

5 Acres or Fewer Farms News



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Introduction: Finding your Niche

By: Dr. Joe Willis, LSU AgCenter

As small growers, you are always trying to find an edge to compete with the large acreage farms. They have an advantage in financial resources; get materials at a discount because they can buy in large volume; can mechanize much of the labor, saving time and reducing labor costs; have more control over selling price of their produce; can provide a continuous stream of produce year-round for their customers; and have more buffer to absorb losses. So, what advantages do you have as a small acreage grower? 1) You are usually more local than the big growers which is a marketing advantage. 2) It is easier to form familiar working relationships with your customers. 3) You can provide fresher product to your customers. 4) You have more flexibility, are able to respond more quickly to market trends and can fill a niche. It is this final point that we try to address in this issue of "5 Acres or Fewer Farms News". The market with any commodity always has small pockets of demand that are simply too small for large operations to deem worthy of their attention. If you're growing 1,000 acres of summer squash, you're not going to set aside a quarter acre of ground to grow cucuzza to supply 100 potential customers. It's not worth the effort and extra labor involved. As a small grower, you can add a row of cucuzza knowing that you have enough customers to buy what you produce AND you are their only source.

The contributors to this quarter's newsletter present some ideas that they see as possible niches small growers could profitably fill. We aren't attempting to be all-encompassing; just trying to flip the idea switch in your thoughts. There are simply some products that, no matter how good you are at growing them, you can never make a profit because your cost of production will always be higher than the large growers. You just can't compete in price or level and continuity of production. If freshness and being local has earned you a customer base growing these types of produce (broccoli, cabbage, sweet corn, green beans, etc.), then continue to grow for your market. However, we suggest you at least entertain the idea of adding something to your line that fills a small demand that no one else is providing. You might see that bottom line grow.

As we said, the articles in this edition won't cover all possibilities. We invite you to send us your ideas and success stories in growing for a small market.

Fresh Cut Culinary Herbs: Lots of Flavor, Fun to Grow

By: Anna Timmerman, LSU AgCenter Assistant Horticulture Agent

Small spaces can be extremely profitable when the right crops are involved. Herb cultivation offers an additional opportunity to generate farm income while utilizing existing marketing channels for other types of fresh produce. Farmer's market customers, grocery retailers, chefs, and food service vendors all seek out fresh herbs, which have a short shelf life. Purchasing locally grown herbs can help to alleviate issues with perishability and small farmers are adaptable enough to deliver these flavorful crops to consumers. Medicinal herbs are also an option, but this article will focus on culinary herbs and their potential as a specialty crop for Louisiana growers.

Marketability

As with any new crop, start small and assess the market in your area. Herbs can dovetail into existing produce rotations and production systems. Many herbs are sought out as a fresh cut product. Simple standbys such as basil, cilantro, and parsley are popular with many consumers and chefs. Specialty herbs may be needed for regional cuisines or seasonal dishes. If there is a large ethnic market in your area, ask what herbs are missing from existing produce offerings. Herbs that are crucial for Asian or Hispanic

dishes are extremely easy to grow in most of Louisiana but are rarely found in our markets. Some examples include lemongrass, kaffir lime, epazote, and shisho. Offering Louisiana-specific products such as fresh bay leaf, file' (sassafras), and bird's eye pepper may spark a demand for old-time flavors with your customers.

Fresh vs. Processed/Value-Added

Fresh herbs are typically cut, bundled, and sold unwashed. Washing can bruise the foliage of herbs and reduces the quality of the aromatic oils they contain. Washing can also reduce the shelf-life of fresh cut herbs. Recent testing done by the FDA



A selection of fresh herbs on display at a Farmer's Market.

has indicated that end users should wash fresh herbs prior to using them (see resources). Cutting herbs to harvest them is not considered "processing" and does not need to be facilitated by a commercial kitchen. Treat fresh cut herbs as you would any other fresh produce item. Fresh herbs are considered "covered" produce and are subject to Food Safety Modernization (FSMA) regulations for produce safety.

Drying or further cutting up herbs does count as "processing" and these activities need to take place in a commercial kitchen that conforms to local and state regulations for food handling facilities. Value-added

products such as herb salts, herb blends, dried herbs, flavored oils, and spice mixes are covered under Part 8 (Spices) of the Louisiana Cottage Food Law and can be produced in a home kitchen that meets the law's minimum standards. For more information on this, please check out the references provided. Processed herbs benefit from a Good Manufacturing Plan (GMP), which many retailers require.

Harvesting and Storage Considerations

Harvest herbs in the cool of the morning before the sun becomes intense, but after the dew has dried. This ensures the highest quality, turgid herb material. As a general rule, herb varieties that are harvested multiple times should never have more than 1/3 of their leaf material removed at one time. Allow the crop to recover and regrow before harvesting again. Planting successive rows will help growers to always have harvest-ready herb material on hand. Avoid bruising or crushing herbs during harvest or packing. Do not stack herbs in harvest or



Attractive packaging of dried herbs will improve buyers satisfaction.

herbs are not washed, but if there are insects or dirt adhering to the herbs, a quick swish through cool, clean water will help. Allow the herbs to air dry before further handling them. A wire drying rack can help to speed this process along.

Cool down herbs as soon as possible after harvest to keep them crisp and fresh. An ideal storage temperature of 33-35°F is recommended for almost all

herbs. An exception to this rule is basil, which will blacken and lose quality rapidly when stored at cold temperatures. Ideally basil should be stored at 45-50°F for best results. There is a UC Davis resource for storage recommendations and quality control of herbs available in the resources section of this article that can help guide producers in developing ideal fresh cut herb storage systems.

Bundled herbs can be stored upright with their cut ends in several inches of cool, clean water to prevent wilting prior to sale. Stored in this manner, many herbs can stay crisp and fresh for 2-3 days.

Woodier herbs like thyme can be stored in clamshells or plastic bags that allow for air exchange. Keep herbs out of direct sunlight at market and while delivering them. This may mean rotating bunches in a farmer's market display, keeping fresh bunches in a



Harvesting lavender with hand shears.

storage totes in a way that will crush them. Keep herbs cool and out of the sun until they can be further packed. Many growers cut herbs and bundle them in the field using hand snippers and rubber bands. Most

cooler or bucket of water.

Dried herbs can stay fresh for months depending on the variety. Store dried herbs in cool, dark food safe areas out of humid conditions. Silica gel packets can help to keep dried herb products from molding or succumbing to the humidity and losing quality. Good Manufacturing Practices (GMP) workshops and trainings cover this aspect of herb storage in depth as dried herbs and herb products are subject to additional food safety considerations. Keep track of dried herb products by developing a lot code system that allows you to trace individual batches back to the harvest date. There is a lot code generator app for herb farmers available from the University of Georgia in the resources section that will allow farmers to print labels for their herb products from their phone or tablet.

Culinary herbs have the potential to be a nice addition to existing produce operations. Growers can easily utilize existing marketing channels and pursue new opportunities that connect to ethnic culinary needs and food service demands. Free samples never hurt. This year try planting a row of culinary herbs and bring them with you to your markets or on deliveries. Let potential customers see, smell, and taste what you have to offer. Fresh herbs have the power to inspire.

Resources

UC Davis Herb Post-Harvest Storage
Recommendations and Quality Control
Recommendations

[http://postharvest.ucdavis.edu/
Commodity_Resources/Fact_Sheets/Datastores/
Vegetables_English/?uid=17&ds=799](http://postharvest.ucdavis.edu/Commodity_Resources/Fact_Sheets/Datastores/Vegetables_English/?uid=17&ds=799)

Johnny's Seeds Herb Library for Growers: Herb
Charts, Technical Guides, Pathogen Information, etc.

[https://www.johnnyseeds.com/growers-library/
herbs/growers-library-herbs.html](https://www.johnnyseeds.com/growers-library/herbs/growers-library-herbs.html)

Johnny's Seeds Herb Planting Guide

[https://www.johnnyseeds.com/growers-library/
herbs/herb-growing-guide.html](https://www.johnnyseeds.com/growers-library/herbs/herb-growing-guide.html)

NC State Extension New Crops and Organics: Herbs
Portal

<https://newcropsorganics.ces.ncsu.edu/herb/>

Appropriate Technology Transfer for Rural Areas
(ATTRA) Sustainable Ag Program: Herb Market
Outlook

<https://attra.ncat.org/horticultural/#Herbs>

FDA Commodity Specific Food Safety Guidelines for
Production, Harvest, Post-Harvest, and Processing:
Fresh Culinary Herbs

<https://www.fda.gov/media/85323/download>

Cottage Food Law in Louisiana

[http://www.rustonfarmersmarket.org/
uploads/2/7/3/1/27317865/
cottage_food_guidelines_hb_1270_simplified.pdf](http://www.rustonfarmersmarket.org/uploads/2/7/3/1/27317865/cottage_food_guidelines_hb_1270_simplified.pdf)

Good Manufacturing Plan (GMP) Information for
Low-Risk Foods

[https://www.carolinafarmstewards.org/good-
manufacturing-practices-for-low-risk-foods-manual/](https://www.carolinafarmstewards.org/good-manufacturing-practices-for-low-risk-foods-manual/)

How to Harvest and Pack Herbs for Market

[https://www.hobbyfarms.com/how-to-harvest-and-
pack-herbs-for-market-4/](https://www.hobbyfarms.com/how-to-harvest-and-pack-herbs-for-market-4/)

UGA Herb Lot Code Generator App (coming soon,
contact to receive updates)

Noelle Fuller, njfuler@uga.edu

HERB GROWING GUIDE COMPARISON CHART

CROP	DAYS TO GERMINATION	SOWING TIME	SEEDING METHOD	LIGHT PREFERENCE	PLANT HEIGHT	PLANT SPACING	HARDINESS ZONES	DAYS TO MATURITY
Angelica	Up to 30 days	Early Spring or Fall	Direct sow or Transplant	Sun/Part Shade	72–96"	12–24"	Biennial Zones 4–9	365 days
Anise	6–14 days	Spring	Direct sow	Sun	24"	6"	Annual	130 days
Anise Hyssop	7–16 days	Spring	Transplant	Sun	24–36"	6–12"	Tender Perennial Zones 5–9	75–80 days
Basil	5–10 days	Spring through Summer	Direct sow or Transplant	Sun	Varies depending on variety	4–8"	Annual	Varies depending on variety

Sample from the Herb Growing Guide Comparison Chart from Johnny's Selected Seeds.

Specialty Peppers

By: Dr. Joe Willis, LSU AgCenter Horticulture Agent

If you walk into the fresh produce section of your typical grocery store looking for peppers, you're going to find a selection of bell peppers of different colors. You'll pretty regularly find jalapenos and on occasion you will find poblanos, serranos, anaheims, shishitos and of course, hatch chiles. Typically, you may expect to find from four to eight different pepper varieties. If you visit markets that cater to a particular ethnic group, you'll almost

always find some selection of specialty peppers; most of these are imported. You may be able to buy about 10-15 different varieties of peppers (either fresh or dried) typically;

however, there are thousands of varieties of peppers available. They come in a wide range of colors, flavors, shapes, heat levels and sizes. Why, there are over 3500 varieties of chiles alone available from seed companies and online sources.

Different cuisines tend to use different pepper types and varieties. Often, these add a uniqueness to the flavor of the dishes that is lost if a substitute is used. You can't make chile rellenos with bell peppers and spicy Thai chicken curry would not be the same without bird's eye peppers.

Though there are thousands of edible cultivated pepper varieties belonging to five different species (*Capsicum annuum*, *C. baccatum*, *C. chinense*, *C. frutescens*, *C. pubescens*) of all shapes, sizes, heat

levels, and plant sizes; they are all grown under the same horticultural conditions. They like a sunny location (6-8 hrs. per day) with well-drained soil (rich in organic matter) with a pH of 6.0-6.5. Some types/varieties produce better in the hot summer conditions (bells don't like the heat) but a good crop can be harvested from any of them.

A quick survey of some of the popular seed catalogs

gives a quick idea of how many pepper varieties are easily available: Totally Tomatoes (145); Johnny's Seeds (67); Territorial (43); Park Seed (41); Burpee's (45). But it's some of those harder to find pepper varieties that might really be profitable. One's



Brazilian Starfish Peppers

like charapita, biquinho and Brazilian starfish might be harder to find but hold the promise of a higher profit margin. The aji charapita, for instance, is a Peruvian, Tepin-like pepper with a citrusy aroma and flavor and the heat level of a good cayenne. It is touted as "the most expensive pepper in the world selling for \$25,000 per kilo to Lima's best chefs and nearly impossible to find outside of Peru." Well, we're not in Lima, so don't start planning your mansion. But you can see how having an excellent but rare product can be profitable. One other advantage you can get with many of the pepper varieties – if you don't sell them all fresh, you can dry them and sell them later. You then don't lose any part of your crop and can store them for future sale. Louisiana enacted HB1270 in 2014, Louisiana's Cottage Food Law,

wherein, spices (the category where dried peppers fall) are listed as a low-risk food and are exempted. Also considered low-risk foods are jams, jellies and preserves; pickles and acidified foods; sauces and syrups (see the reference list below). Pepper jelly or pickled pimenta biquinho for sale? Each state has their own Cottage Laws you should check before marketing your wares there.

Here is a list of a few peppers that I have grown that produce well in Louisiana and just might find a devoted following.

Aji Rico – This is a 2017 AAS Winner! Thin-walled, crunchy, 3 to 4" fruits have a delicate, refreshing citrus flavor combined with a pleasing amount of medium heat. Narrow, conical shaped fruits mature from green to red and can be eaten at any stage.



Aji Rico peppers. Photo by Chris Dunaway

Also dries well for a flavorful homemade spicy paprika. Scoville Heat Units: ~500 SHUs.

Pimenta Biquinho or "Little Beak", also known as Chupetinho, Pimenta de Bico or Chupetinha. Hailing from the Brazilian state of Minas Gerais, Pimenta Biquinho peppers are round and little with a distinctive, tapered point or tail that resembles a bird's beak. They can be either a brilliant scarlet-red or sunshine-yellow. A beautiful looking plant with heaps of drop shaped pods makes a great ornamental

This unique hybrid matures earlier, has more plant vigor and is more productive than comparable open-pollinated types. Perfect for eating fresh, in salsas and making hot sauces.



Dr. Joe Willis uses a dehydrator to dry and preserve tabasco peppers

plant. The plant grows to about 20 inches tall in a pot with pepper filled cascading branches. The small, pointed fruits avg. 1 ¼" and have a unique, slightly tart flavor with a tiny bit of heat. May be eaten raw or cooked and are popular when pickled in vinegar and served with meals or drinks. Scoville Heat Units: 500 SHUs.

Mad Hatter – This is also a 2017 AAS Winner! Mad Hatter produces vigorous plants with early, high yields, large fruits and awesome taste.

Uniquely shaped, specialty peppers, 2 to 3 -1/2" by 2 to 2-1/2", have a delicate floral scent and rich



Mad Hatter peppers.
Photo from All-American Selections

flavor that intensifies as it matures. In hot, dry climates some fruits will have a touch of heat close to the seed cavity, but the wings are always sweet. Excellent fresh, pickled or stuffed. Plants are very productive yielding abundantly throughout the season. Scoville Heat Units: 500-1000 SHUs.

Aji Charapita -A Tepin-like pepper with a distinctly fruity citrus aroma, equal in heat to a cayenne. Thin-skinned peppers turn yellow when ripe and continue producing for months once they get going. Used fresh, gives salsas and sauces a unique tropical taste. More often, it is used in powdered form. Scoville Heat Units: 30,000 - 50,000 SHUs.

Cajun Belle Pepper – This is a 2010 AAS Winner. Spice is popular in today's cuisine, but not everyone likes the heat level high. Cajun Belle has a perfect blend - mildly spicy but still sweet, making it the perfect choice to add a little zing to dishes. Uniform plants reach 24" in width and height, producing plentiful yields of firm-walled fruits that average 3½ to 4" at maturity. Scoville Heat Units: 100 to 1,000 SHUs.

We trialed 88 varieties of peppers this past year in the



Cajun Belle peppers

New Orleans area and only a few didn't do well here. I'm not suggesting you do anything that ambitious. But growing a mix of hot and sweet of several

different varieties and then offering them to your customers to try just might yield a new money-maker to add to your lineup.



Aji Charapita peppers

References:

- Vegetable Gardening Tips: Peppers. 2017. K. Fontenot, et. al. <https://www.lsuagcenter.com/~media/system/2/a/6/c/2a6cd1c38894a182147cc78ec804ae85/pub%202132%20peppers%20rev%204-17pdf.pdf>
- The Complete Chile Pepper Book. 2009. Dewitt, Dave and Paul W. Bosland.
- The Field Guide to Peppers. 2015. Dewitt, Dave and Janie Lamson.
- Peppers of the Americas. 2017. Presilla, Maricel E.
- HB1270: Provides for preparation of low-risk foods in the home for public consumption. <http://www.legis.la.gov/legis/BillInfo.aspx?s=14RS&b=HB1270>
- Johnny's Select Seeds. www.johnnyseeds.com
- Totally Tomatoes. www.totallytomato.com
- Park Seed. www.parkseed.com
- Burpee. www.burpee.com
- Territorial Seed Company. www.territorialseed.com

The Lowdown on Microgreens vs. Sprouts, FSMA, and What it Means for Growers

By Anna Timmerman, LSU AgCenter Assistant Horticulture Agent

Specialty

crop producers that are short on space and looking for items with a high rate of return will frequently come across microgreens or sprouts as an option. Both chefs and home consumers seem to be clamoring for these products to add flavor, visual appeal, and nutrition to their recipes. With an average price per pound of \$25-\$40, it's easy to see why more farmers are adding microgreens or sprouts to their lineup. Whether as a garnish for a fancy dish at a high-end restaurant or a tasty addition to a homemade sandwich, microgreens and sprouts are gaining in popularity with both growers and consumers.

Microgreens and sprouts are not the same product. They have differing growing conditions, time to harvest size, and food safety concerns. Sprouts were very popular with the "back to the land" movement of the 1970's and seem to have fallen out of favor in recent years. Sprouts are extremely fast to produce, and do not require soil or fertilizer to grow. Seeds are soaked and kept in dark, humid environments until the seed germinates. All of the energy within the seed itself is responsible for the growth of the sprout product. The final day of growth often includes exposure to light to get chlorophyll production started and give the sprouts some color. The major issue with production of sprouts is that these growing conditions are also a bacterial breeding ground, and it is extremely easy for disease to take hold.

Microgreens are also baby plants but differ from sprouts in that they are seeded into soil-filled trays and allowed to mature somewhat before they are cut and harvested. Often trays are seeded and covered to encourage germination, then uncovered for a few days up to a couple of weeks to allow the plants to

develop several pairs of true leaves. Scissors are used to harvest the microgreens by cutting the stems right above the soil surface. Microgreens are usually young, tender, and 1-3" long at harvest. Flavors have time to develop as the plants photosynthesize. Microgreens' growing process is much safer as bacterial growth is inhibited by airflow and sunlight exposure. The harvested portion of the plant does not come into contact with the soil, making for a safer food product.



The flavor of sprouts is generally described as mild and they are primarily used to add a crunchy texture to the recipes they are used in. Sprouts don't have access to ample nutrients or sunlight, and don't photosynthesize much, or at all prior to harvest, meaning that they don't develop the flavor compounds associated with the mature plant of the same species. The nutrients stored within the seed do provide some benefits to humans who are eating them. Depending on the type, sprouts can be high in vitamins B and C, niacin, and carotene.

Microgreens, however, pack a lot of flavor in a small package and a whole lot of nutritional benefits for those who consume them. They can have crunchy or leafy textures, colorful foliage, and concentrated

flavors of the mature plant that they are capable of growing into. Broccoli microgreens, for example, taste like high-octane broccoli. The typical microgreen on average can contain up to forty times the nutritional value of the mature plant of the same type by weight.

Both sprouts and microgreens are typically consumed raw, meaning that they are considered “covered produce” and subject to the Food Safety Modernization Act’s Produce Safety Rule (FSMA/PSA). FSMA strives to improve the country’s food safety by preventing food-borne illness and contaminations through good on-farm produce handling practices,

improved recordkeeping and traceability, and training for agricultural workers. Implemented in 2011, FSMA applies to all farms producing sprouts as of 2019, and all farms producing more than \$25,000 of food-related income if microgreens or any other covered produce items are grown and sold. For very small farms producing \$25,000 in produce or less, FSMA will eventually apply to you as well. It is good to familiarize yourself with the program and get certified early. For information please refer to the resources at the conclusion of this article or reach out to your local LSU AgCenter Agent.

To become FSMA compliant, producers of sprouts have far more challenging regulations to adhere to than producers of microgreens do. Sprouts have a long history of *E. coli*, *Listeria*, and *Salmonella* outbreaks due to contaminated seed. Increased sanitation rules as a part of the FSMA law are now

required of all producers of sprouts and sprout products if more than \$25,000 in any produce is grown and sold from that establishment each year. Always purchase seed marketed for use in sprout production, keep all growing surfaces, hands, and harvest equipment sanitized, and refrigerate



Sprouts (left) are grown in water and we eat the whole plant including the root. Microgreens (right) are grown in a planting medium and only the stems and leaves are consumed.

harvested sprouts properly. Keep all animals and other food production components/produce away from sprout production and handling areas. To legally produce sprouts for sale, growers must complete a FSMA/PSA training and obtain their certificate. They must adhere to all parts of the FSMA law (produce safe handling, record

keeping, agricultural water, worker health, hygiene, and training, soil amendments, wildlife, domesticated animals, and land use considerations, post-harvest sanitation and handling, and develop a farm food safety plan), as well as an additional two-part training from the Sprout Safety Alliance (SSA). Farms are then subject to audits conducted by their state’s Department of Agriculture to ensure that the farm food safety protocol is being followed and proper records are being kept. These requirements are much stricter than those of other produce types because of the high prevalence of contamination and food-borne illnesses attributed to sprouts.

Microgreen producers that grow more than \$25,000 in produce on their farms per year for three years in a row must become FSMA compliant and certified through the Produce Safety Alliance (PSA) as well.

They will then also be subject to farm audits from their state's Department of Agriculture. The LSU AgCenter conducts several trainings around the state each year, a link to the upcoming training events is included in the resources section at the conclusion of this article. The AgCenter also offers free mock audits for farmers so that they can learn what to expect from an official audit and work on becoming compliant with expert, confidential input. Microgreen producers do not need to attend any additional certifications or trainings, unlike sprout growers.

Marketing and pricing microgreens can be successfully done via wholesale and retail channels. As with other produce items, direct-to-consumer sales at a retail level often garner a higher profit margin. Microgreens and sprouts are both typically packaged in plastic clamshells or bags by the ounce. Wholesale buyers, such as restaurants and food service providers prefer to purchase these items by the pound at a wholesale rate. Be sure to provide a consistent, high quality product on a regular schedule. Recordkeeping can assist in keeping track of temperature, humidity, and days-to-harvest data. Because both microgreens and sprouts have a quick turnaround, adjustments to a production system can be done quickly as opposed to over an entire growing season. The shelf life on sprouts and microgreens is very limited, making local sources sought after, especially by high-end chefs. Some popular sprouts to consider include sunflower, alfalfa, broccoli, and radish. Microgreens are more versatile; popular varieties include cilantro, basil, pea shoots, mustards and other brassicas, and sorrel. Flavor is a large deciding factor for chefs and home cooks. Allow for samples or tasting if you are at a farmer's market or similar event as potential clients may not be familiar with the product. As with any new crop, study the market and demand in your area. Reach out to potential clients, talk with producers that grow these items, and determine if there is adequate need for sprouts or microgreens produced on your operation. Microgreens offer a high dollar, quick turnaround,

low investment product for small scale specialty crop growers. Sprouts are a bit more challenging due to increased FSMA regulations and a heightened food safety risk, but also garner a large rate of return in a short amount of time.

Resources:

Growing Guides and General Information

What Are Microgreens? NC State: <https://caldwell.ces.ncsu.edu/2018/02/what-are-microgreens/>

Johnny's Seeds Year-Round Microgreen Growing For Profit: <https://www.johnnyseeds.com/growers-library/vegetables/year-round-micro-greens-production.html>

Guidelines for Growing Microgreens: <http://www.ecoffshoots.org/wp-content/uploads/2010/03/Guidelines-for-Growing-Microgreens-ECO-City-Farms.pdf>

Food Safety of Sprouts Fact Sheet- Clemson: <https://www.clemson.edu/extension/food/food2market/factsheets/7-the-food-safety-of-sprouts-factsheets.html>

Microgreen Fact Sheet- U of Florida: <http://gardeningolutions.ifas.ufl.edu/plants/edibles/vegetables/microgreens.html>

Food Safety Modernization Act (FSMA): <https://www.fda.gov/food/guidance-regulation-food-and-dietary-supplements/food-safety-modernization-act-fsma>

Produce Safety Alliance (PSA): <https://producesafetyalliance.cornell.edu/>

Sprout Safety Alliance (SSA): <https://www.ifsh.iit.edu/sssa>

LSU AgCenter FSMA Training Info: https://www.lsuagcenter.com/topics/food_health/food/safety/workshops%20and%20trainings

Mock Farm Audits: Contact Dr. Achyut Adhikari (ACAdhikari@agcenter.lsu.edu) or visit https://www.lsuagcenter.com/topics/food_health/food/safety

Sprout/Microgreen Seed Sources

Johnny's Selected Seeds: www.johnnyseeds.com

Harris Seeds: www.harriseseeds.com

High Mowing Seeds: www.highmowingseeds.com

Kitazawa Seeds: <https://www.kitazawaseed.com/>

Incorporating Cut Flowers on a Small Farm

By William Afton, LSU AgCenter Assistant Horticulture Agent

Thinking

about starting
a new business
or diversifying

your current farm business? When dealing in small acreages, growers should consider adding a specialty crop as a component in their overall farm business plan.

Introduction

In the U.S. agriculture sector, the definition of specialty crop is a wide-ranging term. It is defined as fruits, vegetables, tree nuts, dried fruits, and horticulture and nursery crops including floriculture.

Floriculture crops include bedding and garden plants, foliage plants, potted flowering plants, cut flowers, cut cultivated greens, and floriculture materials. The USDA National Agricultural Statistics Service reported that domestic production of floriculture products has been steady since 2015 with a

wholesale value of \$374 million. Current government legislation has been giving attention to specialty crops over the last several years. Both the 2008 and 2014 farm bills, along with the 2018 farm bill, have increased the provisions pertaining to specialty crops. Several features of cut flower gardening can be appealing to interested growers. Growing cut flowers locally provides consumers with an opportunity to support local production. It offers growers the opportunity to use many different markets including farmers' markets, roadside stands, weddings, u-pick operations, and other events. Several biological

benefits such as beneficial insect attraction, pollinator attraction, and crop rotation options when working in a mixed cropping system.

Site Location

When choosing or evaluating a location to grow cut flowers use the following recommendations to ensure success. Most of the plants used in cut flower production prefer full sun throughout the entire day. A shade structure would accommodate any production involving shade loving plant selections. The area and soil should be well drained. Avoid areas that hold and collect water. Wind breaks offer protection from high winds. This prevents physical damage such as stem breakage, flower damage, and water stress. Access to irrigation water is highly recommended. During periods of dry weather, irrigation water will need to be applied



The 'LSU Super Fan' arrangement from Blushing Blooms.

in a consistent fashion. Producing cut flowers is a labor-intensive project, increasing labor efficiency will benefit the entire process. The production area should be studied for ease in moving tools, equipment, plant material, and harvested crops. If a U-pick marketing strategy is desired make sure the area has access to public roads and parking to accommodate customer flow.

Bed Preparation

Plants can be grown in the ground or in raised beds. A raised bed approach would be beneficial in areas with drainage issues. Beds should be raised 8-12

inches to maximize both drainage and root zone area. Use a soilless media as a soil substitute in beds. Mix your own media or use premixed bags of potting soil. The creator of Square Foot Gardening, Mel Bartholomew, offers a simple recipe for a soilless media using equal parts compost, peat moss, and vermiculite. Premixed potting soils offer a finished product but beware of additional ingredients such as fertilizers and wetting agents. Design raised beds so that the middle of the bed can be accessed from both sides. Widths of over 4 feet can become problematic.

In-the-ground gardens provide the grower with a greater amount of space. Compacted soil is a statewide issue with many crops, especially in urban areas. Compacted soils have small pore spaces between soil particles and reduce water infiltration, root growth, and oxygen exchange. Check for compaction above and below the soil surface. Hard pans can be broken up through deep tilling or by using a sub-soiler. Deep rooted cover crops like

alfalfa may help in breaking up compacted soils and hard pans. Plant the area in a prior year to receive the desired effect. The addition of organic matter is beneficial to long term soil health. Many sources are available on the market today including homemade compost, composted chicken and cow manure, cotton burr compost and, mushroom compost. Cover crops, also known as green manure, can be worked into the soil to provide this effect as well.

Soil fertility should be checked initially and every 2-3 years for maintenance. This is done through soil

sampling and analysis. To take a proper soil sample, obtain an LSU AgCenter soil sample mail-in box. These boxes can be found at all LSU AgCenter Extension Offices throughout the state and at many local garden centers and feed stores. Excavate soil 4-6 inches below the soil surface and place into a

container. Move to another location in the same field and repeat the process. After several random locations have been sampled thoroughly, mix the composite soil samples and add to the soil sample bag supplied with the mail-in box. Label the bag with the field's name. Include the completed form, payment, and soil sample bags in the original box and place in the mailbox for pick up. There is a label sticker on the mail-in box with that includes the mailing address for the soil lab in Baton Rouge. Results typically follow in 7-10 business days. Consult with a local extension agent to develop your specific fertility plan.

Soil pH is a measure of the chemical environment within the root zone. It provides

information on the availability of plant nutrients below ground, and every nutrient has slightly different ranges where it is most available to plants. Plants themselves have desired pH ranges where they function at their best. After using a soil test to determine the current soil pH, adjust up or down using agricultural limestone (raises pH) or soil sulfur (lowers pH). In situation where pH needs to be raised and magnesium (Mg) is deficient, use dolomitic limestone. Use the soil test analysis to determine nutrient availability. Make sure to address low levels



Mitchell Provinsal with Nice Stems Farm sells cut flowers at the Red Stick Farmer's Market in Baton Rouge. Photo by Lucie Monk Carter

of phosphorous (P) and potassium (K). These along with nitrogen (N) are termed macronutrients because plants utilized them more frequently than micronutrients. Elements are replenished in soils through a fertilizer program and these programs can be conventional or organic depending on the source of the fertilizing material. The Organic Materials Research Institute (OMRI) is an excellent source for finding organic versions of almost every plant nutrient.

Irrigation

During times of drought apply irrigation water on a consistent basis. Soaker hoses and drip tape are recommended over traditional irrigation sprinklers. Avoid overhead sprinklers if possible. This prevents excess moisture from accumulating on the leaf surface which can lead to problems with plant disease.

What to Grow

Don't let anyone tell what you can and can't grow. There are hundreds of flowers available in the trade and under the right environmental conditions, you can grow a great deal of them. However, a successful cut flower grower knows that one must sell the crop to get paid. Know your market before purchasing starting material. Survey possible customers to get an understanding of what people are demanding. With that being said, the LSU AgCenter has done some research into some basic plant choices for cut flower production. Dr. Jeff Kuehny and John Young conducted a study to determine the number of days from planting to bud and from bud to harvest on four commonly grown cut flower varieties.

Gladiolus (*Gladiolus x hortulanus*)

Not just for funerals anymore, gladiolus flowers are a common cut flower species. Their shape and silhouette are memorable to the average gardener. Gladiolus are planted as corms, similar to a bulb. Early year plantings in February and March took 28



Bundles of fresh cut gladiolus flowers.

days for the plants to emerge from the soil. When planted later in the season it took 15 days for emergence. Both planting dates averaged ~55 days from emergence to bud. Expect anywhere between 70 and 83 days from planting to bud, depending on how early the corms are planted. Gladiolus are harvested at bud stage for maximum shelf life.

Celosia (*Celosia argentea* var. *cristata*); cock's comb

Celosia is a quantitative short-day plant, meaning it requires short days in order to flower. Transplants planted early (March, early April) and late (late April to June) took 39 days from planting to bud and averaged 19 days from bud to harvest. Expect a total of 58 days from planting to harvest.

Sunflower (*Helianthus annuus*)

Sunflowers are a common plant in general and are very easy to grow. When transplants were planted [both early in the year \(March, early April\) and late \(late April to June\)](#), it took about 39 days until the first bud was produced. Both plantings averaged 19 days from bud to harvest stage. Expect a finished crop in about 58 days.

Zinnia (*Zinnia elegans*)

Zinnias are another commonly known garden flower

that is very easy to grow. It took transplants about 35 days to produce the first flower buds after being planted both early in the year (March, early April) and late (late April to June). It average ~15 days from bud to harvest stage in both plantings. Expect a finished zinnia crop in about 50 days.

Succession Planting

In an effort to prevent over-supply at any given time, utilize succession plantings so that crops can be harvested over several periods rather than all at once. Dr. Jeff Kuehn and Mr. John Young found that planting celosia, sunflower, and zinnia every two weeks produced a steady supply of product throughout the growing season. Succession planting can also be accomplished by using different plants in the same space but at different times of year. Much of the planning can be done prior to purchasing plant material. Plan out a calendar year in the cut flower garden before moving forward.

Staking and Netting

Although many of the popular cut flower species are bred for their naturally long stems, some will need extra support. Individual plant stakes and netting provide support and ensure straight stems, which are essential for premium cut flower production. DIY versions can be used or commercial versions can be purchased from reputable sellers.

Harvest

The best time to harvest cut flowers is early in the morning or late in the afternoon. Those times of the day take advantage of low transpiration rates within the plant. Plants are dealing with heat stress and water loss during the middle of the day and will

experience reduced shelf life when harvested at that time. Use a sharp knife when cutting flower stems. Clean, surgical cuts allow for less desiccation than torn and ripped cuts. Once flowers are harvested, immediately place in water and refrigerate/cool them

down as soon as possible to increase shelf life.

Marketing

As previously stated, know who will buy your cut flowers before you sow the first seed. When it comes to small business advice, you can't get much more practical than that. There are several markets available to the small-scale cut flower producer.

Obviously, you can talk



Various cut flowers on display.

with a local florist to see what types of flowers they use in their bouquets and arrangements. There is a lot of floral material shipped in worldwide. There might be an opportunity to provide a product at a cheaper price. Everybody visits the grocery store a few times per week and you know almost every single grocery store has a small floral department. Local restaurants may utilize local cut flowers as center pieces. Weddings, corporate meetings, parties, and other planned events utilize cut flowers in their planning and design. One of more popular ways to sell cut flowers is at a farmers' market. Visit different markets and research what vendors are selling and what the customers are asking for. A lot of marketing can come across as relationship building, name branding, and product consistency. Develop relationships with your customers, local florists, wedding planners, event caterers, churches, local restaurants, and local hotels in an effort to gain new sales and recommendations

Growing Cucuzza

By: Jessie Hoover, LSU AgCenter Extension Agent

Back in my 4-H agent days, I took a group of kids to the National 4-H Dairy Conference in Madison, WI. On our journey home we detoured through Chicago and stopped at a gas station about an hour south of the city. A gentleman approached me at the gas station, mentioned he had seen the LSU logo on our van, and asked me what we were doing. He was from Ruston, LA. I proceeded to answer him and asked him the same question in return. He told me he was delivering a load of cucuzza to Chicago and that he was one of the largest growers of cucuzza in the nation. He marketed his cucuzza to Italian chefs and markets in Chicago.

Most people have not heard of cucuzza, pronounced ku-KOO-za, but I grew up near Independence, LA where there is a large Italian-American population. Not only have I eaten a delicious cucuzza stew, I have received cucuzza shared by friends at church. They are very popular amongst home gardeners in the Independence/Tickfaw area.

Botanically speaking, cucuzza is a gourd but I often hear it referred to as “cucuzza squash” or “Italian squash.” Both squash and gourds are in the *Cucurbitaceae* family. Cucuzza is a good replacement for squash in recipes and has a mild, sweet flavor. They are a pale green color and are unique because they grow to be 3-4 feet long, resembling a baseball bat!

The first challenge with growing cucuzza will be getting your hands on some seeds. The best place to

find seeds is from someone you know who grows them. Most growers will hold seeds over from year to year and enjoy sharing. Other than that, I have seen them on websites sold as “cucuzzi” or “guinea bean.”



Cucuzza gourd growing on trellis

You should grow Cucuzza on a trellis. You don't need anything fancy, a cow panel or chain link fence will do. The goal is to keep the fruit off the ground. Like cucumbers, cucuzza will grow on the ground but the fruit will develop yellow bellies and spots. Growing them on a trellis prevents this. Plant the seeds ¼ inch deep and 12-18 inches apart. Fertilize your cucuzza like you would squash or cucumbers. The LSU AgCenter Vegetable Planting Guide recommends 4 lbs of 8-8-8 per 100 foot row, or 300 square feet, at planting. Then, side dress with 1 lb of 33-0-0 per 100 foot row when the plants begin to run. Monitor the plants and side dress again if needed. Harvest your cucuzza when they are young, pale green, and the skin is still tender. It is hard to say a specific length but once they hit 3+ feet long they will begin to mature. The skin will start to harden and the cucuzza

may develop little bumps. Once they mature, they become seedy and will not work as well in recipes.

Peel the cucuzza with a vegetable peeler before you cook with them. Some folks recommend removing the seeds from the center, but if you harvest them at the right time, the young seeds are tender and edible. Cucuzza make an interesting addition to your garden. The plants are vigorous, and a few plants will yield enough for you to share with your neighbors. Good luck!

Coming Events

Louisiana CRAFT Field Day

Tools and Strategies for Weed Control Before the Crop Goes In.

February 16th, 2020, 2:00-5:00 PM

@Compostella Farm

13021 John Wimmer Rd, Picayune, MS

Cost = Free

bit.ly/CRAFTLA

Produce Safety Alliance Grower Training (PSA) + Good Agricultural Practices (GAP) Food Safety Plan Workshop

February 20-21, 2020

@LSU AgCenter Hammond Research Station

21549 Old Hammond Hwy, Hammond, LA

Cost = \$20

<https://www.lsu.edu/departments/nfs/outreach/psa-training.htm#p5>

Louisiana Citrus Symposium

February 22, 2020, 8:00 AM—2:00 PM

@Docville Farm

5124 E. St. Bernard Hwy, Violet, LA

Cost = Free

[To register email atimmerman@agcenter.lsu.edu](mailto:atimmerman@agcenter.lsu.edu)

New Orleans Spring Garden Show

Now Accepting Vendor Registrations

April 4-5, 2020

@The New Orleans Botanical Gardens

5 Victory Drive, New Orleans, LA

[To become a vendor, write to cdunaway@agcenter.lsu.edu](mailto:cdunaway@agcenter.lsu.edu)



Citrus being washed by a local grower.

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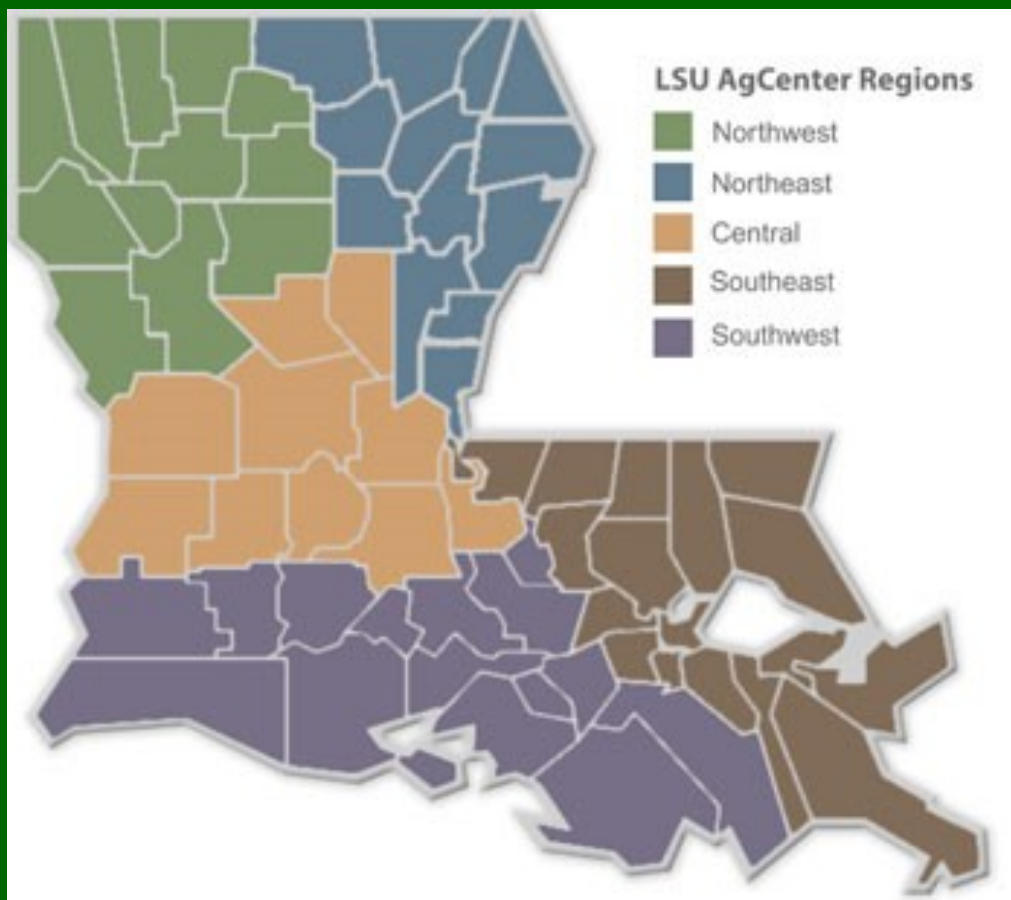
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