

**Table S1 Pairwise correlation coefficients between thousand seed weight and seed size traits for sesame under two environments**

Environment	Trait	tsw	sl	sw	lwr	sp	sd	sa	sc
<b>Hainan</b>	<b>tsw</b>	1							
	<b>sl</b>	0.286**	1						
	<b>sw</b>	0.473**	0.904**	1					
	<b>lwr</b>	-0.393**	0.281**	-0.154	1				
	<b>sp</b>	0.357**	0.987**	0.951**	0.147	1			
	<b>sd</b>	0.360**	0.986**	0.960**	0.123	0.996**	1		
	<b>sa</b>	0.397**	0.974**	0.975**	0.062	0.992**	0.996**	1	
<b>Yuanyang</b>	<b>tsw</b>	1							
	<b>sl</b>	-0.184*	1						
	<b>sw</b>	-0.200*	0.936**	1					
	<b>lwr</b>	-0.028	0.470**	0.130	1				
	<b>sp</b>	-0.186*	0.993**	0.964**	0.382**	1			
	<b>sd</b>	-0.205*	0.984**	0.981**	0.313**	0.993**	1		
	<b>sa</b>	-0.197*	0.983**	0.982**	0.307**	0.993**	0.999**	1	
	<b>sc</b>	0.064	-0.602**	-0.287**	-0.976**	-0.522**	-0.461**	-0.454**	1

\*Significant at  $P \leq 0.05$ ; \*\*Significant at  $P \leq 0.01$ .

tsw, thousand seed weight; sl, seed length; sw, seed width; lwr, length-to-width ratio; sp, seed perimeter; sd, seed diameter; sa, seed area; sc, seed circularity.