



**SENSITIVITY  
MONITORING  
- FUNGICIDE  
RESISTANCE**



**PRODUCT  
SCREENING &  
ACTION MODE  
DETERMINATION**



**IN VITRO,  
IN VIVO,  
IN PLANTA TESTS**



**PLANT  
CARE  
LAB**

**BIOSTIMULANT  
& FERTILIZER  
ASSAYS**



**CONTROLLED  
TO PROTECTED  
CONDITIONS**



**WEEDS &  
PATHOGEN  
MUTATIONS  
DETECTIONS**



## A CRO involved throughout the regulatory registration process



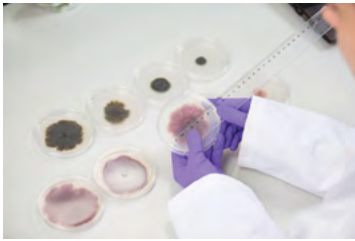
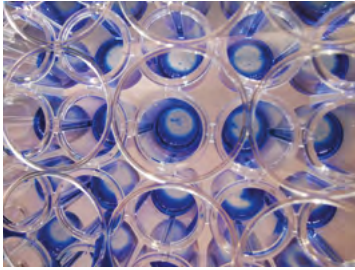
Leveraging Staphyt's network of experimental stations and local partners, the laboratory has structured access to pathogen samples collected throughout Europe. This broad geographical coverage allows us to collect representative pathogen populations, establish their sensitivity profile distributions to multiple active ingredients, and identify any regional shifts in sensitivity at an early stage.

To ensure rigorous and quantitative monitoring of the sensitivity of crop pathogens and also weed to various active ingredients, we perform some complementary tests: *in vitro*, *in vivo*, *in planta* and also **molecular tools** used to detect or quantify mutations responsible for pathogen or weed resistance.

### First steps of product screening

- 🌿 Screening of active substances (conventional, biocontrol or SDP plants protection products);
- 🌿 Determination of the action mode: preventive, curative, research for the activated signalling pathway, etc;
- 🌿 Determination of the direct effect: inhibition of spore germination, visualization of the elongation tube, radial growth, etc;
- 🌿 Demonstration of the activation of plant defence pathways by SDP products with molecular tools;
- 🌿 Phytotoxicity study in planta and selectivity study on seeds;
- 🌿 Product physical and chemical compatibility tests (static and dynamic),
- 🌿 Study of spray quality according to adjuvants use (retention, spreading/coverage, penetration test).

## In vitro Assays



## In vivo Assays



*Plasmopara viticola*



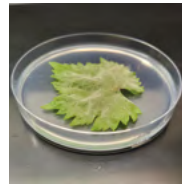
*Bremia lactucae*



*Blumeria graminis*



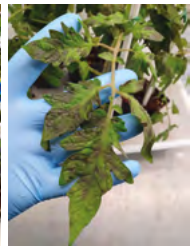
*Phytophthora infestans*



*Erysiphe necator*



## In planta Assays



Support from the lab to the field



**Staphyt**  
empower  
science together

# Evaluation of fertilizer, biofertilizer, biostimulant and growth regulator products

Evaluating the efficacy and characterizing the mode of action of a nutritional or biostimulation product are crucial steps to validate the claims, securing technical positioning, and guiding development and market launch strategies. In this context, Staphyt supports its partners in setting up customized trials, while adhering to the FprEN 17700 standard.

## Plant model mostly managed

Broadacre crops:



Woody perennials:



Vegetables:



Experiments can be deployed at different scales: **under controlled conditions** (climatic chamber) and **under protected conditions** (regulated glass greenhouse and tunnel greenhouse). Each protocol can be adapted according to the **product's positioning**, the **number of applications**, the **number** and **type of assessments**.

Staphyt will assist you according to the claim in question:

## Tolerance of abiotic stress:



Unstressed



Hydric stressed



Unstressed



Hydric stressed



Unstressed



Hydric stressed

## Determination of quality traits:



🌿 Observation of morphological and physiological responses (leaf area, leaf and root biomass, height, yields, chlorophyll index, etc.);

🌿 Effect on germination;

🌿 Evaluation of the effect on the root architecture (number of forks, tips, root length, root diameter).

