Supplementary Materials

Supplementary Table S1 ANOVA of the effect of nitrogen fertilizer regulation on starch characteristics

Source	AAC		Fa		Fb$_3$		Fb$_1$+Fb$_2$	
	MS	F	MS	F	MS	F	MS	F
Varieties	338.753	2317.629**	127.873	1536.813**	6.590	276.07**	24.234	2.180
Fertilizer	0.550	3.761*	0.201	2.414	0.046	1.915	8.938	0.804
Varieties×Fertilizer	0.616	4.212**	0.107	1.290	0.044	1.845	8.829	0.794
Error	0.146		0.083		0.024		11.115	

Note： *,** indicates the correlation at P < 0.05 and P < 0.01 levels. Same as follow

Supplementary Table S2 ANOVA of the effect of nitrogen fertilizer regulation on protein components

Source	Albumin		Globulin		Prolamine		Glutelin	
	MS	F	MS	F	MS	F	MS	F
Varieties	8.149	23.207**	9.461	15.308**	6.074	42.975**	1115.925	60.887**
Fertilizer	0.075	0.215	0.213	0.344	0.532	3.761*	147.786	8.063**
Varieties×Fertilizer	0.524	1.491	1.795	2.905*	0.670	4.739**	51.437	2.807*
Error	0.351		0.618		0.141		18.328	

Note： *,** indicates the correlation at P < 0.05 and P < 0.01 levels. Same as follow

Supplementary Table S3 ANOVA of the effect of nitrogen fertilizer regulation on RVA characteristic

Source	Peak Viscosity		Trough Viscosity		Breakdown		Final Viscosity		Setback	
	MS	F	MS	F	MS	F	MS	F	MS	F
Varieties	1.41E+06	181.591**	1.94E+06	1310.261**	6.06E+04	16.227**	7.14E+06	1878.017**	1.66E+06	2053.978**
Fertilizer	2.42E+04	3.115	1.02E+04	6.842**	9.84E+03	2.634	1.61E+04	4.225*	6.80E+02	0.843
Varieties×Fertilizer	2.99E+03	0.384	2.35E+03	1.583	2.81E+03	0.752	3.12E+03	0.820	1.25E+02	0.155
Error	7.77E+03		1.48E+03		3.74E+03		3.80E+03		8.07E+02	

Note： *,** indicates the correlation at P < 0.05 and P < 0.01 levels. Same as follow

Supplementary Table S4 ANOVA of the effect of nitrogen fertilizer regulation on taste traits

Source	Taste Value		Appearance		Hardness		Viscosity		Balance	
	MS	F	MS	F	MS	F	MS	F	MS	F
Varieties	1324.559	116.525**	4001.265	110.321**	417.143	111.953**	3933.994	114.273**	4469.438	120.896**
Fertilizer	187.983	16.537**	608.987	16.791**	57.964	15.556**	592.242	17.203**	649.464	17.568**
Varieties×Fertilizer	24.884	2.189	82.754	2.282	11.814	3.171*	50.769	1.475	85.924	2.324
Error	11.367		36.269		3.726		34.426		36.969	

Note： *,** indicates the correlation at P < 0.05 and P < 0.01 levels. Same as follow