

# PHENET

## webinar series



The European Research Infrastructures (RI) on plant phenotyping (EMPHASIS), ecosystems experimentation (AnaEE), long-term observation (eLTER) and data management and bioinformatics (ELIXIR) join their forces in the EU funded project PHENET to codevelop next generation of tools, methods for the development of crop varieties, agricultural management practices to face future climatic scenarios across Europe and accompany agroecological transition. These tools are tested in a range of use cases addressing specific scientific questions and will result in new services that will be implemented and available within the RIs involved in PHENET.

With this webinar series we provide an overview of the nine PHENET use cases, we address their scientific questions, present the tools that will be developed and provide a platform for a discussion and exchange with different stakeholders from academia and industry. Each webinar will include multiple speakers addressing a methodological section with presentation of latest developments in hardware, software, modelling solutions followed by applications of these methods to address relevant scientific questions illustrating how next generation phenotyping and envirotyping tools and methods can help to analyse different facets of the soil component, to explore the complex biotic interactions in agroecosystems, to decipher the complex genotypes by environment interaction, and to foresee how these tools and methods can be used to assess crops and forests across scales.

## Further details:

[https://www.phenet.eu/en/about-phenet/use\\_cases](https://www.phenet.eu/en/about-phenet/use_cases)



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# Programme



**22nd of Nov, 14:00 – 16:00 CET**

**Topic: assessment of crops and forests performance across scales**

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## **Speaker:**

Bertrand Muller, INRAE

Introduction of PHENET and the webinar

Xavier Draye, UCLouvain

Earth observation services and proxy-detection for Research Infrastructures

Laurent Saint-Andre, INRAE

The case study of the Doller valley shows the need to integrate proxy and remote sensing, field data, socio-economic issues and modelling for a low-carbon territory

Arthur Monhonval, Soil Capital

Farms 2 Platforms: phenotyping capabilities of RI to support innovation towards the agroecological transition at the farm level

**29<sup>th</sup> of Nov, 14:00 – 16:00 CET**

**Topic : biotic interaction in agroecosystems**

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## **Speaker:**

Bertrand Muller, INRAE

Introduction of PHENET and the webinar

Cyril Pommier, INRAE

Open Science services for data management, integration, sharing and modelling

David Rousseau, Univ. Angers

Adaptable phenotyping devices with AI embedded targeted towards agroecological traits

Philipp Vermeulen, CRA-W

Plant Health: Validated sensors and methodology applicable for biotic stresses in wheat

Madhuri Paul, Univ. Bonn

Intercropping in Europe: a systematic mapping study of arable grain crops

Oliver Schweiger, UFZ

Multiple sensors in sentinel bumble bee colonies to disentangle and predict multiple pressures on bee health



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**6<sup>th</sup> of Dec, 14:00 – 16:00 CET**

**Topic: genotypes x environment interactions across scales**

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## **Speaker:**

Bertrand Muller, INRAE	Introduction of PHENET and the webinar
Ioannis Athanasiadis, WUR	Artificial intelligence in plant phenotyping – towards end-to-end models
David Rousseau, Univ. Angers	Adaptable phenotyping devices with AI embedded targeted towards agroecological traits
Raul Lopez-Lozano, INRAE	Model-assisted wheat phenotyping to predict genotype performance and adaptation to future environmental conditions
Walter Guerra, Laimburg	High throughput phenotyping on apple

**13<sup>th</sup> of Dec, 14:00 – 16:00 CET**

**Topic: digging into the complexity of soil components**

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## **Speaker:**

Bertrand Muller, INRAE	Introduction of PHENET and the webinar
Ines Chaves, ITQB, Miguel Cisneiros, BIODATA	Building on Soil Ontologies
Ilja Reiter, CNRS	Soil in ecological & agroecological settings
Hans Sanden, Akos Akos-Etele	
Csibi, Paval Baykalov BOKU	<i>In-situ</i> subsurface soil properties estimation with Vis-NIR spectroscopy
Nadia Soudzilovskaia, Univ. Haselt	Towards understanding soil phenology



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