Agroscience Screening & Molecular Diagnostics

We are a leading provider of product development consultancy and technical support to the crop protection industry. Our technical activities involve conducting field and laboratory studies to determine the safety and efficacy of new agrochemicals and crop varieties. With over 30 years of experience, Eurofins Agroscience Services offers outstanding technical knowledge and project management skills. By acquiring a carefully selected range of CRO's, we have created a unique portfolio of expertise that provides analytical, regulatory and field support to plant breeders, agrochemical, biopesticide, biocide and fine chemical manufacturers.

Glasshouse and Growth Room Efficacy Studies

Our custom built glasshouse and growth room facilities allow us to simultaneously perform multiple studies in climatically controlled isolated compartments all year round. The state of the art systems enable us to replicate growing conditions and, if required, produce environmental conditions that enhance disease formation. We have expertise in working with a broad range of crops and pests to GEP standards. The range of application equipment we have allows us to replicate almost all commercial practices. Our expertise includes:

- Efficacy, crop safety and rainfastness testing – fungicide, insecticide & herbicide
- Growth regulator studies
- Seed germination testing
- Stored grain studies
- Biopesticide studies
- Primary screening (in-vitro bioassays and in-vivo detached leaf)
- Baseline susceptibility and resistance monitoring

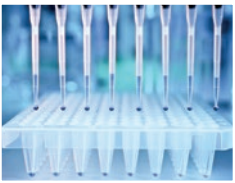
Inoculum Production

We are able to produce a range of inoculums that we can use to artificially inoculate trials with the target pathogen or pest. This vastly increases the success rate of our trials.

Molecular Diagnostics

We offer detection and quantification of viral, bacterial and fungal plant pathogens in either soil or plant material. Molecular tests such as ELISA or PCR give accurate, reliable and reproducible results by detecting and quantifying molecules or fragments of genetic material. The following analyses are routinely performed at our laboratories:

- Club root *(Plasmodiophora brassicae)* analysis in soil using real-time PCR (rapid turnaround time compared to the traditional bait test method)
- Detection of viral pathogens e.g. BYDV, PVY, PLRV, PMTV
- Extraction and quantification of proteins (GM) from plant material (GLP if required) by ELISA
- GLP residue analysis by ELISA methodology
- PCR and ELISA method development
- Grain analysis, grading and germination



Rainfall Simulation – Rainfastness (GEP) and Foliar Wash-Off Studies (GLP)

Eurofins rainfall simulator has been purpose built to satisfy the requirements for both rainfastness (GEP) and Foliar Wash-off Studies (GLP). It has been designed to simulate natural rainfall events from 2mm/hr to 25mm/hr. Our state of the art laser detection system allows real-time recording of rain intensity, droplet size and velocity during the rain event. We are partners in developing international standards and meet the following key criteria;

- Droplet size distribution and velocity fall within parameters which are representative of natural frontal rain conditions in Europe
- The crops are placed on a rotary platform to ensure even distribution of the rain over the specimens
- Less than 10% variance between rain events is achieved
- Rain intensities can be controlled and measured in real time to ensure data integrity

For rainfastness, a standard GEP efficacy study can be performed following product application and rain events. For GLP wash-off studies, the residue remaining on the plant can be determined by our laboratories. The data generated can be used to determine the wash-off factor. This information can then be used to model the environmental concentrations of a residue in the soil or ground water (PECsoil and PECgw).

Time lapse photography

Time lapse photography films give a unique and detailed insight into the action of a plant protection product. For example, germination effects, root vigour, root architecture or even pest/pathogen interactions.

Bespoke Services

We have substantial experience in providing cost effective bespoke services tailored to the individual needs of the client in the areas of screening, diagnostics, biological assays, and the associated method development and method validation. Please enquire if you need further information or require help in designing studies to maximise the quality of the data obtained.

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