

**Supplementary Figure 1** The genotypic effect and frequency of haplotype of candidate genes. **A**, *Glyma03g33360*; **B**, *Glyma15g10780*; **C**, *Glyma16g29760*; **D**, *Glyma17g35490*. The left part: the SPC of haplotype of candidate genes, The right part: the frequency of haplotype of candidate genes. The red triangle represents the average haplotype phenotype. NS. indicates no significant difference. Multiple comparisons are represented by the lowercase letter ‘a’, ‘b’, ‘c’ and the significance level is 0.05.