Project : Village Indoor Farm & Living Lab Survey Report

Amy Dolland

Brian Goggin

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Introduction

The Project : Village initiative is committed to building resilient, rural communities through an integrated, systems-change approach. Project : Village is guided by a four-pillar structure, which focuses on tackling some of the largest challenges faced by those living in rural communities, including: access to transportation, affordable housing, food security, and local economic growth. Our indoor farm is focused on addressing the food security pillar through providing the community with a local food source that is able to produce year-round.

Our new indoor farming initiative is located in Blacks Harbour, New Brunswick. Blacks Harbour is a food desert, with the nearest commercial grocer located over 20 km away from the village. Our community lacks access to nutritious food sources, locally grown produce, and transportation to these services. To address this issue, in 2021, Eastern Charlotte Waterways (ECW) purchased a former grocery store to be converted into a community asset. This has been turned into a dual space for ECW's existing microbiology laboratory and the indoor farm. The space provides approximately 2,100 square feet to grow produce using vertical hydroponic towers to maximize growing space and outputs. The farm will produce leafy greens (lettuce, arugula, salad mixtures), herbs (basil, cilantro), and microgreens in its initial phase. Based on demand, we plan to expand and diversify the products we offer.

Renovations of the building started in June 2022, leading to the new lab being built and moved in the summer of 2023. Construction of the farm started in the summer months of 2023, and is planned to be finished in early fall of 2023. The farm has an anticipated production start date of November 2023, and by winter the farm is projected to be fully operational with crops for sale to local businesses including grocers and restaurants, as well as the broader community.

This report aims to provide the project with local context and the needs of community members in the Charlotte County region. To gain knowledge on consumer needs and perceptions on the pricing and marketing of hydroponic products, ECW administered our own public survey, both at consultation events and online and a market analysis was conducted by Jupia Consulting Ltd., and was completed in June of 2023. Our internal survey covers topics ranging from fair pricing, seasonal spending habits on produce, and preferred purchase locations. Our survey is a tool to gain information from our community and will help us determine pricing and demand for hydroponic produce. The objectives of this report are; to understand consumer preferences and shopping habits, to inform crop selection and pricing for the Indoor Farm initiative, and to make our information on product-specific markets publicly available.

Materials and Methods

Our primary data source, *Project : Village Indoor Farm & Living Lab Public Survey,* was provided to the Charlotte County region through two (2) public consultation events in March 2023 as well as in-person at local farmers markets, and online through our social media platforms from July 13-27, 2023. Survey questions were inspired by the Dalhousie Agri-Food Analytics Laboratory survey [1], then tailored to our specific regional needs and our indoor farm model. The survey focused on the community members of the Charlotte County region, our target audience.

Results and Discussion

Community Demographic Data

The public consultation events in March 2023 received 41 responses, followed by an online administration through our social media platforms and at farmers' markets in the Charlotte County region, leading to a total of 59 survey responses. The majority of respondents to the survey, 44.1%, were from the Eastern Charlotte region. While 5% of respondents were from outside of the Charlotte County region, their data will still be used. Figure 1 shows the age demographics of respondents, with most respondents falling under the 55-70 and 30-45 age ranges.

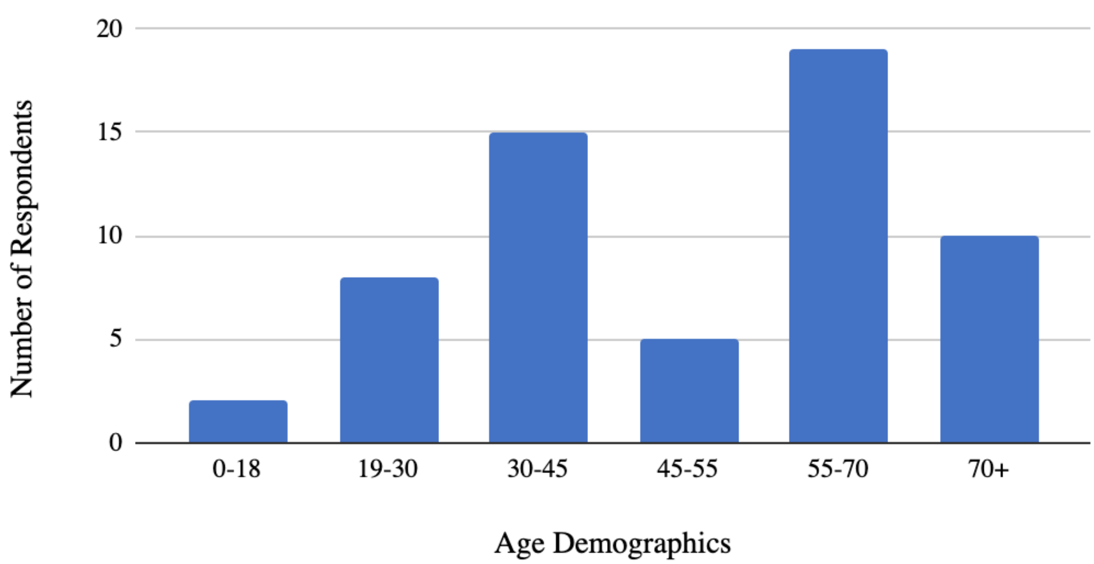

Figure 1: Age Demographics of ECW Survey Respondents.

Food Shopping Habits

Survey respondents were asked a variety of questions pertaining to where they purchase their produce during the different seasons, their opinions on the price of produce, and their monthly spending habits on fresh produce.

Figure 2 shows the data collected from respondents' answers to their purchasing locations, with respondents able to choose multiple answers to fully encompass where their fresh produce comes from. 51 respondents said that they source their produce from grocery stores in the Charlotte County region, and 34 answers of local farms and farmers' markets. Grocery stores in Saint John, the closest city to Charlotte County, is also a source of many respondents' fresh produce. 9 respondents (5.35%) reported that they either grew a portion of their fresh produce, or grew their own fresh produce in their own vegetable gardens.

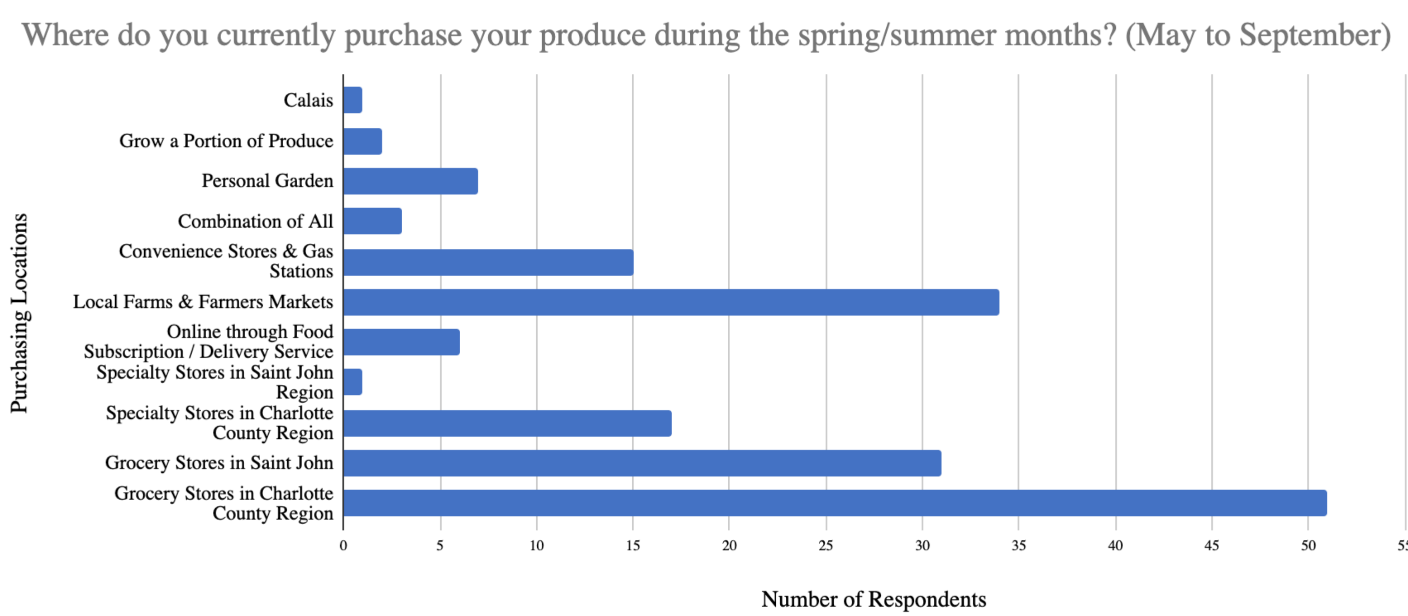

Figure 2: Purchasing Locations of Fresh Produce during Summer Months of ECW Survey Respondents.

Outside of the summer months, November to April, the majority of respondents still purchased their produce at grocery stores in the Charlotte County region and in Saint John as shown by Figure 3. Only 10 respondents purchase fresh produce from local farms and farmers' markets outside of the summer months, compared to the 34 respondents who do so in the summer months, presumably due to the lack of farmer's markets or farm produce available outside of the traditional growing season.

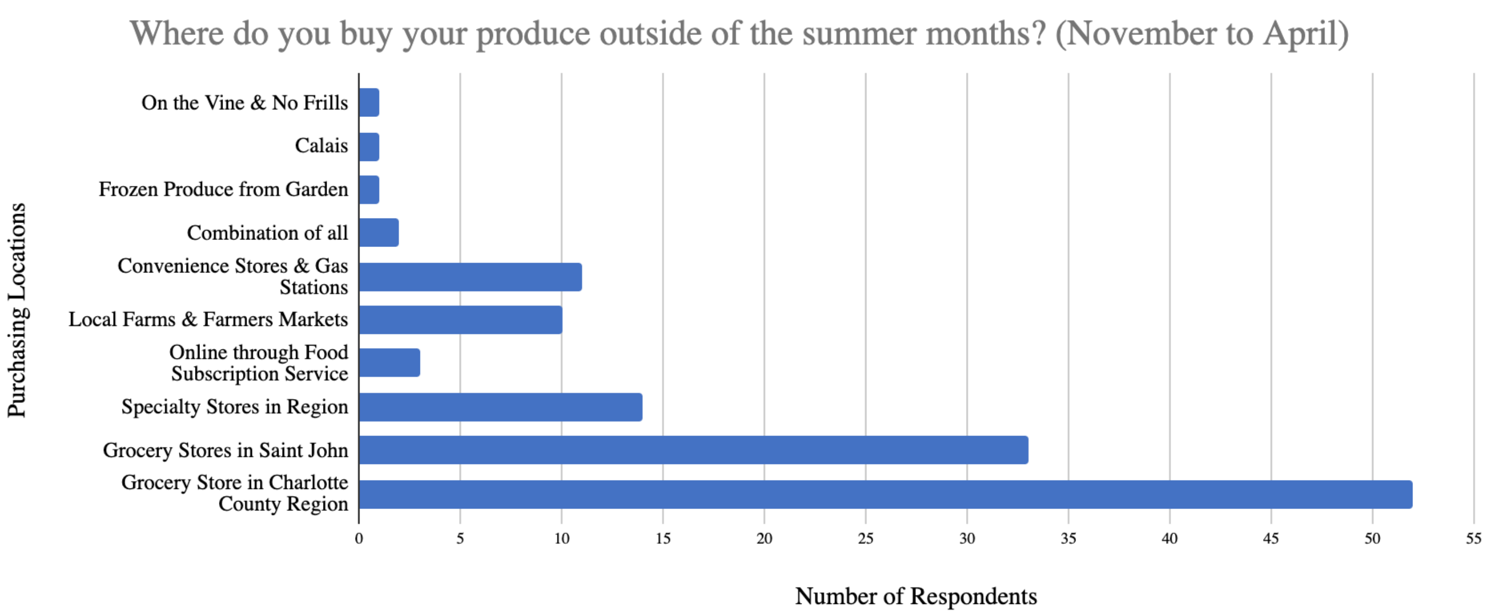

Figure 3: Purchasing Locations of Fresh Produce Outside of Summer Months of ECW Survey Respondents.

Differences in spending between the seasons can be found in Figures 4 and 5, which compare spending between the summer months (May to September), and outside of the summer months (November to April). The number of respondents that spend more than $100 monthly on produce was consistent between seasons. The largest changes in spending habits can be found between those paying $25-$50, and those paying $50-$100 per month on fresh produce. Respondents paying $50-$100 for fresh produce increases by 8.7% during the fall/winter months, which could be due to fluctuating prices due to seasonality and importation of fresh produce.

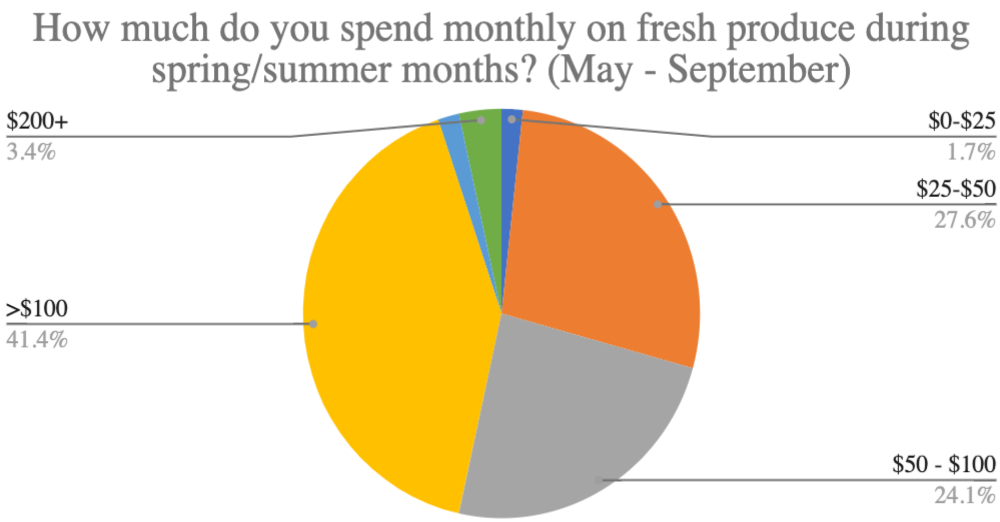

Figure 4: Monthly Spending on Fresh Produce during Spring / Summer months.

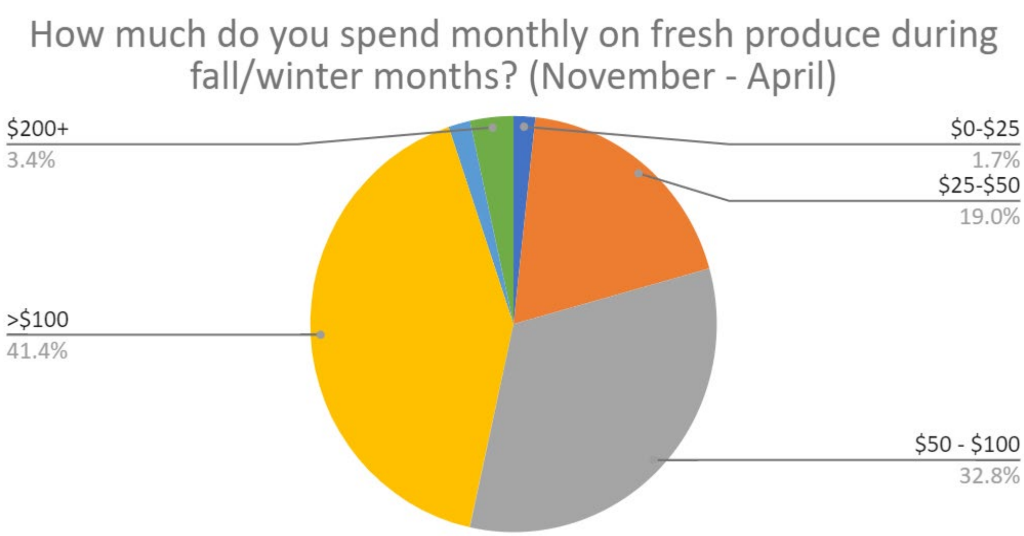

Figure 5: Monthly Spending on Fresh Produce during Fall/Winter Month

Vegetable Prices

Of the respondents, 88.1% think that the current price of produce is too high, while 11.8% do not. Of those respondents who answered no to prices being too high, 57% were from the 55-70 age range. Despite almost all respondents answering that the current price of produce is too high, price and affordability ranked fourth in the most important factors for consumers when purchasing fresh produce, as shown in Figure 6.

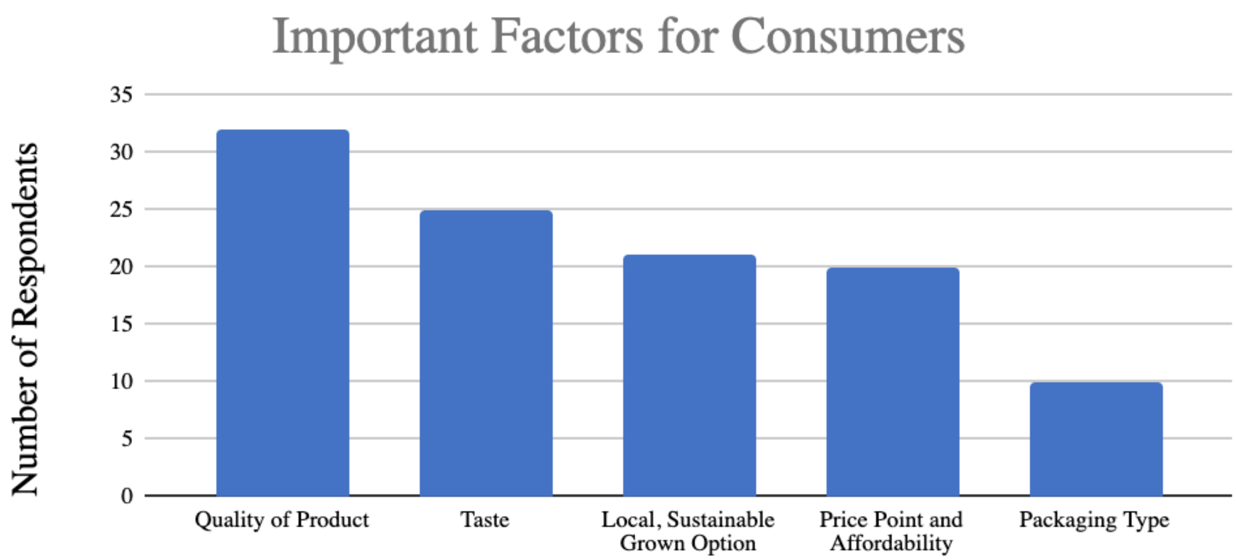

Figure 6: Important Factors for Consumers When Purchasing Fresh Produce of ECW Survey Respondents.

Regarding costs of locally grown, sustainable produce, 47.45% of respondents answered that $3.49 per head of lettuce was a fair price, which is the current market price in grocery stores. Of the respondents, 44% think that $2.99 per 28 grams of basil was a fair price for locally grown, sustainable basil, and 44% of respondents believe that $1.99

per 28 grams of basil is the fair price. Other pricing options and responses can be found in Figures 7 and Figure 8.

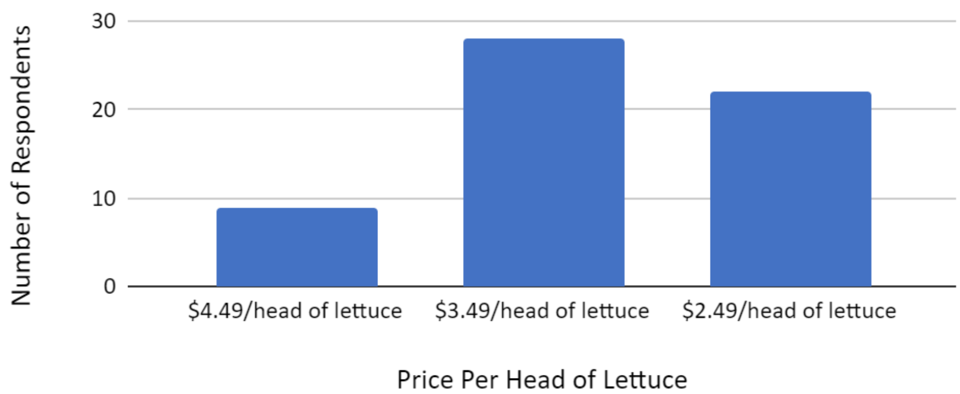

Figure 7: Fair Price for Lettuce Determined by Survey Respondents

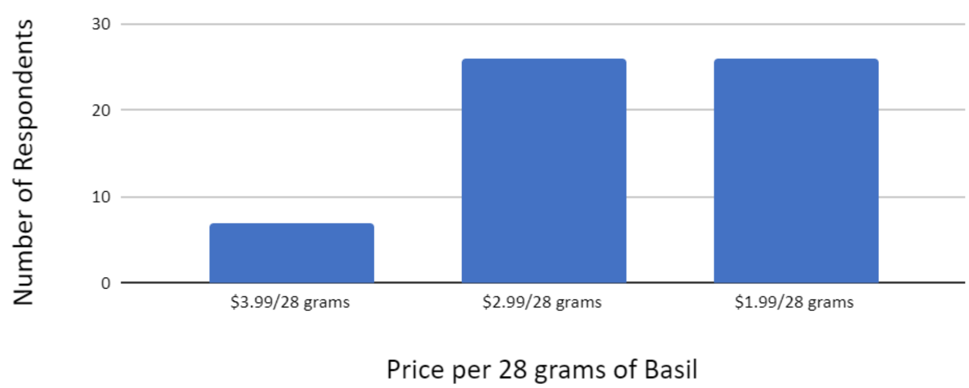

Figure 8: Fair Price for Basil Determined by Survey Respondents

New Brunswick respondents are more likely to be willing to pay a premium for locally grown (inside the province) CEA produce in the off-season, with 56.8% respondents of the Dalhousie University study respondents agreeing or strongly agreeing to the statement "I would pay a premium for off-season fresh produce grown locally in greenhouses (or using other technologies) versus imported alternatives" (Dalhousie University Agri-Food Analytics Lab, 2020). New Brunswick residents' willingness to pay a premium for locally grown sustainable produce could explain why respondents were choosing current market pricing options, while the majority felt as though those were too high for the example products, lettuce and basil, that ECW's survey posed.

Controlled Environment Agriculture and the Consumer Market

Controlled environment agriculture applies to a large variety of technology driven methods for food production with the aim to protect crops from external elements and provide an optimal growing medium. The Project: Village Indoor Farm will be using vertical hydroponic towers to grow our produce variety, which are considered to be a CEA technology. To understand consumer attitudes surrounding CEA, we administered questions through the survey about CEA, as well as using the Dalhousie survey to frame our understanding around consumer perceptions. Out of our survey respondents, 66.1% said that they had previously heard of CEA, while 30.5% answered that they had not heard of CEA before. Our community is interested in learning about this field 71% of respondents said they would be interested in attending webinars on CEA.

Quality, as noted previously, is the most important factor for consumers when purchasing produce. Dalhousie's study, which examined consumer attitudes towards CEA, found that 27.7% of their respondents said that crops in greenhouses or rooftop farms were better than conventional land-grown crops, 9.1% said they were worse, and 62.4% said they were the same. Of the respondents, only 17.3% were unwilling to pay a premium for locally grown, fresh produce, 43.2% and 35.5% would be willing to pay a premium of less than 10% or 10-20%, respectively (Dalhousie Agri-Food Analytics Lab, 2020).

Conclusion

We hope this information can be used by local producers and distributors to gain a local context to the shopping habits and preferences for fresh produce in our community. We expect this survey and dataset to evolve as we continue to work with community partners and engage the public. For more information on the Project : Village Indoor Farm and Living Lab, visit our website (projectvillage.ca), check out our Instagram or Facebook, or contact our Farm Manager at (506) 456-6001.

References

1. Charlebois, Sylvain & Faires, Shannon & Music, Janet & Williams, Kent. (2021). The Feasibility of Controlled Environment in Horticulturally Poor Region: The Case of New Brunswick in Canada. Journal of Food Research. 10. 33. 10.5539/jfr.v10n4p33.