



Original thinking... applied

HARNESSING THE POWER OF INSECT BIOCONVERSION: A CIRCULAR SOLUTION FOR FOOD WASTE.

Insect Bioconversion has the potential to transform our food system, but it is under utilised in the UK.

Insect bioconversion delivers unique benefits by upcycling food waste materials unfit for human consumption, including vegetal matter surplus crops, kitchen waste and even manures into high-value products including protein and fertiliser.

Insects have a natural ability to recycle wasted nutrients and contribute to the circular economy by consuming materials that would otherwise be wasted.

This circular process has the potential to be implemented on a large scale, repurposing surplus food to provide sustainable proteins for a variety of animal and pet food within the scope of current UK regulations.

INSECT BIOCONVERSION: BENEFITS & OPPORTUNITIES

1. Insect bioconversion retains / repurposes food waste as usable calories.
2. Insect bioconversion can add value to permitted food waste streams by moving them up the waste hierarchy.
3. Insect bioconversion farms can be situated near sources of waste to improve supply chain efficiency (UK, local).
4. Markets already in place for insect protein - pet food, aquaculture and for poultry just live larvae only.
5. Insect protein can be further processed into lipids & oils for wider permitted use in animal feed.
6. Insects have the potential to be raised on a wide variety of feedstock substrates including manures and other hard-to-recycle materials (subject to future regulation).



CONTACT US: FIND OUT HOW INSECT BIOCONVERSION COULD MAKE YOUR BUSINESS MORE SUSTAINABLE.

DISPOSAL

COMPOSTING

- Greenhouse gas emissions
- Toxic leachate: water system risk
- Landfill tax: high cost



RECOVERY

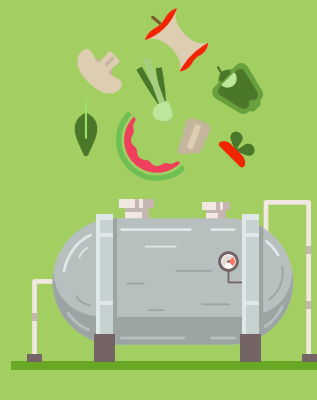
INCINERATION

- Greenhouse gas emissions
- Air pollution: toxins, particulate and dioxins
- + Energy from waste: heat generation
- + Consumes all waste



IN VESSEL COMPOSTING

- + Food waste is converted into compost
- + Wide range of organic materials including AMBs can be processed
- + Low GHG emission (CO2 produced = biogenic)
- High operating costs
- No green energy
- Expensive



ANAEROBIC DIGESTION

- + Nutrient recovery: biofertilizer
- + Wide range of organic materials can be processed
- + Methane capture for renewable energy
- + Excess heat to warm animal sheds / greenhouse
- + Circular system
- High operating cost
- Some greenhouse gas emissions (odours)
- Virgin crops grown specifically to fuel some plants
- Risk of toxic spills of digestate



INSECT BIOCONVERSION

- + Greenhouse gas reduction
- + Potential synergies with AD
- + Promotes food security through production of protein
- + Creates nutrient rich fertiliser with potential biopesticide applications
- + Circular system
- High operating cost
- Permitted feedstock (substrates) currently restricted by regulations



SUSTAINABLE - CIRCULAR RECYCLING

