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EMPHASIS ON THE NETWORK OF EUROPEAN PLANT PHENOTYPING INFRASTRUCTURES AND ON ITS ITALIAN NODE PHEN-ITALY

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EMPHASIS (European Infrastructure for Multi-scale Plant Phenotyping And Simulation for Food and Security in Changing Climate) is a pan-European distributed infrastructure of the ESFRI (European Strategy Forum on Research Infrastructures) Roadmap. EMPHASIS aims at exploiting, through high-throughput phenotyping, the genetic diversity required for the enhancement of plant productivity, the resistance to biotic and abiotic stresses, and, in general, progresses in plant breeding. The infrastructure will enable diverse users to quantify relevant plant traits and to precisely analyze genotype performance in current and future agro-climatic scenarios. EMPHASIS will furthermore establish links between big data acquisition and management, and models at single plant and crop level, achieving reliable simulations of performances (from genotypes to whole crops) in different environmental scenarios. State of the art facilities will be accessible to users from academia, the industry and relevant stakeholders, delivering scientific breakthrough and innovation, and maintaining Europeans leadership in plant phenotyping. At the Italian level, Phen-Italy the national node of the preparatory phase of the ESFRI Project EMPHASIS-PREP, is co-coordinated by CNR and ALSIA, and is structured in a Joint Research Unit (JRU) that is participated by 11 more universities and research entities, contributing to the development and successful exploitation of plant phenotyping in the Mediterranean area.

ABSTRACT