



## 3<sup>rd</sup> International and 17<sup>th</sup> National Crop Science Congress of Iran

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*“Knowledge-based, Smart Agriculture and Contract Farming”*

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**Speech Topic:** Plant Phenotyping crossing borders: overcoming technological and structural bottlenecks

### **Abstract:**

Quantitative analysis of structure and function of plants has become a major bottleneck that is needed to identify the associations between phenotypic and genotypic data that is required for practical applications and basic science. A coordinated effort is required to effectively address this gap and enable a close interaction between phenotyping experts and users from different disciplines to specifically address the demand and requirements of different disciplines.

The EU funded research infrastructure projects such as EPPN2020 or the ESFRI listed project EMPHASIS aim at integrating the plant phenotyping community in Europe and to address this bottleneck. While the EPPN2020 project enables practical access to plant phenotyping installations for user driven plant phenotyping experiments in Europe, the EMPHASIS project develops a long-term sustainable operation of the infrastructure.

In this presentation, I will present currently available infrastructure with best case examples of the application of this infrastructure. Plant phenotyping infrastructure combines the application of non-invasive sensor technologies for quantitative measurement of plant traits under various scenarios in controlled growth chambers, semi-controlled greenhouses, under field conditions, complemented by a modeling platform and a relevant e-infrastructure. In the last part of the talk, I will stress the need for cooperation within the phenotyping sciences (including plant and agri sciences as well as technology providers) and ways to connect to diverse user communities in knowledge and access networks.

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