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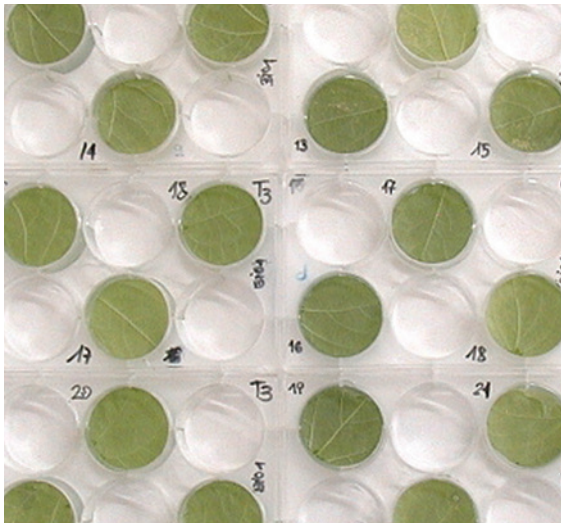

NON-TARGET ARTHROPODS ON PLANTS

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Welcome to Eurofins Agroscience Services

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 25 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.

Non-Target Arthropods on Plants

Non target arthropods on plants are invertebrates that play an essential role in ecosystems as pest controllers. Ecotoxicological data is required to confirm the impact on these non-target species.

Laboratory Studies

Eurofins Agroscience Services offers a wide range of standardized Tier I laboratory studies, performed according to the recent IOBC/WPRS guidelines, with parasitoids (*Aphidius rhopalosiphi, Trichogramma cacoeciae*), predatory mites (*Typhlodromus pyri*), aphidophagous predators (*Chrysoperla carnea, Coccinella septempunctata*) and anthocorid bugs (*Orius laevigatus*). Test organisms are exposed to treated glass surfaces, such as slides or petri dishes. Studies are designed as limit tests or dose response tests including LD and ER determination.

Extended Laboratory Studies

Eurofins Agroscience Services conducts Tier II studies if the results of Tier I studies do not discount risks to non target organisms. Studies can be conducted with *Aphidius rhopalosiphi, Trichogramma cacoeciae, Typhlodromus pyri, Chrysoperla carnea, Coccinella septempunctata* and *Orius laevigatus.* Test organisms are exposed to treated plant material (leaf discs, detached leaves or whole plants) under extended laboratory conditions. Plants are sprayed in the laboratory, in the field or outdoors near the testing facility using field application equipment.

Standard studies can be performed throughout the year, provided that plants can be cultivated indoors (laboratory / greenhouse) during winter.

Aged Residue Studies

Studies with aged residues are designed to assess plant protection products (PPPs) persistence under outdoor climatic conditions. Leaves for exposure are taken from field crops or from potted plants sprayed outside, simulating a field application. Residual toxicity is evaluated in several bioassays started at defined intervals after treatment. Studies can be linked to residual analysis performed in-house.

Plants can be protected from rain during the ageing of pesticide deposits under a UV-permeable acrylic glass. Aged residue studies can be conducted between May and October (last applications August / September). The choice of plants depends on the crop where the tested product is used and / or suitability for the test organism. Most frequently, apple (*Malus domesticus*), dwarf bean (*Phaseolus vulgaris*), cereals e.g. barley (*Hordeum vulgare*) are used. In addition, leaves of maize (*Zea mays*), sweet pepper (*Capsicum annuum*) or sugar beet (*Beta vulgaris*) can serve as substrate for exposure. Ageing studies under laboratory conditions using special lamps with a spectrum resembling daylight conditions can also be conducted.

Semi-field Studies

A test system has been developed to conduct studies closely simulating field conditions. Test organisms are exposed in cages under natural climatic conditions, sheltered from rain by a UV- permeable roof. Methods are established for *Aphidius rhopalosiphi, Chrysoperla carnea* and *Coccinella septempunctata.* Semi-field studies can be performed in Germany between May and August.

Eurofins Scientific Group

Eurofins Scientific is a life sciences company that serves a wide range of industries including the pharmaceutical, agricultural, food and environmental sectors.

Today the Eurofins Group is a leading provider of analytical services with:

- An international network of 150 laboratories across 30 countries in Europe, the USA, Asia and South America
- About 9,500 staff
- A portfolio of over 40,000 reliable analytical methods
- More than 80 million assays per year to establish the safety, composition, authenticity, origin, traceability, identity and purity of biological substances

T. pyri extended laboratory test

Climatic chamber with *C. septempunctata* test

Spraying chamber

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