PHEN-ITALY INFRASTRUCTURES/INSTALLATIONS

Installation name	**Phenotyper FEM**
Installation Location	San Michele all'Adige (TN), Italy
Installation Location (GPS coord.)	46.193037031108446, 11.135380893977496
Installation Category	Controlled conditions
Traits analysed	Above ground
Environmental Manipulation applicable	– Temperature – Water – Nutrients concentration – Light quality – Light intensity, Rh
Stress applicable	– Drought – Heat stress – Light – Biotic stress – nutrients, soil amendments
Max Capacity	90 pots (10L) for plants up to 1.3m or 45 trays (20 pots/tray) for up to 900 seedlings
Status	Operational
Trait measurements	– Growth – WUE – Stress indices
Equipment and sensors	– RGB Camera – Tomography – Hyperspectral
References	Clemens M, Faralli M, Lagreze J, Bontempo L, Piazza S, Varotto C, Malnoy M, Oechel W, Rizzoli A and Dalla Costa L (2022) VvEPFL9-1 Knock-Out via CRISPR/Cas9 Reduces Stomatal Density in Grapevine. Front. Plant Sci. 13:878001. doi: 10.3389/fpls.2022.878001
Description of the infrastructure/installation	State-of-the-art automated RGB and hyperspectral high-throughput phenotyping platform with controlled conditions for temperature, humidity, and light type and intensity, with an automatic irrigation and weighing system for plants up to 1.3 m in height (90 plants/experiment) or seedlings/small plants (900 plants/experiment). *Applications* Characterization of genotypes / varieties

	Identification of differences in growth, biomass, architecture, health status among different genotypes or plant varieties under optimal growth conditions. *Stress response* Characterization of the responses to various types of stress (e.g. water, light, thermal) of single or multiple genotypes / plant varieties. *Development of indices of plant stress* Development of hyperspectral indices of stress and physiological state of plants under controlled conditions for field application evaluation.
Contact person	Mingai Li mingai.li@fmach.it +39 0461 615131
URL	https://cri.fmach.it/en/Facilities/Technological-Facilities/Plant-Phenotyping