Considerations Before Starting a Commercial Scale Fruit and Vegetable Farm

Planning a fruit or vegetable farm business is exciting. The prospect of growing your own food, feeding others and creating a good life for you and your family can make a person stay up at night just thinking of all the possibilities. Louisiana and its consumers would benefit tremendously from an increase in local fruit and vegetable producers. We are lucky to have favorable year-round weather for vegetable production. That's not to say the weather is perfect since it can be hot and humid. Producers will battle disease and insects year-round, but this should not stop anyone from getting into the fruit and vegetable production business. Before quitting your current job and rushing off to purchase land, use this resource as a guide to understand basic business principles of growing fruit and vegetable crops.

Let's start planning with a basic checklist. Have you considered these aspects of starting a farm?

1. A guaranteed market to sell your crops.
2. Land.
3. Labor.
4. Certifications.
5. Insurance.
6. Equipment needs.

Though they are not listed in a particular order of importance, each of the items above is crucial for a viable and profitable produce farm.

A Market for Your Crop

You will need to identify a buyer or market for your crops prior to growing them. This is essential since many crops are highly perishable and do not store well. It is very difficult to sell an acre of ripe tomatoes or any perishable horticulture crop with no guaranteed buyer, simply because you have a very short window before they are no longer marketable. Before selecting which crops to plant, consider:

- "At which markets am I going to sell my produce?"
- "What fruits or vegetables are not being sold at those markets?"
- "Are those crops consumed in that area?"
- "Will people actually buy those crops?"

Just because you enjoy eating a niche vegetable doesn't mean there is a large demand for it. Remember you need to make a living. Is there room in the current market to sell more popular crops that are already being grown and incorporate a few new ones that you can promote to the local community? Line up at least two buyers prior to planting your crop. Options include but are not limited to:

- Individual grocery stores.
- Wholesale buyers.
- Setting up a roadside stand. What is the drive-by traffic like near your land?
- Selling at an established farmers market.
- Selling directly to restaurants.
- Setting up smaller displays at gas stations, feed and seed, and hardware stores.
- Creating a Community Supported Agriculture program (CSA).
- Making home deliveries.
- Online produce sales.

Not sure where farmers markets are located? For a listing of Louisiana farmers markets, visit http://www.ldaf.state.la.us/wp-content/uploads/2021/06/Farmers-Markets-2021.pdf.

Land

Land is necessary for traditional fruit and vegetable production. Fortunately, hundreds of acres aren't necessary for commercial scale production. Some people may even choose to make a living with no land, simply growing microgreens in a side room of their house. Vegetable farm size varies greatly across Louisiana. There are a few very large farms growing on 100s of acres and some farms in the 40- to 80-acre range. Many Louisiana vegetable farms are in the 5- to 10-acre range. We even have some that are 1 acre and smaller. Louisiana fruit and vegetable growers can be full- or part-time workers and make a decent living. Land costs in Louisiana vary greatly. Some areas are as inexpensive as a few thousand dollars per acre, whereas more urban areas may cost as much as $50,000 per acre. When selecting land, consider several key factors:

1. Is the land close to your market? Fuel costs can be high and may rise. Can you afford to drive the produce to the market or pay for third-party transportation costs from your farm to the market?

2. How much clearing of the land are you going to need to do? Fruits and vegetables grow best in direct sunlight. Consider the costs of tree and stump removal and grading of the property. You may use this as a negotiating point.

3. What is the water quality on the property? Is your farm small enough to use municipal water? Will you need a well? If so, does a well exist or does it need to be excavated? What is the quality of the ground water? Water quality factors to consider include pH, electrical conductivity, hardness, mineral content and the presence of E-coli or other human pathogens. If you are going to use a pond for your irrigation, does it contain enough

water to supply your needs? What food safety precautions are you taking when using pond water so that human-borne pathogens aren't contaminating your produce? See the Food Safety Modernization Act website for more information on water quality parameters. This LSU AgCenter document also offers more information: https://www.lsuagcenter.com/NR/rdonlyres/DB3F2E0B-4453-410F-A0D8-FBFA6ED1E511/102587/5AgriculturalWaterforProductionOverview.pdf.

4. What kind of soil is on the land? Does the soil need to be amended? Heavy clays have very poor drainage and can be hard for root crops to penetrate. Sandy soils may drain too fast and lack certain minerals. How will you mitigate any issues? Take soil samples prior to purchasing or leasing land. Consider what kind of drainage you'll need to install. Ask what type of activities took place on the land in the past. Was the site ever used for storing toxic chemicals or as a dump site at any point?

5. Is there enough space for you to plant and store the crop, store your equipment and possibly open a market at the farm one day? Is there room for parking? Is there space for large trucks to turn around? The goal is to start a small business and grow it into a larger more profitable business — even if that means always remaining under your control and with very few employees. Business must grow and expand to meet the ever-changing needs of the marketplace.

Labor

Labor is one of the greatest costs on fruit and vegetable farms. Hand labor is typically needed to plant, maintain and harvest most crops. Vegetable crops are planted and harvested 12 months of the year. Do you have a good source of year-round, reliable, local labor? If not, you may need to consider hiring temporary, nonimmigrant workers as H-2A labor. For more information on the H-2A program, please visit https://www.dol.gov/agencies/whd/agriculture/h2a.

When hiring labor, consider these items to keep a happy, healthy workforce.

- Restroom facilities or access to clean restrooms nearby.
- A designated area for taking breaks, eating meals and storing personal belongings.
- The equipment needed for completing the job including small hand tools such as gloves, boots and pruners.
- Are you going to provide benefits? Hire by the job? Hire by the hour?
- If you are hiring H-2A labor, you will also need housing and transportation to and from the person's country of origin. Please see the website listed above since there are many factors to consider when hiring H-2A labor.

Determining how much labor is needed for fruit and vegetable farms can be difficult. It depends on several factors including the reliability of your workers and their experience in fruit and vegetable production. Are you trying to maintain an organic farm versus a conventional farm? Organic farming can be more labor intensive as more cultivation and hand-pulling weed management strategies are employed. **Some estimates on the number of laborers needed per acre of production are as high as one-half to one full-time employee per acre of land cultivated in fruit and vegetable production. Organic farming can be more labor intensive as more cultivation and hand pulling weed management strategies are employed.**

Proper Certifications

The fruit and vegetable produce world is generally unregulated but there are special circumstances when you do need certifications or licenses to grow and sell produce. Some certifications to consider applying for include:

1. If you plan on spraying regulated pesticides (herbicides, fungicides and insecticides), consider visiting the Louisiana Department of Agriculture and Forestry (LDAF) for a private applicator license. Obtaining this card isn't necessary, but there are many pesticides available to commercial producers with this license versus a limited selection of potentially high-cost pesticides that homeowners can use. For more licensing information, visit https://www.ldaf.state.la.us/ldaf-programs/pesticide-environmental-programs/pesticide-licensing-and-certification/.

2. Consider getting certification through the Food Safety Modernization Act (FSMA).

   You do not fall within all FSMA regulations if the scenarios below apply to your farm, however, we strongly suggest you still attend one FSMA Produce Safety Alliance workshop hosted by the LSU AgCenter. The strong suggestion is because while you are exempt from following these laws, you can still be taken to court if your produce makes someone sick.

   - If your produce farm makes less than $30,160 (2021 value) or an average 3 year value 2019-2021 less than $29,245 you are qualified exempt from this rule. The value in sales includes farm sales of raw and value-added products. This area of FSMA is constantly changing. This is a major reason why we suggest you contact your local county agent or food safety specialist to make sure you are qualified exempt.
   - If your farm makes less than $500,000 and/or sells more than 50% of your crop to a direct end user (i.e. restaurant, single grocer, farmers market or CSA), you are exempt from a portion of this rule.

   If any of the below scenarios apply to your produce farm, you must attend an FSMA Produce Safety Alliance training held at the LSU AgCenter and follow mandates within the FSMA regulations.

   - If more than 50% of your crop is marketed to a broker or wholesale facility, you must comply with FSMA.
   - If you earn more than $500,000 per year despite where you sell produce, you must comply with FSMA.

   For more information, visit https://www.lsuagcenter.com/topics/food_health/food/safety/food%20safety%20modernization%20act.

3. If you plan on growing and selling fruit trees or vegetable or herb transplants, you must obtain a Nursery Certificate

Permit, or grower's permit, from LDAF. For more information, visit https://www.ldaf.state.la.us/wp-content/uploads/2021/12/NurseryCertificate-LIST-12012021.pdf.

4. If you plan on incorporating cut flowers on your farm and will sell those as bundles or bouquets instead of single stems, you must obtain a Cut Flower Dealer Permit from LDAF. If you place a rubber band around several stems of cut flowers, it qualifies as a bouquet in the state of Louisiana. For more information, visit https://www.ldaf.state.la.us/wp-content/uploads/2021/12/CutFlowerDealerPermit-LIST-12012021.pdf.

5. You may need Good Agriculture Practices (GAP) certification. Many wholesale buyers will require fruit and vegetable farms, regardless of size or profits, to be GAP certified. GAP certification is very similar to FSMA certification. The four W's of GAP certification include worker health and hygiene, water quality, wildlife on the farm and waste management. Waste management refers to the usage of manures and compost products. To find more information regarding GAP certification, visit https://www.ams.usda.gov/services/auditing/gap-ghp.

Permits may also need to be obtained if you are planning on "peddling" fruit and vegetable crops. This is when a person picks up produce from another farm and sells it along a roadside. Because permitting rules vary by parish, it is best to contact your local parish government office to determine if this is necessary.

Insurance

There are several reasons to consider obtaining insurance for your produce farm:

1. The first is as people consume produce, they can pick up human-borne pathogens if the produce is not washed properly, either on the farm or off the farm. It would be terrible to lose a farm to pay a consumer's medical bills. No one in the agriculture industry wants to make consumers sick! Beyond following Good Agriculture Practices, having **product liability insurance** is a good measure. Many fruit and vegetable farms will obtain this insurance at the $1 million dollar range. Some farmers markets may even require you to have this type of insurance before becoming a vendor.

2. The second type of insurance you may consider is **crop insurance**. Because Louisiana is known for unpredictable weather, including hurricanes, tropical storms, hail, tornadoes, freezes and more, crop insurance can protect you in cases of weather-related loss. The most common crop insurance available to specialty crop producers is through the U.S. Department of Agriculture's Risk Management Agency. For more information on costs, dealers and more, please visit https://www.farmers.gov/blog/specialty-crop-producers-we-have-you-covered.

3. The third type of insurance to consider is **general farm liability insurance** which covers accidents that come from farm-based production activities. This type of insurance usually covers both employees, customers and even guests if you have a U-pick operation. People may trip, fall or misuse machinery. Accidents happen, and you should be prepared.

   NOTE: Please talk with your insurance representative. General liability insurance may not replace **worker's compensation insurance.**

There may be other insurance needs specific to your farm. Talk to an insurance provider if you are creating value-added products such as jellies and ice cream and other processed fruit and vegetable products.

Equipment/Crop Inputs

Equipment needs vary drastically between farms. If you are a small farm (less than 5 acres), you do not even need a tractor. Fruit and vegetable farmers can grow more than 60 types of crops in Louisiana. Planting and maintaining peaches, for example, is drastically different than planting and maintaining a cabbage field, and some may do both. It is not uncommon to see up to 40 different vegetables grown on the same farm. Think about equipment categories for your farm, then tailor your needs more specifically:

1. Storage space for pesticides, fertilizers and harvest aids separate from dry and cold storage of produce. You should keep produce and pesticides stored separately on the farm.

2. Cold storage. Even with buyers lined up, you may need to store produce on the farm several days after it is harvested. Be sure you have a designated cool area to store it to maintain post-harvest quality.

3. Tillage equipment. This can be a tractor with implements, a walk-behind tractor, a walk-behind gas-powered tiller, and electric tiller or smaller options needed to break ground and manage weeds.

4. Planting equipment. This can be a transplanter that hooks to a tractor, a push seeder or a single-seed dropper used on the farm. At the very least, it's a pair of gloves to wear while placing the seed from your hand into the soil.

5. Harvest boxes. What will you put the harvested produce into? Are these bins just for your farm? What will hold the produce when transporting it from the farm to the store?

6. Bags or bins for customers. How will your customers take home the produce? Will you use plastic bags, small containers or other means?

7. Fuel for your tractor, hand-pushed machinery, greenhouse heaters and truck to transport produce off the farm.

8. Fertilizer. Even if your soil sample results come back very high in phosphorous and potassium, every crop still requires nitrogen inputs as well as micronutrients to produce a marketable crop. Fertilizer can be purchased in organic and inorganic forms. Both work well, but both also cost a good deal of money. This input is a major consideration when working out your budgets.

9. Irrigation. Simply praying for rain won't cut it. Many times when it rains, it's too much or too late. The most critical

irrigation times in vegetable and fruit production are at planting. Always water a crop within one hour of planting, and the second critical time is during bloom. If there is a drought during bloom, the flowers will fall, and fruit will fail to set. There go your profits. Drip irrigation is best, since overhead water techniques spread disease. If possible, invest in irrigation that is emitted at the soil line not on the foliage.

10. Mulch or weed prevention. Some weed prevention is done with cultivation and hand removal, but larger farms will need to consider plastic mulch, biodegradable plastic mulch, paper-based mulch and/or the use of herbicides. The best and most cost-efficient herbicides for use in commercial scale production require a pesticide applicator license. Herbicides and fertilizers come in organic and inorganic formulations. Both work when the labeled directions are followed, but both need to be considered when creating a budget.

11. Staking materials. Tomatoes, eggplants, peppers and other crops need assistance in standing up when fruit loads are heavy. Wood and metal stakes along with twine usually do a good job, though some people may use netting or fence lines to help keep a crop erect.

12. Pesticide costs. Louisiana has many pests. Pesticides include insecticides, fungicides, bactericides and herbicides and come in organic and inorganic formulations. Pesticides work when the labeled instructions are followed completely, but they cost a good deal of money. There are very few seasons when a farmer can get away with little to no spray applications to protect a crop. Be prepared to spray insects before their populations reach damaging thresholds. Fungicides and bactericides don't kill these organisms; they prevent them. Therefore, apply fungicides and bactericides prior to onset of disease. Many growers will start their first season with one or two pesticides in each category and add to their collection over the years. When switching between insecticides and fungicides, make sure you aren't just rotating brand names but are actually rotating the "mode of action" or method by which the pesticides work. Insecticides have Insecticide Resistance Action Committee (IRAC) codes and fungicides have Fungicide Resistance Action Committee (FRAC) codes. Switching between numbers or codes ensures you are switching modes of action and won't create a scenario where you cause resistance in a pest to a particular type of pesticide. When purchasing pesticides, make sure they are labeled to prevent the pest you need them to prevent or kill, and also make sure you purchase pesticides with multiple modes of action or IRAC and FRAC codes.

13. Sanitation Supplies. While washing your produce is not necessary, many growers believe washed produce is more marketable. Use carrots as an example. If you harvest them in the mud, they'll need to be washed. If you harvest them when the soil is dry, however, they generally don't need to be washed until right before consumption. Some fruit crops should never be washed unless you are about to eat them. This includes strawberries, raspberries, blackberries, blueberries and fuzzy fruits such as peaches. These fruits may lose shelf quality if washed too soon. If you chose to wash your produce, it is best to place a food-grade sanitizer in the wash water to prevent E-coli and other pathogens from spreading from one fruit onto many. For more information on sanitizers, visit https://lsuagcenter.com/articles/page1561146897345.

14. Packaging materials are not essential but can sometimes be helpful in marketing your products. Small containers to hold cherry tomatoes, berries and other fruit crops are examples. Plastic bags for clients who do not have bags of their own and waxed cardboard boxes to transfer produce to the grocery store are also helpful. When considering packaging materials, you have disposable and reusable options. Reusable containers are more expensive initially, but if washed and well maintained, can be quite cost efficient if used for many years.

Closing Thoughts

Knowing how to grow fruits and vegetables is important. If you need help with this part of the business, use these three excellent guides to get started:

- The Southeast Vegetable Crop Handbook, a valuable tool updated annually by the LSU AgCenter and many other southern universities, is available at https://vegetablegrowersnews.com/2022-southeast-vegetable-crop-handbook/.
- The LSU AgCenter's Commercial Vegetable Production Recommendations is very helpful for crop-specific guidelines and can be found at https://www.lsuagcenter.com/NR/rdonlyres/1A445217-3622-4161-ACF9-C0F28FC6E753/59038/pub2433commvegetableBWLOWRES.pdf.
- The Southern Region Small Fruit Consortium's guides to growing small fruit crops such as blackberries, strawberries, grapes, muscadines, raspberries and blueberries is available at https://smallfruits.org/ipm-production-guides/.

The LSU AgCenter wishes you the very best of luck on beginning your new fruit and vegetable production business.

For more information:

The Louisiana Home Orchard guide for basic tree fruit questions:
https://www.lsuagcenter.com/NR/rdonlyres/CF2350DE-B6C5-43E8-B1B6-E9D2AA4F54B0/38101/pub1884homeorchardHIGHRES1.pdf

The Louisiana Home Citrus Production guide for citrus growing tips:
https://www.lsuagcenter.com/articles/connected/louisiana-home-citrus-production

Author Information:

Kathryn Fontenot, Ph.D.
Maria Bampasidou, Ph.D.
Marcus Coleman, Ph.D.

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Matt Lee, Interim LSU Vice President for Agriculture
Louisiana State University Agricultural Center
Louisiana Agricultural Experiment Station
Louisiana Cooperative Extension Service
LSU College of Agriculture

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