charles river

SAFETY ASSESSMENT

Plant Metabolism Studies

Available study designs:

- Confined, succeeding and rotational crop studies
- Plant metabolism studies in all crop groups
- Outdoor radiolabeled studies (UK and Spain)
- Glasshouse radiolabeled studies (UK and Spain)
- Commercial formulation preparation
- Metabolism in transgenic crops
- Processing and stability investigations
- Validation of enforcement methods
- *In vitro* investigations
- Translocation investigations

Charles River offers a comprehensive range of environmental testing services, as well as expertise in global regulations. We can design studies to meet specific data requirements that take into account the properties of the test item and its potential routes of environmental exposure.

Charles River has the capability to handle plant metabolism and confined rotational crop studies with radiolabeled test items at dedicated sites in both the UK and Spain. Facilities include environmentally-controlled glasshouses and dedicated areas of arable land for outdoor confined plot studies with radiolabeled test items.

Plant metabolism studies are designed to maximize the information generated. A radiolabeled test item is incorporated into a proposed commercial formulation and applied according to the intended use pattern and application method. Interim harvest intervals are included to generate information on the metabolic pathway and changes in residue levels with crop development. Untreated plants can be used to provide control material for analysis and to monitor $^{14}CO_2$ fixation.

Rotational and succeeding crop studies can be conducted under confined or field conditions to assess the potential for accumulation and metabolism of soil residues. Our experience includes the full range of major crop species, including cereals and oilseed species, leafy and fruiting vegetables, root crops and legumes, fruits and grapevine, sugarcane and tobacco.

Support Services

The quantitative and qualitative determination of parent test items and metabolites in radiolabeled studies is primarily undertaken using HPLC with either online or offline radiodetection, including TopCount™ low-level counting. Confirmatory analysis in a second contrasting system is routinely undertaken. LC-MS/MS and accurate mass time-of-flight (Q-ToF, IT-ToF) are used for the identification of unknown components.

EVERY STEP OF THE WAY