The Third International *Horticulture Research* Conference

October 16-19, 2016
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Hanyuan Mansion | Nanjing | China

Program and Abstracts

Organized by Nanjing Agricultural University, Horticulture Research, SPRINGER NATURE

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Key Laboratory of Biology and Germplasm
Enhancement of Horticultural Crops in Eastern China
Horticulture Research
Nanjing Agricultural University
Springer Nature

Biotechnology for Horticultural Crops: Improvement Disease Resistance in Malus and Grapevine

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Apple and Grapevine worldwide production requires intensive operations of spraying to control many damaging diseases (e.g. apple scab, powdery mildew, fire blight in apple and Powdery mildew, downy mildew and pierce disease in grapevine) and insects (e.g. apple maggot, or leobosia in grapevine) in orchards. Chemical control has been an important means to keeping these pests at bay. The rising chemical costs not only squeeze the industry's profit margin, but also threaten the industry's sustainability. In theory, this is possible to reduce cost of disease control through both conventional breeding and biotechnology, but the technical challenges make the task nearly impossible with conventional breeding. In contrast, there are fewer technical difficulties to take on the task using genetic engineering, and it has been proven durable in apple and grapevine. However, some of the undesirable points associated with existing biotechnology have resulted in public concern and opposition by several groups. Having the apple and grapevine genome available, and thanks to joint efforts of several institutions, many of resistance or susceptible genes have become available to implement different approaches (transgenesis,, cisgenesis or new breeding technology) to improve resistance to these disease in apple. In this talk we will present an overview of what we are doing to improve disease resistance (fire blight, apple scab, powdery mildew, and leobosia) in apple via GM technology.

Biography: Dr Malnoy is leading the foundation Edmund Mach the unit of genomic and advance biotechnology. He contributed to the development of biotechnology procedure for apple and grapevine (transgenesis, cisgenesis and new breeding technology). He contributed to the investigation and characterization of susceptible and resistance gene in apple and grapevine for the bacterial (fire blight) and fungal (apple scab and powdery mildew) disease. He participated to the genome sequencing project of apple cv Golden delicious and pear cv Bartlett. His research work led to several scientific papers (ISI-WEB researcher ID: C-5007-2012) and communications to national and international conferences. He has been supervisor or co-supervisor of ca 20 thesis.

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