

Zhu Yuelin



Areas of Research

Vegetable biotechnology, vegetable physiology, olericulture.

Contact Information

Office location: Room B6013 Life Science Building (No. 1 Weigang, Xuanwu District, Nanjing, Jiangsu Province 210095, China).

Office phone: 025-84396472

Lab location : Room B6015 Life Science Building.

Lab phone: 025-84396472

Email address: ylzhu@njau.edu.cn

Research Interests

Vegetable biotechnology; vegetable physiology; olericulture

Prof. Zhu's lab has paid research emphasis on the intensive integration of biotechnology, physiology, and the cultivation of vegetables for the rapid advancement of the related knowledge and technologies, as well as on the international research collaborations. Some of the current research fields are described below.

1. Vegetable biotechnology

Research interests have been paid in the establishment of highly-efficient genetic transformation system by using *Agrobacterium tumefaciens* in vegetable soybean (Journal of Agricultural Science and Technology, 16: 175-190) to improve the tolerance to abiotic stresses caused by low phosphorus (Scientia Horticulturae, 177: 71-76; Journal of Agricultural Science and Technology, 17: 469-482) and salinity (Horticulture, Environment, and Biotechnology, 55: 213-221; 56: 94-104). In addition, the molecular mechanism of increased biological nitrogen fixation (BNF) has been explored based on the enhancement of the tolerance to low phosphorus (Journal of Plant Biology, 59: 172-181) and the tolerance to abiotic stresses of salinity (Legume Research, 41: 675-680) and drought (Legume Research, 42: 603-608).

2. Vegetable physiology

Research interests have been focused on the cloning of genes conferring allergenic proteins and salt tolerance by screening a full-length cDNA library in vegetable soybean (Acta Horticulturae, 929: 129-134). Attempts have also been made at the construction and characterization of a full-length cDNA library and identification of

genes involved in salinity stress in wild eggplant (*Solanum torvum* Swartz) (Horticulture, Environment, and Biotechnology, 53: 158-166). Additionally, efforts have been conducted at the effects of nitrogen forms on the growth and polyamine contents in developing seeds of vegetable soybean (Journal of Plant Nutrition, 34: 504-521).

3. Olericulture

By the international collaboration with Chiba University of Japan, the research interests have been involved in the technologies of the plant factory with artificial light (PFAL) regarding the following aspects, such as, the effects of different LED lighting regimes on the growth and photosynthetic characteristics of lettuce (*Lactuca sativa* L.) seedlings in plant factory (Journal of Agricultural University of Hebei, 40: 57-63), the effects of root zone temperatures on growth and concentrations of mineral elements of hydroponically-grown lettuce (Acta Agriculturae Shanghai, 31: 48-52), and the effects of Spd spraying on the growth and photosynthetic characteristics of lettuce under root-zone heat stress (Acta Agriculturae Shanghai, 33: 48-53).

Education Background

Bachelor: Yangzhou University, China

Master: Nanjing Agricultural University, China

Doctor: Chiba University, Japan

Work experience

Assistant Professor, Nanjing Agricultural University, 1986-1993.

(Visiting Researcher, National Agriculture Research Center, Tsukuba, Japan, 1991-1992)

Associate Professor, Nanjing Agricultural University, 1994-2000.

Full Professor, Nanjing Agricultural University, 2000-present.

Honors and Awards

The special allowance of the Chinese State Council.

The second prize of Chinese National Science and Technology Progress Award.

The second prize of Jiangsu Provincial Science and Technology Progress Award.

The 8th Youth Science and Technology Award of Chinese Association of Agricultural Science.

The 1st Science and Technology Award of Jiangsu Province for Young and Middle-aged Scientists.

Selected Publication

1. Wang Xiaxia, Gao Fan, Yang Shouping, Gai Junyi, Zhu Yuelin*. Overexpression of the *StP5CS* gene promotes nodulation and nitrogen fixation in vegetable soybean under drought stress. *Legume Research*, 2019, 42(5): 603-608.
2. Ren Xiaowei, Yu Dingwen, Yang Shouping, Gai Junyi, Zhu Yuelin*. Effects of *StP5CS* gene overexpression on nodulation and nitrogen fixation of vegetable soybean under salt stress conditions. *Legume Research*. 2018, 41(5):675-680.
3. Pei Xuli, Jing Zange, Tang Zheng, Zhu Yuelin*. Comparative transcriptome analysis provides insight into differentially expressed genes related to cytoplasmic male sterility in broccoli (*Brassica oleracea* var. *italica*). *Scientia Horticulturae*. 2017, 217: 234-242.
4. Zhu Wenli, Yang Lifei, Yang Shouping, Gai Junyi, Zhu Yuelin*. Overexpression of rice phosphate transporter gene *OsPT2* enhances nitrogen fixation and ammonium assimilation in transgenic soybean under phosphorus deficiency. *Journal of Plant Biology*. 2016, 59(2):172-181.
5. Chen Guohu, Wen Yan, Yang Shouping, Wang Aiming, Gai Junyi, Zhu Yuelin*. Overexpression of rice phosphate transporter gene *OsPT2* enhances tolerance to low phosphorus stress in soybean. *Journal of Agricultural Science and Technology*. 2015, 17:469-482.
6. Zhang Gongchen, Zhu Wenli, Gai Junyi, Zhu Yuelin*, Yang Lifei. Enhanced salt tolerance of transgenic vegetable soybean resulting from overexpression of novel

Δ 1-pyrroline-5-carboxylate synthetase gene from *Solanum torvum* Swartz. Horticulture, Environment, and Biotechnology. 2015, 56:94-104.

7. Yan Wen, Chen Guohu, Yang Lifei, Gai Junyi, Zhu Yuelin*. Overexpression of the rice phosphate transporter gene *OsPT6* enhances tolerance to low phosphorus stress in vegetable soybean. *Scientia Horticulturae*, 2014, 177: 71-76.
8. Chen Guohu, Yan Wen, Yang Lifei, Gai Junyi, Zhu Yuelin*. Overexpression of *StNHX1*, a novel vacuolar Na⁺/H⁺ antiporter gene from *Solanum torvum*, enhances salt tolerance in transgenic vegetable soybean. *Horticulture, Environment, and Biotechnology*, 2014, 55(3): 213-221.
9. Liu Sichen, Zhang Gongchen, Yang Lifei, Mii Masahiro, Gai Junyi, and Zhu Yuelin*. Bialaphos-resistant transgenic soybeans produced by the *Agrobacterium*-mediated cotyledonary-node method. *Journal of Agricultural Science and Technology*. 2014, 16(1): 175-190.
10. Liu Sichen, Chen Guohu, Yang Lifei, Gai Junyi and Zhu Yuelin*. Production of transgenic soybean to eliminate the major allergen Gly m Bd 30K by RNA interference-mediated gene silencing. *Journal of Pure and Applied Microbiology*. 2013, November: 589-599.
11. Chen Gang, Wang Hua, Gai Junyi, Zhu Yuelin*, Yang Lifei, Liu Qianqian, Zhang Gongchen, Chen Guohu. Construction and characterization of a full-length cDNA library and identification of genes involved in salinity stress in wild eggplant (*Solanum torvum* Swartz). *Horticulture, Environment, and Biotechnology*. 2012, 53(2): 158-166.
12. Zhu Yuelin*, Yang Lifei, Gai Junyi. Cloning of genes conferring allergenic proteins and salt tolerance by screening a full-length cDNA library in vegetable soybean. *Acta Horticulturae*. 2012, 929: 129-134.

Reference

<http://yyxy.njau.edu.cn/zhuyuelin2019.3.11.pdf>