

## Supplementary Tables

### Table S1. Positive epistatic QTNs identified with model KinADE.

Detailed information was available in the attached Excel file.

### Table S2. Degree of dominance (d/a values) for the all QTNs identified by model KinADE.

Detailed information was available in the attached Excel file.

### Table S3. Candidate genes for all QTNs identified based on the model KinADE.

Detailed information was available in the attached Excel file.

### Table S4. The expression of PH, EH, RPR\_TIAG and RPR\_IUE candidate genes at seedling stage on B73, Mo17 and B73 × Mo17.

Detailed information was available in the attached Excel file.

### Table S5. The expression of GY and GM candidate genes at spikelet stage on CL11, NG5 and HYB (CL11 × NG5).

Detailed information was available in the attached Excel file.

### Table S6. The expression of GY and GM candidate genes at floret stage on CL11, NG5 and HYB (CL11 × NG5).

Detailed information was available in the attached Excel file.

### Table S7. Released hybrid varieties combined from elite line A008 (KA105).

Hybrid Varieties Name	Approval No	Approved by	Female	Male
ShaanDan 679	20220397	National/China	KA105	KB179
ShaanDan 638	20220117	National/China	KA105	KB024
ShaanDan 660	20210062	National/China	KA105	KB089
ShaanDan 642	20210530	National/China	KA105	KB207
ShaanDan 620	20200264	National/China	KA105	KB106
ShaanDan 632	20220065	Province/Shaanxi	KA105	KB074
ShaanDan 697	20220063	Province/Shaanxi	KA105	KB121
ShaanDan 635	20220050	Province/Shaanxi	KA105	KB019
ShaanDan 673	20220044	Province/Shaanxi	KA105	KB066
ShaanDan 630	20220008	Province/Shaanxi	KA105	KB028
ShaanDan 608	20210055	Province/Shaanxi	KA105	KB085
ShaanDan 682	20210049	Province/Shaanxi	KA105	KB139
ShaanDan 669	2020061	Province/Shaanxi	KA105	KB109
ShaanDan 619	2020053	Province/Shaanxi	KA105	KB020
ShaanDan 662	2020046	Province/Shaanxi	KA105	KB128
ShaanDan 659	2020010	Province/Shaanxi	KA105	KB107
ShaanDan 658	2019001	Province/Shaanxi	KA105	KB025
ShaanDan 618	2015006	Province/Shaanxi	KA105	KB081