HAWAI'I ISLAND HOMEGROWN: START-UP GUIDE FOR AN ORGANIC SELF-RELIANCE GARDEN











Hawaiʻi Island Homegrown: Start-up guide for an organic self-reliance garden

By Craig Elevitch



Permanent Agriculture Resources PO Box 428, Holualoa, HI 96725 USA Tel: 808-324-4427; Fax: 808-324-4129 E-mail: par@agroforestry.net Main web site: www.agroforestry.net

© 2009 Craig Elevitch

Reproduction

Copies of this publication can be downloaded from www.agroforestry.net/pubs. Reproduction and dissemination of this publication in unaltered form for educational or other non-commercial purposes are authorized without any prior written permission from the copyright holder provided the source is fully acknowledged (see recommended citation below). Reproduction of material in this publication for resale or other commercial purposes is permitted only with written permission of the Director, Permanent Agriculture Resources, PO Box 428, Holualoa, Hawai'i, 96725, E-mail: par@agroforestry.net.

Recommended citation

Elevitch, C.R. 2009. Hawaiʻi Island Homegrown: Start-up guide for an organic self-reliance garden. Permanent Agriculture Resources, Holualoa, Hawaii. www.agroforestry.net/hhfa

Acknowledgements

This publication evolved out of the Hawai'i Island Homegrown: Food Self-Reliance Workshops in 2008–09 and was inspired by workshop presentations by Tom Baldwin, Melanie Bondera, Cher Capps, Shekinah Carrillo, Jim Channon, Andrea Dean, Nelson Denman, Ben Discoe, Keola Downing, Kalamakani Francisco, Renee Gronwall, Rev. Jetton, Hugh Johnson, Keiki Kekipi, Dash Kuhr, Biko Long, Ken Love, Tracy Matfin, Pua Mendonca, Scott Middlekauff, Gene Nolan, Bonnie Perata, Britton Price, Geoff Rauch, Nancy Redfeather, John Schinnerer, Evan Short, and Kalani Souza.

Photo opportunities were generously provided by Shannon Casey, Ben and Deb Discoe, Una Greenaway, gardeners of Hāliʿimaile Community Garden, Gerry Herbert, Holuakoa Gardens and Café, Island Naturals Market, Peneku Kihoi, Ken Kotner, Margaret Krimm, Barry Levine, Malaʿai: The Culinary Gardens of Waimea Middle School, Karin Payne, Mayumi Oda, Nancy Redfeather, Amanda Rieux, Confessor Riviera, Leon Rosner, Evan Short, Taylor Thornton, Kim Wilkinson, and Fumi Yoshimoto.

Thoughtful review was given by Ben Discoe, Deb Pun Discoe, BreeLyn DuPertuis, Ngaire Gilmour, Scott Middlekauff, Karen Payne, and Pedro Tama.

Sponsors

This publication and the Hawai'i Island Homegrown: Food Self-Reliance Workshops (2008–09) were sponsored by the Hawai'i County Resource Center and the County of Hawai'i Department of Research and Development. The statements, interpretations, and conclusions expressed in this publication are those of the author and do not necessarily reflect the views of the sponsors.

Contents

Introduction
Why grow food at home?
Common obstacles to homegrown food5
Short- and long-lived food plants 6
Know your site 8
Start small and close by9
Compost, mulch, and other sources of fertility 10
Seeds and other plant materials12
Pests and diseases 13
Other tips for success14
Supporting homegrown food14

Introduction

Many people would like to be growing more of their own food, but don't know where or how to start. This guide is for people with little or no organic gardening or farming experience, living on a typical landscaped house lot on Hawai'i Island. The guide offers tips on how to successfully begin gardening and includes a range of information resources for continued learning.

Why grow food at home?

Taste and nutrition. Homegrown is the freshest and therefore tastiest and most nutritious you can get. There is nothing like the flavor and vitality of freshly picked fruits and vegetables. Research has shown that produce that has been on the store shelf for a few days has significantly lower nutritional value as compared with freshly harvested produce.

Food self-reliance. Homegrown gives you control over your food. Currently about 85% of our island's food is imported by ship or airplane from distant locations, and there is just a few days worth of food in stores at any given time. Many residents are concerned about economic, ecological, or health issues that might slow down or cut off our food imports. Many of our Hawai'i Island Community Development Plans prioritize growing more of our food locally, supporting farms, and protecting agricultural lands. An event that restricted food imports might also curtail imports of fuel, fertilizer, and chemicals that are used commercially to produce and distribute food on the island.

Food safety. Growing food at home gives you full knowledge of how the food was grown and handled from field to plate. Most of us eat store-bought food that was grown and processed with unfamiliar methods by strangers in anonymous, distant locations. This distance between field and plate has caused growing concern about the safety of our food.



Margaret displays a basket of freshly harvested veggies from her organic garden in Hōnaunau. Homegrown food is fresh, flavorful, and nutritious.



There are dozens of varieties of avocado, banana, and papaya on Hawai'i Island, many of which have unique and outstanding qualities. There is also a huge number of vegetables varieties for lettuce, beans, squash, and many others, some of which were selected by fervent gardeners to suit our island's specific growing conditions.

Cultural integrity. A personal home garden reflects crops and varieties that suit individual preferences. On the other hand, large commercial growers generally grow just a few crop varieties, those that are best suited for large-scale production and long-distance distribution. The shrinking diversity of crops available in stores around the country has tended to diminish cultural connections to unique local foods and dishes. Since food is integral to cultural expression, growing our own food allows us to reconnect our culinary lives to our cultural/social identities.

Household economy. Growing food at home can decrease the percentage of the household budget devoted to purchasing food. Most home gardeners produce seasonal over-abundance of many crops, which can be shared with friends and neighbors or sold. By producing an abundance of food at home, the benefits to household economies overflows into neighborhood communities.

Minimizes carbon footprint. Because of our island's remoteness, our imported food travels thousands of miles from food processors and distributors on the U.S. mainland. Some of that food is transported hundreds or thousands of miles (e.g., from China) to reach the mainland food distributors. Once the food arrives on store shelves on Hawai'i Island, many of us drive our cars miles to buy it, burning more fuel. By growing food at home, we can eliminate the fuel consumed to transport, process, refrigerate, and store it. We may use some energy to grow food, but that energy may be saved by turning unused lawn or purely ornamental landscaping into fruit and vegetable gardens.

Web resources

Hawai'i Island Community Development Plans (CDP) are documented here: www.hcrc.info

Food safety issues are covered on many government web sites including:

www.ctahr.hawaii.edu/foodsafety-ces
www.hawaii.gov/health/healthy-lifestyles/foodsafety

Slow Food Hawai'i supports local, national, and international efforts on behalf of sustainable agriculture and rediscovery of the pleasures of the table: www.slowfoodhawaii.org

Hawai'i Island banana and avocado varieties and much more local tropical fruit information can be found at:

www.hawaiifruit.net/indexposter.html

Books

Slow Food Nation: Why Our Food Should Be Good, Clean, and Fair by Carlo Petrini. 2007. Rizzoli Ex Libris. Covers how controlling food resources locally empowers communities.

Animal, Vegetable, Miracle: A Year of Food Life by Barbara Kingsolver, Camille Kingsolver, and Steven L. Hopp. 2008. Harper Perennial. A family's engaging journey through a one-year local diet.

Harvest for Hope: A guide to mindful eating by Jane Goodall, Gary McAvoy, and Gail Hudson. 2006. Wellness Central. Speaks to the social significance of our food choices.

Pathways to Abundant Gardens: A pictorial guide to successful organic gardening by Craig Elevitch. 2007. Permanent Agriculture Resources.

An inspirational book about growing local and sustainable food.

Periodicals

Acres U.S.A., a monthly magazine. Acres U.S.A., P.O. Box 91299, Austin, TX 78709. North America's oldest, largest magazine covering commercial-scale organic and sustainable farming. Web: www.acresusa.com

Mother Earth News. Ogden Publications, Inc., 1503 SW 42nd St., Topeka, Kansas 66609-1265. The original magazine for sustainable living, including organic gardening. Web:

www.motherearthnews.com

Permaculture Activist. Permaculture Activist, PO Box 5516, Bloomington, IN 47407. Information about permaculture design, edible landscaping, bioregionalism, ecovillage design, aquaculture, natural building, earthworks, forestry, soils, agriculture, urban sustainability, renewable energy, regeneration & restoration. Web: www.permacultureactivist.net

Common obstacles to homegrown food

Time. Most people today have very busy schedules earning a living, going to school, or taking care of children or other family members. Spending time growing food at home has become a low priority, especially when food is readily available in stores. The percentage of ready-to-eat food purchased has been increasing steadily over the years, meaning that we are also spending less time preparing tasty dishes. **Solution:** We need to find ways to grow food in the same amount or less time than we already spend on maintaining home landscapes (see "Short- and long-lived food plants").

Knowledge and experience. For some people, it has been generations since food was grown at home and the how-to knowledge has been lost.



Time constraints prevent most people from having a large vegetable garden. However, we can grow food gardens that take no more time or money than conventional ornamental landscapes. Gerry shows his perennial collard patch to a visitor. Honalo.

Those who have grown up on the mainland and migrated to Hawai'i may not have any experience growing food in a tropical environment with a different climate, soils, and crops. *Solution:* Start learning on a small project, while learning from neighbors, volunteer projects, workshops, and books.

Soil. On Hawai'i Island, there are many places where loose soil is shallow or nearly absent. These areas include, but are not limited to, North and South Kona, South Kohala, Ka'ū, and Puna. *Solution:* The key to tropical soil fertility is organic matter, the living and decaying plant and animal matter that is naturally cycled through soil (see "Mulch, compost, and other sources of fertility").

Land. Condo dwellers, renters, and many

others lack access to land for gardening. In urban areas, open land suitable for gardening can be scarce. *Solution:* Where land is scarce, small plots and container gardens can be used to grow substantial amounts of produce and herbs (see "Start small and close by").

Plant materials. Aside from mainland vegetable seed companies, plant materials for tropical and subtropical species of vegetables and fruits can be hard to find. *Solution:* Investigate unconventional plant sources such as seed exchanges, farmers' markets, and even neighbors (see "Seeds and other plant materials").

Short- and long-lived food plants

With our mild tropical climate in Hawai'i, we are very fortunate to be able to grow most food plants from both temperate and tropical climates. Temperate food plants include many table vegetables such as lettuce, cabbage, tomato, cucumber, corn, squash, spinach, sunflower, radish, peas, and beans. These plants have relatively short life cycles, usually 2–9 months. These short-lived plants are adapted to completing their life cycle during the few months of spring, summer, and fall. Since we



Local gardeners are a great source of knowledge and locally appropriate plant materials. Evan teaches a workshop about growing a very diverse food garden right outside the back door. Hāwī.

have a mild winter in Hawai'i (except at high elevations above 4–5,000 ft [1,200–1,500 m]), most people can grow temperate vegetables year round. A garden of temperate vegetables can start producing food within a few weeks, and with regular care and maintenance, can produce continually. A garden filled with short-lived crops is constantly changing, with certain plants completing their life cycle (by going to seed) and others beginning anew—with commensurate demands on the time and energy of the gardener.

Certain temperate food plants can produce for one or two years or even longer in our climate. These long-lived crops include, kale, collard, peppers, basil, parsley, asparagus, chard, and many others. These require less labor, because they don't need to be replanted as often. Many temperate fruits (e.g., apple, plum, peach) can also grow well in Hawai'i, although many require a certain number of chill hours (temperature below 45°F [7.2°C]) in order to set fruit. The amount of chill required for producing many temperate fruits is only experienced at higher elevations in Hawai'i.

We can also take advantage of the world of tropical food plants. Examples are staples such as taro, sweet potato, yam, and cassava, legumes such as winged bean and pigeon pea, and vegetables such as chayote and tree tomato. Many of these are longlived. There is also a wide range of long-lived perennial leafy vegetables that are unfamiliar to most people, but are tasty and nutritious, including chaya, sissoo spinach, Okinawan spinach, edible hibiscus, and cassava (also produces edible tuber).

Many tropical fruits produce for years and even decades, and can form the foundation of a homegrown diet. The starches include banana (dessert and cooking types) and breadfruit. Nuts include macadamia, pili, Malabar chestnut, and coconut. There are innumerable fruits that can be included in a home garden such as pineapple, papaya, avocado, mango, lychee, starfruit, passion fruit, dragon fruit, jackfruit, fig, guava, and every kind of citrus fruit. All of these can be accommodated in small gardens by keeping them pruned to a small size.

Books

Cornucopia II: A source book of edible plants by Stephen Facciola. 1998. Kampong Publications. Comprehensive coverage of the edible plants of the world.

Hawai'i Organic Gardening Guide

by Shunyam Nirav. June 1992 (3rd edition). New Dawn Environmental Service. Now out of print, this is a classic guide to crops for Hawai'i.

Fruits of Warm Climates by Julia F. Morton. 1987. Comprehensive coverage of fruits. Available for free online:

www.hort.purdue.edu/newcrop/morton/



Top: A garden of short-lived temperate vegetables such as this one (sunflower, beet, lettuce, daikon) produces lots of food, but requires constant care such as weeding and replanting. Bottom: A garden of tropical food plants (sweet potato, cassava, banana, breadfruit) requires less weeding and replanting, because of the long-lived species.

> Manual of Tropical and Subtropical Fruits by Wilson Popenoe. 1920. The Macmillan Company. A very useful reference for tropical fruits. Available for free from Google Books: books.google.com

Web resources

HawaiiFruit.net includes a wide range of information about fruits suitable for Hawai'i: www.hawaiifruit.net

"Leaves to live by: Perennial leaf vegetables" gives an introduction to long-lived leafy vegetables for the tropics: www.agroforestry.net/pubs/ Leaves_to_Live_By-Elevitch.pdf

Know your site

Getting to know the environment where you live is the best way to begin the process of growing food. Knowing about your soil, rainfall, elevation, wind direction, and other environmental conditions will help determine what to plant and what might need to be done to improve conditions for plants and animals. The environment includes: **Soil.** Soils vary tremendously across the island, from sandy clays to coarse soil in lava rock. A soil test can help determine the nutrients available in your soil.

Rainfall. Precipitation ranges from almost none to over 200 inches (5,000 mm) per year on Hawai'i Island. Rainfall maps based on historical data can give you a good average value for your region.

Elevation. Average temperature varies with elevation above sea level. In general, the higher the elevation, the cooler the average temperatures are.

Aspect. Aspect is the direction a slope faces (e.g., south, west, etc) and partly determines the amount of sunlight exposure on a site.

Wind direction. The prevailing wind direction, particularly on the windward side of the island will help determine where windbreaks should be planted.



Margaret holds up a photograph of her backyard being leveled by a bulldozer before she started her garden.



Left: A small vegetable garden near the entrance to a home tends to get daily attention. Right: Expand your garden only as you develop successful methods and routines, and know that you can handle the expansion.

Books

Atlas of Hawai'i by Sonia P. Juvik. 1998 (3rd edition). University of Hawaii Press. Includes many environmental maps, including rainfall, elevation, and wind maps.

Introduction to Permaculture by Bill Mollison with Reny Mia Slay. 1997. Tagari Publications, Tyalgum, Australia. A key reference to site design in harmony with natural processes.

The One-straw Revolution: An introduction to natural farming by Masanobu Fukuoka. 1978. Rodale Press. A very influential book about a philosophy of natural farming based on observation of the natural world.

Rodale's All-New Encyclopedia of Organic Gardening: The Indispensable Resource for Every Gardener edited by Fern Marshall Bradley and Barbara W. Ellis. 1993. Rodale Books. A comprehensive guide to organic gardening and gardening in general.

Web resources

A free guide for soil testing from the University of Hawai'i entitled, "Testing Your Soil Why and How to Take a Soil-Test Sample"

www2.ctahr.hawaii.edu/oc/freepubs/
pdf/AS-4.pdf

Google Earth, a free application, is a wonderful way to familiarize yourself with your neighborhood earth.google.com

USDA NRCS soil survey data is available online. You can also contact your local USDA Natural Resources Conservation Service office for more information. websoilsurvey.nrcs.usda.gov/ app/HomePage.htm

Start small and close by

If you are not already growing food, then starting small and close by the house is the best strategy for success. Many people get excited about gardening and they put lots of effort into a relatively large area, only to be overwhelmed with maintenance such as weeding, watering, replanting, etc., eventually becoming frustrated and abandoning the project. Starting small allows you to learn what works for you in terms of crops, methods, and your ability to keep up with the work. As you get some experience under your belt, you can expand on the area with a better sense of your limitations. It also allows you to experiment, without risking large losses of time, space, or money. Planting close by your home allows you to keep a watchful eye on your project several times a day. "Out of sight, out of mind" applies especially to garden plots, so putting your new planting near where you naturally spend time daily will remind you to give

attention to the garden when it needs it, such as watering, weeding, replanting, and harvesting. A garden close to the house improves your ability to control wild animals that can cause problems, such as chickens, turkeys, and pigs. Moreover, having a garden or animals near the house will allow you to easily experience your garden and learn about its needs and cycles.

Some examples of starting small near the house include:

- A container garden in large nursery pots can be placed next to the lanai, front door, or kitchen door, and can produce a good amount of food, depending on the number of containers.
- A small garden bed, about 3 ft x 10 ft can provide abundant kitchen greens and herbs.
- A small raised garden bed, such as one built on a platform fashioned from used pallets, is a good height for working without having to squat or stoop over.

All of these examples can start small and can be scaled up over time, as desired.

Books

How to Grow More Vegetables (and fruits, nuts, berries, grains, and other crops than you ever thought possible on less land than you can imagine): A primer on the life-giving sustainable grow biointensive method of organic horticulture by John Jeavons. 2006 (7th edition). Ten Speed Press. A classic in the field of sustainable gardening.

Web resources

"Start small...and expand on successes" is a short article covering this topic: www.agroforestry.net/ overstory/overstory5.html

Compost, mulch, and other sources of fertility

Decomposing organic materials are the primary source of fertility in organic gardens. The richest source of organic materials is plant matter such as tree and garden trimmings, grass clippings, weeds, and kitchen scraps. These can be used directly in the garden as mulch or indirectly after composting. Mulch is a layer of decomposing organic matter on the soil surface. Mulching improves nutrient and water retention in the soil, encourages favorable soil microbial activity and worms, and suppresses



Top: Healthy, mulched soil is dark and holds moisture (left), whereas bare soil loses its nutrients and moisture faster. Bottom: Composting can turn yard trimmings into nutrient-rich humus.



Properly applied mulch can turn a lawn into a fruit and vegetable garden. This mulch is in the process of being applied, with cardboard placed directly over the grass (left), followed by a thick layer of chipped yard trimmings (right). Hāwī.

weed growth. When properly done, mulching can significantly improve the well being of plants and reduce maintenance as compared to bare soil culture.

Composting is a controlled, intensive decomposition of organic matter into a form that is rich in available nutrients. The composting process involves a minimum volume of organic material with a certain ratio of nitrogen-rich (green leaves, manure) and carbon-rich (woody) materials at the appropriate moisture and air content. When done correctly, compost generates heat from intensive microbial activity until it decomposes into a dark, rich, finished humus. Compost can either be mixed into garden soil, or used as mulch, preferably underneath other mulch materials so that it does not dry out.

Both mulching and composting are easy to carry out, but there are some principles to learn. See the links below for further information. Other sources of fertility include vermicompost, animal manure, and ground covers. Vermicompost is an ambient temperature compost where worms do much of the decomposition of the organic matter. Animal manures from poultry, rabbits, goats, and other livestock are rich sources of nutrients. Ground covers, especially leguminous plants, build fertility as they grow.

Finally, sometimes it is necessary to supplement soil nutrients that are lacking with mineral amendments that are brought in from elsewhere. These include crushed coral (calcium), rock phosphate and bone meal (phosphorous sources), green sand and wood ash (potassium source) and basalt rock powder (wide range of minerals). The need for these amendments can be determined by nutrient deficiency symptoms in your plants, a plant tissue analysis, or a soil test.

Books

How to Have a Green Thumb Without an Aching Back: A new method of mulch gardening by Ruth Stout and Leta Macleod Brunckhorst. 1990. Fireside. Describes gardening with mulch in a fun, narrative style.

The Rodale Book of Composting: Easy methods for every gardener edited by Grace Gershuny and Deborah L. Martin. 1992 (revised edition). Rodale Books. An updated version of Rodale's Complete Book of Composting (1960), this book covers all aspects of composting.

Teaming with Microbes: A Gardener's Guide to the Soil Food Web by Jeff Lowenfels and Wayne Lewis. 2006. Timber Press. An excellent guide to soil health from a biological perspective.

Worms Eat My Garbage: How to set up & maintain a worm composting system by Mary Appelhof. 1997 (revised edition). Flower Press. A seminal work in worm husbandry at home.

Web resources

"Sheet Mulching: Greater Plant and Soil Health for Less Work" gives detailed instructions about mulching:

www.agroforestry.net/pubs/Sheet_ Mulching.html

Compost How-to: www.compostinstructions.com

"Recommended Plant Tissue Nutrient Levels" includes a table for most fruits and vegetables for Hawai'i and an order form for tissue analysis: www.ctahr.hawaii.edu/oc/freepubs/ pdf/pnm4.pdf

Seeds and other plant materials

Many food plants can be propagated from seed and many are propagated from vegetative parts such as cuttings or offshoots. Temperate vegetables are usually propagated from seed (e.g., lettuce, corn, beans). Seed is very handy because for most species it can be dried and stored cool and dark in an airtight container for years or decades, depending on the species and the storage conditions. Each seed is a plant embryo with initial stored nutrients in "suspended animation" until the conditions for germination occur. This suspended state allows seed to be stored from year to year and easily transported. There are numerous seed companies on the U.S. mainland that supply many types of vegetables and numerous varieties. Many of these mainland-grown varieties are adapted to mainland conditions, rather than conditions in Hawai'i. To get the best varieties for Hawai'i, including selections made here in Hawai'i, check with neighbors



Some of the best seeds are grown and shared locally through seed exchanges, among friends, and at farmer's markets. Ideally, use varieties that have been selected and proven for local conditions over many seasons.



Left: Many tropical food plants are only propagated from vegetative parts, including Hawaiian canoe plants such as taro, banana, and breadfruit. Right: Taro tops (*huli*) ready for replanting.

and participate in local seed exchanges. Vendors at farmer's markets will sometimes sell seed or seed-lings of locally adapted vegetables.

Many tropical plants are propagated from vegetative parts. These include taro, sweet potato, cassava, banana, breadfruit, pineapple, sugar cane, and ginger. For these plants, you'll need to find growing plants in order to propagate more of them. Certain fruits such as fig, mulberry, and dragon fruit are propagated from cuttings (branches of a certain size, depending on species), which can take root and grow into separate plants that are genetically identical to the original plant.

Many tropical fruits can be grown from seed, but are usually grafted. This means that a small vegetative part such as a twig from a specific variety (e.g., 'Sharwil' avocado, 'Rapoza' mango) is made to graft onto the tissue of a suitable seedling. In this case the root system of the plant is grown from a seed, and the part above the graft union is identical to the variety it originated from. For more information on propagation, please see the resources below.

Books

Seed to Seed: Seed saving and growing techniques for vegetable gardeners by Suzanne Ashworth. 2002. Seed Savers Exchange, Decorah, Iowa. An extensive seed-saving guide with specific techniques. Breed Your Own Vegetable Varieties: The gardener's & farmer's guide to plant breeding & seed saving by Carol Deppe. 2000 (revised edition). Chelsea Green. A scientific as well as practical guide to breeding your own vegetable varieties.

Rooting Cuttings of Tropical Trees by Alan Longman. 1993. Commonwealth Science Council. Introduction to vegetative propagation of trees for the lay person. www.fao.org/docrep/006/ ad231e/AD231E00.HTM

Pests and diseases

Most organic gardeners consider pests and diseases to be a symptom—as opposed to a cause—of poor plant health. From this perspective, pest and disease prevention focuses on plant health, which depends on these factors:

Growing the right plants for your environment. Varieties that are well suited to your soil, rainfall, temperature, and other environmental factors will tend to have better health than those that are not adapted to your conditions.

Soil health. Healthy soil is the basis for vibrant plants, and the basis for healthy soil is organic matter added as mulch or compost.

Biodiversity. Growing a mixture of different plants and varieties tends to suppress pests and diseases relative to growing a single crop on a large scale.



Top: A well-balanced soil with plenty of decomposed organic matter is the basis for plant health. Middle: A diverse garden is less prone to outbreaks of pests and disease than large, single crop plantings. Bottom: A diverse food forest of banana, cassava, taro, jackfruit, jaboticaba, and fig (left to right).

If you already have a pest or disease problem (you are past the point of prevention), then there are organic options for treatment. When faced with such problems, many gardeners opt to start over with a different crop or plant variety.

Books

Eco-Farm, An Acres U.S.A. Primer: The definitive guide to managing farm and ranch soil fertility, crops, fertilizers, weeds and insects while avoiding dangerous chemicals by Charles Walters. 2003 (3rd revised edition). Acres USA. A detailed, authoritative primer for the paradigm shift towards organic and sustainable agriculture.

Weeds, Guardians of the Soil by Joseph A. Cocannouer. 1980. Devin-Adair. Shows how weeds contribute to garden health and give clues as to soil conditions.

Web resources

Soil Biology Primer: soils.usda.gov/ sqi/concepts/soil_biology/biology.html

Hawaii Plant Pests and Diseases by Dr. Scot Nelson: www.plant-doctor.net

University of Hawai'i Master Gardener program: www.ctahr.hawaii.edu/ ctahr2001/UrbanGardenCenter/ index.html

Other tips for success

Grow what you love to eat. Growing your favorite foods will give you the enthusiasm and fortitude you will need to succeed.

Grow what thrives naturally in your area. Growing plants that thrive in your conditions is very satisfying, versus the frustration that can come out of growing plants that are not well suited to your growing conditions.

Learn to love to eat what loves to grow where you live. A combination of the two tips above, this philosophy is a real winner.

Gardeners garden because they find it rewarding and satisfying. It's probably best to find a way to grow food at home that suits you. For example, if you enjoy tending an annual garden, then that is a good place for you to start. Others might consider starting with fruit trees or growing long-lived shrubs with edible leaves. Finding ways to grow food enjoyably increases your chances of success.

Supporting homegrown food

There are many options for supporting homegrown food in addition to growing your own food. These include:

- Buy or trade for homegrown food from your neighbors. Neighborly exchange of food is an integral part of local culture in Hawai'i, inspiring a sense of cohesive community.
- Volunteer to help a neighbor with their garden. Sharing work with neighbors empowers them and thereby benefits the community as a whole.

- Community gardens are an option for those who don't have access to land where they live. Support the establishment of community gardens throughout the island.
- Buy from small producers at local farmer's markets. Many vendors at our local farmer's markets sell surpluses from their own home gardens. Support enthusiastic gardeners financially when the opportunity arises.
- Community Supported Agriculture (CSA) is a way to support local growers by committing to regular produce purchases.
- Donate money or volunteer at school gardening projects. School garden projects give kids an opportunity to learn about growing food, which they can teach to their family.
- Insist on locally grown from retailers and restaurants. Spend your hard-earned food dollars locally and you ensure that local gardeners and farmers can afford to continue growing food, while keeping your money circulating in your local community, rather than leaving the island to buy imported food.



Beyond growing food at home, you can support homegrown food by patronizing local vendors at farmer's markets. Hōlualoa.



Left: Amanda (left side of photo) leads students in a trust building exercise at a school garden. Waimea. Right: Another way to support local growers is to buy only locally grown produce at your favorite store.

Books

Sharing the Harvest: A guide to community supported agriculture by Elizabeth Henderson and Robyn Van En. 2007 (revised edition). Chelsea Green Publishing. Describes how to form partnerships between local farmers and nearby consumers.

Web resources

World Wide Opportunities on Organic Farms: www.wwoof.org

Slow Food Hawai'i's Guide to Hawai'i Island Grown Food including farmers' markets and community supported agriculture:

www.slowfoodhawaii.org/local.html

Organizational web sites

Hawai'i Homegrown Food Network www.hawaiihomegrown.net

Hawai'i Agriculture Notes www.ahualoa.net/ag/notes_farming. html

Hawai'i Farmers Union www.hawaiifarmersunion.org Hawaiʻi Fruit www.Hawaiifruit.net

Hawai'i Island School Garden Network www.kohalacenter.org/HISGN/about. html

Hawaiʻi Organic Farmers Association www.hawaiiorganic.org

Hawai'i SEED www.hawaiiseed.org

Hawai'i Tropical Fruit Growers www.hawaiitropicalfruitgrowers.org

Kona Outdoor Circle www.konaoutdoorcircle.org

Know Your Farmer Alliance www.knowyourfarmeralliance.com

Slow Food Hawaiʻi www.slowfoodhawaii.org