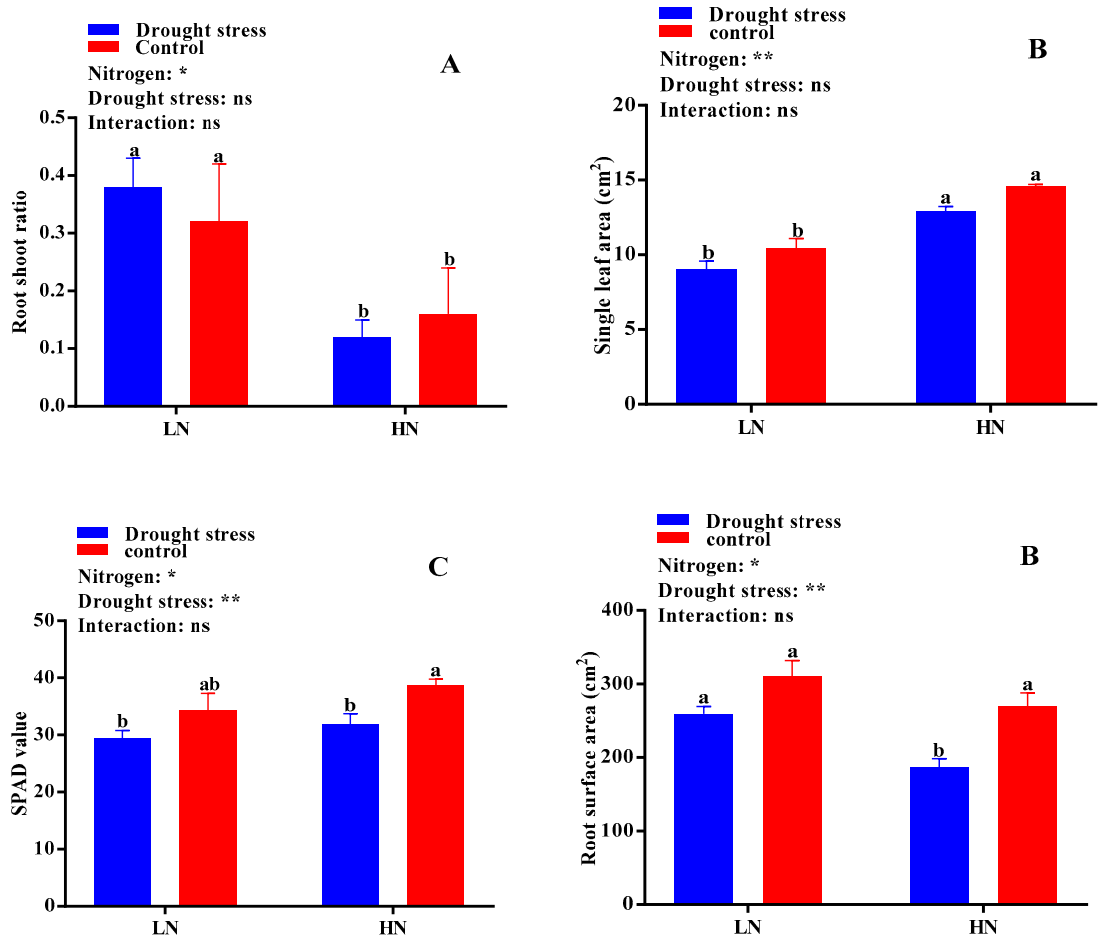
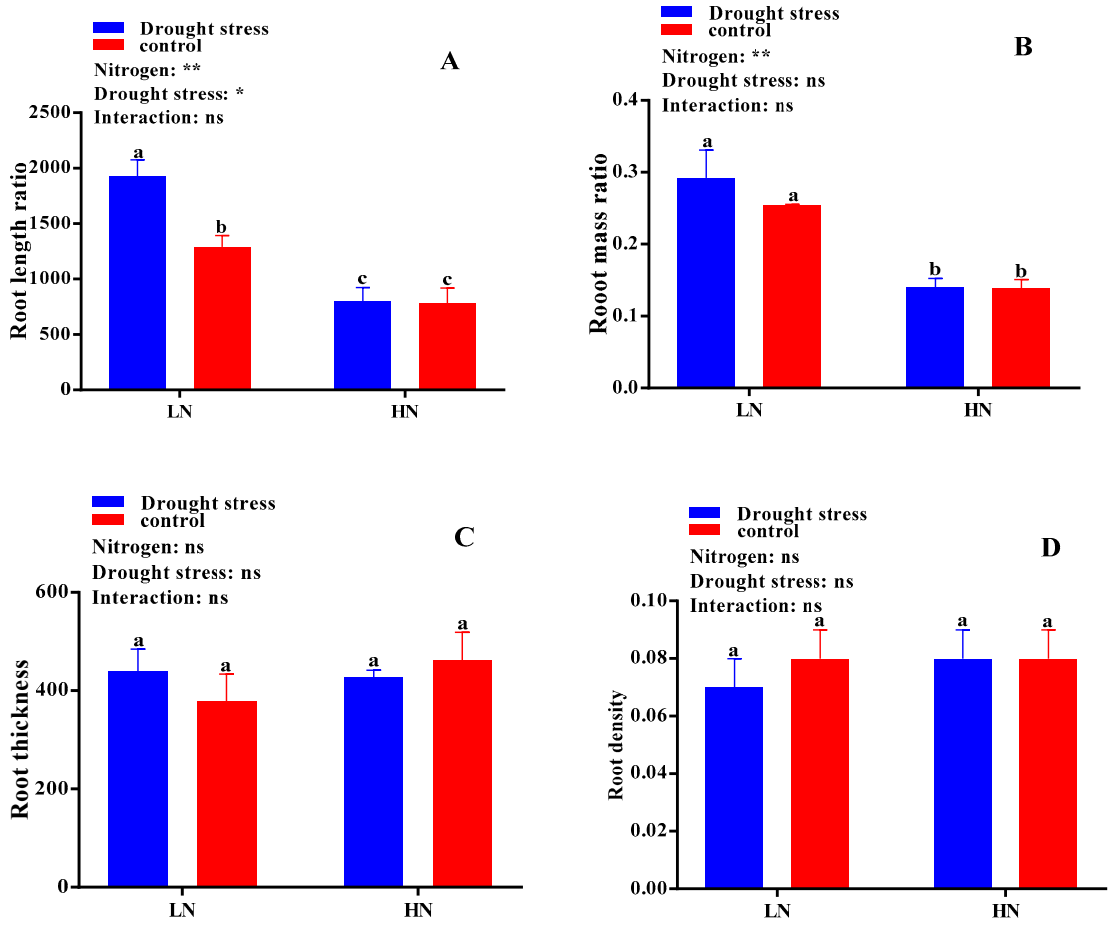


Supplementary figure 1. Root-shoot ratio (A), single leaf area (cm) (B), SPAD value (C) and root surface area (cm^2) (D) of cotton seedlings at the end of the experiment. Control: 0 g L^{-1} PEG-6000, drought stress: 150 g L^{-1} PEG-6000, LN, low nitrogen concentration (0.25 mM) and HN, high nitrogen concentration (5 mM). Bars with the different letters indicate significant difference ($p < 0.05$). Error bars represent the standard error ($n = 3$). p-Values of the ANOVA of nitrogen, drought, and their interaction are indicated as ns, not significant; * $p < 0.05$, ** $p < 0.01$.



Supplementary figure 2. Root length ratio (%) (A), root mass ratio (cm) (B), root thickness (mm) (C) and root density (cm^3) (D) of cotton seedlings at the end of the experiment. LN, low nitrogen (0.25 mM); HN, high nitrogen (5 mM). Control: 0 g L^{-1} PEG-6000, drought stress: 150 g L^{-1} PEG-6000, LN, low nitrogen concentration (0.25 mM) and HN, high nitrogen concentration (5 mM). Bars with the different letters indicate significant difference ($p < 0.05$). Error bars represent the standard error (n = 3). P-Values of the ANOVAs of nitrogen, drought, and their interaction are indicated as ns; not significant, *; $p < 0.05$, **; $p < 0.01$.

Table S1. PCA of morphophysiological and biochemical traits of shoot and root under combined conditions of nitrogen and water stress.

	Shoot		Root	
	PC1	PC2	PC1	PC2
Total soluble sugar	-0.35	-0.23	**0.28**	-0.32
Total soluble protein	**0.35**	0.08	**0.28**	**0.31**
Free amino acid	**0.28**	-0.35	-0.21	0.17
Nitrate reductase activity	**0.34**	**0.26**	-0.27	**0.32**
Glutamate dehydrogenase activity	-0.17	0.14	0.05	-0.45
Glutamate synthase activity	-0.12	**0.20**	0.14	-0.42
Glutamine synthetase activity	-0.27	**0.32**	**0.40**	0.08
Catalase activity	0.10	-0.24	-0.27	-0.16
Peroxidase activity	**0.29**	-0.25	-0.38	-0.05
Superoxide dismutase activity	**0.25**	-0.41	-0.19	**0.36**
Malondialdehyde content	-0.36	-0.17	**0.35**	**0.23**
Photosynthetic rate	**0.20**	**0.45**	-0.34	-0.15
Shoot dry matter	**0.34**	**0.26**	**0.21**	**0.22**
Eigen value	5.86	2.99	5.90	4.90
Variance contribution rate	63.25	25.94	45.42	37.75
Cumulative percentage	45.09	68.13	45.42	83.17

The numbers in bold fonts indicate key factors of PC1 and PC2 with abstract of scores larger than 0.20.