

Plant Phenotyping @ ALSIA – AGROBIOS



Francesco Cellini

Research and Advanced Services Area

The Italian plant phenotyping landscape and the other international initiatives
5 - 6 September 2018, Metaponto - Matera



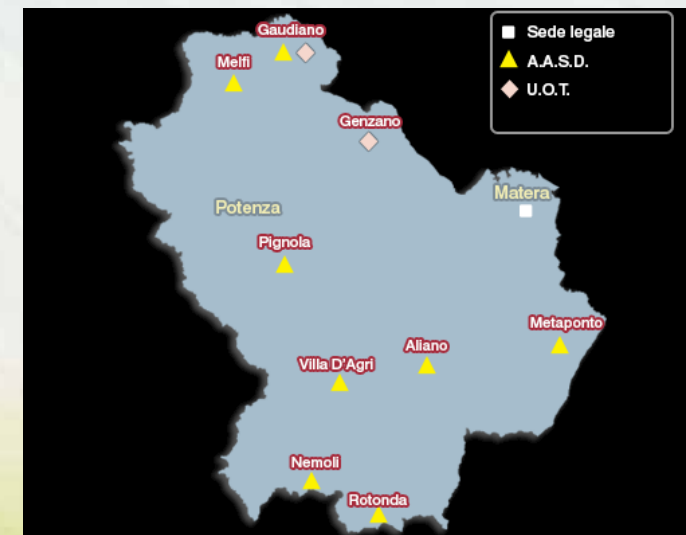
ALSIA PROFILE



Metapontum **Agrobios**

Regional Agency for the development and innovation of agrofood and agroindustry sectors through innovation transfer and implementation of Agrofood Development Services (ADS)

Headquarter in Matera, office in Potenza, Campus and Agrobios R&D center in Metaponto, 8 Demonstration and Experimental farms



ALSIA ACTIVITIES



Metapontum **Agrobios**

- ◆ R&D&T activities
- ◆ Agriculture extension services (dissemination, technical and organizational consultancy, marketing)
- ◆ Farmer training
- ◆ Agro-technical services and support



METAPONTUM AGROBIOS RESEARCH CENTER



Metapontum **Agrobios**



- Labs (m² 3.000)
- Plants (m² 2.260)
- Greenhouses (m² 5.400)
- Experimental fields (ha 5)



THE RESEARCH CENTER AREAS OF INTEREST



Metapontum **Agrobios**

AGRICULTURE

INDUSTRY

GREEN BIOTECH

ENERGY

ENVIRONMENT



THE PHENOTYPE: GENOTYPE x ENVIRONMENT



Metapontum **Agrobios**

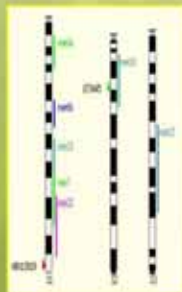


Environment



Performance, Yield,
Quality

Genes



IMAGING



Metapontum **Agrobios**



- **BET ON IMAGING:**
 - Non disruptive
 - Medium-HighThroughput
 - Automatable



2 ROUND OF INVESTMENTS



Metapontum **Agrobios**



2007



2009

THE PLATFORM: PHENOLab



Metapontum Agrobios

2. Imaging stations



- Fluorescence/Photosynthesis
- Stress indexes

UV (fluorescence)

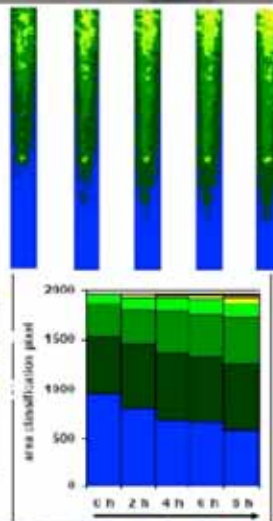
RGB SCAN

RGB

- ROI ("Region of Interest")
- Digital biomarkers
- Green and yellow indices



- Water content
- % drought stress
- Root morphology
- Root Architecture



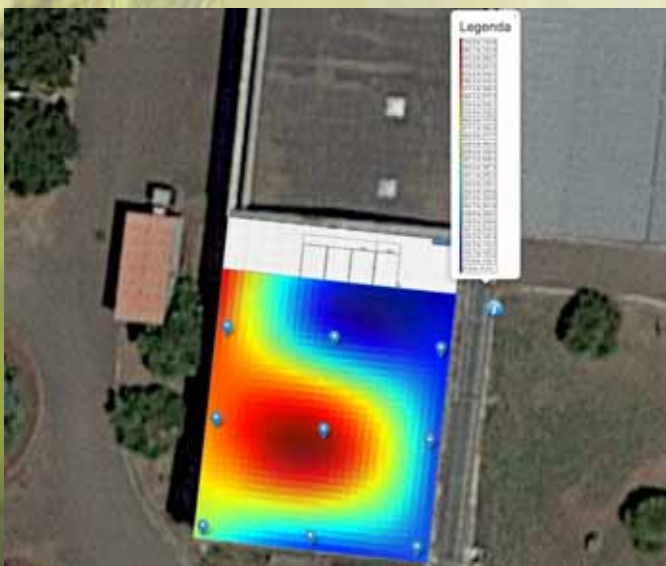
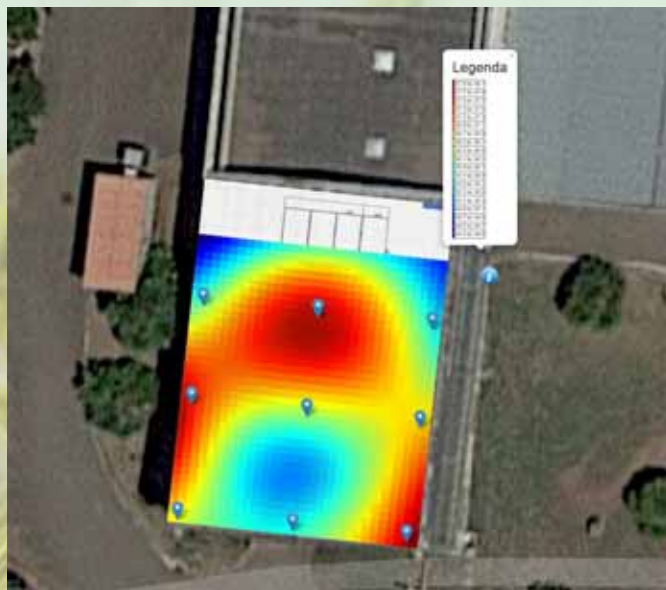
3. Computer station

1. Conveyor system

ENVIRONMENTAL MONITORING SYSTEM



Metapontum **Agrobios**



- 9 REALTIME SENSORS (T, PAR, Hum)
- 2 CO2 SENSORS
- GEOREFERENCED
- DATA CLOUD COLLECTION AND ANALYSES



ACTIVITIES & SECTORS



Metapontum **Agrobios**

R&D

Mutant characterization
Stress response
Biodiversity

INDUSTRY

Agrochemicals
&
Biostimulants
efficacy

Breeding



AGROTECH

Model
validation

Model
development

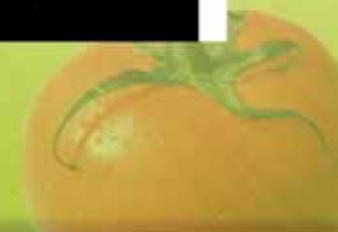


VISION & AMBITION



Metapontum **Agrobios**

- **NATIONAL REFERENCE POLE**
- **EUROPEAN NETWORK NODE**
- **GLOBAL NETWORK PARTNER**



PHENITALY



Metapontum **Agrobios**



- **Cofounder with CNR**
- **Principle node**
- **11 Partners**
 - **7 Universities**
 - **4 Research centers**

<http://www.phen-italy.it>



PUBLIC & PRIVATE PARTNERSHIPS



Metapontum **Agrobios**



CNR-IBBR JRU



VALAGRO@PHENOLab



EUROPEAN & INTERNATIONAL PARTNERSHIP



Metapontum **Agrobios**



<https://eppn2020.plant-phenotyping.eu>



ROADMAP ESFRI

<https://emphasis.plant-phenotyping.eu>



FOUNDER

<https://www.plant-phenotyping.org>



IMAGING THE FUTURE



Metapontum **Agrobios**



- **DEVELOPMENT OF NEW TECHNOLOGIES**
 - *in vivo* real time sensors



- **MEDITERRANEAN COOPERATION**



- **SMART AGRICULTURE**

- **EXPANSIONE AND EXTENSION**



AKNOWLEDGEMENTS



Metapontum **Agrobios**

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