



**Figure S2** Quantile-quantile (Q-Q) plots of estimated  $-\log_{10}(P)$ . Q-Q plots of marker-trait association analysis for flour color-related traits based on BLUP values: (A)  $L^*$ , (B)  $a^*$ , (C)  $b^*$  and (D) yellow pigment content (YPC). The red line is the expected line under a null distribution. In the upper right section of the graphs, deviations from the diagonal are expected, as these are the SNP most likely to be associated with the trait.