Name: Aiqun Chen

Professor of Plant nutrition

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Education:

- Ph.D. in Plant Nutrition, Nanjing Agricultural University, 2009
- B.S. in Agricultural Resources and Environment, Nanjing Agricultural University, 2004

Research interests and expertise:

In natural ecosystems, most plants are able to grow on nutrient-poor soils by living together with microbes for mutual benefit, an instance referred to symbiosis. Arbuscular mycorrhiza that is formed by the interaction between soil fungi belonging to Glomeromycotina and more than 80% of land plants, including the most important economic crops, such as rice, soybean and potato, is considered to be one of the most widespread and important symbiotic associations. Development of AM association requires a continuous exchange of nutrients and signalings between the two symbionts, which triggers coordinated differentiation of both partners to enable their interaction within the root cells. The control of AM symbiosis is a finely tuned process that involves multiple regulatory components functioning at multiple levels. The long-term goals of our research are to understand the mechanisms underlying development of the AM symbiosis and nutrient transfer between the symbionts.

Current teaching:

- Plant nutrition genetics

Selected publications:

- Chen AQ*, Gu M, Wang SS, Chen JD, Xu GH* (2018) Transport properties and regulatory roles of nitrogen in arbuscular mycorrhizal symbiosis. Semin Cell Dev Biol. 74: 80-88.
- Chen X[1], Liao DH[1], Yang XF, Ji MJ, Wang SS, Gu M, Chen AQ*, Xu GH (2017) Three cis-regulatory motifs, AuxRE, MYCRS1 and MYCRS2, are required for modulating the auxin- and mycorrhiza-responsive expression of a tomato GH3 gene. Plant Cell Physiol. 58 (4): 770-778.
- Liu JL[1], Liu JJ[1], Chen AQ*, Ji MJ, Chen JD, Yang XF, Gu M, Qu HY, Xu GH (2016) Analysis of tomato plasma membrane H+-ATPase gene family suggests a mycorrhiza-mediated regulatory mechanism conserved in diverse plant species. Mycorrhiza 26 (7): 645-656.
- Liao DH[1], Chen X[1], Chen AQ*, Wang HM, Liu JL, Liu JJ, Gu M, Sun SB, Xu GH (2015) The characterization of six auxin-induced tomato GH3 genes uncovers a member, SlGH3.4, strongly responsive to arbuscular mycorrhizal symbiosis. Plant & Cell Physiology, 56: 674-687.
- Chen AQ, Gu M, Sun SB, Zhu LL, Hong S, Xu GH* (2011) Identification of two

conserved cis-acting elements, MYCS and P1BS, involved in the regulation of mycorrhiza-activated phosphate transporters in eudicot species. New Phytologist, 189: 1157-1169.