

Sustainable Marketing Plan



UNIVERSITY OF
ARKANSAS
Office for Sustainability

A Capstone Project in Collaboration with the University of Arkansas Office for Sustainability

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Processing

1. PROCESSING

POST-HARVEST PROCESSING

Proper post-harvest handling can increase the quality, health, and shelf life of your produce. Since Tri Cycle is a small-scale greenhouse using organic growing techniques and utilizing volunteer labor, professional equipment is most likely not needed or warranted.

WORKER CLEANLINESS

Those who handle produce going to market should always wash hands, wear aprons or other sanitary clothing, and maintain personal cleanliness to reduce the occurrence of contamination

WASHING AND STORAGE

You want to provide your consumers with a product that is attractive and healthy to consume. All produce should be checked and any products that are decomposing, have insect or pest damage or signs of mold should be removed. The produce should be washed and rinsed using potable water and dried properly. Sanitizing agents may be used, but they must be handled and used properly to reduce toxicity.

EQUIPMENT CLEANLINESS

Stainless steel processing surfaces and sinks are recommended due to their durability and ease of sanitization. It is also important to make sure all containers and storage facilities are sanitized to reduce contamination.*

2. PRODUCE STORAGE

Storing produce properly before it is shipped to the purchaser is important to keep the products fresh, attractive, and safe for the consumer to eat. The shelf life of many fresh fruits, vegetables, and greens is very short, sometimes only up to three days, so prompt processing, storage and shipment is necessary to provide the freshest produce to your markets. Ideally, harvest times should be tailored around shipment dates to reduce the amount of time produce is left in storage.*

COLD STORAGE

Berries and leafy greens stay fresh the longest when stored at or below a temperature of 40 degrees Fahrenheit. The storage container should be kept clean and sanitary to reduce disease, mild and pest problems and increase food safety. Proper insulation of the cold storage container can drastically reduce the amount of energy that goes into cooling produce and can increase the company's sustainability.

ROOM TEMPERATURE STORAGE

Tomatoes should be stored at room temperature to encourage ripening and help them retain flavor. They should be stored in a dry, clean location.

3. TRANSPORTATION PACKAGING

Transporting produce from greenhouse to the selves is an integral part of marketing goods. Horticultural crops such as leafy greens, herbs, and fresh fruits and vegetables are prone to damage and bruising during transportation, which decreases their value and marketability. For this reason, it is important to choose a packing solution that maximizes protection of the products and

*<https://www.extension.iastate.edu/Documents/MCMS/GAPSpstharvest.pdf>

*http://msue.anr.msu.edu/news/proper_produce_storage

works for your organization. There are many different types of packaging out in the market today, including boxes, crates, bags, and baskets, however not all containers are created equally. As consumer and producers become increasingly concerned about the environment, trends are shifting toward renewable or biodegradable packaging such as the options listed below. 1*

CORRUGATED FIBERBOARD

Corrugated Fiberboard is a sturdy material made from multiple layers of paper or cardboard. Recycled paper fibers may be used in the production of these products and while the strength is somewhat diminished as the percentage of recycled fibers increases, the material remains strong. Fiberboard packaging is cheap, lightweight, versatile, and stackable. Low temperatures and high moisture can compromise the integrity of fiberboard, but waxed or coated fiberboard is always an option. Some containers may be collapsed and reused, however most fiberboard containers are single-use though and must be disposed of once they are emptied.

RECYCLED PLASTIC

Reusable recycled plastic crates are an ideal and sustainable option for transporting products to and from markets. Made from recycled materials, stackable crates can be used to move produce into stores and then they may be returned later to be cleaned and re-used. Crates may be used repeatedly for a long period of time, and reduce the amount of plastic waste. One drawback is that the cost associated with plastic crates is high, however in a small-scale greenhouse organization such as Tri Cycle, they are a viable option. 2*

1* <https://content.ces.ncsu.edu/packaging-requirements-for-fresh-fruits-and-vegetables>

2* <https://www.tranpak.com/handheld-plastic-crates/versacrates>

4. INDIVIDUAL PACKAGING

Biodegradable folded paper packages for leafy greens may be used to show off greens while reducing the use of plastics, giving your operation a smaller environmental footprint. 1* Paper or waxed paper packages are another sustainable packaging option, as they will lock in moisture to keep produce fresh but will biodegrade more readily than plastic half-shells or sleeves. Something as simple as using labeled or branded twisty ties for basil or herbs will not only reduce waste, but also effort in packaging and labeling these products. Soft fruits pose a unique transportation challenge because the delicate fruits require more packing to enclose a protect them during transit. This can make sustainably packing them a challenge. One option would be pulp-based cartons for strawberries nestled inside recycled plastic crates. Another option would be folded paper or cardboard cartons which could both contain and protect fruit until they reached the consumers. 2*

5. LABELING

Labeling the packaging is important to inform consumers and producers about the product and to influence them to purchase it. Details such as type of produce, weight, other information, and your brand must be included. Packaging may also require a UPC (Universal Product Code) such as a barcode. The label itself should be eye-catching and easy to understand. Hydroponics are somewhat considered a market premium by the local Fayetteville businesses surveyed. Using this to your advantage, labeling could include the word “Hydroponic” or “Hydroponically Grown”. If roots are left on products such as herbs and leafy greens, emphasis on “living produce” could be a marketable strategy.

1* <https://www.trendhunter.com/trends/lettuce-packaging>

2* <https://www.envapack.com/2018/02/smurfit-kappas-sustainable-fruit-packaging-led-to-50-sales-increase/>

Retail

5. LOCAL STORES

Buying locally has become an ever-growing movement throughout the United States. When thinking specifically about locally grown food, there are countless economic, environmental, and social benefits to offer. Buying local food can create countless economic opportunities, can lead to a healthier community, and contributes to the reduction of negative environmental impacts. Many people feel local food tastes better and in some cases, believe that local food can last longer than imported food. Buying local also helps create a more interconnected community, allowing citizens the opportunity to give back and make a difference within their own collective. Most citizens prefer to know where their food came from and how it got to their local market or grocery store. Supporting civic economics and building relationships with local farmers, distributors, and food producers is incredibly important and can be a contributing factor to protecting the environment. Due to all the positive externalities, one can conclude that buying locally grown food is an important movement to support within every community.

Reasons to Support Local Stores:

1. Health improvements
2. Boost to local economy
3. Know who makes your products
4. Creates individuality between communities
5. Usually better customer service

6. Greater degree of personalized service

ENVIRONMENTAL BENEFITS

What are Food Miles? “Food miles” is a term used to describe the distance that food has traveled from the place of its production to the place where it will be sold to the consumer. The correlation between food miles and fossil fuel emissions are extreme. The food miles of local farm grown food is far less than that of imported food. Imported food can sometimes travel hundreds or thousands of miles to arrive at the supermarket. The greater the distance food must travel, the greater the consumption of fossil fuels. This transportation causes greater carbon emissions. Buying local farm grown food reduces food miles and helps alleviate our dependence on fossil fuels. Other benefits can be the reduction of air pollution and a cut back on greenhouse gas emissions.

ECONOMIC BENEFITS

Buying locally grown food can help support your local economy in the following ways:

- **It Keeps Money in Your Community**
- **Local Farmers Keep More Profit**
- **It Creates Jobs**
- **It Supplies Other Local Businesses**
- **It Keeps Taxes Down**

The U.S Small Business Association and the U.S. Department of Labor report the positive impacts of small, independent business on local economies.

- Local businesses are more likely to utilize other local businesses such as banks, service providers, and farms.

- For every \$100 you spend at local businesses, \$68 will stay in the community.
- Independent retailers return more than three times as much money per dollar of sales to the community in which they operate than chain competitors. Independent restaurants return more than two times as much money per dollar of sales than national restaurant chains.
- Small businesses employ 77 million Americans and accounted for 65% of all new jobs over the past 17 years.

In addition to helping build the local economy, there are also notable intangible benefits that come from supporting businesses in your local community.

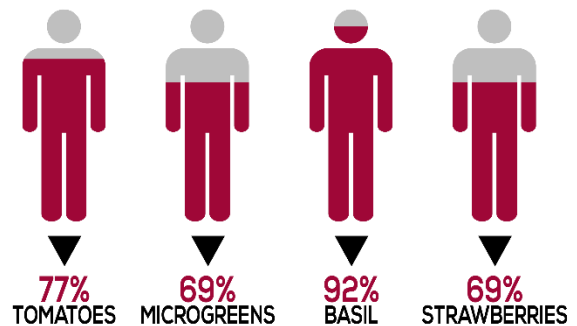
1. Local businesses are owned and operated by your neighbors! They care about and are invested in the well-being of your community and its future.
2. Local businesses are more accountable to their local communities and donate more money to non-profits.
3. Supporting local businesses is good for the environment because they often have a smaller carbon footprint than larger companies. *

LOCAL STORES SURVEY RESULTS

From our sample set of 13 local food markets/grocers, we found:



WHAT WOULD THEY MARKET



*<https://blog.mass.gov/blog/consumer-advice/think-local-7-reasons-why-supporting-local-business-is-good-for-your-community/>

Waste

6. UNDERSTANDING VALUE-ADDED PRODUCTS

In today's economic climate it is essential for small business owners to take advantage of any opportunity to make their operation more economically sustainable. This is especially true for small scale horticultural/agricultural based operations where fruit and vegetable produce is the main source of revenue. These smaller operations have to be particularly zealous in their business techniques because their product is the same as, or similar to their direct competition. In order for these farmers to make their businesses stand-out amongst their competition, adopting new practices may be essential to grow their company. One of the new practices many farmers have been adding to their business models is the development and sale of **value-added products**, in addition to raw produce. A value-added product is just the production of a commodity through the combination of other products- in this case fruit and vegetable produce. Examples of common value-added products are jams, jellies, salsas, and sauces.

APPLICATIONS

Through the development and sale of value-added products not only can farmers separate themselves from their competition, but they can be more economically and environmentally sustainable through the reduction of food waste. When making a value-added product, it is not essential to use

the most marketable produce for its development. Produce that is not sold because of excess surplus that will not hold until the next market (in the case of farmers-market based operations) or produce that is not sold based on appearance purposes (not quality purposes) is often fed to livestock or thrown away. However, when making a value-added product appearance of produce is not a disqualifying factor because it will be processed beyond direct recognition. This allows farmers to capitalize on produce they would normally not generate revenue from. This is extremely helpful for farmers that are experiencing a large loss when the direct supply of their produce is not equivalent to its immediate demand. The implementation of a value-added system allows farmers to compensate for this occurrence through the ability to store a product that they can capitalize on for an extended period.

HOW TO MAKE VALUE-ADDED PRODUCTS

If the development of a value-added product is of interest to a farmer, there are simple steps that can be taken to begin the process. First the farmer can assess what produce he/she has an excess of, and see what products can be developed and stored from that produce. Once a recipe is selected, the farmer must make sure it is a "safe" product according to the farmers market standards for their area. If the farmer is unsure of how to develop his commodity on a large sale or wants to sell his product to grocery stores or other businesses, they can seek out certified food processing facilities or specialized kitchens. These facilities are more common than the name implies- a lot of universities and churches have these accommodations.

These facilities are often designed to help insure food safety and have machinery that can process food on a large scale. Here at the University of Arkansas we have a facility called the Arkansas Food Innovation Center or AFIC, that helps smaller businesses develop these specialty products.

APPLICATION TO OUR PROJECT

Given the outline of our project, we suggest that Tri-Cycle Farms considers implementing a value-added system. The first few years of developing a complex operation such as hydroponics, will likely experience many trial-and-error situations. However, that does not mean it can't be somewhat economically feasible. During the first few years of hydroponic implementation if the crop does yield the quality of produce that is easily or economically marketable- having a value-added system might prove to be an effective way to generate some revenue while figuring out the details of the system itself.

Producer to Consumer

7. DISTRIBUTION

A major source of environmental concern is in relation to the distribution of products and from the emissions through their transportation. Transportation and the hauling of goods between the producer and consumer with lowest possible impact on the ecological and social environment must always be considered. This includes the whole distribution process from storage, order processing, packaging, improved vehicle loadings, delivery to the customer or purchaser and return packaging.

TRANSPORTATION

“Local” is commonly referred to as food being produced near the consumer. Tri Cycle will work with local businesses to reduce fossil fuel usage. The implementation of refrigerated trucking as well as subsidized fuel costs, enable conventional food to be shipped throughout the area at a fairly low cost. *Fayetteville city limits, biking with a refrigerated trailer attachment? When delivering outside the direct city limits, utilize the most efficient route.

DELIVERY

Sustainable food distribution methods primarily rely on the direct- to-do consumer market and the direct- to-retail; i.e. community supported agriculture. Orders should be delivered twice a week to retain freshness of the produce and reduce emissions due to mileage. The use of refrigerated trucks should be use to insure quality.