

Supplementary figure

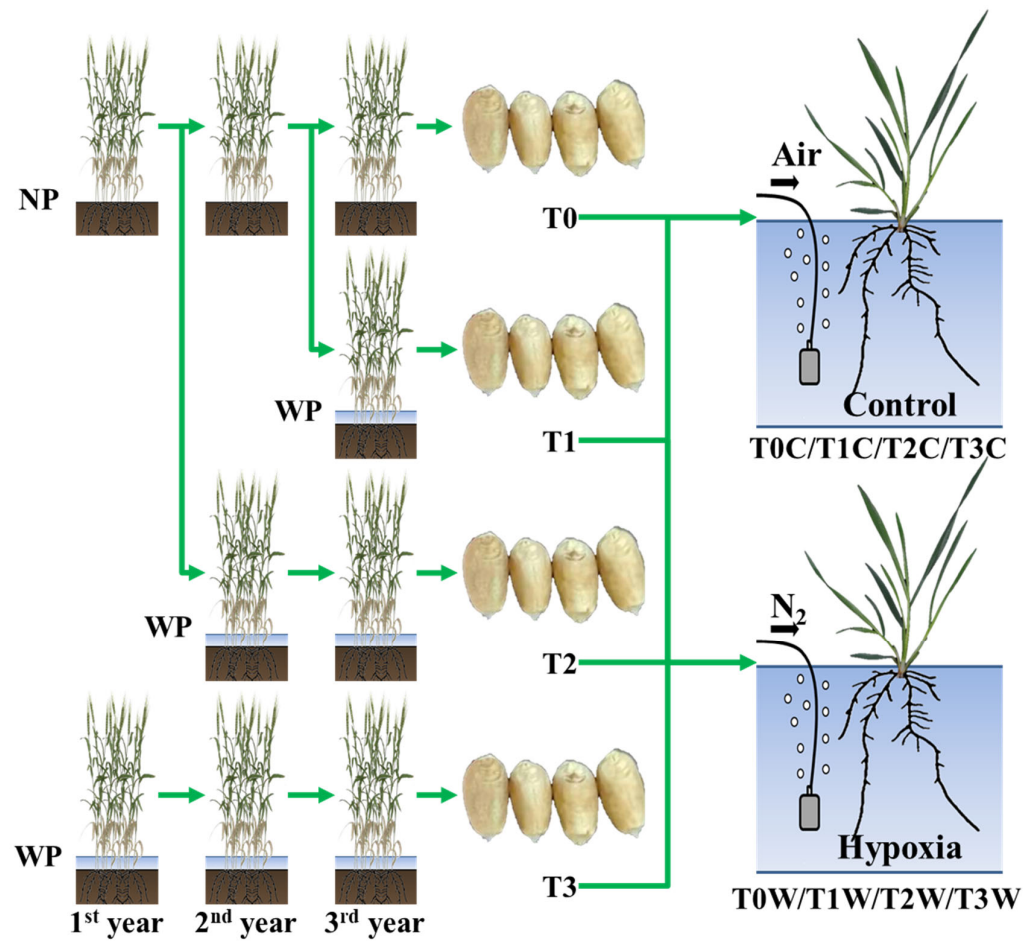


Figure S1. Waterlogging-priming pattern

Note: T0C, no-priming + no offspring hypoxia stress; T0W, no priming + offspring hypoxia stress; T1C, one-generation priming + no offspring hypoxia stress; T1W, one-generation priming + offspring hypoxia stress; T2C, two-generation priming + no offspring hypoxia stress; T2W, two-generation priming + offspring hypoxia stress; T3C, three-generation priming + no offspring hypoxia stress; T3W, three-generation priming + offspring hypoxia stress.

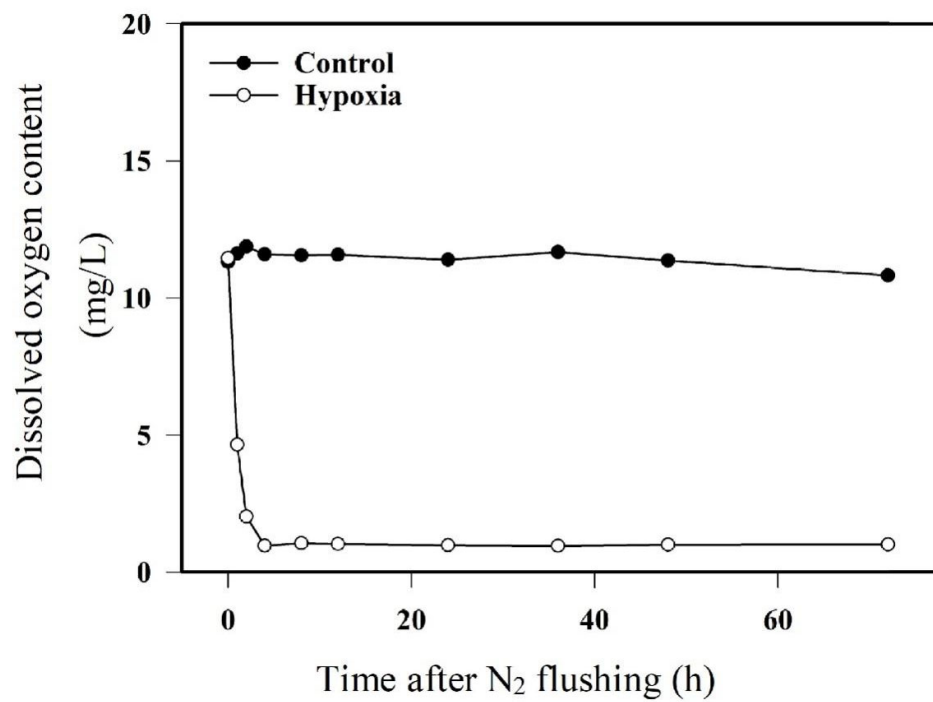


Figure S2. Dissolved oxygen content changes over time in solution with aeration of nitrogen

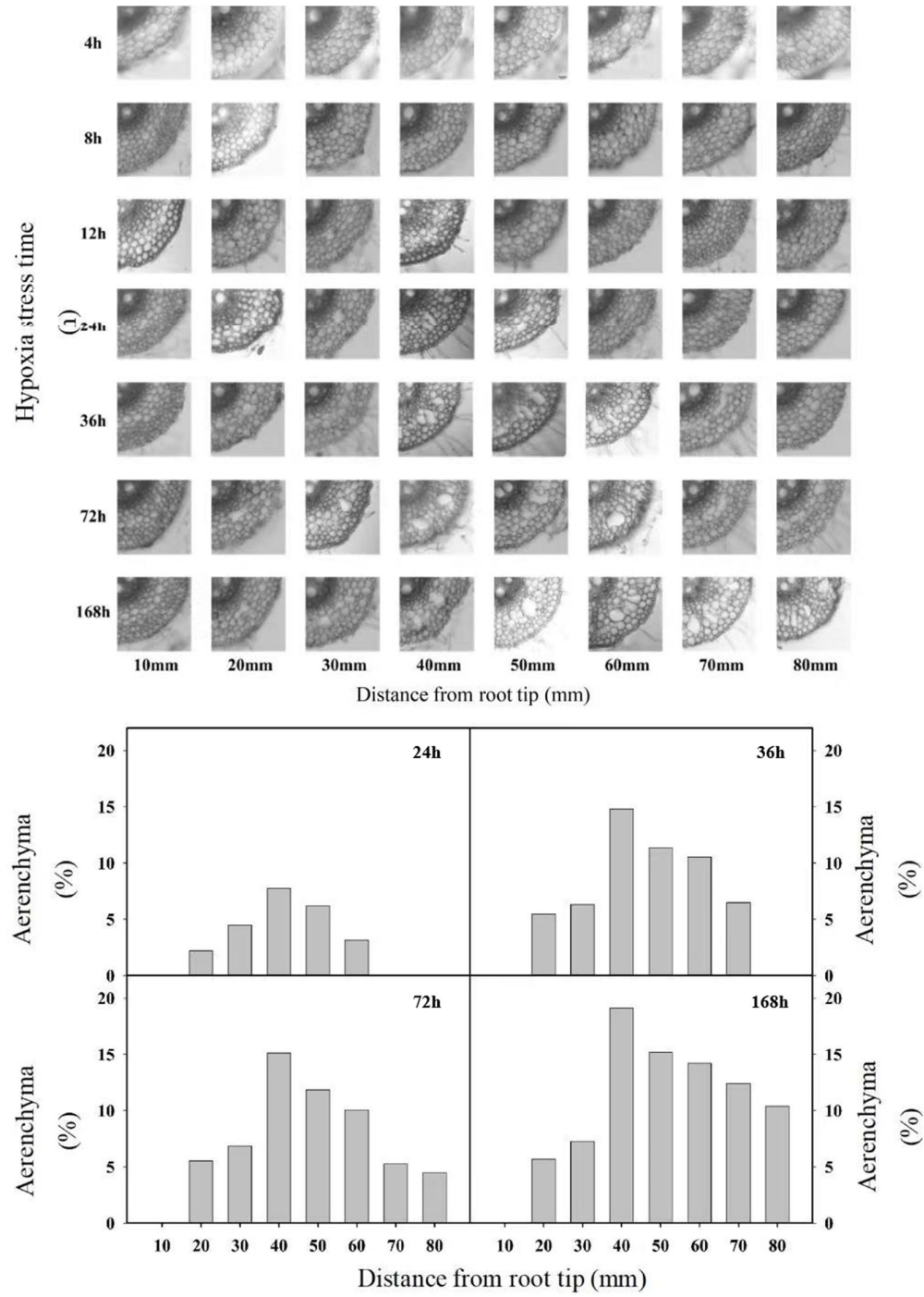


Figure S3. Effects of hypoxia stress on the formation of aerenchyma in wheat secondary roots

Supplementary Tables

Table S2. PCR primers used for semi-quantitative and quantitative RT-PCR

Gene	Forward primer 5'-3'	Reverse primer 5'-3'	Citation
<i>TaAINV</i>	AACGTCACAAGGCTCGTCGT	ATGTAGGCCTGATTGTAGGAGGAGT	[1]
<i>TaNIN</i>	CACTGGAGCGTAAGAGGTCATT	CCACACTATCAAAGCCGTCAT	[1]
<i>TaSuS</i>	CCGACAAGGAGAAGTATG	CGAGTTCCTAACATTAC	[1]
<i>TaPDC1</i>	AGGGTCTCTGCTGCCAAC	TATTTGATGGCAACGTGCTG	[2]
<i>TaPDC2</i>	GAGCTTCTTGAGTGGGGTTCT	ATGTGTCCTGGGGATTGG	[2]
<i>TaADH1</i>	CCCAATGTCGTGGAGATGTA	CTAGTTCTCCATGCGGATGAT	[2]
<i>TaADH2</i>	GGAGCTGGACGTGGAGAA	GAACGCCGTGTTGATCTG	[2]
<i>TaACS2</i>	AGCACCAGCAGCAGAAGG	GTGGACGAGCGGAGACTG	[2]
<i>Actin</i>	GCTCTCCAACAACATTGCCAA	GCTTCTGCCTGTCACATACGC	[3]

Note: *TaAINV*: Acid Invertase gene; *TaNIN*: Alkaline/neutral invertase gene; *TaSuS*: Sucrose synthase gene; *TaPDC1*, *TaPDC2*: Pyruvate decarboxylase gene; *TaADH1*, *TaADH2*: Alcohol dehydrogenase gene; *TaACS2*: 1-aminocyclopropane-1-carboxylate (ACC) synthase gene.

References:

1. Liu, L.; Cang, J.; Yu, J.; Wang, X.; Huang, R.; Wang, J.; Lu, B. Effects of exogenous abscisic acid on carbohydrate metabolism and the expression levels of correlative key enzymes in winter wheat under low temperature. *Biosci Biotechnol Biochem* 2013, 77, 516-525, doi:10.1271/bbb.120752.
2. Yamauchi, T.; Watanabe, K.; Fukazawa, A.; Mori, H.; Abe, F.; Kawaguchi, K.; Oyanagi, A.; Nakazono, M. Ethylene and reactive oxygen species are involved in root aerenchyma formation and adaptation of wheat seedlings to oxygen-deficient conditions. *J Exp Bot* 2014, 65, 261-273, doi:10.1093/jxb/ert371.
3. Wang, X.; Zhang, X.; Chen, J.; Wang, X.; Cai, J.; Zhou, Q.; Dai, T.; Cao, W.; Jiang, D. Parental drought-priming enhances tolerance to post-anthesis drought in offspring of wheat. *Front Plant Sci* 2018, 9, 261, doi:10.3389/fpls.2018.00261.