Yiyong Zhu

Professor of Plant Nutrition

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Education:

- Ph.D., Justus Liebig University, Giessen, Germany; Agricultural Sciences, 2004
- B.A., Nanjing Agricultural University; Soil Science and Plant Nutrition, 1996

Research interests and expertise:

My research has examined uptake and use efficiency of plant nutrients, especially the nitrogen and phosphate use efficiency in agricultural systems. This includes involvement of plasma membrane H+ ATPase in the uptake of ammonium , phosphate and some related nutrients, the effect of nitrification inhibitors on the nitrogen use effeciency. Currently, I focus on the interplay among nitrogen and phosphate use efficiency and soil fertility in paddy rice fields, especially on the contribution of plasma membrane H+ ATPase.

Current projects:

- NSFC 31471937: Mechanism of the transport of CO2 via the aquaporin in rice, 2015-2018
- National Key Basic Research and Development Program 2017YFD0200206：Improvement of phosphate fertilization in Yangze river area, 2017-2020

Current teaching:

- Soil Science and Fertilization Science
- Advanced Plant Nutrition

Selected publications：

- Zeng H, Wang G, Hu X, Wang H, Du L, Zhu Y*. (2014) Role of microRNAs in plant responses to nutrient stress. Plant Soil 374:1005–1021
- Zeng H, Feng X, Wang B, Zhu Y*, Shen Q, Xu G. (2013) Citrate exudation induced by aluminum is independent of plasma membrane H+-ATPase activity and coupled with potassium efflux from cluster roots of phosphorus-deficient white lupin. Plant Soil 366: 389-400

- Xu J, Zhu Y, Ge Q, Li Y, Sun J, Zhang Y, Liu X. 2012. Comparative physiological responses of Solanum nigrum and Solanum torvum to cadmium stress. New Phytologis. 196: 125–138
- Zhu Y, Zeng H, Shen Q, Ishikawa T, Subbarao GV (2012) Interplay among NH4+ uptake, rhizosphere pH and plasma membrane H+-ATPase determine the release of BNIs in sorghum roots – Possible mechanisms and underlying hypothesis. Plant Soil 358:131–141
- Zhu Y, Di T, Xu G, Chen X, Zeng H, Yan F, Shen Q. 2009. Adaptation of plasma membrane H+-ATPase of rice roots to low pH as related to ammonium nutrition. Plant, Cell Environment. 32: 1428-1440

Prizes, awards, honors:

- Excellent Talent of China Education Ministry, 2011