

Converting Food Waste to Aquaculture Feed Stock

Background

Recycling nutrients from food waste through composting often requires extensive amounts of energy and time required to transport waste, provide ideal compost conditions, and create a usable product. Alternatives for the use of this food waste include organisms that can consume a variety of plant and animal biomass, and upcycle them into nutritious, edible biomass for humans.

In aquaponic systems, nutrient input comes from fish feed, which is often imported and highly processed, and may include undesirable chemical additives. Omnivorous fish species such as tilapia are can consume most biomass if it is properly prepared and meets the nutrient requirements of the fish.

WaterFarmers Aquaponics is a Canadian consulting firm that designs and builds efficient food production systems around the world. Through our Urban Agriculture Innovation branch, we are expanding our capacity to address urban food systems issues, including food system nutrient cycling, rainwater capture and storage, passive solar greenhouses, and other projects.

Challenge

Design a framework for upcycling food waste into suitable feedstock inputs for aquaponic systems. The AP 707 demonstration system at the Scadding Court Community Centre is a focus of this project, as it is well-positioned to receive food waste and use the feedstock produced. Our goal is to thoroughly understand the possibilities and challenges associated with the idea, including balancing nutrient levels (especially protein content) in the feedstock.

Skills we are seeking

As we begin the initial research on how to collect, process, and distribute fish feed from urban food waste, we are in need of:

- Community engagement and urban planning specialists to organize and advise on food waste collection and transportation
- Mechanical engineering, biology, and chemistry advisors to assist in designing the food waste processing system
- Urban agriculture advocates and aquaponic/aquaculture enthusiasts to assist with distributing and using the new feedstock, and community engagement

Who to contact for additional information on this challenge:

Evan Bell (evan@waterfarmers.ca)