

Wang Sanhong



Areas of Research

1. Molecular breeding of fruit trees, especially in apple, grapevine.
2. Physiology & molecular biology of apple against fungal diseases
3. Innovation of Techniques for High Quality & Efficiency Cultivation for fruit trees.

Contact Information

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Research Interests

1. Omics & molecular biology of fruit trees

One of my research interests is in molecular biology of fruit trees. Using omics approaches, such as genomics, proteomics, metabonomics, etc. and bioinformatics, we have identified and isolated some important functional genes, their expression regulatory factors and cis-elements for some important agronomic traits (such as disease resistance, stress resistance, quality, yield, etc.) in a large scale. Furthermore, we reveal their signal transduction, regulatory mechanism and response environment and stimuli. Through these researches, we aim to breed good quality and high stress resistance cultivars by gene editing and transformation.

2. Molecular assisted fruit breeding

By means of re-sequencing, we develop new molecular markers of fruit trees to construct genetic linkage maps, QTL mapping and molecular marker assisted breeding of important traits including: (1) Development of high-throughput apple SNP markers for high-density genetic mapping, QTL mapping, genome-wide association analysis and genome structure and evolution studies using high-throughput sequencing techniques. (2) mapping and molecular marker-assisted breeding of important economic traits (red flesh, disease resistant, etc) by using the high density molecular marker genetic map. (3) Genotype identification and mechanism of self-incompatibility of apple and loquat

3. Innovation of techniques for high efficiency fruit cultivation

To study the physiological basis of high quality and high efficiency production of fruit trees, and to develop and innovate the labor-saving, high quality and high efficiency cultivation techniques for fruit trees, especially for apple and grape.

Education Background

2002-2007 Ph.D. Nanjing Agricultural University

1995-1998 Ms. Zhejiang University

1991-1995 BSA. An Hui Agricultural University

Work experience

Professor, Nanjing Agricultural University. 2017- present,

Associate Professor, Nanjing Agricultural University. 2012- 2017,

JSPS Special Fellow (Post Doc), Chiba University, Japan. 2007-2010,

Visiting researcher, China Agricultural University. 2004-2005,

Honors and Awards

Fellow, Chinese Society for Horticultural Science, China

Fellow, Japanese Society for Horticultural Science, Japan

Selected Publication

1. Xiaoxuan HU; Yan Zhong; Kai hui Huang; **Sanhong Wang**; Qunkang Cheng; Zongming Cheng. [Differential expression of 12 nbs-encoding genes in two apple cultivars in response to *alternaria alternata* f. sp. mali infection](#). Canadian Journal of Plant science, 2018:CJPS-2017-0117.
2. Longming Zhu; Weichen Ni; Shuai Liu; Binhua Cai; Han Xing; **Sanhong Wang(*)**. [Transcriptomics analysis of apple leaves in response to *Alternaria alternata* apple pathotype infection](#), Frontiers in plant Science, 2017.01.01, 107: 307~313
3. Weichen Ni; Longming Zhu; Renhe Sha; Jianmin Tao; Binhua Cai; **Sanhong Wang(*)**. [Comparative iTRAQ proteomic profiling of susceptible and resistant apple cultivars infected by *Alternaria alternata* apple pathotype](#), Tree Genetics & Genomes, 2017.01.01, 13(23): 01~13
4. Xinyi Yu; Yingjun Hou; Weiping Chen; **Sanhong Wang**; Peihong Wang; Shenchun Qu. [Malus hupehensis miR168 targets to ARGONAUTE1 and contributes to the resistance against *Botryosphaeria dothidea* infection by altering defense responses](#), Plant & Cell Physiology, 2017.9, 58(9): 1541~1557
5. Shuai Lui; Changguo Luo; Longming Zhu; Renhe Sha; Shenchun Qu; Binhua Cai; **Sanhong Wang ,(*)** [Identification and expression analysis of WRKY transcription factor genes in response to fungal pathogen and hormone treatments in apple \(*Malus domestica*\)](#), Journal of Plant Biology, 2017.4, 60(2): 215~230
6. **Sanhong Wang(*)**; Qian Wang; Ying Zhang; Hongli Qie; Huakun Wang, [Identification of two new s-RNases and molecular s-genotyping of twenty loquat cultivars \[*Eriobotrya japonica* \(Thunb.\) Lindl.\]](#). Scientia Horticulturae, 2017, 218, 48-55.
7. Ying Zhang; Lihuan Qin; Huakun Wang; **Sanhong Wang (*)**. [Identification of s genotypes in loquat \(*Eriobotrya japonica* lindl.\) based on allele specific PCR](#). Scientia Horticulturae, 2017, 225: 736-742 .

8. Menghan Wei; **Sanhong Wang**(*) ; Hui Dong; Binhua Cai; Jianmin Tao. [Characterization and comparison of the CPK gene family in the apple \(*Malus × domestica*\) and other rosaceae species and its response to *Alternaria alternata* infection](#), PLoS One, 2016.5.17, 11(5)
 9. Yanhong Liu; Zhen Zhang; Xinwei Wang; **Sanhong Wang**, Huaizhi Jia; Hong Wang; Jianmin Tao. [Function of *vtPGIP* in pathogenic fungus resistance of *vitis thunbergii*](#). African Journal of Biotechnology, 2014, 13(8), 962-972.
 10. **Sanhong Wang**; Hiroyuki Kakui; Shinji Kikuchi; Takato Koba; Hidenori Sassa , (*) [Interhaplotypic heterogeneity and heterochromatic features may contribute to recombination suppression at the S locus in apple \(*Malus×domestica*\)](#) , Journal of Experimental Botany, 2012.8, 63(13): 4983~4990
 11. **Sanhong Wang**, Hiroyuki Kakui, Shiji Kikuchi, Hidenori Sassa. [S-RNase and SFBB family F-box genes are located in sub-telomeric and heterochromatic chromosomal region in apple](#). XXI international Congress on Sexual Plant Reproduction, Bristol , 2nd-6th August, 2010.
 12. Mai Minamikawa, hiroyuki kakui, **Sanhong Wang**, Nobuhiro Kotoda, Shiji Kikuchi, Takato Koba, Hidenori Sassa. [Apple S locus region represents a large cluster of related, polymorphic and pollen-specific F-box genes](#). Plant Molecular Biology, 2010 (74):143-154.
 13. Qingju Wang, Kuanyong Xu, Zhaoguo Tong, **Sanhong Wang**. [Characterization of a new dehydration responsive element binding factor in central arctic cowberry](#), Plant Cell Tiss Organ Cult, 2010, DOI 10.1007/s11240-010-9678-8
 14. Kuanyong Xu, **Sanhong Wang**, Li Xi et al. [Rapid determination of transgene copy number in tobacco by competitive PCR using a pair of SSR primers](#), Genetic and molecular research. 2010, 9 (2): 935-940
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