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Germplasm identification and salinity-tolerant gene isolation on *G. hirsutum L.*

Ye Wu-wei, Wang Jun-juan, Wang De-long, Fan Wei-li, Wang Shuai, Guo Lixue, Guo Xiaoning, Song Liyan, Zhang Lina, Zhou Kai, Lu Xu-ke, Song Guifan and **Wang Xiaoge**

Institute of Cotton Research of CAAS, China

Soil salinization has become a serious global problem affecting the agricultural development and the ecological environment. Salinity, as one of the most important abiotic stresses in the world, severely limits the production of crop. Saline-alkali land in our country is widely distributed with the character of multi types and serious salt-deposition. To carry out the utilization of saline-alkali land efficiently, it is necessary to develop the agriculture on the saline-alkali land. Cotton, as a pioneer crop in saline-alkali land, should be paid more efforts to conduct the mechanism research of salt-tolerance and to breed new tolerant varieties. Identification of salinity-tolerance plays a vital role on cotton breeding. The abiotic-tolerant identification methods used before, mainly based on morphological characters, were usually restricted for time-wasting and labor-costing, environment influence and seasonal restrictions. A new set of preliminary methods system, called SSR multi-markers salinity-identification method, was initially established to identify salinity tolerance of cotton by the standardization of the whole process of seedling nursing, DNA extraction, PCR amplification, amplification products detecting, and marker-combination. Another 11 materials were used to testify this method, which showed the coincidence of 90.91% in consistence with the identification result of 0.4% NaCl identification method. This study showed that the multi-markers identification method was proved to be used to assist identify the salinity tolerance of cotton germplasm. Seven salt-tolerance related genes, H+-pyrophosphatase gene and S-adenosylmethionine synthetase gene and others, were cloned from the salt-tolerance material on *Gossypium hirsutum*, which were named GhVP and GhSAMS, respectively. The bioinformatics analysis and their transformed accessions were tested and identified.

Biography

Ye Wu-wei has joined the Institute of Cotton Research of CAAS in the year of 1990. He has been involved with studies related to cotton germplasm identification, innovation and biodiversity research, focusing on resistant on cotton germplasm, such as salinity and draught-resistance. He is responsible for the Co-ordination of identification and implementation of cotton germplasm identification center in China.

yew158@163.com

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