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## 研究方向

1. 水稻杂种不育的遗传与分子机制
2. 控制水稻育性的关键基因的克隆与功能分析

水稻籼粳亚种间杂种优势强，增产潜力巨大。直接利用籼粳杂种优势是最有希望且能在较短的时期内实现水稻产量突破的途径，也是育种工作者多年来梦寐以求的愿望；但是籼粳亚种间存在生殖隔离，表现为花粉败育、结实率低，极大地限制了其优势的有效利用。为此，我们将结合遗传学、分子生物学、基因组学和生物信息学等研究手段去解析杂种不育的遗传与分子机制，为解决杂种优势利用的不育难题提供基因、材料和理论支撑。

## 教育及工作经历

2018-现在：南京农业大学农学院，教授（高层次人才引进）

2017-2018：南京农业大学，讲师

2009-2017：南京农业大学，农学院作物遗传育种专业，农学博士

2005-2009：河南大学，生命科学学院生物科学专业，理学学士

## 论文发表情况

1. Yu, X.<sup>#</sup>, Zhao, Z.<sup>#</sup>, Zheng, X., Zhou J., Kong W., Wang P., Bai W., Zheng H., Zhang H., Li J., Liu J., Wang Q., Zhang L., Liu K., Yu Y., Guo X., Wang J., Lin Q., Wu F., Ren Y., Zhu S., Zhang X., Cheng Z., Lei C., Liu S., Liu X., Tian Y., Jiang, L., Ge, S., Wu, C., Tao, D., Wang, H., Wan, J. A selfish genetic element confers non-Mendelian inheritance in rice. *Science* (IF=41.058) 2018, 360: 1130-1132.

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3. Zheng, H. #, Wang, Z. #, Tian, Y., Liu, L., Lv, F., Kong, W., Bai, W., Wang, P., Wang, C., **Yu, X.**, Liu, X., Jiang, L., Zhao, Z., Wan, J. *Rice albino 1*, encoding a glycyl-tRNA synthetase, is involved in chloroplast development and establishment of the plastidic ribosome system in rice. *Plant physiology and biochemistry* (IF=3.404). 2019, 139: 495-503.
4. Liu, J., Chen, J., Zheng, X., Wu, F., Lin, Q., Heng, Y., Tian, P., Cheng, Z., **Yu, X.**, Zhou, K., Zhang, X., Guo, X., Wang, J., Wang, H., Wan, J. *GW5* acts in the brassinosteroid signalling pathway to regulate grain width and weight in rice. *Nature Plants* (IF=11.471). 2017, 3: 17043.
5. Yu, Y., Zhao, Z., Shi, Y., Tian, H., Liu, L., Bian, X., Xu, Y., Zheng, X., Gan, L., Shen, Y., Wang, C., **Yu, X.**, Wang, C., Zhang, X., Guo, X., Wang, J., Ikehashi, H., Jiang, L., Wan, J. Hybrid Sterility in Rice (*Oryza sativa* L.) Involves the Tetratricopeptide Repeat Domain Containing Protein. *Genetics* (IF=4.644). 2016, 203: 1439-1451.
6. Zhang, L., Ren, Y., Lu, B., Yang, C., Feng, Z., Liu, Z., Chen, J., Ma, W., Wang, Y., **Yu, X.**, Wang, Y., Zhang, W., Wang, Y., Liu, S., Wu, F., Zhang, X., Guo, X., Bao, Y., Jiang, L., Wan, J. *FLOURY ENDOSPERM 7* encodes a regulator of starch synthesis and amyloplast development essential for peripheral endosperm development in rice. *Journal of Experimental Botany* (IF=5.677), 2016, 67: 633-647.
7. Shen, Y., Zhao, Z., Ma, H., Bian, X., Yu, Y., **Yu, X.**, Chen, H., Liu, L., Zhang, W., Jiang, L., Zhou, J., Tao, D., Wan, J. Fine mapping of *S37*, a locus responsible for pollen and embryo sac sterility in hybrids between *Oryza sativa* L. and *O. glaberrima* Steud. *Plant Cell Reports* (IF=3.071) 2015, 34: 1885–1897.
8. Zhao, Z., Zhang, Y., Liu, X., Zhang, X., Liu, S., **Yu, X.**, Ren, Y., Zheng, X., Zhou, K., Jiang, L., Guo, X., Gai, Y., Wu, C., Zhai, H., Wang, H., Wan, J. A Role for a Dioxygenase in Auxin Metabolism and Reproductive Development in Rice. *Developmental cell* (IF=12.861), 2013, 27: 113–122.

## **在研科研项目**

1. 南京农业大学高层次引进人才启动基金，2019-2024，主持；
2. 转基因生物新品种培育重大专项，2019-2020，主持；
3. 国家自然科学基金重大项目课题，2020-2024，主持；
4. 国家自然科学基金青年科学基金，2020-2022，主持；
5. 江苏省自然科学基金杰出青年基金，2020-2022，主持。