



Original thinking... applied

## Earthworm Acute (*Eisenia fetida*)

For plant protection products applied directly to the soil granules, seed treatments and pellets, or where contamination of the soil is possible, registration data are required on non-target soil organisms under EU Regulation (EC) No 1107/2009.

Standard studies for soil organisms and terrestrial plants are required by VICH GL38 and FEEDAP (2008) for environmental risk assessments for veterinary medicinal products and feed additives.

Higher tier studies to refine the risk assessments for veterinary medicinal products and feed additives, can also be done and include Species Sensitivity Distributions (SSDs) and extended terrestrial plant studies using manure mediated exposure.

The earthworm *Eisenia fetida* (Lumbricidae) has been selected for testing because its susceptibility to chemicals is considered to resemble that of true soil inhabiting species.

## LABORATORY TESTS

### ACUTE TOXICITY TESTS

Fera offers standard laboratory tests with the *Eisenia fetida* following OECD guidelines.

#### How we carry out the tests

The earthworm is exposed to the test compound in a treated artificial soil (according to OECD requirements). The product to be tested can be incorporated into the substrate, or applied to the surface depending on the application method. Effects on mortality are assessed after 7 and 14 days of exposure. Sub lethal effects including effects behaviour are also observed over this period. After 14 days, adults are removed from the test system and any effects on biomass assessed.

#### Endpoints

Endpoints for the test are:

- Mortality after 14 days of exposure
- Biomass changes after 14 days of exposure
- Reproductive capacity of earthworms
- An LR<sub>50</sub> (lethal rate producing 50% mortality and/or a (NOER) no observable effect rate

## ADDITIONAL TESTING

Fera's studies are GLP-compliant and can be adapted to provide bespoke tests that meet your specific data requirements. Fera also offers in-house dose verification or residue analysis to validated methods.

### Test guidelines

OECD-Guideline for the testing of chemicals No. 207  
"Earthworm, Acute Toxicity Test" (adopted April 4, 1984).

## MORE ABOUT FERA

Fera is based at the National Agri-Food Innovation Campus near York, UK. We have a long track record of developing and providing ecotoxicology services to support environmental risk assessments for companies developing plant-protection products and veterinary medicines.

Our scientists combine extensive expertise with Fera's advanced resources and GLP-compliant laboratories, to assess the impact of plant protection products on terrestrial non-target arthropods, terrestrial plants and soil organisms.

We'll work in partnership with you to devise and conduct the appropriate tests to provide the essential data you need for robust environmental risk assessments.

## GET IN TOUCH

For more information and to book a test, call Fera on **+44 (0)300 100 0321**, email **[sales@fera.co.uk](mailto:sales@fera.co.uk)** or visit **[www.fera.co.uk/terrestrial-ecotoxicology](http://www.fera.co.uk/terrestrial-ecotoxicology)**

