

Introduced structure	Generation	Total no. plants	No. segregants	
			Fertile	Sterile
S314a	F ₁	10	10	0
	BC ₁ F ₁	8	6	2
	BC ₂ F ₁	68	0	68
	BC ₃ F ₁	53	0	53
	BC ₄ F ₁	98	0	98
S352b	F ₁	16	16	0
	BC ₁ F ₁	34	28	6
	BC ₂ F ₁	40	0	40
	BC ₃ F ₁	37	0	37
	BC ₄ F ₁	38	0	38
S367	F ₁	7	7	0
	BC ₁ F ₁	13	13	0
	BC ₂ F ₁	60	60	0
	BC ₃ F ₁	19	19	0
	BC ₄ F ₁	23	23	0
S356	F ₁	4	4	0
	BC ₁ F ₁	4	4	0
	BC ₂ F ₁	30	30	0

Figure S3. Male phenotype of the backcrossed rice lines.

The lines with the S314a, S352b, S367 and S356 structures were bred by backcrossing with the maintainer line ZS97B (with the recessive restorer genes *rf3* and *rf4*) as the recurrent parent. All F₁ and most BC₁F₁ segregants with S314a and S352b were male-fertile, suggesting that these cytoplasm-donor accessions also carried dominant restorer gene(s) that could restore the male fertility of the hybrid plants. Then, the male-sterile BC₁F₁ plants with S314a and S352b (and homozygous *rf3* and *rf4-i* from ZS97B) were used for further backcrossing to produce the sterile BC₂F₁, BC₃F₁ and BC₄F₁ plants.