Mobile Insect Rendering Plant

Australian National University

GOTERRA

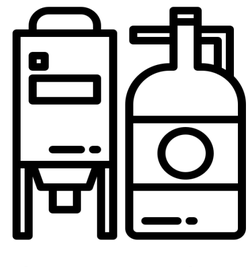
ORGANIC WASTE

Every business produces waste, whether it be organic or industrial. Most of the time, non-recyclable material either ends in landfill, or in the case of organic material, turned into low value compost or animal feed. With the world population ever increasing, along with its thirst for resources, Goterra seeks to transform common organic waste into high value protein and oils through the use of breeding **Black Soldier Fly Larvae**.

INSECT FARMING

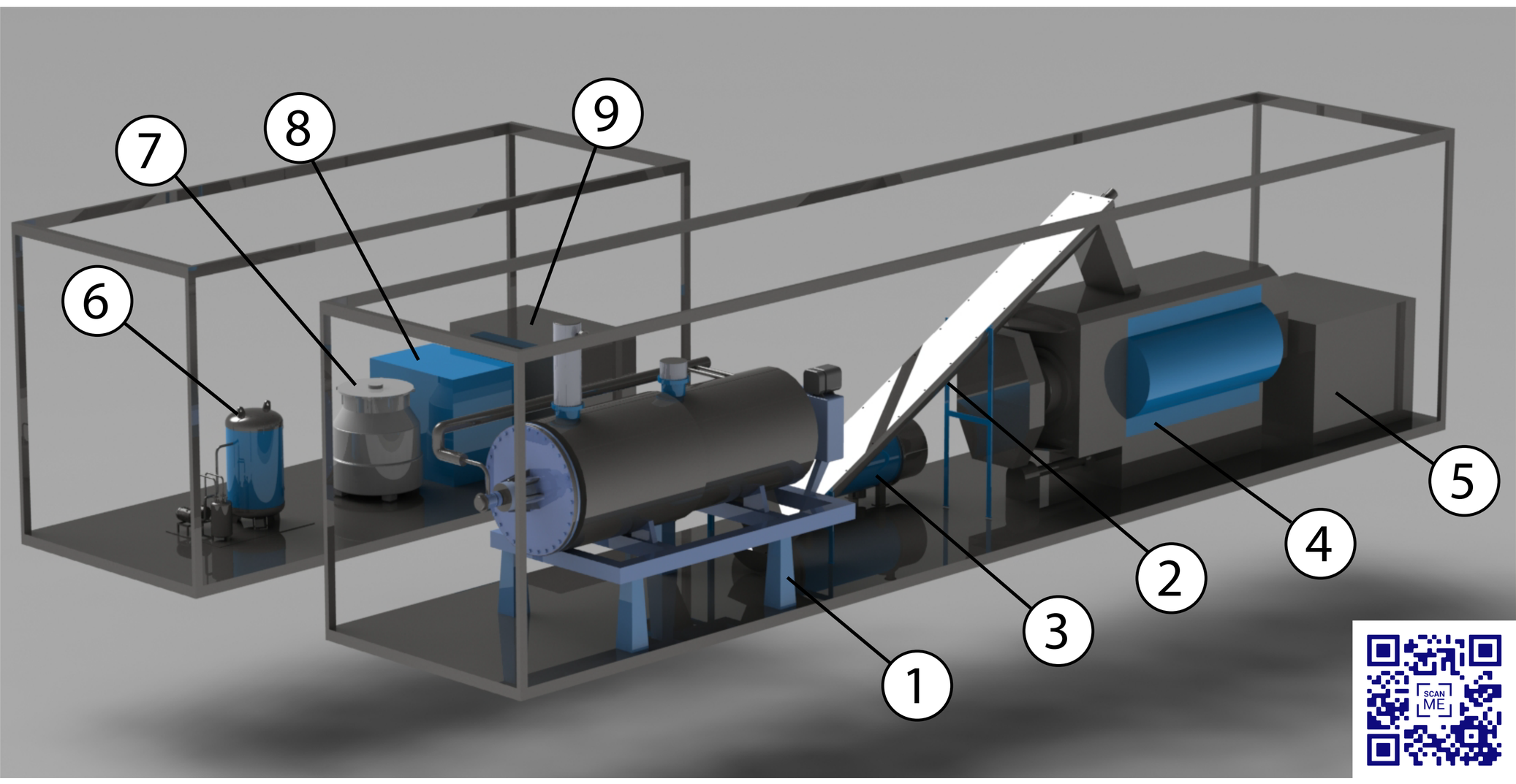
Goterra seeks to innovate the way society currently breeds and harvests what is an efficient and sustainable protein source. By utilizing **mobile insect breeding plants**, transporting them to areas where there is high organic waste output, Goterra allows on site production of larvae, eliminating the need for material transportation or infrastructure.

RENDERING INSECTS



The project our team has been tasked is to conduct feasibility analysis and design of a **mobile insect rendering plant** that contained in one (or more) containers can accompany the mobile farming plant from site to site. The shared vision of the design is to take in organic waste, process into insects, then process those into protein meal and natural oils, used for everything from the heavy industries to cosmetics.

DESIGN

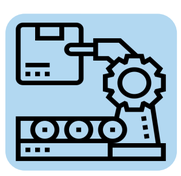


1. Batch Cooker
2. Screw Covenyor
3. Condenser
4. Fat Press
5. Controller
6. Vacuum Pump
7. Cooling Tower
8. Water Tank
9. Power Supplier

IMPACT

Addresses Barrier to Market

Low Capital Expenditure enables players to enter market

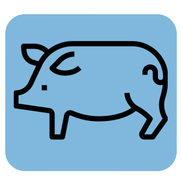


Generates High Value Products

Widely usable protein meal and oils from low value waste

Environmentally Sustainable

Significantly more efficient than current agricultural practices



Popularizes Insect Protein as a Food Source

Helping increase production, insect protein becomes normalized

THE FUTURE

1. **Expanding Rendering into Other Animal Materials**

While currently able to process insects only, future projects will seek to expand the designs capability to process animal offal and fish.

2. **Redesigning Process Equipment**

Currently most of the equipment sourced for the design is over capacity. As this project is continued, specific equipment can be design ed to be smaller and more efficient for Goterra.

3. **Increasing Synergy between Farming and Rendering Modules**

Can waste heat from rendering be used in the farming module? Is the waste water extracted of any value in the rest of the process? These questions and others will be sough to be answered.

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