Biocontrol evaluation

Performance and mode of action

Our plant pathology team has developed pathogenic tests to evaluate the performance of your plant protection products under controlled and semi-controlled conditions.

We evaluate the efficiency your products:

- Towards more than 35 fungal and bacterial plant diseases (dose, time of treatment, systemic action, etc.) – See list at the back
- As weed treatment (herbicidal effect on a dozen weeds)

We evaluate factors that could impact your product efficiency:

- Abiotic factors (leaching, UVA, UVB, temperature, humidity, water and salt stress, compatibility with other agricultural inputs)
- Biotic factors (variety effect, pathogenic or beneficial micro-organisms tracking, etc.)

We help you understand the mode of action of your product:

- Its direct biocidal or antagonist effect on the pathogen at different stages (spore germination, mycelium growth, bacterial multiplication…, *in vitro* tests)
- Its ability to trigger plant defence pathways: gene expression profiles using qPFD tool (Licence INRAE®) on tomato, potato, wheat and rapeseed (*in planta* assays).

We have powerful and adapted equipments at the laboratory scale:

1500 m² of greenhouses divided into 22 regulated compartments of 20 to 150 m²

12 regulated growth chambers of 4 to 14 m²

Laboratories: microbiology, in vitro culture, molecular biology and biochemistry

We can also conduct **scientific and technical literature searches** to provide you with information already published that is useful for a better understanding of your products.

Disease assays

For the evaluation of plant protection products

In order to assess the plant protection performance of your products on plant diseases, we have developed a large number of patho-tests. Our protocols are standardized with an adapted scoring scale and data statistical analysis.

Plant		Disease	Pathogen (fungus – bacteria)
Cereals and other field crops	Wheat	Septoria Fusarium blight Damping off	*Septoria tritici* *Fusarium graminearum* *Fusarium graminearum*
	Rapeseed	Sclerotinia	*Sclerotinia sclerotiorum*
	Fava bean	Rust Grey mold	*Uromyces fabae* *Botrytis fabae*
	Flax	Verticillium wilt	*Verticillium dahliae*
	Potato	Downy mildew/Late blight Rhizoctonia	*Phytophthora infestans* *Rhizoctonia solani*
Fruit and vegetables	Artichoke*	Downy mildew	*Bremia lactucae*
	Cabbage and cauliflower*	Ringspot disease Downy mildew Black rot Club root	*Mycosphaerella brassicicola* *Peronospora parasitica* *Xanthomonas campestris* *Plasmodiophora brassicae*
	Semy-dry bean (Coco de Paimpol)	Bacterial brown spot disease	*Pseudomonas syringae*
	Cucumber	Powdery mildew	*Erysiphe cichoracearum*
	Spinach	Damping off	*Pythium* sp.
	Strawberry*	Powdery mildew	*Podosphaera aphanis*
	Bean	Damping off	*Botrytis cinerea* or *Pythium* sp.
	Lettuce*	Downy mildew White mold Damping off	*Bremia lactucae* *Sclerotinia minor* *Rhizoctonia* sp. or *Pythium* sp.
	Melon	Downy mildew Powdery mildew	*Pseudoperonospora cubensis* *Sphaerotheca fuliginea*
	Pea	Downy mildew	*Peronospora viciae*
	Tomato*	Hairy root Leaf mold Downy mildew/Late blight Powdery mildew Grey rot Verticillium wilt	*Agrobacterium rhizogenes* *Cladosporium fulvum* *Phytophthora infestans* *Oidium neolycopersici* *Botrytis cinerea* *Verticillium dahliae*
Ornamental plants and herbs	Basil	Downy mildew	*Peronospora belbahrii*
	Rose*	Powdery mildew Rust	*Sphaerotheca pannosa* *Phragmidium mucronatum*

* Field tests can also be carried out by our partner, the CATE experimental station (GEP)

Additional pathogenic tests are under development and can be developed under request.

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