

李刚 博士:

School of Agriculture, Food and Wine, University of Adelaide, Australia

Email: [gang.li@adelaide.edu.au](mailto:gang.li@adelaide.edu.au)

## 个人简介:

2007年在华中师范大学生命科学学院获得硕士学位，2014年在上海交通大学生命科学技术学院获得博士学位，2015年至今在澳大利亚阿德莱德大学农业食品与葡萄酒学院从事 Research Fellow (Level A)。2019年在西南科技大学任兼职副教授。在植物发育学、植物细胞生物学、植物激素信号途径和作物分子遗传育种领域均有深入的研究经验。在 PNAS, Plant Cell, Plant Physiology 等国际知名期刊发表研究论文十余篇，申请作物育种新方法国际专利一项。主要研究方向：1.大麦/小麦花序发育的分子机理和遗传资源育种；2.大麦/小麦生殖发育对环境因子适应性的机理研究；3.CRISPR/Cas9 基因编辑技术在作物基础研究和育种中的应用。

## 研究工作:

### **Current research interests: Mechanism of the development of inflorescence and spikelet in cereals**

Rice, wheat and barley, the representative grass plants, develop specialized morphology of inflorescence and spikelet, which determines the ultimate yield production. We are using various approaches including forward and reverse genetics, biochemistry, cell biology etc to investigate the molecular mechanisms underlying cereal inflorescence and spikelet development. Productivity/development-related genes/mutants are to be investigated in wheat and barley, identified or characterized by means of modern biology. The genes are classified functionally into several groups, including the following: 1) transcription factors, like *MADS* genes, regulating spike development, which mainly affect grain number; 2) genes involved in metabolism or signaling of growth regulators—cytokinins, gibberellins, and auxin—which control inflorescence patterning and in consequence grain yield; 3) genes determining cell division and proliferation mainly impacting grain size; 4) floral regulators and gene regulatory networks influencing inflorescence architecture and in consequence seed number. Research directions/areas as below:

1. The mechanism of cereals inflorescence development, which mainly affect branching and grain number.
2. Environmental factors, such as temperature and pathogen, interact with cereal inflorescence development and yields.
3. Probe the function of cereal key regulators by CRISPR-Cas9 genome editing technology.