

Figure S1. Field experiment testing rice yields and critical nitrogen loss from flooded paddy fields under various nitrogen fertilization rates with or without iron amendment.

Figure S2. Leachate collection device to collect NO_3^- leaching samples in each field plot.

Figure S3. Ammonia concentration in field surface water under various nitrogen fertilization rates with or without iron amendment in 2019 (a) and 2020 (b). 100%N is the conventional N fertilization rate ($315 \text{ kg N hm}^{-2} \text{ season}^{-1}$) for rice in the lower Yangtze River Delta. Fe was applied at 5000 kg hm^{-2} of iron powder (>99% purity) started the beginning of the field experiment.

Figure S4. PH of field surface water under various nitrogen fertilization rates with or without iron amendment in 2019 (a) and 2020 (b). 100%N is the conventional N fertilization rate ($315 \text{ kg N hm}^{-2} \text{ season}^{-1}$) for rice in the lower Yangtze River Delta. Fe was applied at 5000 kg hm^{-2} of iron powder (>99% purity) started the beginning of the field experiment.

Figure S5. Soil moisture and temperature in the experimental field in 2019 (a) and 2020 (b).

Figure S1



Figure S2

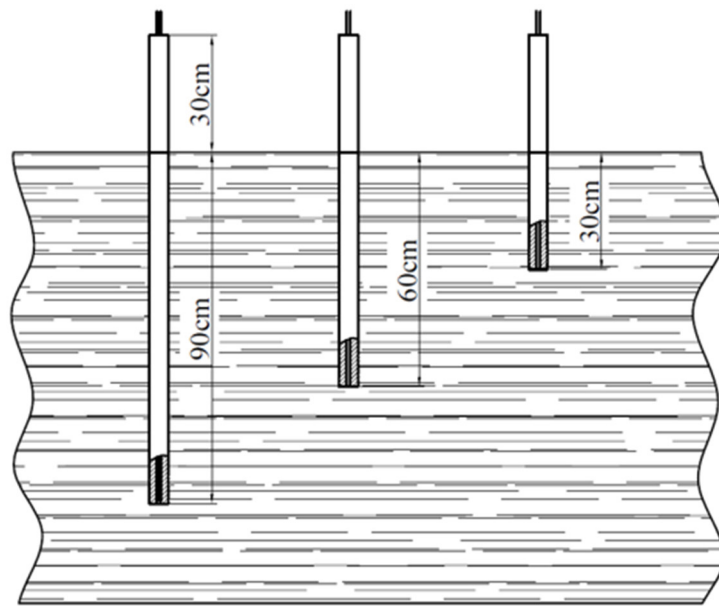


Figure S3

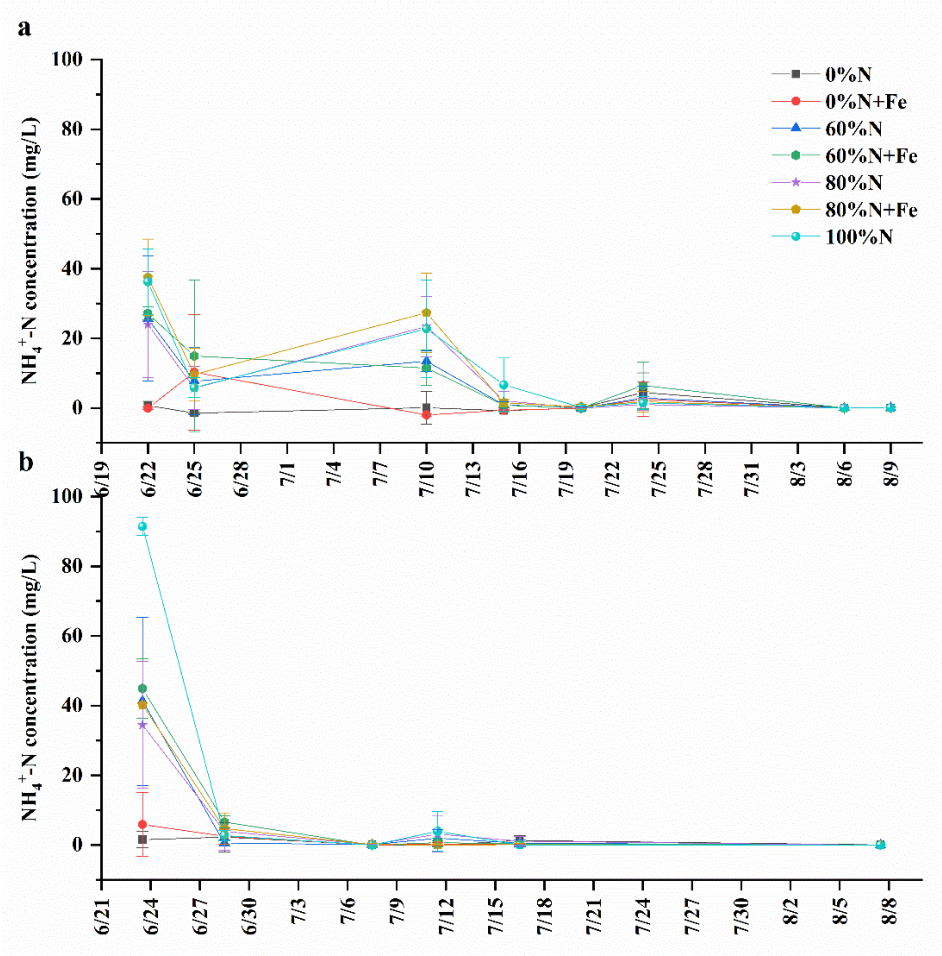


Figure S4

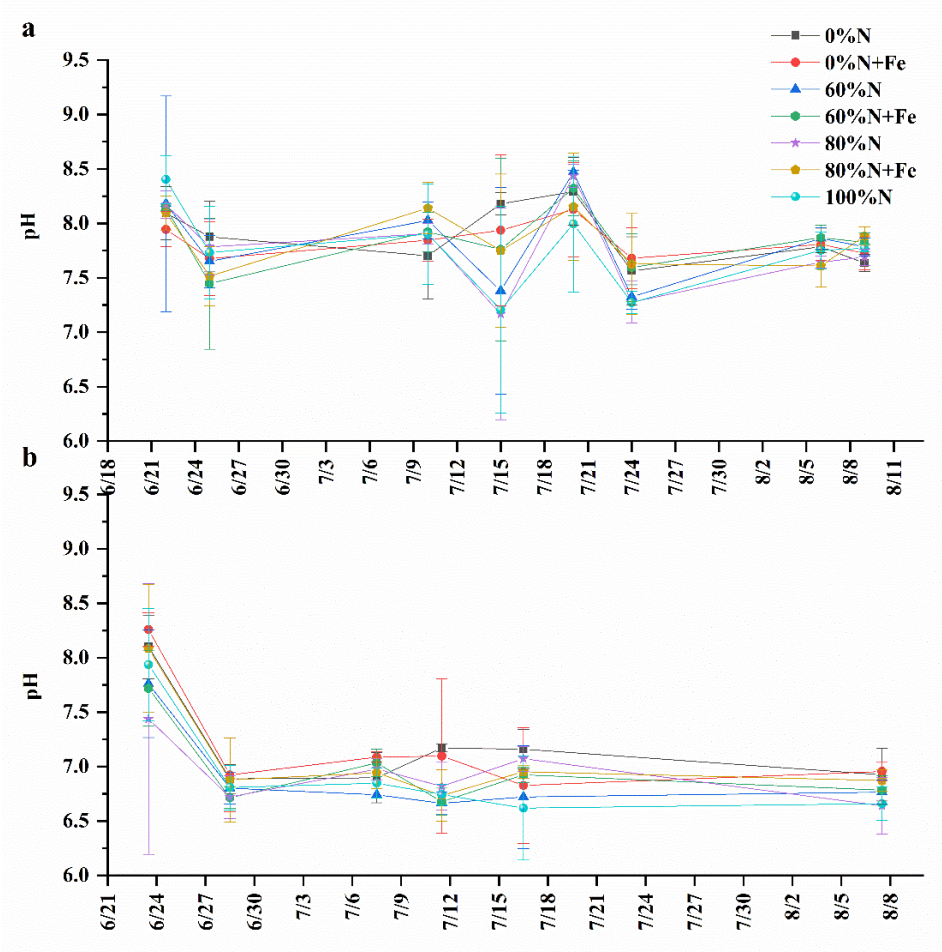


Figure S5

