VITIRAMA: A program to characterize disease susceptibility in French ampelographic collections

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**VITIRAMA**

A program to characterize disease susceptibility in French ampelographic collections

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The program (2018-2020) deals with the tolerance to major diseases directly impacting grape production on a large panel of *Vitis vinifera* and hybrids varieties. Our aim is to better characterize the genetic resources in the Grapevine Resources Center of Vassal-Montpellier and the main French ampelographic collections for their exploitation in the short and medium term, either as alternative varieties or as genitors.

**Objectives**

Organize already existing data and field phenotype diversified genetic resources

Make available a synthetic knowledge to viticulturists and nurseries, breeders and the scientific community

**Actions**

1. Disease phenotyping in repository fields
   - Develop a common phenotyping protocol
   - Phenotype whole plants at the relevant stage
   - Gather existing data

2. Database integration
   - Convert and format existing data
   - Integrate bibliography and passeport data
   - Submit new CropOntology traits

3. Statistical analysis
   - Use mixed statistical models
   - Account for known confounders (e.g. spatial)
   - Include all available genetic information

4. Methods and data sharing
   - Phentyping protocols, CropOntology, stat. scripts
   - Datasets by disease and by sample
   - Scientific communication

**Expected outcomes**

- Document and advise growers about variety potential
- Help breeders design their mating schemes taking into account original germplasm less susceptible to several pathogens
- Establish study panels for fundamental research on the genetic determinisms related to main disease resistance traits

**VITIRAMA: an original and innovative approach**

- A rich panel of genetic resources studied for the first time for their tolerance to various diseases
- Combine existing data with new observations
- Mixed statistical models
- Data workflow from the field to open databases