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● 研究员

当前位置: 人才培养 >> 研究员



沈仁芳

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科研项目

著作论文

获奖情况

课题组成员

个人经历

教育经历:

浙江农业大学(现浙江大学), 获农学学士学位(1982-1986)

中国科学院南京土壤研究所, 获理学硕士学位(1986-1989)

中国科学院南京土壤研究所, 获理学博士学位(1989-1993)

工作经历:

英国洛桑研究所从事博士后工作(1994-1995)

中国科学院南京土壤研究所, 副研究员(1995-1998)

日本国立农业环境技术研究所, 日本科技厅特别研究员(1998-2000)

日本香川大学, 日本学术振兴会特别研究员(2000-2002)

入选中国科学院“百人计划”(引进国外杰出人才); 任中国科学院南京土壤研究所研究员、博士生导师(2002-)

土壤与农业可持续发展国家重点实验室主任(2006-)

中国科学院南京土壤研究所常务副所长(2008-2010)

中国科学院南京土壤研究所常务所长(2011-)

科研项目

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课题名称	负责人	课题来源	起止时间
土壤环境胁迫与植物适应生理	沈仁芳	中国科学院“百人计划”项目	2003-2005
根际土壤中铝的形态转化与植物耐铝机制的关系解析	沈仁芳	国家自然科学基金面上项目	2004-2006
酸性土壤根际微环境铝化学与植物耐铝毒机制研究	沈仁芳	中科院创新团队国际合作伙伴计划项目	2005-2008
铝胁迫下胡枝子根系的生理反应及可能的耐铝机制	沈仁芳	国家自然科学基金面上项目	2006-2008
作物根际过程与养分高效吸收利用机制	沈仁芳	中科院知识创新工程重要方向项目	2006-2009
东南集约化农田养分均衡调控技术模式研究与示范	沈仁芳	国家科技支撑计划	2006-2010
土壤酸化机制与酸性土壤生物修复研究	沈仁芳	国家自然科学基金重大国际合作	2009-2011
酸性土壤中不同形态氮(铵态氮/硝态氮)对植物铝毒害的影响及其机理	沈仁芳	国家自然科学基金面上项目	2009-2011
酸性土壤中氮、磷对植物耐铝的影响及其机理研究	沈仁芳	nsfc群体(续)	2011-2013

酸性土壤铝毒害和养分胁迫交互作用与植物协调适应机制	沈仁芳	国家自然科学基金杰出青年科学基金	2011-2014
一株分离于酸性土壤的红酵母强耐铝机制研究	沈仁芳	国家自然科学基金	2013-2016

著作论文

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专著:

1. 沈仁芳. 铝在土壤-植物中的行为及植物的适应机制. 2008. 北京: 科学出版社, pp258.

代表性论文:

1. Wang C, Wang CY, Zhao XQ, Chen RF, Lan P, Shen RF. Proteomic analysis of a high-aluminum-tolerant yeast *Rhodotorula taiwanensis* RS1 in response to aluminum stress. *Biochimica et Biophysica Acta (BBA) - Proteins and Proteomics*, 2013, <http://dx.doi.org/10.1016/j.bbapap.2013.06.014>
2. Liang LZ, Zhao XQ, Yi XY, Chen ZC, Dong XY, Chen RF, Shen RF. Excessive application of nitrogen and phosphorus fertilizers induces soil acidification and phosphorus enrichment during vegetable production in Yangtze River Delta, China. *Soil Use and Management*, 2013, DOI 10.1111/sum.12035
3. Wang C, Zhao XQ, Chen RF, Chu HY, Shen RF. Aluminum tolerance of wheat does not induce changes in dominant bacterial community composition or abundance in an acidic soil. *Plant and Soil*, 2013, 367(1-2): 275-284
4. Zeng QL, Chen RF, Zhao XQ, Shen RF, A. Noguchi, F. Shimachi, I. Hasegawwa. Aluminum could be transported via phloem in *Camellia oleifera* Abel. *Tree Physiology*, 2013, 33: 96-105.
5. Wang C, Zhao XQ, T. Aizawa, M. Sunairi, Shen RF. High Aluminum Tolerance of *Rhodotorula* sp. RS1 is Associated with Thickening of the Cell Wall Rather than Chelation of Aluminum Ions. *Pedosphere*, 2013, 23(1): 29-38.
6. Wang CY, Shen RF, Wang C, et al. Root protein profile changes induced by Al exposure in two rice cultivars differing in Al tolerance. *Journal of Proteomics*, 2013, 78: 281-293.
7. Tang YZ, Sun C, Yang XJ, Yang XD, Shen RF. Graphene Modified Glassy Carbon Electrode for Determination of Trace Aluminium (III) in Biological Samples. *International Journal of Electrochemical Science*, 2013, 8: 4194-4205.
8. Li L, Xie YF, Wang YP, Yang XD, Chen RF, Shen RF. Study on nicotinamide adenine dinucleotide adsorbed at nano-boehmite/water and nano-corundum/water interfaces. *Colloids and Surfaces B: Biointerfaces*, 2013, 102: 398-404.
9. Chen RF, Zhang FL, Zhang QM, Sun QB, Dong XY, Shen RF. Aluminium-phosphorus interactions in plants growing on acid soils: does phosphorus always alleviate aluminium toxicity? *Journal of the Science of Food and Agriculture*, 2012, 92: 995-1000
10. Yang XD, Cai L, Peng Y, Li H, Chen RF, Shen RF. Effects of Al(III) and Nano-Al(13) Species on Malate Dehydrogenase Activity. *Sensors*, 2011, 11(6): 5740-5753.
11. Zeng Q L, Chen R F, Zhao X Q, Wang H Y, Shen R F*. Aluminium uptake and accumulation in the hyperaccumulator *Camellia Oleifera* Abel. *Pedosphere*, 2011, 21: 358-364
12. Chen Z C, Zhao X Q, Shen R F*. The alleviating effect of ammonium on aluminum toxicity in *Lepedeza bicolor* results in decreased aluminum-induced malate secretion from roots compared with nitrate. *Plant and Soil*, 2010, 337: 389-398
13. Zhao X Q, Mitani N, Yamaji N, Shen R F*, Ma J F. Involvement of silicon influx transporter OsNIP2:1 in selenite uptake in rice. *Plant Physiology*, 2010, 153: 1871-1877
14. Chen RF, Shen R F*, Yang X D, Wang X. Effects of buckwheat growth on variation of aluminum and major metals in root-zone soil solutions. *Journal of Plant Nutrition and Soil Science*, 2010, 173: 788-794
15. Zhao X Q, Shen R F*, Sun QB. Ammonium under solution culture alleviates aluminum toxicity in rice and reduces aluminum accumulation in roots compared with nitrate. *Plant and Soil*, 2009, 315: 107-121
16. Yu M, Shen RF, Xiao HD et al.. Boron alleviates aluminum toxicity in pea (*Pisum*

- sativum). *Plant and Soil*, 2009.1-2 (314): 87-98
17. Liang L Z, Shen R F *, Yi X Y, Zhao X Q, Chen Z C, Chen R F, Dong X Y. The phosphorus requirement of *Amaranthus mangostanus* L. exceeds the " change point" of P loss. *Soil Use and Management*, 2009, 25: 152-158
 18. Yu M, Shen RF, Liu JY et al.. The role of root border cells in aluminum resistance of pea (*Pisum sativum*) grown in mist culture. *Journal of Plant Nutrition and Soil Sciencezeitschrift Fur Pflanzenernahrung Und Bodenkunde*, 2009.4(172): 528-534
 19. Wang X, Li K, Yang X D, Wang L L, Shen R F*. Complexation of Al(III) with reduced glutathione in acidic aqueous solutions. *Journal of Inorganic Biochemistry*, 2009, 103: 657-665
 20. Dong X Y, Shen R F*, Chen R F, Zhu Z L, Ma J F. Secretion of malate and citrate from roots is related to high Al-resistance in *Lespedeza bicolor*. *Plant and Soil*, 2008, 306: 139-147
 21. Chen RF, Shen RF, Gu P, Wang HY, Xu XH. Investigation of Aluminum-Tolerant Species in Acid Soils of South China. *Communications in Soil Science and Plant Analysis*. 2008, 39(9-10)
 22. Chen RF, Shen RF. Root phosphate exudation and pH shift in the rhizosphere are not responsible for aluminum resistance in rice. *Acta Physiologiae Plantarum*, 2008, 30(6): 817-824
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 24. Sun Q B, Shen R F*, Zhao X Q, Chen R F, Dong X Y. Phosphorus enhances Al resistance in Al-resistant *Lespedeza bicolor* but not in Al-sensitive *L. cuneata* under relatively high Al stress. *Annals of Botany*, 2008, 102: 795-804
 25. Gu P, Shen R F*, Chen Y D. Diffusion Pollution from Livestock and Poultry Rearing in the Yangtze Delta, China. *Environmental Science and Pollution Research*, 2008, 15: 273-277
 26. M. Shibata, T. Konno, R. Akaike, Xu Y, Shen RF, Ma JF. Phytoremediation of Pb contaminated soil with polymer-coated EDTA. *Plant and Soil*, 2007, 290(1-2): 201-208
 27. Xu Y, N. Yarnaji, Shen RF, Ma JF. Sorghum Roots are Inefficient in Uptake of EDTA-chelated Lead. *Annals of Botany*, 2007, 99(5): 869-875
 28. Yang X D, Zhang Q Q, Li L F, Shen R F. Structural features of aluminium(III) complexes with bioligands in glutamate dehydrogenase reaction system - A review. *Journal of Inorganic Biochemistry*, 2007, 101: 1242-1250
 29. Chen R F, Shen R F*, Gu P, Dong X Y, Du C W, Ma J F. Response of Rice (*Oryza sativa* L.) with Root Surface Iron Plaque under Aluminium Stress. *Annals of Botany*, 2006, 98: 389-395
 30. Shen R F, Chen R F, Ma J F. Buckwheat accumulates aluminum in leaves but not in seeds. *Plant and Soil*, 2006, 284:265-271
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 33. Ma J F, Shen R F, Nagao S, Tanimoto E. Aluminum targets elongating cells by reducing cell wall extensibility in wheat roots. *Plant and Cell Physiology*, 2004, 45: 583-589
 34. Shen R F, Ma J F, Kyo M, Iwashita T. Compartmentation of aluminium in leaves of an Al-accumulator, *Fagopyrum esculentum* Moench. *Planta*, 2002, 215(3): 394-398
 35. Shen R F, Ma J F. Distribution and mobility of aluminium in an Al-accumulating plant, *Fagopyrum esculentum* Moench. *Journal of Experimental Botany*, 2001, 52: 1683-1687
 36. Shen R F, Ae N. Extraction of P solubilizing active substances from the cell wall of groundnut roots. *Plant and Soil*, 2001, 228(2): 243-252

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2007年获得江苏省“333高层次人才培养工程”中青年科学技术带头人荣誉称号；

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