



Metabolism in Rotational Crops Test

This test assesses the potential for a chemical and its soil metabolites or soil degradation products to accumulate in a rotational crop that is used in either human or animal feed.

We undertake the test to provide an estimate of total radioactive residues (TRRs) in raw agricultural commodities (RACs) via soil uptake and to elucidate the degradation pathway of the active ingredient in rotated crops.

We also identify the major components of the terminal residue in the RACs, to indicate the components which will be analysed for in-residue quantification studies.

Data from the test can be used to determine rotational intervals and whether or not field trials for rotational crops should be performed.

Representative rotational crops from the root and tuber vegetable, small grain and leafy vegetable crop groupings are planted at three rotational intervals. The three rotational crops are then harvested, with the RACs for human and livestock feed plant parts then sampled.

We also collect samples on selected crops at multiple intervals, if it's usual to harvest both immature and mature crops as part of agricultural practice.

In the initial stages of the test we sample, chop or homogenize the crop parts and from this process, the TRR is determined.

A series of solvents and solvent mixtures are used to extract the samples. The resultant extracts are defined as the extractable residues.

Identification is accomplished either by co-chromatography of the metabolite standards using two dissimilar systems or by techniques capable of positive structural identification such as mass spectrometry or nuclear magnetic resonance (NMR).

Test guidelines and references

US-EPA. OPPTS Harmonized Test Guideline 860.1850.
Confined Accumulation in Rotational Crops.

FERA'S WORK IN ANIMAL AND PLANT METABOLISM

Metabolism 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 metabolism studies include a range of regulatory compliant tests to assess the nature of residues and the test substance's metabolic pathways in animals and plants/crops, 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**

