



Bioaccessibility Testing

ALcontrol offer BARGE and FOREhST testing methods to determine Bioaccessibility of soil

Bioaccessibility testing has been developed to mimic the passage of soil through the human digestive system. This is done by using dual stage extractions which closely match conditions in the stomach and small intestine.

BARGE

Unified BARGE (Bioaccessibility Research Group of Europe) methodology for Arsenic, Cadmium and Lead. Other metals can be assessed - however as yet they have not been validated against bioavailability in-vivo data.

BARGE is correlated in-vivo using a juvenile swine model and is undertaken in the fasted state as this gives the most conservative result for metals.

FOREhST

We also offer the FOREhST (Fed Organic Estimation human Simulation Test) methodology for PAH.

This method requires in-vivo correlation and is carried out, as the name suggests, in the fed state. This is because PAH's are fat soluble and so more readily absorbed when there is food in the stomach.



Both methods simulate the leaching of a solid matrix in the human gastrointestinal tract, and aim to determine the total fraction of contaminant that is available for absorption during transit through the gastrointestinal tract.

The tests are essentially a two stage sequential extraction that uses various acids and enzymes to simulate both gastric and the small intestine compartments with extraction carried out at 37°C.