

**Supplemental Table 1.** Correlation coefficients for spikelet fertility under high temperature in 2013, 2014/8/6 and 2014/8/7

Trait	SSP8.6	SSP8.7
SSP8.7	0.673**	
SSP13	0.435**	0.411**

\* and \*\* mean the significance levels of 0.05 and 0.01, respectively; SSP8.6, SSP8.7, SSP13 mean spikelet fertility in 2014-8-6, 2014-8-7 and 2013, respectively

**Supplemental Table 2.** Published QTLs associated with heat tolerance at flowering stage which were overlapped with QTLs identified in our research

QTL	Chr.	Marker	Position(Mb)	LOD	Additive effect	R <sup>2</sup> (%)	Population	Donor	Reference
<b><i>qSF<sup>ht</sup>2</i></b>	<b>2</b>	<b>RM1234-RM3850</b>	<b>11.3-35.4</b>						
<i>qtl2.2</i>		C601	30.3	3.7	0.11	7.4	Bala×Azucena RIL	Azucena	(Jagadish <i>et al.</i> 2010a)
<i>qHt2</i>		RM183-RM106	25.1	5.2	-4.87	7.4	T219×T226 RIL	T226	(Chen <i>et al.</i> 2008)
<i>qh<sub>ts</sub>-2</i>		RM406-525	28.3-35.2	2.7	-0.38	6.6	Zhongyouzao 8×Toyonishiki RIL	Toyonishiki	(Zhang <i>et al.</i> 2008)
<b><i>qSF<sup>ht</sup>4.2</i></b>	<b>4</b>	<b>RM3916-RM2431</b>	<b>28.6-34.9</b>						
<i>qhr4-3</i>		RG214-RG143	31.7-33.7	6.4	4.33	1.3	IR64×Azucena DH	IR64	(Cao <i>et al.</i> 2003)
<b><i>qPSL<sup>ht</sup>5</i></b>	<b>5</b>	<b>RM1248-RM4915</b>	<b>0-4.3</b>						
<i>qh<sub>ts</sub>-5</i>		RM405-274	3.1-26.9	4.6	0.66	10.7	Zhongyouzao 8×Toyonishiki RIL	ZYZ8	(Zhang <i>et al.</i> 2008)
<b><i>qDFT3</i></b>	<b>3</b>	<b>RM3766-RM3513</b>	<b>6.9-25.1</b>						
<i>qhr3-1</i>		RZ892-RG100	5.2-12.9	6.4	-6.46	2.9	IR64×Azucena DH	Azucena	(Cao <i>et al.</i> 2003)
<i>qh<sub>ts</sub>-3</i>		RM157b-282	12.41	2.7	-0.60	10.7	Zhongyouzao 8×Toyonishiki RIL	Toyonishiki	(Zhang <i>et al.</i> 2008)
<b><i>qDFT8</i></b>	<b>8</b>	<b>RM5891-RM4997</b>	<b>26.6-28.2</b>						
<i>qtl8.3</i>		RG598	27.6	3.4	-0.11	7.4	Bala×Azucena RIL	Bala	(Jagadish <i>et al.</i> 2010a)
<b><i>qDFT10.1</i></b>	<b>10</b>	<b>RM6737-RM6673</b>	<b>18.7-23.0</b>						
<i>qtl10.1</i>		C16	20.8	3.6	-0.146	13.0	Bala×Azucena RIL	Bala	(Jagadish <i>et al.</i> 2010a)
				3.5	-0.226	13.4			
<i>SSPF10</i>		RM6132-RM6100	18.8-18.9	6.6	7.24	11.5	996×4628 RIL	996	(Xiao <i>et al.</i> 2011)
<i>SSPc10</i>				7.2	6.99	11.6			
<b><i>qDFT11</i></b>	<b>11</b>	<b>RM1355-RM2191</b>	<b>17.2-24.7</b>						
<i>qtl11.1</i>		G1465	24.2	3.2	0.15	8.0	Bala×Azucena RIL	Azucena	(Jagadish <i>et al.</i> 2010a)
				2.8	0.14	7.4			
<b><i>qPSL<sup>ht</sup>1</i></b>	<b>1</b>	<b>RM1196-RM6581</b>	<b>21.9-31.5</b>						
<i>qhr1</i>		RG381-RZ19	30.9	10.2	-9.5	19.2	IR64×Azucena DH	Azucena	(Cao <i>et al.</i> 2003)

Bold words represent QTLs identified in this study