

Figure S1. Average daily temperature (°C) and total precipitation (mm) during the winter wheat and summer maize growing seasons for the period 2005 to 2018.

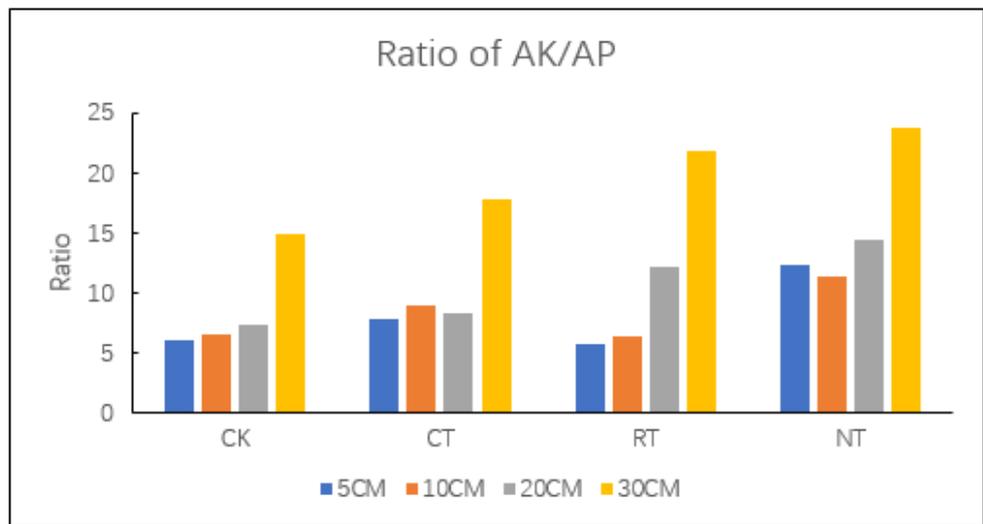
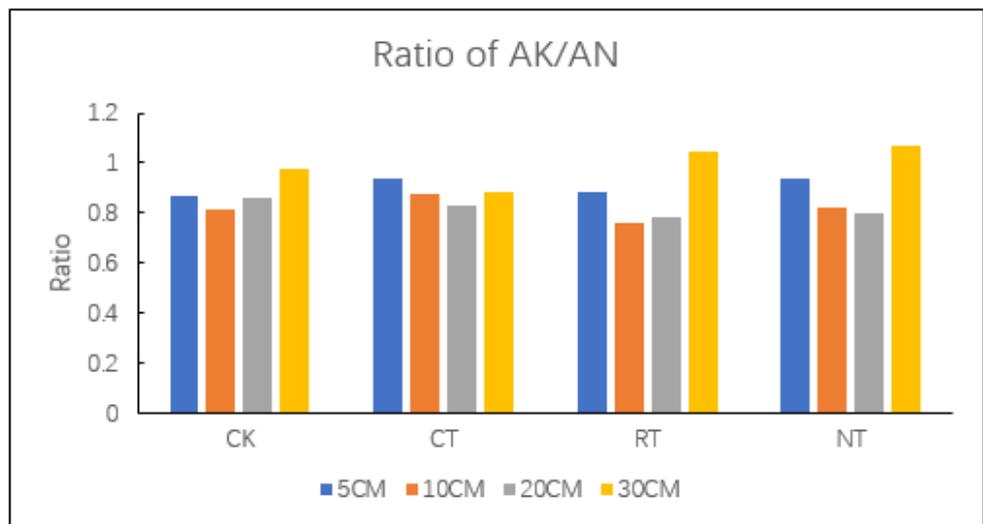
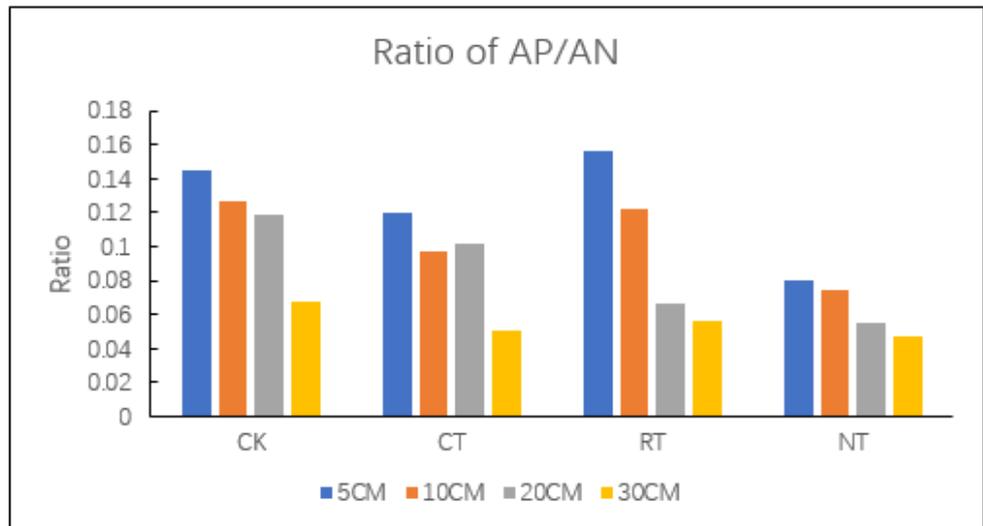


Figure S2. Ratios (wt/wt) of available P (AP) and available N (AN) (a), available K (AK) and AP (b), and of AK and AN (c) in four soil layers (0–5, 5–10, 10–20 and 20–30 cm) and four tillage treatments (means of the years 2014, 2016 and 2018). See Table 1 for the tillage treatments.

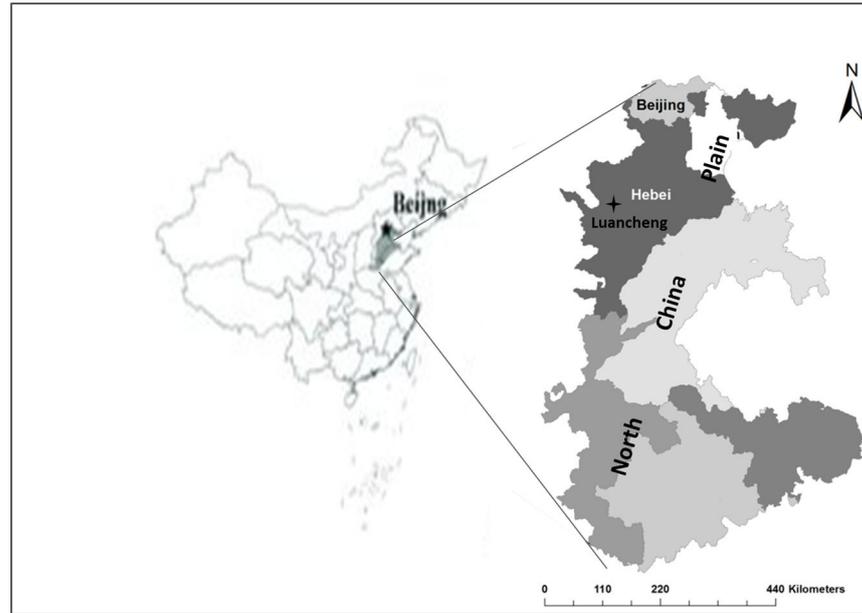


Figure S3. The location of Luancheng experimental station.