

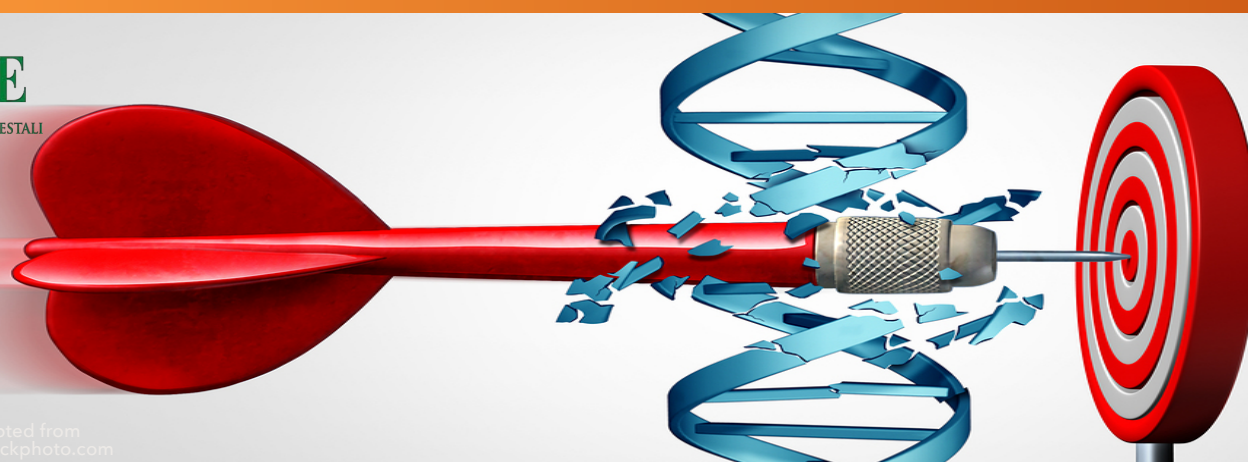
# GENOME EDITING FOR A SUSTAINABLE AGRICULTURE



DIPARTIMENTO DI SCIENZE AGRARIE E FORESTALI



Picture adapted from www.bigstockphoto.com



UNIVERSITÀ  
DEGLI STUDI DELLA  
Tuscia

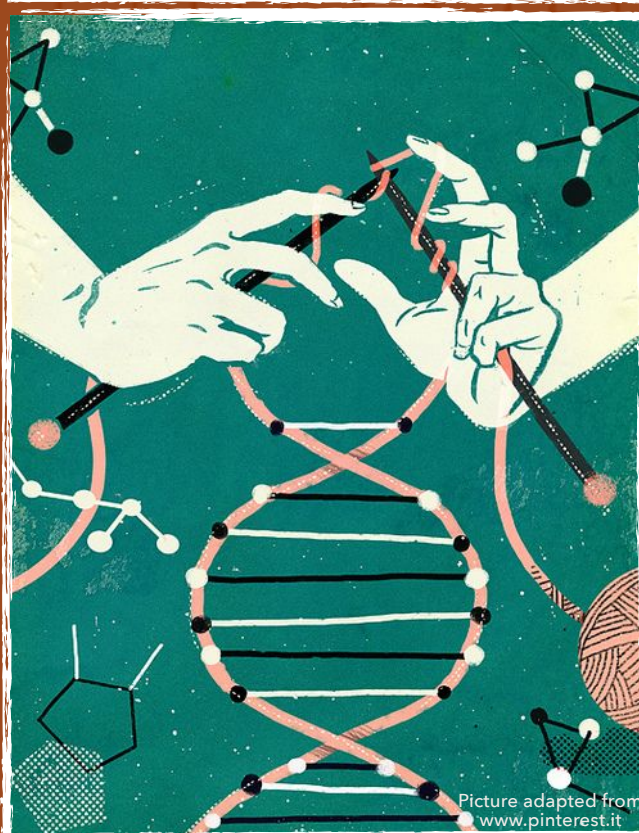


Under the patronage of the Italian  
Society of Agricultural Genetics

Aula Magna Scarascia Mugnozza - Complesso Santa Maria in Gradi

## MARCH

# 7



Picture adapted from www.pinterest.it

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**09:00-09:15**

**Prof. Alessandro Ruggieri**  
Rector  
University of Tuscia - Italy  
**'Welcome speech'**



**09:15-09:30**

**Prof. Stefania Masci**  
WP5 coordinator - DAFNE  
University of Tuscia - Italy  
**'SAFE-Med - Work package 5'**



**09:30-10:15**

**Prof. Dirk Inzé**  
Science Director  
Center for Plant Systems  
Biology - Belgium  
**'Global and sustainable food  
security needs science-driven  
innovation'**



**10:15-11:00**

**Dr. Luigi Cattivelli**  
Council for Agricultural  
Research and Economics (CREA) - Italy  
**'Biotechnologie sostenibili per  
l'agricoltura italiana: a national  
project for genome editing in plants'**



**11:00-11:30**

**Coffee break**

**11:30-12:15**

**Prof. Francisco Barro**  
Institute for Sustainable  
Agriculture - Spain  
**'CRISPR/CAs for editing the  
celiac-disease related gliadins  
complex in wheat'**



**12:15-13:00**

**Prof. Antonio Granell**  
Institute of plant molecular  
and cellular biology - Spain  
**'Editing the Solanaceae genome for  
plant and fruit quality traits'**



**13:00-13:15**

**Dr. Francesco Camerlengo**  
DAFNE  
University of Tuscia - Italy  
**'Application of CRISPR-Cas9  
technology to improve nutritional  
and health value in durum wheat'**



**13:15-13:30**

**Dr. Gabriella Dono,**  
**Dr. Maurizio E. Picarella**  
DAFNE - University of Tuscia - Italy  
**'Genome editing, a tool to study  
useful tomato fruit variants'**



The goal of **sustainable agriculture** is to meet society's food and feed needs in the present without compromising the ability of future generations to meet their own needs. The United Nations Food and Agriculture Organization foresees that food production needs to be increased by at least 70% to accommodate the growth in population, expected to exceed nine billion people by 2050. Furthermore, diminishing water resources and climate change are putting additional pressure on agriculture. As the amount of cultivable land worldwide is limited, *improving crops to increase yields is a key tool to meet future demand*. The challenge is obtaining functional diversity in agronomic traits. **Biotechnology** is an important tool to improve crop yields, nutritional quality and to reduce the impact on the environment. Newly developed techniques of **genome editing**, which are *revolutionizing biology*, can generate heritable mutations in a predictable trait-related genomic location, creating a series of variable phenotypes for breeding within a single generation.

In 2018, the Department of Agriculture and Forest Sciences (**DAFNE**) was awarded an important grant to develop the project entitled 'Sustainability of Agricultural and Forest systems in the Mediterranean environment in a global change context' (**SAFE-MED**). This project is composed by 7 main work packages (WPs), among which **WP5** focuses on the usage of biotechnology for a sustainable agriculture. During this meeting emerging approaches and strategies of genetic engineering, as well as their regulation, for a more sustainable agriculture will be shown and discussed with a panel of national and international experts.