

Non-Target Soil Organisms

Welcome To Eurofins Agrosience Services

Eurofins Agrosience Services is experienced in conducting acute and chronic studies with soil organisms including earthworms, several soil inhabiting arthropod species (spiders, carabids and staphylinid beetles), micro-arthropods (springtails and mites) and soil microorganisms. In addition to the standard application, coated seeds, pellets, granules with formulations, actives and metabolites also can be tested using modified test designs. If required, verification of application can be linked to in-house residue analysis. The following studies are conducted routinely in our testing facilities.

Soil Microflora

As standard, we conduct the soil microflora test throughout the year using natural soil (standard soil obtained from LUFA, Speyer, Germany). This test includes the nitrogen transformation and the short-term respiration tests. Depending on the solubility of the test item, it can be applied with different carriers (water, organic solvents or quartz sand); this applies for all tests.

Nitrogen Transformation Test

This study is conducted according to the OECD Guideline 216. Nitrogen turnover will be determined by Continuous Flow Analysis (CFA), measuring the NO_3^- -N content in aqueous soil extracts. If required, also nitrite can be determined from the samples.

Short-Term Respiration Test

This study is conducted according to OECD Guideline 217 using the OxiTop® System. The detector head is able to determine and record the time dependent change of pressure inside the bottle caused by the oxygen consumption and turnover to carbon dioxide.



Earthworm Studies

Eurofins Agroscience Services has more than 20 years experience in laboratory testing of ecotoxicological effects on earthworms. Our stock culture of *Eisenia fetida* provides the high quality test organisms needed to perform acute toxicity studies, reproduction toxicity studies and bioaccumulation studies all the year round.

- Acute toxicity test:

Effect of the test item on mortality and change in body weight of the earthworms is assessed according to OECD 207 and ISO 11268-1.

- Reproduction test:

Effects of the test item on reproduction and growth of *Eisenia fetida* is assessed according to OECD 222 and ISO 11268-2.

- Bioaccumulation study:

Bioaccumulation in *Eisenia fetida* is assessed according to OECD 317. These studies can also be conducted with radio labelled (¹⁴C) substances.

Soil Arthropods

We offer studies with several soil inhabiting arthropod species like the collembolan species *Folsomia candida*, the predatory soil dwelling mite *Hypoaspis aculeifer*, the carabid species *Poecilus cupreus* (adults and larvae), the *staphylinid* beetle *Aleochara bilineata*, and the *lycosid* spider genus *Pardosa* sp. Studies with all organisms except *Pardosa* sp. can be started at any point in the year. Studies with *Pardosa* sp. can be started only in spring and autumn and are dependent on the availability of test organisms. Studies with springtails

and soil mites are conducted using artificial soil while studies with *carabid* and *staphylinid* beetles as well as spiders are conducted on quartz sand. The test substance can be applied by mixing or spraying.

Extended laboratory studies with the above mentioned test species are conducted using natural soils (e.g. standard soils obtained from LUFA, Speyer, Germany). In addition to the standard application, coated seeds, pellets, granules with formulations, actives and metabolites are tested using modified test designs.

Dung organisms

Studies with dung organisms like the dung fly *Musca autumnalis* and the dung beetles *Onthophagus taurus* and *Aphodius constans* can be offered. In these studies the test organisms are exposed to the test substance mixed with cattle dung. All standard tests are performed according to the most recent guidelines or guidance documents (OECD, ISO, IOBC). Studies with *Musca autumnalis* and *Onthophagus taurus* can be offered all the year round while studies with *Aphodius constans* can be started during the winter months only.

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