

## Caixia Dong

Professor of Plant Nutrition

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### Education:

Ph.D., Institute of Soil Science, Chinese Academy of Sciences (CAS); Plant Nutrition, 2002

M.S.; Shandong Agriculture University; Plant Physiology, 1999

B.S.; Shandong Agriculture University; Plant Nutrition, 1996

### Research Experience:

- Physiological and molecular biology of mineral nutrition in pear trees
- Relationship between root architecture and nutrients uptake in fruit trees
- Nutrients management of fruit trees and fertilization practice in orchard

### Current Projects:

- National Natural Science Foundation of China (NSFC, 31872172, 2019-2020), Physiological and molecular mechanism of high efficient transport of potassium between rootstock and scion of pear.
- National Key R&D Program of China (2017-2020, 2017YFD0202100): Improvement of soil fertility in tropical fruit tree orchard through the substitution of mineral fertilizer by organics.
- National Key R&D Program of China (2017-2020, 2017YFD0800205): Resource utilization mechanism of agricultural waste.
- Key R&D Program of Jiangsu Provincial (2018-2021, BE2018389): Research of the basis and key technologies for reducing fertilizer application and increasing efficiency in fruit trees.

### Current Teaching:

- Soil Science and Fertilization Science

### Selected Publication:

1. Changwei Shen, Yan Li, Jie Wang, Yosef Al Shoffe, **Caixia Dong\***, Qirong Shen, Yangchun Xu, Potassium influences on the expression of key genes involved in sorbitol metabolism and sorbitol assimilation in pear leaf and fruit. *Journal of Plant Growth Regulation*, 2018, 37:883-895.

2. Yan Li, Lirun Peng, Changyan Xie, Xiaoqian Shi, **Caixia Dong\***, Qirong Shen, Yangchun Xu. Genome-wide identification, characterization, and expression analyses of the HAK/KUP/KT potassium transporter gene family reveals their involvement in K<sup>+</sup> deficient and abiotic stress responses in pear rootstock seedlings. *Plant Growth Regulation*, 2018, 85:187-198.

3. Changwei Shen, Xiaoqian Shi, Changyan Xie, Yan Li, Han Yang, Xinlan Mei, Yangchun Xu, **Caixia Dong\***. The change in microstructure of petioles and peduncles and transporter gene expression by potassium influences the distribution of nutrients and sugars in pear leaves and fruit. *Journal of Plant Physiology*. 2019, 232, 320-333.

4. Changwei Shen, Jie Wang, Xiaoqian Shi, Yalong Kang, Changyan Xie, Lirun Peng, **Caixia Dong\***, Qirong Shen and Yangchun Xu. Transcriptome analysis of differentially expressed genes induced by low and high potassium levels provides insight into fruit sugar metabolism of pear. *Frontiers in Plant Science*, 2017, 8: 938.

5. Changwei Shen, Jie Wang, Xin Jin, Na Liu, Xueshan Fan, **Caixia Dong\***, Qirong Shen, Yangchun Xu. Potassium enhances the sugar assimilation and transportation from leaves to fruit by regulating the expression of key genes involved in sugar metabolism of pear. *Plant Growth Regulation*, 2017, 83 (2): 287-300.