

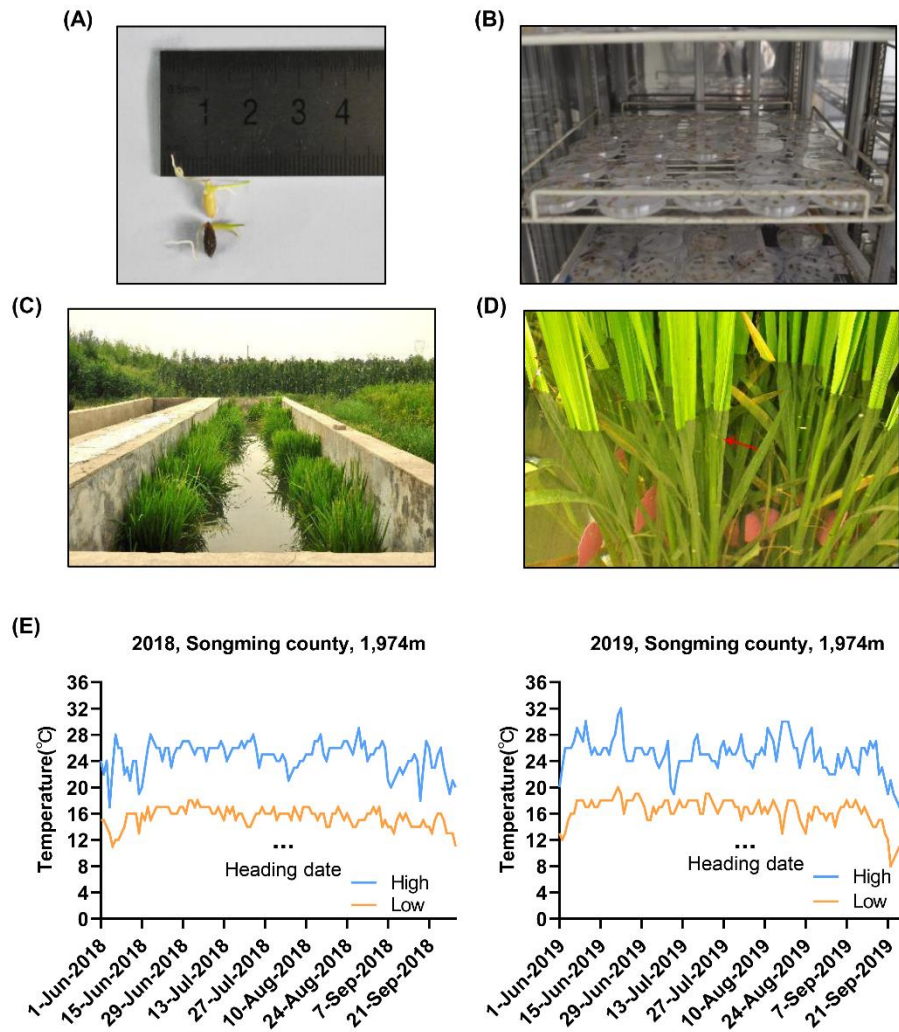


Figure S1. Evaluation of cold tolerance at the early seedling and booting stages. (A) The early seedling before cold treatment. (B) Cold treatment at the early seedling stage in the low-temperature incubator. (C, D) Cold treatment at the booting stage in deep water. The red arrow in D indicates the stage when the pulvinus of the flag leaf grows to the penultimate leaf level. (E) Temperature records for Songming county in 2018 and 2019. The bottom middle of the graph shows the heading date of the BIL population.

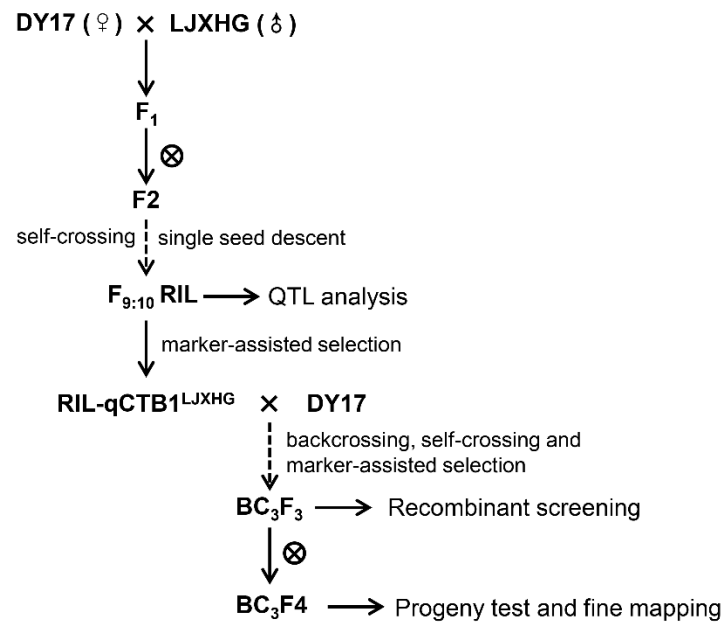


Figure S2. Construction of the genetic mapping population

Table S1. The information of the linkage map developed using the LJXHG/DY17 RIL population

Chr	No. of markers	Maximal/minimal interval (cM)	Map distance (cM)	Average distance (cM/marker)
1	21	17.7/0.6	151	7.6
2	13	25.5/1.9	105.1	8.8
3	14	17.2/2.7	115.4	8.9
4	15	20.1/1.2	88.6	6.3
5	23	12.6/0.5	116.2	5.3
6	12	27.0/1.2	119.4	10.9
7	16	13.6/0.5	74.7	5.0
8	20	15.4/0.3	95.8	5.0
9	10	12.0/0.6	57.5	6.4
10	10	19.7/1.0	61.9	6.9
11	5	27.2/1.2	40.7	10.2
12	7	18.5/0.9	40	6.7
In total	166	27.2/0.3	1067.3	7.3