Project Summary
Recycle Compost System (RCS) for Growers

Produce farms are challenged by the ability to locate sufficient quantities of nutrient-rich compost at a reasonable price. Seventy percent of the 20,000 US organic farms use compost.
Goal: Research and Develop vermicompost (worm) and aerobic compost ("hot") on growers' farms. "Enhance Composting:" a new compost process using supercharged oxygenated irrigation water, achieves compost in 20 days with minimal labor. The RCS is scalable, per year goal, produce up to 6,000 cu yards aerobic compost and 1000 cu yards vermicompost. The RCS will be located on a farm inside a high tunnel (hoop house). The temperature, moisture and oxygen levels of the compost will be monitored/managed inside this high tunnel making compost in the winter.

RCS Inputs (feedstock): residential and business food waste, yard waste (leaves), culled farm plant material, livestock manure, wood chips.

Technical Objectives:

1. Research/design a turnkey recycle aerobic and vermicomposting system that can be located on small to midsize produce farms.
2. Research and perform analysis on the value, availability and costs of different inputs
3. Research and perform analysis of best methods to compost in 20 days with minimal labor, including the two most important components of rapid composting—adding oxygen and moisture—and whether a microbiological compost activator will increase composting rate. The oxygen-injection method includes using electrolysis to produce dissolved oxygen in irrigation water

Applications include: farms and composting operations of all sizes.
Limiting factors: sufficient feedstock supply which includes the 40 million tons of food waste dumped into landfills per year.