

**Nitrogen application alleviates the adverse effects of defoliation stress
on *Lolium perenne* L. by enhancing the antioxidant system and
promoting photosynthesis**

Hui Zuo, Shuxia Yin, Tiemei Wang, Xinyue Xiong, Mengtong Shi, Qianqian Guo*

School of Grassland Science, Beijing Forestry University, 100083, Beijing, China

Corresponding author email: guoqianqian@bjfu.edu.cn

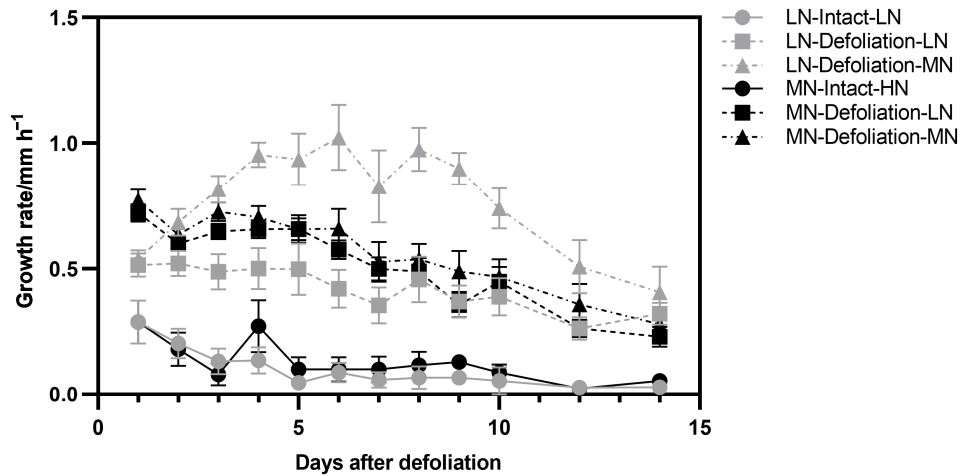


Figure S1. Single-day regrowth rate of perennial ryegrass after defoliation under low (0.05 mM) or moderate (5 mM) nitrate supply. Values are means \pm SE (n=10 plants)

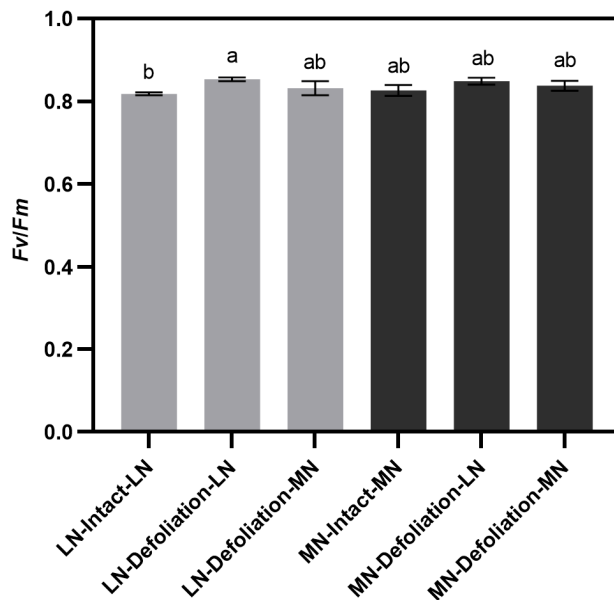


Figure S2. Maximum efficiency of photosystem II (F_v/F_m) on 15th days of perennial ryegrass regrowth under low (0.05 mM) or moderate (5 mM) nitrate supply after defoliation. Values are means \pm SE (n=6 plants). Different letters indicate significant differences ($p < 0.05$); the same letter indicates no significant differences between the treatments

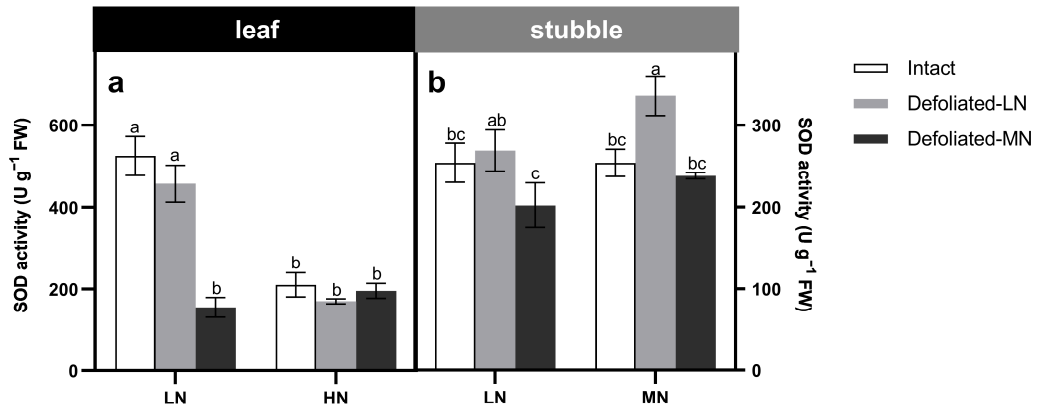


Figure S3. SOD activity of perennial ryegrass after defoliation under low (0.05 mM) or moderate (5 mM) nitrate supply. **(a)** SOD activity in leaf on the fifth days after defoliation, **(b)** SOD activity in stubble on the tenth days after defoliation. Values are means \pm SE (n=3 pools of six plants each). Different letters indicate significant differences ($p < 0.05$); the same letter indicates no significant differences between the treatments