

Yali ZHANG

Professor of Biological professor

Address: A710 CRES Building

Phone Number: +86 25 8439 6228

Email: ylzhang@njau.edu.cn

Education:

- Ph.D., Nanjing Agricultural University; Plant Nutrition, 2006
- B.A., Nanjing Agricultural University; Plant Nutrition, 1996

Research interests and expertise:

My research concentrates on nutrient efficient utilization in plants. On one hand, natural resources such as mineral resources are very limited, however, how plants cope with soil low nutrient condition remains clear. We first reported that strigolactones improve nitrogen and phosphate uptake and utilization through modulating plant rice growth and inducing more nutrients transporting from roots to shoots. On other hand, enormous population push scientists to find more ways to let plants have more grain yield under sufficient nutrient condition. I focus on the interplay among plant phytohormone such as auxin and the acquisition of nutrients from the soil, particularly nitrogen and its diverse forms. Understanding the regulation of these processes is critical for sustaining food quantity and at the same time for protecting our environment.

Current projects:

- The national key R&D program of China, Nitrogen fertilizer efficient utilization in wheat (2018YFD0200503, 2018-2020)
- The national key R&D program of China, Nitrogen fertilizer efficient utilization in rice (2017YFD0200100, 2017-2020)
- NSFC, Strigolactones increase phosphate uptake and utilization in rice (31672225 , 2017-2020)
- NSFC, Rice transcription factor OsMADS57 participates nitrate modulating root growth (31471936, 2015-2018)

Current teaching:

- Field trials and biostatistics, undergraduate, spring term
- Advanced plant nutrition experimental methodology, graduate, autumn term
- Advanced experimental design and biostatistics, graduate, autumn term

Selected publications:

- Sun H, Bi Y, Tao J, Huang S, Hou M, Xue R, Liang Z, Gu P, Yoneyama ,Xie X, Shen Q, Xu G, Zhang Y*.2016.Strigolactones are required for nitric oxide to induce root elongation in response to nitrogen- and phosphate-deficiency in rice. Plant Cell Environment, 39:1473–1484

- Huang S, Chen S, Zhang C, Yan Ming, Chen J, Xu G, Fan X, Zhang Y*. 2015. Knockdown of the partner protein OsNAR2.1 for high-affinity nitrate transport represses lateral root formation in a nitrate-dependent manner. *Scientific Reports*, 5:18192.
- Song W, Liu S, Meng L, Xue R, Wang C, Liu G, Wang S, Dong J, Zhang Y*. 2015. Potassium deficiency inhibits lateral root development in tobacco seedlings by changing auxin distribution. *Plant and Soil*, 396:163–173
- Sun H, J Li, Song W, Tao J, Huang S, Chen S, Hou M, Xu G, Zhang Y*. 2015. Nitric oxide generated by nitrate reductase increases nitrogen uptake capacity by inducing lateral root formation and inorganic nitrogen uptake under partial nitrate nutrition in rice. *Journal of Experimental Botany*, 66:2449-2259.
- Sun H, Tao J, Liu S, Huang S, Chen S, Xie X, Yoneyama K, Xu G, Zhang Y*. 2014. Strigolactones are involved in phosphate and nitrate deficiency-induced root development and auxin transport in rice. *Journal of Experimental Botany*, 65:6735-6746.
- Song W, Sun H, Li J, Gong X, Huang S, Zhu X, Zhang Y*, Xu G. 2013. Auxin distribution is differentially affected by nitrate in roots of two rice cultivars differing in responsiveness to nitrogen nutrients. *Annals of botany*, 112:1383-1393

Prizes, awards, honors:

- The 100 most influential papers in China, 2012
- First prize of jiangsu science and technology award in 2015 (10/11)