	HAU2710	HAU2888	4.04	-0.13	-0.31	1.87
		F _{2:3}	3/A6	18	HAU2710	HAU2888	4.36	0.14	0.20	1.89
	<i>qFS-3-2</i>	F ₂	3/A6	49	HAU2888	HAU0784b	2.80	-0.24	-0.95	6.36
<i>qFS-4-1</i>	F ₂	4	16	HAU2349	HAU0250	3.45	-0.24	0.74	4.87	
	F _{2:3}	4	14	HAU2349	HAU0250	2.88	0.10	0.64	3.33	
<i>qFS-4-2</i>	F ₂	4	36	HAU0250	HAU2065a	3.12	-0.19	0.94	6.21	
	F _{2:3}	4	39	HAU0250	HAU2065a	4.87	-0.41	0.76	9.76	
<i>qFS-4-3</i>	F ₂	4	78	HAU0667	HAU2119	6.20	-0.62	1.01	13.14	
Fiber micronaire value	<i>qFM-1-1</i>	F ₂	1/A1	27	HAU1045	HAU3269	5.59	-0.05	0.24	5.77
		F _{2:3}	1/A1	27	HAU1045	HAU3269	5.18	-0.01	0.02	2.10
<i>qFM-3-1</i>	F ₂	3/A6	29	HAU2710	HAU2888	6.97	0.04	-0.80	19.69	
	F _{2:3}	3/A6	18	HAU2710	HAU2888	4.07	0.01	-0.01	1.03	
<i>qFM-4-1</i>	F ₂	4	13	HAU2349	HAU0250	2.52	0.00	-0.12	1.55	
	F _{2:3}	4	14	HAU2349	HAU0250	3.15	-0.01	-0.19	5.01	
<i>qFM-4-2</i>	F ₂	4	70	HAU0667	HAU2119	4.00	-0.01	-0.97	21.10	
<i>qFM-4-3</i>	F _{2:3}	4	39	HAU0250	HAU2065a	5.67	0.12	-0.13	10.65	
Fiber elongation	<i>qFE-1-1</i>	F ₂	1/A1	27	HAU1045	HAU3269	5.53	0.05	-0.12	4.38
		F _{2:3}	1/A1	25	HAU1045	HAU3269	5.57	0.01	-0.10	6.67
<i>qFE-3-1</i>	F ₂	3/A6	18	HAU2710	HAU2888	3.97	0.02	0.01	2.39	
	F _{2:3}	3/A6	18	HAU2710	HAU2888	4.29	-0.01	-0.03	1.01	
<i>qFE-4-1</i>	F _{2:3}	4	16	HAU2349	HAU0250	2.83	-0.01	0.05	2.60	
<i>qFE-4-2</i>	F _{2:3}	4	79	HAU0667	HAU2119	2.89	-0.01	0.09	4.09	
<i>qFE-4-3</i>	F _{2:3}	4	107	HAU2119	DPL0187	3.69	-0.06	0.04	8.98	
Fiber uniformity	<i>qFU-1-1</i>	F ₂	1/A1	25	HAU1045	HAU3269	5.38	-0.21	-0.55	6.61
		F _{2:3}	1/A1	26	HAU1045	HAU3269	5.22	0.08	-0.16	0.77
<i>qFU-3-1</i>	F ₂	3/A6	18	HAU2710	HAU2888	4.40	0.02	-0.89	8.13	
	F _{2:3}	3/A6	17	HAU2710	HAU2888	4.89	-0.12	0.40	3.80	
<i>qFU-3-2</i>	F ₂	3/A6	69	HAU0784b	HAU0784a	2.56	-0.15	-2.47	14.74	
<i>qFU-4-1</i>	F ₂	4	12	HAU2349	HAU0250	3.02	-0.23	-0.16	2.51	
	F _{2:3}	4	17	HAU2349	HAU0250	3.20	0.22	0.25	4.40	
<i>qFU-4-2</i>	F ₂	4	83	HAU0667	HAU2119	3.92	-0.29	-1.55	23.96	
<i>qFU-4-3</i>	F _{2:3}	4	37	HAU0250	HAU2065a	3.88	0.29	0.50	11.33	
<i>qFU-4-4</i>	F _{2:3}	4	79	HAU0667	HAU2119	2.60	0.03	-0.35	1.93	