

## Basic Information:

<b>Installation Name:</b>	ALSIA-PhenoLAB
<b>Installation Location:</b>	Metaponto di Bernalda (MT) - ITALY
<b>Installation location MAP</b>	<a href="https://www.google.com/maps/d/edit?mid=13hasa5ACAj6v93l5ltAywK8AJCz8ivv0&amp;usp=sharing">https://www.google.com/maps/d/edit?mid=13hasa5ACAj6v93l5ltAywK8AJCz8ivv0&amp;usp=sharing</a>
<b>Installation Category:</b>	Control Conditions, Open Field, Growth Chamber
<b>Traits analysed</b>	<b>Above ground, Below ground</b>
<b>Environmental Manipulation:</b>	Water, Nutrients concentration
<b>Stress applicable</b>	Drought, Biotic stress, Viruses, Bacteria
<b>Capacity</b>	494 pots for plant imaging 80 hectares
<b>Status</b>	Operational
<b>Trait Measurements:</b>	Growth, Structure and architecture, Root properties, WUE, Root architecture, Stress indices
<b>Equipment and sensors available (in particular for field activities)</b>	RGB camera, IR, multispectral, Fluorescence, LiCOR, porometer,

**References:**

- Parlati A et al., 2017. Ectopic Expression of PII Induces Stomatal Closure in Lotus japonicus Front Plant Sci. 2017 Jul 25;8:1299. doi:10.3389/fpls.2017.01299.
- Reynolds Det al., 2018. What is cost efficient phenotyping? Optimizing costs for different scenarios. Plant Sci. [282](#):14-22 DOI: 10.1016/j.plantsci.2018.06.015
- Donatella Danzi, et al., 2019. Can High Throughput Phenotyping Help Food Security in the Mediterranean Area? Front. Plant Sci., 25 | <https://doi.org/10.3389/fpls.2019.00015>
- Briglia N et al., 2019. Drought phenotyping in Vitis vinifera using RGB and NIR imaging. Scientia Horticulturae DOI: 10.1016/j.scienta.2019.108555

**URL**

<https://www.alsia.it/opencms/opencms/Servizi/dettaglio/Fenonica-Vegetale/>

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**Description of the infrastructure:**

The core of platform is based on a plant-to-sensor Lemnatech Scanalyzer 3D system equipped with a conveyor system accommodating 494 pots (2,5 l) carried by RFID-tagged carts, 4 imaging sensor chambers (NIR, RGB, Flu, NIR Roots), an automatic (fert)-irrigation station with a scale for evapotranspiration measurement of single pots. The platform is located in a glasshouse for semi-controlled conditions, and environmental variables are measured via a network of nine sensor nodes (PAR, T, RH, CO<sub>2</sub>). Experimental open fields with agro-meteo stations are available in a network of seven experimental farms located in the most important agricultural areas of Basilicata Region.