University of the Fraser Valley
Food and Agriculture Institute
Archway
February 2026

DIY VERTICAL AGRICULTURE WORKSHOP

Guiding responsible innovation in the province of British Columbia

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SUMMARY

Motivations

- Convenient access to high quality produce
- Desire to maximize home grow spaces

Considerations

- Food safety and ongoing maintenance requirements
- Tower design to minimize water loss/spillage

"Bulk Buy celebrates any opportunity to educate folks about where food comes from and how to get it. Clients are already asking to be included in the next one!"

Mackenzie Delaney - Bulk Buy Coordinator

OBJECTIVES

This summary document presents the high-level results from the first of a series of workshops to connect atypical agriculture stakeholders.
The goals of this workshop series are to facilitate collaboration, identify hurdles for agri-food technology development, reduce barriers to entry into vertical agriculture production, and establish groundwork for future connections for the atypical agriculture sector.
This research aims to support an environmentally, economically, and socially desirable direction for atypical agriculture, advancing more responsible agri-tech innovation pathways in partnership with industry, government, community food organizations, and members of the public.

For this work, we define atypical agriculture as practices involving indoor, vertical, controlled environment growing of vegetables, culinary herbs, mushrooms, fruits, and berries.

The goal of this introductory workshop was to assess the viability and components of 'do-it-yourself', community-based vertical growing.

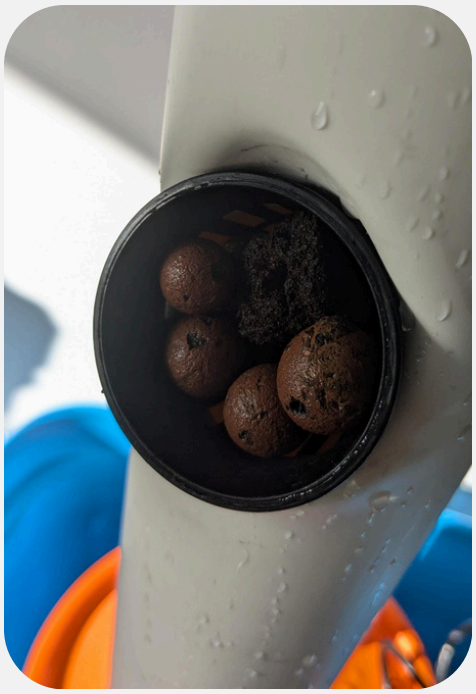

Figure 1. Kits were designed and constructed by the UFV research team. They included an aquarium pump, two PVC towers with hand-cut pockets, tubing, and nutrients, with a total of 14-16 grow cups. The test kit was trialed at two of the researcher team's homes.

APPROACH

On November, 2024 and October, 2025, the FAI research team hosted workshops in partnership with Archway at a Bulk Buy produce pickup. The workshop provided all participants a vertical grow tower for at-home assembly. A total of eleven individuals participating in Food Bank and Bulk Buy Collective programming attended. The workshop research process highlighted the following key themes:

Motivations for Vertical Food Production

What drew individuals to participate in the workshop? Do they have previous experience with home gardening (with or without vertical grow technologies)?

Challenges and Considerations for Future Programming

How can future grow tower designs be improved for at-home use? What considerations would make the towers more accessible and useful?

MOTIVATIONS FOR USING A DIY GROW TOWER KIT

Participants were interested in attending the workshop and receiving a kit for a variety of reasons, pertaining to food access and interest in vertical growing tools. Participants most commonly identified increased access to high quality produce, both in terms of cost as well as proximity, as a key motivator.

Additional considerations included maximizing their existing grow spaces. For example, one participant placed their tower in an existing greenhouse structure in their backyard.

> *"I love the freshness, if I just pick something and it's on my table" (Participant 1)*

> *"Food is getting expensive" (Participant 2)*

> *"Space - [the grow tower] goes up and not out" (Participant 3)*

CONCERNS AND EXPERIENCES SO FAR

Workshop participants described ongoing maintenance as their key concern regarding the grow system. Specific concerns regarding ongoing performance and mold/moisture development were highlighted. Kit accessibility was also noted as a key consideration for future workshops. Grow towers are awkward and large, making their transport and integration into homes a potential challenge. In terms of design, one participant flagged the need to set grow pockets higher off the ground to minimize water splashing outside the reservoir. Several participants actively experimented with site location and design to maximize efficiency

> *"I'm concerned about mold...It's indoors and it is generating moisture" (Participant 3)*

> *"The nutrients will be expensive to buy" (Participant 1)*

> *"Are we going to assemble these here? I'm concerned about carrying it" (Participant 2)*

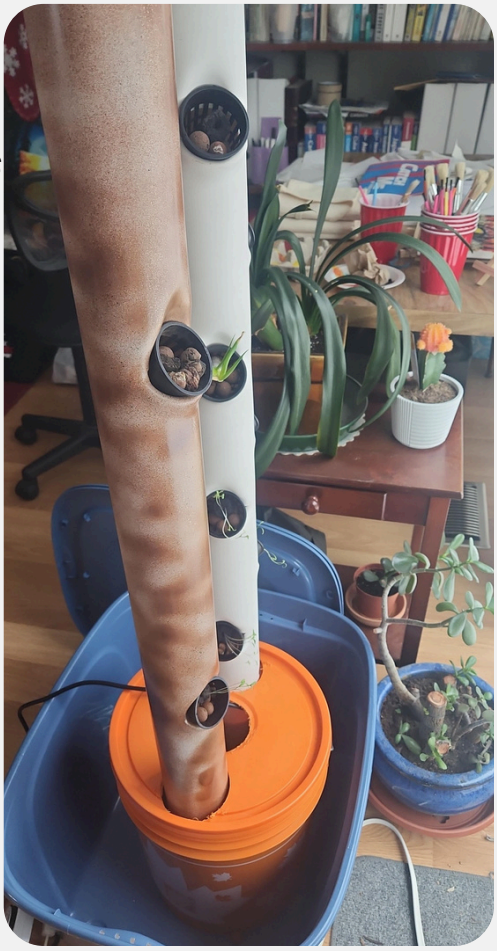

Figure 2. Kit set up and functioning in workshop participant home.

HIGHLIGHTS

Fresh food access is a key draw for participants

- There is demand for fresh food and gardening resources. Vertical grow towers (training and/or kits) for year-round and space efficient growing can be leveraged to satisfy this demand.

1

Grow kits should be intuitive to use and set up, as well as run safely

- Work with participants is required prior to workshops to determine appropriate system placement and transportation.

2

Work with workshop participants for future design strategies

- Thus far, most workshop participants have successfully adapted the grow towers to their homes. Collaborating with keen participants will support the scaling of this program to others.

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