SolACE

Solutions for improving **A**groecosystem and **C**rop **E**fficiency for water and nutrient use

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+ 25 partners

ECO & SOLS

INRA SCIENCE & IMPACT
Montpellier

Horizon 2020
European Union Funding
for Research & Innovation

Solutions for improving Agroecosystem and Crop Efficiency for water and nutrient use

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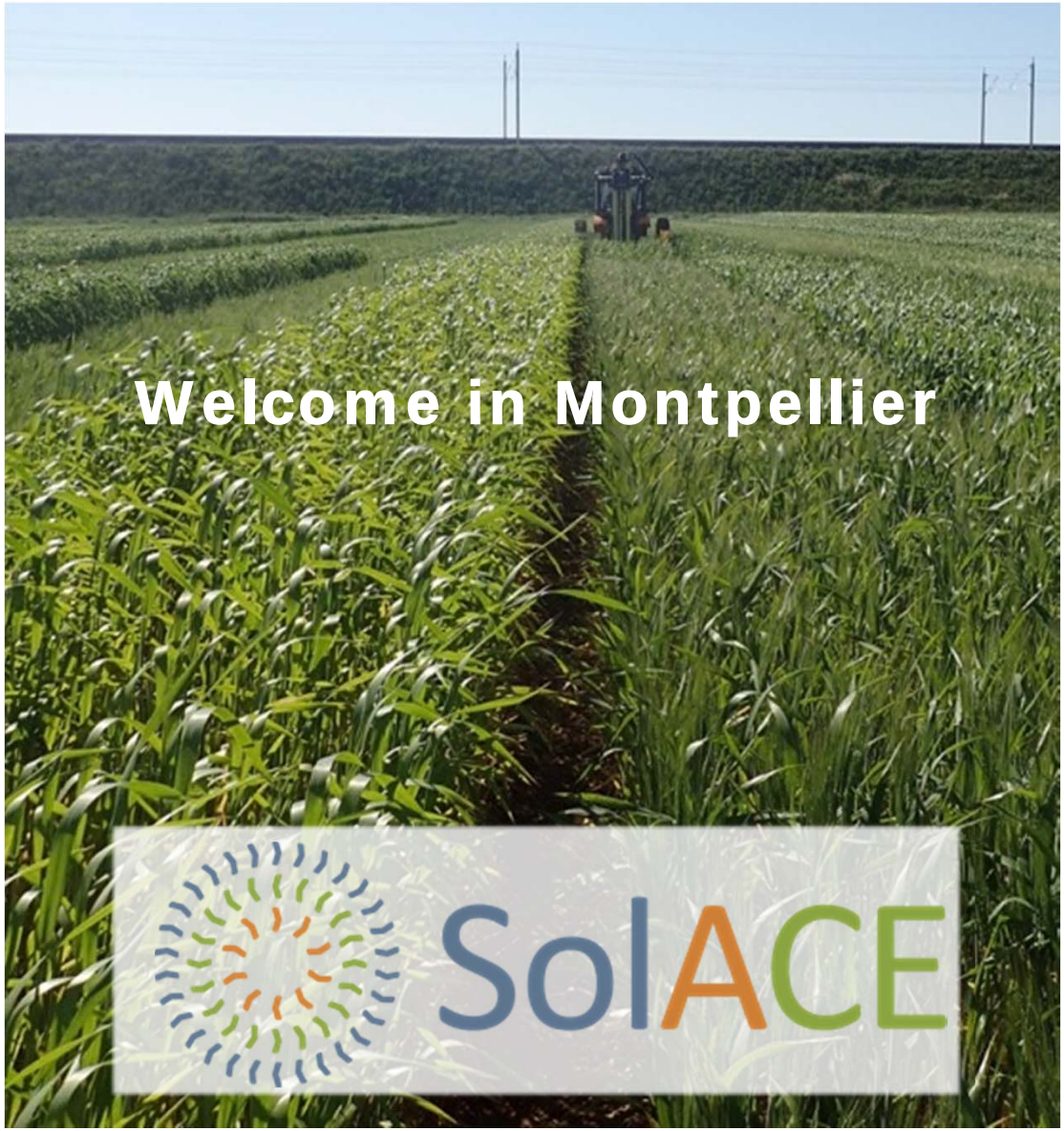
Stakeholders' Event

Kick-Off Meeting June 26-28th 2017



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General objective

Solutions for improving **A**groecosystem and **C**rop **E**fficiency for water and nutrient use

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General objective

- **design/test novel**
- **management innovations (inoculants, etc…)**

Solutions for improving **A**groecosystem and **C**rop **E**fficiency for water and nutrient use

- **innovative breeding strategies, ideotypes, genotypes (hybrids…)**
- **i.e. performances under combined stresses (drought x N or P)**

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General objective

Solutions for improving **A**groecosystem and **C**rop **E**fficiency for water and nutrient use

- focus on three major European crops: **bread wheat**, **durum wheat** and **potato**

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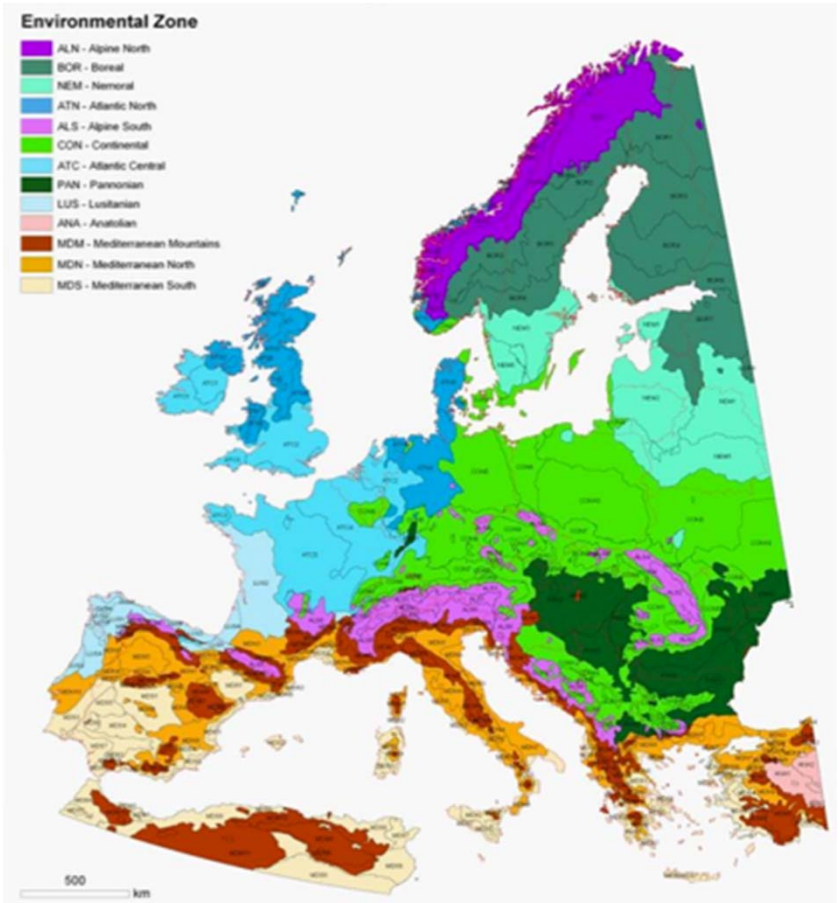
Specific objectives

- **Identify most probable present-day and future scenarios of combined water and nutrient stresses**, across the various pedo-climatic zones of Europe



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Specific objectives

- **Identify crop responses to combined stresses**, i.e. realistic simultaneous limitation by water and N or P availabilities

  - Water x N : bread and durum wheat
  - Water x P : potato

Specific objectives

- **Identify crop responses to combined stresses**, i.e. realistic simultaneous limitation by water and N or P availabilities
- **Evaluate resource (water, N and P) acquisition efficiency** and define the corresponding, relevant **below-ground traits** (root / rhizosphere microbiome / symbiosis)

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Specific objectives

- **Define the combination of traits**, including below- and above-ground, for resource (water, N and P) use efficient cropping systems (**ideotypes** coping/combined stresses)

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Specific objectives

- **Identify genes / molecular markers involved in combined stress response**

- **Define genomic selection models for improving yield under combined stress**

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Specific objectives

- Identify genes / molecular markers involved in combined stress response
- Define genomic selection models for improving yield under combined stress
- **Design novel, resource efficient ideotypes or hybrids**

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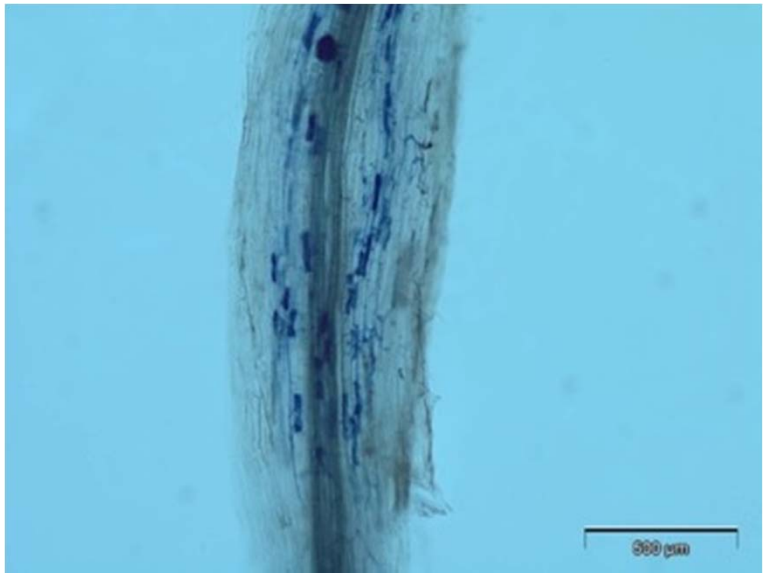
Specific objectives

- **Evaluate biotic** (plant-plant, plant-microbe) **interactions** at play in novel crop management techniques (cover crop, genotype mixtures, microbial inoculants)



Specific objectives

- **Design efficient microbial inoculants**, and evaluate them *in field conditions*
- **Design efficient genotype mixtures**
- **Test legume-based crop rotation and reduced tillage/no till strategies** *in field conditions*

Specific objectives

- **Design efficient microbial inoculants**, and evaluate them *in field conditions*
- **Design efficient genotype mixtures**
- **Test legume-based crop rotation and reduced tillage/no till strategies** *in field conditions*
- **Develop novel enabling technologies** for crop/soil monitoring and management of water and N status

Specific objectives

- **Evaluate *on-farm* the agronomic / economic / environmental performances of tested innovations** *at field plot scale*

- **Identify local solutions**

- **Identify barriers to uptake of tested innovations and provide recommendations to overcome them**

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- **Communicate to end-users**

  practice abstracts

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General Approach

- **multi-actor approach**
- field-relevant levels of combined stresses

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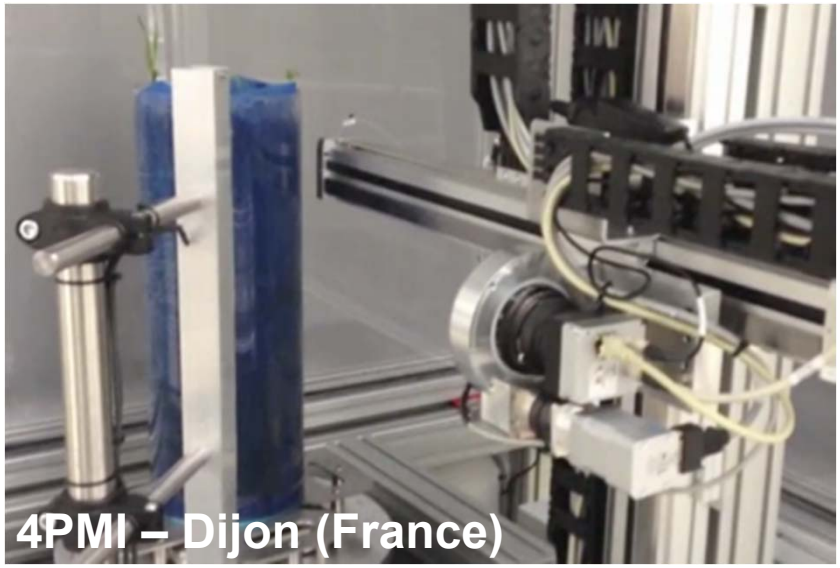
- field-relevant levels of combined stresses
- **largely relying on field (incl. on-farm) experiments**
  + unique phenotyping facilities (for belowground traits)



4PMI – Dijon (France)

RadiMax – Copenhagen (Denmark)

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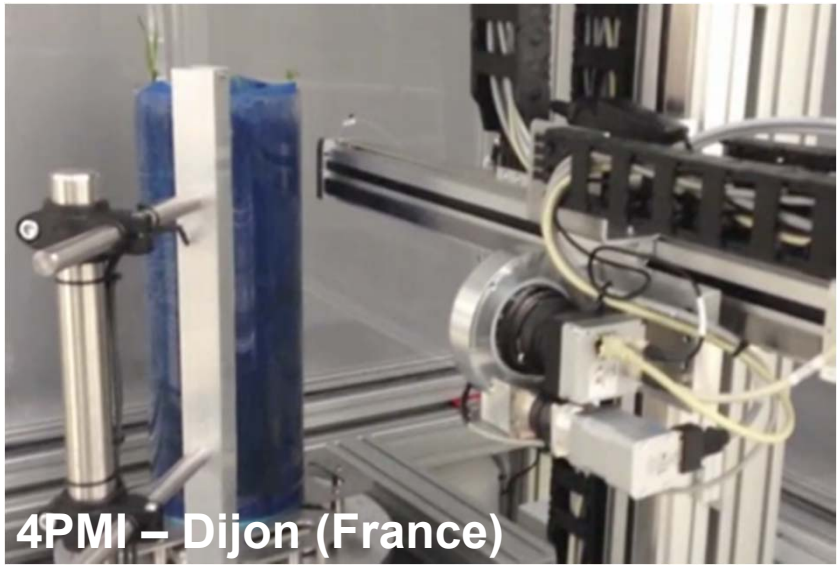

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SolACE a multi-actor consortium

Kick-Off Meeting June 26-28th 2017

Research

1. INRA
2. AIT
3. CREA
4. FiBL
5. JHI
6. KU
7. SU
8. SLU
9. UCL
10. UE
11. UHOH
12. UNEW
13. UPM
14. AGROSCOPE

Industry

17. DCM
22. SOLYNTA
23. SP
24. SYNGENTA
25. AGROBIOTA

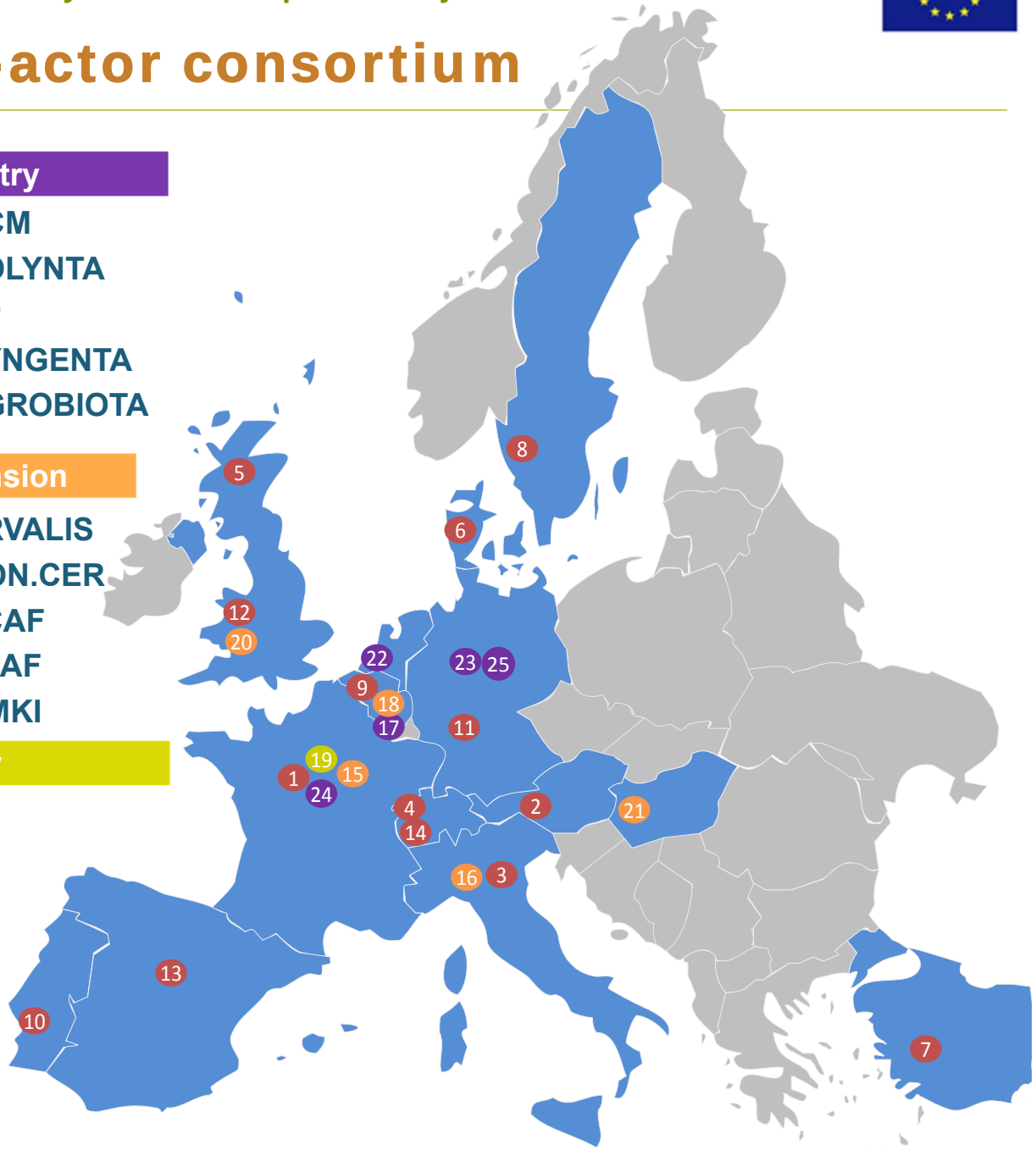
Extension

15. ARVALIS
16. CON.CER
18. ECAF
20. LEAF
21. ÖMKI

Other

19. IT

Located in 14 countries



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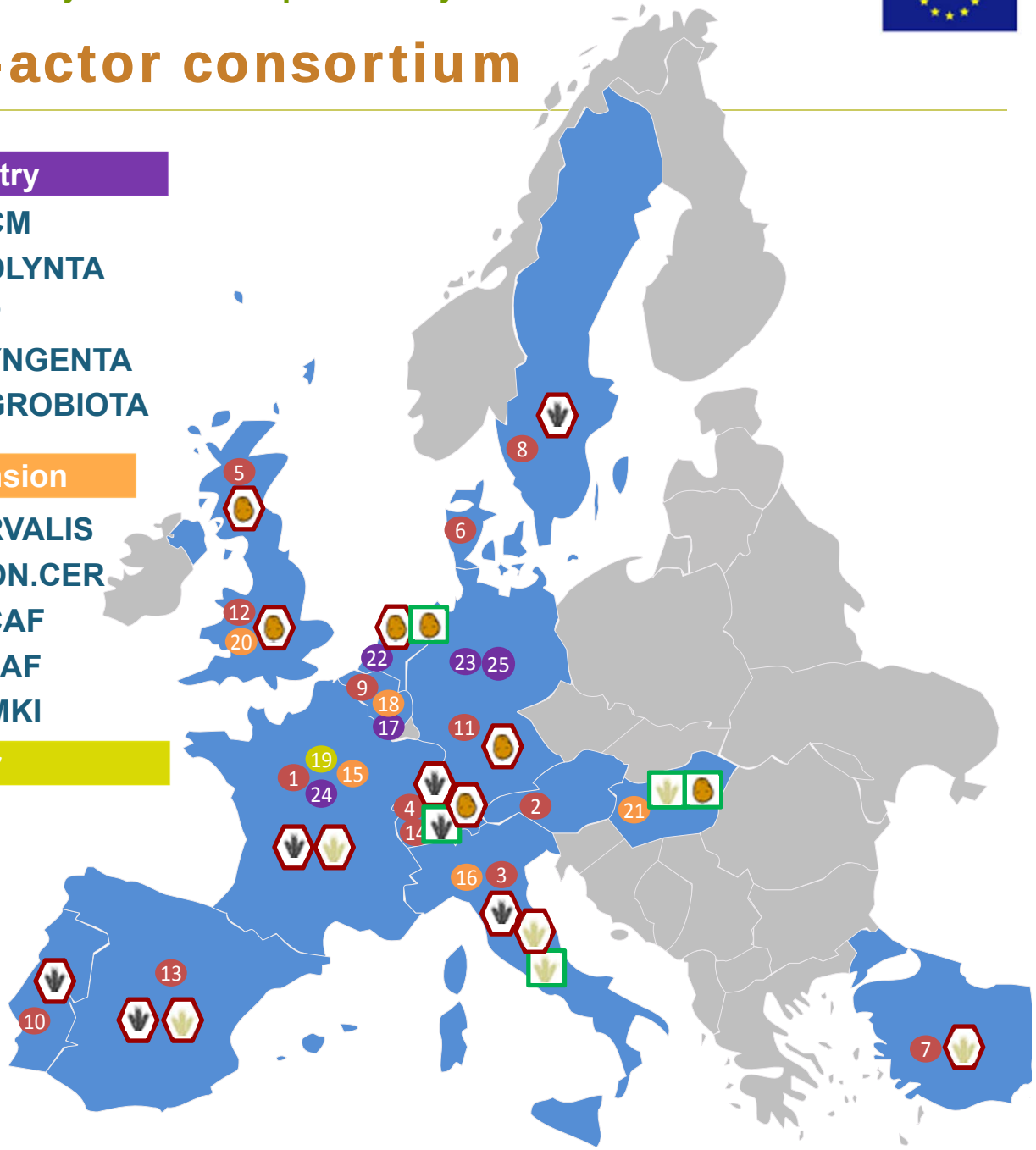
Experimental sites

- Organic
- Conventional

- Bread Wheat
- Durum Wheat
- Potato



Objectives of the Stakeholders' Event

- exchange views with **stakeholders**
  - farmers, farm advisors
  - breeders, agri-business actors
  - across the whole production chain

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Objectives of the Stakeholders' Event

- exchange views with **stakeholders**
  - farmers, farm advisors
  - breeders, agri-business actors
  - across the whole production chain
- beyond those involved as SolACE partners,
  to identify most relevant questions and strategies
  - most promising traits / genotypes
  - most promising management options
  - and their combinations

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Thank you

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