

# Victory Gardeners: Gardening as Part of a Healthy Lifestyle and Considerations for Starting a Home or Community Garden<sup>1</sup>

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This publication provides information for home gardeners and other adults in Florida who are interested in incorporating gardening activities and producing home-grown produce as part of a healthy lifestyle.

## Introduction

“Healthy lifestyle,” “victory garden,” and “blue zone” are familiar terms to most; each involves a holistic approach to human well-being. The therapeutic and health benefits of gardening have long been recognized. After World War I, many service members were treated using horticulture therapy methods. During the early stages of the COVID-19 pandemic, individuals and families turned to gardening as a source of supplemental food and physical and emotional wellness.

Distinct regional communities of the world first integrated gardening into their daily lives centuries ago and have continued the practice throughout many crises. These areas, known as “blue zones,” are Okinawa, Japan; Sardinia, Italy;

Costa Rica’s Nicoya Peninsula; Ikaria, Greece; and Loma Linda, California, the sole blue zone in the United States. People who live in the blue zones reach the age of 100 ten times as often as those living outside of Loma Linda in the United States (Buettner and Skemp 2016). Heart disease has been the leading cause of death in the United States for decades, followed by cancer (CDC 2012); blue-zone centenarians have a lower prevalence of these and other chronic health issues. In Ikaria, Greece, for example, the heart disease rate is half the rate seen in the United States, and there are 20% fewer incidences of cancer. The rate of dementia in Ikaria is almost nonexistent (Buettner and Skemp 2016).

Nine factors contribute to the Blue Zone populations’ health and longevity. Researchers have coined the two main factors “move naturally” and “plant slant.” The term “move naturally” refers to engaging in low-intensity activities often, such as walking and gardening. People in Blue Zones do not necessarily have a health club membership; instead, they integrate exercise into their daily activities. Gardening,

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for example, may help improve “flexibility, strength, endurance, and balance” (Blue Zones Project 2015). In Okinawa and the Nicoya Peninsula, people grow fresh foods in their gardens, and “the kitchen garden is an extension of the food preparation area” (Buettner 2015).

As a term, “Plant slant” acknowledges that people living in blue zones consume an abundance of plant foods such as fruits, vegetables, whole grains, and nuts (Greger 2017). Blue zone inhabitants also eat many varieties of bean: fava, black, soy, and lentil (Greger 2017). Legumes form the foundation of most blue-zone centenarian diets (Buettner and Skemp 2016). The link between plant food consumption and health is especially noted, due to the high fiber and antioxidant content only found in plant foods. Antioxidants are powerful plant chemicals that are linked to preventing heart disease, cancer, inflammation, and myriad chronic illnesses (Aune et al. 2017). Yet, despite the pronounced benefits of fruit and vegetable consumption, only one in ten Americans consume enough of these foods a day (CDC 2017). Through gardening, one can harvest the benefits of both moving naturally and increasing the consumption of health-promoting foods (Figure 1).



Figure 1. Freshly harvested green beans.

Credits: Tiare Silvasy, UF/IFAS

The benefits of gardening extend beyond promoting physical health; they promote a “healthful lifestyle.” This holistic term encompasses several aspects of life, including spiritual, emotional, physical, intellectual, financial, social, and environmental facets (Lynch et al., 2021). Communal gardening can benefit one’s spiritual life by helping the individual find purpose through community service and by helping strengthen the community food systems. For more on the spiritual benefits of gardening, see “[A Practical Guide to Healthy Living](#).”

Purpose is another blue zone longevity factor, and it can add up to seven years of extra life expectancy (Buettner and Skemp 2016). Buettner and Skemp (2016) define purpose as “why I wake up in the morning.” Some examples of how to target purpose through supporting food systems include growing vegetables to share with family or neighbors and connecting with people in your community to share gardening experiences. “By creating social networks of health conscious people, it encourages healthy living and gives people a sense of purpose” (Buettner and Skemp 2016).

Gardening in public spaces helps older adults build new relationships (Lynch et al. 2021); for the inhabitants of blue zones, belonging to a social network is also a health and longevity factor. Finally, one can also benefit from gardening intellectually by learning new cognitive skills and financially by saving money on home grown produce (Lynch et al. 2021).

“Managing stress,” also known as “downshifting” (Buettner and Skemp 2016), is when gardening and one’s positive interactions with nature help relieve their stress (Lynch et al. 2021). Satisfied by the act of growing their own food, people often feel less anxiety regarding food insecurity.

Thus, gardening contributes to the healthy lifestyle of some of the longest-living people on the planet by promoting crucial health and longevity factors. This publication suggests that you consider getting involved in gardening activities or even “blue zoning” your backyard with diverse Florida crops that you can grow or get from your local community.

## Planning

### Financial Wellness and Considerations for the Home Gardener

Financial stress is a huge problem in our post COVID-19 economy. A garden can provide a supplemental source of food, but the growing process requires money, space, time, patience, and an education. Gardeners have different goals. If your goal is to offset food costs, you must be realistic about your limitations so that you may select a crop and growing system that suits your needs and resources. Costs will be incurred before the benefit of the yield: while preparing the garden or growing system. Oftentimes, it takes multiple harvests to offset the investment.

Do you have any of the following limitations? Consider these questions before you start growing.

- Cost: can it be recovered in profits or in reducing food costs?
- Space: how much room do you have to grow a garden?
- Light: does your site get full sun, partial sun, or shade?
- Airflow: does your site get enough ventilation?
- Access to a power source: do you need electricity for your cropping system, such as for hydroponic pumps or other equipment?
- Access to a water source: do you have sufficient water for all your plants, at least until they are established?
- Time: How often would you maintain the system?
- Harvesting, processing, and cold storage for crops: how would you store your harvest?
- Seasonal considerations: should you be concerned about extreme temperatures?

## Resource-Limited Growing

Growers with time and a viable growing space that has ample sunlight and access to water should consider growing their crops in the soil or in raised beds (Figure 2). Those growers without a structure to cover their crops should select seasonal crops that they know how to harvest, wash, prepare, and consume. (To select crops best suited for your region, see “[Florida Vegetable Gardening Guide](#)”.) Good soil and plant nutrients are important and will need to be added periodically. You can make your own compost to improve soil fertility, but additional nutrients may be needed depending on the crop. If you do not have time to water, consider an automatic irrigation system and, therefore, the cost for the irrigation timer and other irrigation system components. Just because you plant it does not mean it will get harvested. Pests can damage your crops, and crops grown in soil have greater interaction with potential pests.

## Basic Hydroponics

Growers that lack resources, especially space and time, should consider hydroponics. To keep it affordable, keep it simple! Hydroponics can be successful in a recycled jug, bucket, baby pool, or almost any container. To determine which container you need, consider how often you want to eat the food you grow. Lettuce is an excellent cool season crop to grow outdoors in Florida from October through April. Lettuce is also adaptable for year-round hydroponics using artificial lights, though the lights do increase the cost. To learn more, see “[Growing Lettuce in Small Hydroponic Systems](#)”.



Figure 2. Vegetables grown in an in-ground garden using drip irrigation and straw mulch.

Credits: Tiare Silvasy, UF/IFAS

## Soil and Compost

It is important to compost organic materials such as yard waste, kitchen food scraps, and any livestock manure prior to adding this compost to the garden. Gardeners invest a lot of time and energy into composting to build up organic matter in their soil. If not properly processed, compost can also be a source of foodborne pathogens. The type of animal manure being incorporated into the pile and the manure’s management will dictate how long it needs to mature before use. If the compost is close to being ready, then avoid adding fresh manure. If in doubt, avoid using the finished compost on leafy vegetables or anything that will be consumed raw. The best practice is to incorporate the compost into the existing soil; this reduces the risk of compost splashing up on plants. Properly processed by heat, commercial compost poses a minimal risk of introducing pathogens. Keep livestock and large groups of animals, including flocks, away as they may directly or indirectly introduce feces into the gardens. To learn more, see “[Compost Tips for the Home Gardener](#)”.

## Seed Sources

There are many sources of seeds available for vegetable gardeners in today’s market. Each option has its pros and cons. Local box stores, hardware stores, and feed stores offer an effective and generally consistent source of seasonal seed selection. However, these stores may be limited to specific varieties that are more traditional. More traditional varieties may not offer the same level of disease resistance found in newer varieties. Though local stores sometimes offer heirloom and/or organic varieties, their seeds may be less suitable for our area as they are purchased on a larger regional scale. Alternatively, online seed markets



offer many new varieties that are disease resistant and may offer quicker harvests. If they shop online, gardeners can consider open pollination and new colors and sizes. The downsides are that these may sell out, may not have been trialed in our region, and are not offered as heirloom varieties.

Seed libraries or local seed exchanges may be another alternative to purchasing from specific companies. This is very effective and usually promotes community engagement when well organized. The biggest challenges with seed exchanges are storage space, organizational efforts, labeling, and seed rotation to prevent the oldest seeds from remaining in the catalog. Seed exchanges may be free, charge a lump sum fee each season, ask for monetary donations, or return some seeds saved from your harvest.

## Seed Saving

If you plan to start saving seeds, it is best to choose open-pollinated (heirloom vegetable) varieties so the new plant will have characteristics similar to the parent plant. It is not recommended to save seeds from hybrid or GMO varieties of plants because they will not grow as their parents did.

The easiest seeds to save are seeds that dry when mature. The seeds naturally dry on the plant so wait until the seeds turn brown and dry on the plant, collect them, and remove the seeds from the seed pod (Figure 3). Other examples of dry seeds that are also easy to save are lettuce, okra, basil, mustard, sunflower and corn.



Figure 3. Papaya seeds can be scraped into a bowl of water to help clean them.

Credits: Tiare Silvasy, UF/IFAS

Wet seeds are held within the fleshy area of moist fruits; many of these seeds are cross-pollinated. Tomato, cucumber, squash, pepper, eggplant, watermelon, and papaya are just a few examples of fruits with wet seeds. To save wet seeds you must remove them from the fleshy fruit and try to get the pulp off. It is okay to clean them in a bowl of water and then dry them on a paper bag. Tomato and other wet seeds can be fermented in a jar with a breathable lid for one to four days to help remove the jelly-like seed coating that prohibits germination.

Store seeds in a cool dry place in paper packets or plastic bags. Humid conditions increase seed moisture and reduce seeds shelf life. Alternatively, seal seeds in an airtight jar and place them in a refrigerator. Seeds have a shelf life of only one to five years, so grow them out and save seeds every couple of years to preserve your favorite varieties.

## Planting

### Starting your Garden

Once you have made a plan and selected your seeds or transplants, it is important to map out your garden prior to planting. Take into consideration the direction of your garden and what time it gets the most sunlight; most edible gardens require at least 6 hours of direct sunlight. This allows you to provide optimum spacing between rows, consider plant height to prevent the shading out of shorter crops, plan for crop rotation between seasons, and consider other options such as companion planting. Once you have a set plan, you can start with seeds or transplants. You will want to make your rows and remove weeds prior to planting. Remember, weeds can promote pest and disease. Breaking up the soil and removing old debris and root mats will help your new vegetable plants spread their roots. Seeds should not be planted more than twice their diameter deep; usually planting  $\frac{1}{8}$  to  $\frac{1}{2}$  inch below the soil surface allows adequate germination. It is also important to not pack soil too tightly over the top of the seeds or transplants. It takes practice to properly transplant vegetables. Some vegetables, including tomatoes, should be planted a little deeper. Others should be planted just at or above their root ball so that the roots may uptake air and carbon dioxide.

### Pests

Only 1% of insects worldwide are considered pests. However, it is almost guaranteed that you will find one or more feeding on your garden. Be sure to inspect your plants at least weekly, and do not forget to look at the underside of the leaves. If you find things that you are unsure of, reach out to your local Extension office for help

with identification and treatment recommendations. If you choose to apply pesticides, use Integrated Pest Management (IPM) principles: identify the pest, consider alternative control methods such as physical removal, and always read the product label before applying pesticides. Remember, the label is the law, and you must follow the instructions on the label. Do not forget to protect the good bugs such as pollinators and predatory insects, who eat garden pests. For information on organic gardening practices, see “[Natural Products for Managing Landscape and Garden Pests in Florida](#).”

## Weed or Pollinator Plant?

Although weeds can compete with your edible crops and harbor pests and diseases, not all weeds are bad. Weed location can affect the impact on your garden. Though some native Florida plants—undesirable due to their growth patterns—may be considered weeds, their presence may actually benefit your garden by, for example, attracting pollinators.

Butterfly milkweed (*Asclepias tuberosa*)—also referred to as butterfly weed or Indian paintbrush—is an annual pollinator that attracts butterflies, bees, other insects, and hummingbirds. It can serve as the larval host for several butterfly species including monarch butterflies (*Danaus plexippus*), soldier butterflies (*Danaus eresimus*), and queen butterflies (*Danaus gilippus*). After establishment, the milkweed’s flowers bloom red, yellow, or orange. It self-seeds and, as a result, may begin to grow outside of the preferred planting area. Another annual pollinator, Spanish needles (*Bidens alba*) or beggar-ticks, also attracts bees and butterflies. It has little, white flowers that are edible, and its seeds have barbs that can stick to clothing. The *B. alba*, along with other plants, hosts the larval stage of the dainty sulfur butterfly (*Nathalis iole*). Passionflower (*Passiflora incarnata*) is a perennial native vine that attracts butterflies and bees. It produces purple or lavender flowers and can serve as the larval host for a variety of butterflies, including Florida’s state butterfly: the zebra longwing (*Heliconius charithonia*). The vine’s growth can be aggressive. It climbs and spreads, and each flower that blooms only remains for about a day. For a full description of butterfly plants, see “[Butterfly Gardening in Florida](#).”

Other examples of plants that are great for pollinators and aesthetics in Florida gardens include coneflowers, salvias, and pentas. The purple coneflower (*Echinacea purpurea*) is a perennial pollinator that attracts butterflies and, despite its common name, does not always produce purple flowers. Likewise, salvias come in a variety of colors (and shapes

and sizes). They come in annual and perennial selections; each attract butterflies and hummingbirds. Pentas are perennials that attract hummingbirds and butterflies; they bloom in a variety of colors including pink, red, and white flowers (Figure 4).



Figure 4. Pentas are Florida-friendly plants that help attract beneficial insects to your garden.

Credits: Tiare Silvasy, UF/IFAS

## Food Safety in the Garden

Many people grow their own produce to introduce nutritious, fresh foods into their diets. The health benefits from eating vegetables are numerous. However, no one wants to introduce foodborne pathogens into their diets. Viruses, bacteria, and microbes can cause an array of foodborne illnesses. Consumers may contract pathogens found in produce—including *Salmonella* and *Escherichia coli*—by a variety of ways. When gardening, it is best to consider how to reduce the risk of exposure to foodborne pathogens from the beginning of your garden design. Factors and sources to consider include water, domestic and wild animals, compost, tools, and people; a brief overview of things to consider for each will be discussed, focusing on pre-planting until harvest. These tips will help reduce the exposure for foodborne pathogens and illnesses in the garden but cannot remove all risk.

## Water

The water quality and source significantly impact the possibility of introducing pathogens. When designing your space, consider whether your water will come from a municipal water source, a reclaimed water source, or a well. If your water source treats its water, you should consider how the water is treated; most local health departments will test for the counts of bacteria and other contaminants in water intended for human consumption. It is recommended

that you test your water annually, especially if using it on produce and if it is from a well or reclaimed source. Remember that these tests may not indicate viral or microbial counts.

Grey water that has been treated often runs through a purple pipe. The Florida Department of Environmental Protection set guidelines outlining the scenarios in which grey water may safely be used on vegetables. If the vegetable is going to be peeled, cooked, or thermally processed, reclaimed water is okay to use. Also, if the vegetable is watered indirectly—i.e., through drip irrigation—and the water will not directly contact the vegetable, then you may use this water source. However, depending on the crop and irrigation system, you might need to consider an alternative water source.

The best way to manage contaminants in water is to maintain good practices. These include:

- Testing the water annually.
- Avoiding grazing livestock in areas where feces may enter groundwater or be close to the well-head.
- Providing areas of healthy vegetation to filter out contaminants around water recharge areas.

## Domestic and Wild Animals

Animal and human feces are the most common contaminants of produce. It is important when planning out your space to consider if you will keep livestock or poultry and where, which way the water flows on your property, how manure will be managed, and the potential for domestic and wild animals to enter the space.

Whether you are in a residential neighborhood trying to keep feral cats from using your raised beds as litter boxes or dealing with wild animals—like deer, rats, and squirrels—moving through your garden, try to keep your garden space animal-free to greatly reduce the risk of food-borne pathogens.

The most important question you must ask when thinking about animals and your garden is: how can I reduce the risk of feces entering my garden through the water? Raising chickens has become more popular within urban areas where space is at a premium. While most urban chickens cannot free range, the movement of feces through shoes, hands, and water should be considered when planning how far to place the coop from the garden, as should the order in which you will complete chores. If chickens will

range freely, they should not be allowed in the garden space before harvest or in-between seasons.

Fences will keep larger animals away from the garden, but nuisance animals like neighborhood cats are difficult to control. Motion sensor irrigation sprinklers and other devices can scare nuisance animals away. Moth balls are a pesticide that are not labeled for outdoor use and should never be used to keep nuisance animals from a garden space. Refer to the publication [“The Facts About Mothballs”](#) for more information.

## People

The final factor to consider when addressing food safety in your garden is the human factor. It is important to consider how the gardener may introduce pathogens to growing produce. This may be through damaging the fruit with fingernails or tools or inadvertently moving feces or manure into an area. Gardeners should avoid working with compost and soil and then touching produce before washing their hands. Clothes, shoes, and tools can also become contaminated when working with manure, so care should be taken to keep these items clean or disinfected before moving throughout your space. Routinely disinfecting tools has the added benefit of potentially reducing the spread of plant pathogens.

The mentioned factors—water, animals, soil, and people—should be considered when trying to reduce the risk of harmful pathogens entering a garden space. Planning your garden space and your garden routine with these in mind can significantly decrease the chance of foodborne pathogens from ending up in your garden and thus on your table.

## Basic Food Safety and Preservation

Once you bring the produce indoors, food safety continues to be of the highest priority. Some items will spoil quickly, some require refrigeration and others should be stored at room temperature. Many vegetables should be washed immediately before refrigerating. Fruits should be washed before use.

Florida’s warm temperatures may reduce storage times for items that are best stored unrefrigerated. Items that would be stored in cellars in northern climates may require refrigeration in Florida to keep them from decaying. Refrigeration may affect quality. To identify storage temperatures for individual products, go to the [“United States](#)



A few general storage guidelines:

- Store potatoes, onions, tomatoes, winter squash, and pumpkins without refrigeration.
- Once fruit or vegetables have been cut, peeled, and prepared, they should be stored in the refrigerator within two hours of preparation.
- Without exception, low acid vegetables must be canned in a pressure canner. Follow procedures listed in current USDA documents. Following other recommendations could cause serious illness. Current USDA recommendations can be found at [https://nchfp.uga.edu/how/can\\_home.html](https://nchfp.uga.edu/how/can_home.html).
- When handled as recommended, foods can be stored safely in the freezer. Items stored below 0°F are safe to consume if they were safe when they were added to the freezer. Items with high water content do not freeze well. They will be safe, but the quality may not be acceptable. Rotate foods so that they are used within a year of freezing for the best quality.

Serving healthy fruits and vegetables from your garden also depends on preparation. Use or preserve produce as soon as possible after harvesting. Add less salt, sugar, and fat when preparing your meal. Use herbs and spices to add desired flavor. Protect nutrients by steaming or roasting. If boiling vegetables, when possible, use the water in the recipe. Use different cooking methods and include raw vegetables for variety. Be careful not to overcook; some nutrients are heat sensitive.

## Summary

Gardens provide a variety of physical and mental health benefits when incorporated into our daily lives. Through gardening, we can try new vegetable types and varieties, add physical activity to our daily routines, and eat healthier by including home grown produce in our meals.

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