

Supplementary Material for

Grain-filling characteristics and yield formation of wheat in two different soil fertility fields in the Huang–Huai–Hai Plain

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This file includes:

Table S1.

Soil texture and particle size distribution before sowing at the experimental site in 2018/19 growing season.

Soil layers (cm)	High soil fertility field				Middle soil fertility field			
	Soil texture	Particle size distribution (%)			Soil texture	Particle size distribution (%)		
		Sand	Silt	Clay		Sand	Silt	Clay
		2.00-0.05 mm	0.05-0.002 mm	<0.002 mm		2.00-0.05 mm	0.05-0.002 mm	<0.002 mm
0-20	Sandy clay loam	65.97	9.30	24.73	Sandy clay loam	65.63	11.47	22.91
20-40	Sandy clay loam	66.64	10.30	23.06	Sandy clay loam	65.73	11.70	22.57
40-60	Sandy loam	63.97	17.13	18.90	Sandy loam	63.80	16.80	19.40
60-80	Sandy loam	64.66	18.13	17.21	Sandy loam	64.64	18.47	16.90
80-100	Sandy loam	61.94	24.70	13.36	Sandy loam	66.65	19.47	13.89
100-120	Sandy loam	61.19	26.30	12.51	Sandy loam	67.20	20.47	12.33
120-140	Sandy loam	62.55	23.47	13.98	Sandy loam	66.73	21.30	11.97
140-160	Sandy loam	63.40	21.97	14.63	Sandy loam	66.38	20.63	12.98
160-180	Sandy loam	74.35	11.13	14.52	Sandy loam	75.25	10.80	13.95
180-200	Sandy loam	76.86	8.33	14.81	Sandy loam	76.88	8.47	14.65

Table S2

Soil bulk density and filed capacity before sowing at the experimental site in 2017/18 and 2018/19 growing seasons.

Year	Index	Treatment	Soil layers (cm)									
			0-20	20-40	40-60	60-80	80-100	100-120	120-140	140-160	160-180	180-200
2017/18	Bulk density (g cm ⁻³)	HF	1.42b	1.58b	1.56a	1.59a	1.62a	1.63a	1.64a	1.63a	1.64a	1.64a
		MF	1.50a	1.64a	1.59a	1.61a	1.64a	1.65a	1.64a	1.65a	1.66a	1.65a
	Field capacity (%)	HF	27.25a	23.31a	26.09a	24.75a	23.77a	23.40a	23.80a	23.74a	23.66a	23.61a
		MF	24.47b	21.92b	24.98a	24.09a	23.86a	22.69a	23.41a	23.04a	22.86a	23.30a
2018/19	Bulk density (g cm ⁻³)	HF	1.41b	1.56b	1.54a	1.57a	1.63a	1.64a	1.64a	1.65a	1.64a	1.65a
		MF	1.55a	1.63a	1.55a	1.59a	1.64a	1.65a	1.67a	1.65a	1.66a	1.66a
	Field capacity (%)	HF	29.54a	25.44a	27.69a	25.35a	24.58a	24.22a	23.54a	23.64a	23.71a	23.08a
		MF	24.89b	22.08b	25.48b	24.96a	24.27a	24.11a	23.04a	22.75a	23.44a	23.03a

HF, high soil fertility field and MF, middle soil fertility field. Values followed by a different letter are significantly different (LSD test, $p < 0.05$) within the treatments in each year.

Table S3

The growth curve equations of grain filling process of each treatment with three replicates in 2017/18 and 2018/19 growing seasons.

Year	Treatment	Growth curve equation	Correlation coefficient
2017/18	HF	$y=46.6109/(1+45.7973e^{-0.2105x})$	0.9980
		$y=46.8455/(1+46.4878e^{-0.2097x})$	0.9988
		$y=46.5626/(1+44.1827e^{-0.2094x})$	0.9986
	MF	$y=43.2331/(1+49.2343e^{-0.2169x})$	0.9975
		$y=43.1698/(1+48.1446e^{-0.2160x})$	0.9978
		$y=42.8801/(1+48.3429e^{-0.2193x})$	0.9976
2018/19	HF	$y=47.0175/(1+47.6692e^{-0.2165x})$	0.9993
		$y=47.2094/(1+44.3558e^{-0.2111x})$	0.9995
		$y=47.0822/(1+44.8246e^{-0.2114x})$	0.9994
	MF	$y=42.9267/(1+48.4459e^{-0.2208x})$	0.9988
		$y=42.9954/(1+45.7597e^{-0.2198x})$	0.9989
		$y=43.0892/(1+48.1431e^{-0.2217x})$	0.9990

HF, high soil fertility field and MF, middle soil fertility field.