

黄新元

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从事专业：

植物营养学，植物遗传学，植物离子组学

研究方向：

植物重金属吸收、转运与积累的遗传分子机理

植物微量元素积累与环境适应性的分子机制

植物有益元素积累遗传机理与生物强化

植物硫素稳态的遗传与表观遗传调控机理

招生方向：

农业资源与环境，植物营养生物学与逆境调控

欢迎对植物营养学、植物遗传学、离子组学、基因组学、分子生物学等学科感兴趣的同学报考！

教育经历：

2004/09–2010/03，中国科学院上海生命科学研究院植物生理生态研究所，植物遗传学博士（导师：林鸿宣 院士）

2000/09–2004/07，南京农业大学农学院生物技术专业，理学学士

研究工作经历：

2016/09–至今，南京农业大学资源与环境科学学院，教授

2011/09–2016/09, 英国阿伯丁大学生物与环境科学研究所,
Research Fellow

2010/03–2011/09, 美国普渡大学农学院园艺与景观学系, 博士后
学术任职与服务:

Associate Faculty of F1000 (2013-2016)
(<http://f1000.com/prime/thefaculty/member/499999771097520057>).

Plant Cell, Molecular Plant, Plant Physiology, Plant Journal, Plant Communications, Journal of Experimental Botany, PLoS ONE, Plant and Soil 等多个学术期刊审稿人。

主持科研项目:

1. 国家自然科学基金面上项目, 丝氨酸羟甲基转移酶 SHM7 调控植物硫素稳态的表观遗传机理研究, 58 万, 2020-2023; 主持
2. 国家自然科学基金面上项目, 水稻籽粒钙含量 QTL 的克隆及基因功能研究, 55 万, 2018-2021; 主持
3. 江苏省自然科学基金杰出青年项目, 基于离子组学解析水稻重金属及必需矿质营养元素积累的遗传机理, 100 万, 2018-2021; 主持
4. 江苏省“双创人才”项目, 50 万, 2018-2020; 主持
5. “十三五”国家重点研发计划, 长三角镉砷和面源污染农田综合防治与修复技术示范, 47.5 万, 2018-2020; 参与
6. 中央高校基本科研业务费自主创新重点项目, 9 万, 2017-2019; 主持
7. 南京农业大学高层次引进人才启动基金, 100 万, 2016- ; 主

持

专利：

获国家发明专利一项（水稻锌指蛋白转录因子新基因及抗旱耐盐应用，排名第二）。该专利已申请国际专利，并已获得日本、韩国、俄罗斯、澳大利亚和南非等国授权。

发表论文：

(*Corresponding author)

1. **Huang XY***, Liu H, Zhu YF, Pinson SRM, Lin HX, Guerinot ML, Zhao FJ, Salt DE*. 2019. Natural variation in a molybdate transporter controls grain molybdenum concentration in rice. *New Phytologist*. 221, 1983-1997.

2. **Huang XY***, Li M, Luo R, Zhao FJ, Salt DE. 2019. Epigenetic regulation of sulfur homeostasis in plants. *Journal of Experimental Botany*. 70, 4171 -4182

3. Wang C, Tang Z, Zhuang JY, Tang Z, **Huang XY***, Zhao FJ. 2019. Genetic mapping of ionomic quantitative trait loci in rice grain and straw reveals *OsMOT1;1* as the putative causal gene for a molybdenum QTL *qMo8*. *Molecular Genetics and Genomics*. DOI: 10.1007/s00438-019-01632-1

4. Zhang L, Wu J, Tang Z, **Huang XY**, Wang X, Salt DE, Zhao FJ*. 2019. Variation in the *BrHMA3* coding region controls natural variation in cadmium accumulation in Brassica rapa vegetables. *Journal of Experimental Botany*. 70, 5865 -5878

5. Sui F, Zhao D, Zhu H, Gong Y, Tang Z, **Huang XY**, Zhang G, Zhao FJ*. 2019. Map-based cloning of a new total loss-of-function allele of *OsHMA3* causing high cadmium accumulation in rice grain. *Journal of Experimental Botany*. 70(10): 2857-2871.

6. Lu C, Zhang L, Tang Z, **Huang XY**, Ma JF, Zhao FJ*. 2019. Producing cadmium-free Indica rice by overexpressing *OsHMA3*. *Environment International*. 126, 619-626.

7. Busoms S, Paajanen P, Marburger S, Bray S, **Huang XY**, Poschenrieder C, Yant L, and Salt DE*. 2018. Fluctuating selection on migrant adaptive sodium transporter alleles in coastal *Arabidopsis thaliana*. *Proc Natl Acad Sci USA*. 115, E12443-E12452.
8. Zhao FJ*, **Huang XY**. 2018. Cadmium phytoremediation: call rice CAL1. *Molecular Plant* 11, 640-642.
9. Yang M, Lu K, Zhao FJ, Xie W, Ramakrishna P, Wang G, Du Q, Liang L, Sun C, Zhao H, Zhang Z, Liu Z, Tian J, **Huang XY**, Wang W, Dong H, Hu J, Ming L, Xing Y, Wang G, Xiao J, Salt DE, Lian X*. 2018. Genetic basis of rice ionic variation revealed by Genome-wide association studies. *Plant Cell*. DOI:10.1105/tpc.18.00375
10. Sui FQ, Chang JD, Tang Z, Liu WJ, **Huang XY**, Zhao FJ*. 2018. Nramp5 expression and functionality likely explain higher cadmium uptake in rice than in wheat and maize. *Plant and Soil*. doi:10.1007/s11104-018-3849-5
11. Wang P, Xu X, Tang Z, Zhang W, **Huang XY**, Zhao FJ*. 2018. OsWRKY28 regulates phosphate and arsenate accumulation, root system architecture and fertility in rice. *Front Plant Sci* 9, 1330.
12. **Huang XY**, Deng F, Yamaji N, Pinson SR, Fujii-Kashino M, Danku J, Douglas A, Guerinot ML, Salt DE*, Ma JF*. 2016. A heavy metal P-type ATPase OsHMA4 prevents copper accumulation in rice grain. *Nature Communications*. 7, 12138.
13. **Huang XY**, Chao DY, Koprivova A, Danku J, Wirtz M, Muller S, Sandoval FJ, Bauwe H, Roje S, Dilkes B, Hell R, Kopriva S, Salt DE*. 2016. Nuclear localised MORE SULPHUR ACCUMULATION1 epigenetically regulates sulphur homeostasis in *Arabidopsis thaliana*. *PLoS Genetics* 12, e1006298.
14. **Huang XY**, Salt DE*. 2016. Plant ionomics: from elemental profiling to environmental adaptation. *Molecular Plant* 9, 787-797.
15. Rome C, **Huang XY**, Danku J, Salt DE, Sebastiani L*. 2016. Expression of specific genes involved in Cd uptake, translocation, vacuolar compartmentalisation and recycling in *Populus alba* Villafranca clone. *Journal of Plant Physiology* 202,

83-91.

16. Busoms S, Teres J, **Huang XY**, Bomblies K, Danku J, Douglas A, Weigel D, Poschenrieder C, Salt DE*. 2015. Salinity is an agent of divergent selection driving local adaptation of Arabidopsis to coastal habitats. *Plant Physiology* 168, 915-929.

17. Forsberg SK, Andreatta ME, **Huang XY**, Danku J, Salt DE, Carlborg O*. 2015. The multi-allelic genetic architecture of a variance-heterogeneity locus for molybdenum concentration in leaves acts as a source of unexplained additive genetic variance. *PLoS Genetics* 11, e1005648.

18. Pinson SRM*, Tarpley L, Yan WG, Yeater K, Lahner B, Yakubova E, **Huang XY**, Zhang M, Guerinot ML, Salt DE. 2015. Worldwide genetic diversity for mineral element concentrations in rice grain. *Crop Science* 55, 294-311.

19. Zhang M, Pinson SR, Tarpley L, **Huang XY**, Lahner B, Yakubova E, Baxter I, Guerinot ML, Salt DE*. 2014. Mapping and validation of quantitative trait loci associated with concentrations of 16 elements in unmilled rice grain. *Theoretical and Applied Genetics* 127, 137-165.

20. **Huang XY**, Chao DY, Gao JP, Zhu MZ, Shi M, Lin HX*. 2009. A previously unknown zinc finger protein, DST, regulates drought and salt tolerance in rice via stomatal aperture control. *Genes & Development*. 23, 1805-1817.

21. **黄新元***, 赵方杰. 2018. 植物分子遗传学在挖掘作物重金属积累相关基因中的作用. *农业环境科学学报* 37, 1396-1401.

22. **黄新元***, 赵方杰. 2018. 植物防御素调控水稻镉积累的新机制. *植物学报* 53, 451-455.