PHEN-ITALY INFRASTRUCTURES/INSTALLATIONS

Installation name	**PhenoPlant - UNITO**
Installation Location	Grugliasco (TO), Italy
Installation Location (GPS coord.)	https://maps.app.goo.gl/LLVDGPLLtpnizbN58
Installation Category	– Controlled conditions
Traits analysed	Above ground
Environmental Manipulation applicable	– Water – Light quality
Stress applicable	– Drought – Light
Max Capacity	216 pots
Status	Operational
Trait measurements	– Growth – Canopy – Structure and architecture – WUE – Stress indices
Equipment and sensors	– RGB camera – multispectral
References	---
Description of the infrastructure/installation	The PhenoPlant platform is an advanced phenotyping system that enables the automated detection of morphological, structural and functional traits in plants. This automated platform is intended to complement the Department research equipment, to support the scientific training of students, PhD students and researchers, and to attract new national and international collaborations. The PhenoPlant platform, consisting of 216 stations (for potted plants), ensures the continuous measurement of plant weight, its irrigation according to deficiency/restitution protocols, as well as the control of illumination, temperature and humidity. It allows the automated detection of morphological, structural and functional plant traits through the analysis of multispectral images emitted by the plants and continuously scanned by a gantry system. By integrating the multispectral outputs, the system provides the automated measurement of plant growth and fitness parameters, as well as the survey of environmental parameters.

	The PhenoPlant platform acts simultaneous and accurate measures in order to study the correlations between phenotypic expression, growth performance, induced experimental treatments, environmental and genetic parameters. Understanding the processes that regulate adaptation strategies to the environment and cultivation techniques is essential for the advancement of basic science and for multiple agronomic and technological implications.arrow_down
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