



Original thinking... applied

Aerobic and Anaerobic Transformation in Soil

The study is performed to measure the transformation of a chemical in soil under aerobic and anaerobic conditions over a period of time. The study determines the rate of degradation of a substance and the rate of formation and decline of transformation products.

Samples are treated with non-radio or radiolabelled compounds and are incubated under controlled conditions in flasks or a flow through system over a period of time. At suitable time intervals, samples are removed from incubation and are extracted and analysed for parent compounds and any potential transformation products.

For studies using ^{14}C Labelled material the transformation pathway of a substance can be tracked and studied. A mass balance of the soil can be achieved by collecting any $^{14}\text{CO}_2$ produced and analysing the formation of soil bound residues during the incubation phase.

Degradation kinetics are determined for the parent test chemical and any major transformation products.

Test Guidelines and References

OECD 307: Aerobic and Anaerobic Transformation in Soil.

US-EPA OPPTS 835.4100 Aerobic soil metabolism.

US-EPA OPPTS 835.4200 Anaerobic soil metabolism.

FERA'S WORK IN ENVIRONMENTAL FATE

Environmental fate studies play a crucial role in providing the data which supports chemical companies in completing thorough environmental risk assessments.

Fera's support and expertise helps chemical companies to achieve successful product registrations and operate ongoing due diligence. Our environmental fate studies include a range of regulatory compliant tests to assess the biodegradation of chemicals in soil and water, and we provide a range of services from single studies to complex, whole programmes, including dossier preparation and submission.

Fera's multidisciplinary teams combine decades of agrochemical and veterinary drug industry experience with world-class technical expertise and analytical capabilities.

We operate in GLP-compliant facilities in the UK and provide regulatory compliant studies for submission in all geographic regions.

MORE ABOUT FERA

Fera is based at the National Agri-Food Innovation Campus near York, UK.

We work closely with plant protection and veterinary medicine product manufacturers to help develop effective, sustainable and safe chemical products that minimise ecosystem impacts and pollution, while maximising the beneficial effects for crops, plants and animals.

Combining the extensive expertise of our scientists with advanced resources and GLP-compliant laboratories, we provide valuable support to companies in their chemical evaluation and registration efforts.

GET IN TOUCH

For more information and to book a test, call Fera on +44 (0)300 100 0321, email sales@fera.co.uk or visit www.fera.co.uk/chemical-regulation

