

**Table S3 The effective numbers of tests for eight traits of rice in the natural bin analysis.**

Trait	$m_e$	$p$ -value criterion	Chi-square criterion	LOD criterion
Yield (YD)	26.56	0.00188	9.63	2.09
Tiller number (TP)	65.45	0.00076	11.29	2.45
Number of grains (GN)	37.55	0.00133	10.28	2.23
1000 grain weight (KGW)	69.50	0.00072	11.43	2.48
Grain length (GL)	85.81	0.00058	11.80	2.56
Grain width (GW)	34.82	0.00143	10.14	2.20
Heading date (HD)	6.79	0.00736	7.14	1.55
Apicule color (OsC1)	1.21	0.04125	4.15	0.90

$m_e$  : Effective number of tests.

$p$ -value: The genome-wide  $p$ -value criterion used to declare significance (  $p - \text{value} = 0.05 / m_e$  ).

Chi-square criterion: The  $(1 - p) \times 100$  percentile of the  $\chi_1^2$  distribution.

LOD criterion: The LOD score criterion is the Chi-square criterion divided by 4.61.