

LEARNING MADE EASY



# Backyard Homesteading

ALL-IN-ONE

for  
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**5**  
**Books**  
in one!

**Todd Brock**





# Backyard Homesteading

ALL-IN-ONE

**by Todd Brock with**

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## Backyard Homesteading All-in-One For Dummies®

Published by: **John Wiley & Sons, Inc.**, 111 River Street, Hoboken, NJ 07030-5774, [www.wiley.com](http://www.wiley.com)

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Published simultaneously in Canada

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Library of Congress Control Number: 2019936496

ISBN 978-1-119-55075-4 (pbk); ISBN 978-1-119-55079-2 (ebk); ISBN 978-1-119-55077-8 (ebk)

Manufactured in the United States of America

10 9 8 7 6 5 4 3 2 1

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# Introduction

**F**eeding your family with what comes from your little piece of land. Making your own. Doing it yourself. Buying less. Being more self-sufficient. That's what backyard homesteading is all about.

A lot goes into backyard homesteading. It's a hobby for some, and a lifestyle for many. And it's increasing in popularity, as people from all types of backgrounds feel an urge to reconnect with a simpler time, the earth, and their roots. There was a time when families who grew their own vegetables, preserved their own food, and raised their own chickens weren't the least bit extraordinary. But those activities fell out of favor as society continued its never-ending search for bigger, faster, easier. Now these activities are returning to a mainstream society that lost sight of their value.

If you've considered joining that growing movement — even with just the smallest of steps — *Backyard Homesteading All-In-One For Dummies* is for you. Here, you learn how to get started, how to succeed, and how to make the homesteading spirit an integral part of your everyday life.

## About This Book

*Backyard Homesteading All-In-One For Dummies* breaks down the various components most often associated with backyard homesteading: growing food, preserving the harvest, making your own food and other products, raising animals, and building items that help you keep doing those other things. The goal is to walk you through each topic step by step so you can start from scratch if you're a newbie, or brush up with a quick reference if you already have some experience.

As you read, you'll find the following:

- » Background information and special considerations to factor in before you embark on a new aspect of homesteading
- » Recommended tools, equipment, and gear to do the job correctly and safely
- » Potential problems to look for and how to avoid or resolve them

- » Assembly instructions and building plans that give you a solid baseline for a project, but can usually be adapted or modified to suit your unique situation
- » Recipes that help you get started in the kitchen, but are by no means the extent of what you can do with what comes out of your garden

This book is your entry guide to the world of backyard homesteading, a launching point for a lifelong adventure that will evolve along with you the longer you pursue it.

## Foolish Assumptions

In compiling the content for this book, some general assumptions have been made about you, the reader:

- » You have enough property to make homesteading a worthwhile endeavor. You can homestead on acres of rolling pasture or in a small backyard in a suburban neighborhood. If you live in a high-rise apartment with a tiny balcony, though, you can adapt bits of information in this book, but “backyard homesteading” might be a stretch.
- » You have some experience with gardening and are interested in growing food beyond a single potted tomato plant or one modest vegetable bed.
- » You know your way around the kitchen and can follow the basic conventions of recipes, even if more advanced techniques such as pressure canning, pickling, and fermenting are new to you.
- » You have an interest in being more self-sufficient by utilizing your own property and skills to produce things you and your family will consume.
- » You are at least modestly handy or willing to become so. No one expects you to be able to build your own pole barn after reading this book, but homesteaders are typically resourceful folks who aren’t afraid to roll up their sleeves and tackle whatever is required to do the job.

## Icons Used in This Book



TIP

The Tip icon marks tips (duh!) and shortcuts that you can use to make your efforts as a homesteader easier.



REMEMBER

Remember icons mark the information that's especially important to know. To discover the most important information in each chapter, skim through these icons.



TECHNICAL  
STUFF

The Technical Stuff icon marks information of a highly technical nature that you can normally skip.



WARNING

The Warning icon tells you to watch out! It highlights important safety information or marks other details that may save you considerable headaches.

## Beyond the Book

Often, you'll need to recall a specific piece of information at a time when this book isn't handy. An accompanying cheat sheet online can be accessed anytime by any Internet-ready device.

You can go to [www.dummies.com/cheatsheet/backyardhomesteadingaio](http://www.dummies.com/cheatsheet/backyardhomesteadingaio) for a comprehensive planting guideline, perfect for when you're planning or laying out your garden at the beginning of the season. You'll also find a quick step-by-step refresher on the steps for both water-bath canning and pressure canning, easy to call up when you're in the kitchen ready to get to work on a batch of tomato sauce. And a convenient chicken coop checklist helps you ensure that the structure you're either looking at purchasing or thinking about building will fit the needs of your flock.

## Where to Go from Here

Instructions for various homesteading techniques and projects can be found throughout the book. If you're starting a garden from scratch, though, Book 1, Chapter 1 is the best place to begin. If you already have a garden up and running and want to start canning and preserving, go right to Book 2.

Book 3 is loaded with recipes that help you expand your homesteading horizons to fermenting food, brewing beer, and baking bread. Considering backyard bees or chickens? Book 4 has you covered with no need to read the previous minibooks.

Book 5 details miscellaneous projects and step-by-step building plans for a few larger specialty builds, too.



# 1

## **Creating a Garden**

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#### IN THIS CHAPTER

- » Siting your garden on your property and organizing its layout for best results
- » Squeezing out every square foot of growing space
- » Safeguarding against critters

## Chapter 1

# Planning Your Garden

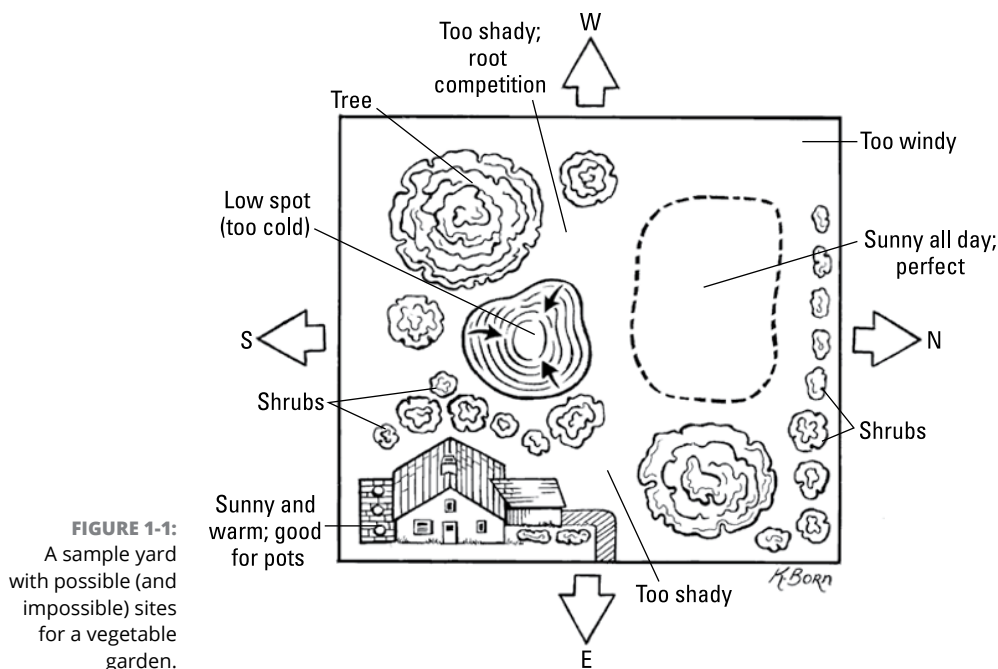
A lush, bountiful vegetable garden is the centerpiece of any backyard homestead. Everyone loves good food. And what better way to have fresh, tasty, and nutritious food than to grow it yourself? You don't have to be a farmer to do so either. Whether you have a plot of land in the yard that's tilled to grow vegetables, a few vegetables planted amongst your flowers and shrubs, or containers loaded with attractive, edible choices, growing your own food is a satisfying and rewarding activity.

But vegetable gardening isn't just about taste. It's about safe food that's produced close to home. It's about knowing what has been sprayed on that food. It's about feeding your friends and family nutritious food high in vitamins and *antioxidants* (cancer-fighting compounds). It's about connecting with your neighbors and community as you experiment with ethnic dishes using exotic ingredients grown in your not-so-exotic backyard. It's about reducing pollution and global warming by not buying produce that's shipped hundreds of miles to your local grocery store. Finally, it's about getting in touch with nature and reclaiming your ability to grow some of your own food, even if it's a container of basil, to be more self-reliant in your little corner of the world. (And that's pretty much why you're interested in backyard homesteading to begin with, right?)

This chapter is all about conceptualizing the garden that your homestead will be built around.

## Determining Location and Size

When considering where to plop down your plot, think of these three main elements, which are necessary for the perfect spot: site, sun, and soil. The following sections describe each of these and give you some things to think about when surveying your yard for the best possible spot for your plot. Figure 1-1 puts some of these ideas into visual perspective.



*Illustration by Kathryn Born*



REMEMBER

Don't be discouraged if you lack the ideal garden spot — few gardeners have one. Just try to make the most of what you have.



## Acclimating to your conditions

The first step in planting wisely is understanding your region's climate, as well as your landscape's particular attributes. Then you can effectively match plants to planting sites.

Don't use geographic proximity alone to evaluate climate. Two places near each other geographically can have very different climates if one is high on a mountainside and the other is on the valley floor, for example. Also, widely separated regions can have similar climates.

## USDA Plant Hardiness Zone Map

Low winter temperatures limit where most plants will grow. After compiling weather data collected over many years, the U.S. Department of Agriculture (USDA) divided North America, Europe, and China into 11 zones. Each zone represents an expected average annual minimum temperature.

On the USDA Plant Hardiness Zone Map for North America (see Figure 1-2), each of the 11 zones is 10°F warmer or colder in an average winter than the adjacent zone. The warmest zone, Zone 11, records an average low annual temperature of 40°F or higher. In Zone 1, the lowest average annual temperature drops to minus 50°F or colder. Brrr!

Zones 2 through 10 on some North American maps are further subdivided into *a* and *b* regions. The lowest average annual temperature in Zone 5a, for example, is 5°F warmer than the temperature in Zone 5b. When choosing plants that are just barely hardy in your zone, knowing whether your garden falls into the *a* or *b* category can ease your decision. After a few years of personal weather observation in your own garden, you'll have a pretty clear idea of what to expect for winter low temperatures too.



TIP

Most books, catalogs, magazines, and plant labels use the USDA zone system. For a color version, which may be a bit easier to read, visit the U.S. National Arbo-retum website, which offers a map of North America and individual regions at [www.usna.usda.gov/Hardzone/index.html](http://www.usna.usda.gov/Hardzone/index.html).

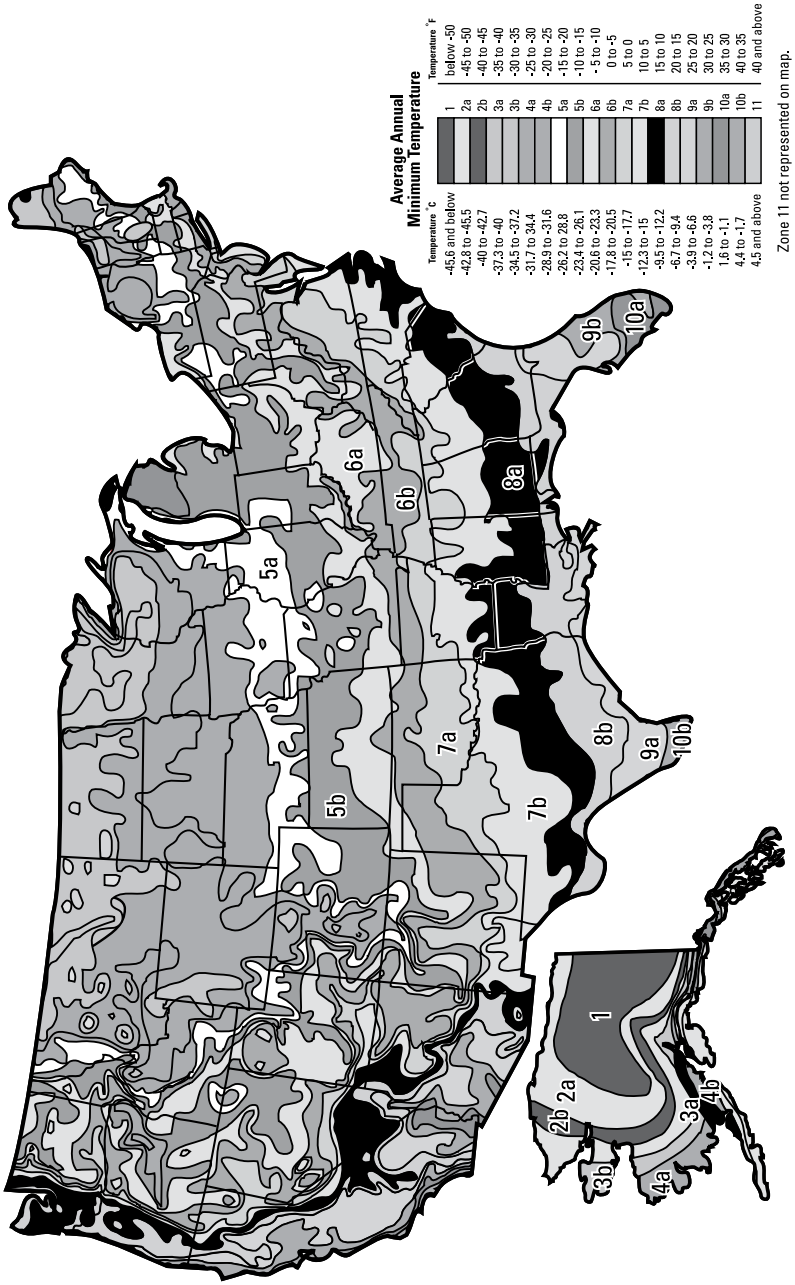


REMEMBER

The USDA map is based on a single factor: a region's average minimum winter temperature. Many other factors affect a plant's ability to thrive in a particular environment, so use the map only as a guideline.

**FIGURE 1-2:**  
The USDA Plant Hardiness Zone Map indicates each zone's expected average annual minimum temperature.

**USDA PLANT HARDINESS ZONE MAP**



### AHS Heat Zone Map

To help gardeners in warm climates, the American Horticultural Society developed the AHS Heat Zone Map. This map divides the United States into 12 zones based on the average number of *heat days* each year — days that reach temperatures

of 86°F or higher. Zone 1 has fewer than one heat day per year; Zone 12 has more than 210.

Order your own color poster of the AHS Heat Zone Map by calling the society at (800) 777-7931, ext. 137. Or visit the American Horticulture Society's website at [www.ahs.org/publications/heat\\_zone\\_map.htm](http://www.ahs.org/publications/heat_zone_map.htm) for more information and a downloadable map. The site also offers a Heat Zone Finder to locate your particular heat zone by zip code.

## Sunset map

In an attempt to take total climate into consideration when evaluating plant hardiness, Sunset Publishing created Sunset's Garden Climate Zones, a map that divides the country into 24 zones. This map is especially useful to gardeners in the western United States, where mountains, deserts, and coastal areas create wildly diverse climates, sometimes within a few miles of each other.

Although most national plant suppliers and references use the USDA zone map, regional garden centers and growers in the western half of the country often refer to the Sunset map. View it at [www.sunset.com/sunset/garden/article/1,20633,845218,00.html](http://www.sunset.com/sunset/garden/article/1,20633,845218,00.html).

## Factoring in microclimates

Within larger climates, smaller pockets exist that differ somewhat from the prevailing weather around them. These *microclimates* occur wherever a building, body of water, dense shrubs, or hillside modifies the larger climate.

Microclimates may be very small, such as the sunny side of your house or the shady side under a tree, or as large as a village. A town on the shore of Lake Michigan has a different microclimate than a town just 20 miles inland, for example. Common microclimates around your property may include the following:

- » **North side of the house:** Cool and shady year-round
- » **South side of the house:** Hot and sunny all day; often dry
- » **East side of the house:** Warm morning sun and cool afternoon shade
- » **West side of the house:** Morning shade and hot afternoon sun
- » **Top of a hill:** Exposed to wind and sun; soil dries quickly
- » **Bottom of a hill:** Collects cold air and may be poorly drained due to precipitation that runs down the slope

No doubt you can find other examples on your site as you closely observe the patterns of sun, water, wind, and temperature throughout the year.



TIP

Plan your landscape and gardens to take advantage of microclimates. Use wind-sheltered areas to protect tender plants from drying winter winds in cold climates and hot, dry winds in arid places. Put plants such as phlox and lilac, which are prone to leaf disease, in breezy garden spots as a natural way to prevent infections. Avoid putting frost-tender plants at the bottoms of hills, where pockets of cold air form.



REMEMBER

Urban environments typically experience higher temperatures than suburban or rural areas thanks to so many massive heat absorbers such as roofs, steel and glass buildings, concrete, billboards, and asphalt-paved surfaces. And that doesn't even begin to account for all the waste heat generated by human sources such as cars, air conditioners, and factories. The urban homesteader needs to consider all of these additional factors that could make their microclimate even more of a challenge.

## Considering different sites

Choosing a site is the important first step in planning a vegetable garden. This may sound like a tough choice to make, but don't worry; a lot of the decision is based on good old common sense. When you're considering a site for your garden, remember these considerations:

» **Keep it close to home.** Plant your garden where you'll walk by it daily so that you remember to care for it. Also, a vegetable garden is a place people like to gather, so keep it close to a pathway.

Vegetable gardens used to be relegated to some forlorn location out back. Unfortunately, if it's out of sight, it's out of mind. But most homesteaders prefer to plant vegetables front and center — even in the front yard. That way you get to see the fruits of your labor and remember what chores need to be done. Plus, it's a great way to engage the neighbors as they stroll by and admire your plants. You may even be inspired to share a tomato with them.

» **Make it easy to access.** If you need to bring in soil, compost, mulch, or wood by truck or car, make sure your garden can be easily reached by a vehicle. Otherwise you'll end up working way too hard to cart these essentials from one end of the yard to the other.

» **Have a water source close by.** Try to locate your garden as close as you can to an outdoor faucet. Hauling hundreds of feet of hose around the yard to water the garden will cause only more work and frustration. And, hey, isn't gardening supposed to be fun?

- » **Keep it flat.** You can garden on a slight slope, and, in fact, a south-facing one is ideal since it warms up faster in spring. However, too severe a slope could lead to erosion problems. To avoid having to build terraces like those at Machu Picchu, plant your garden on flat ground.



REMEMBER

How big is too big for a veggie garden? If you're a first-time gardener, a size of 100 square feet is plenty of space to take care of. However, if you want to produce food for storing and sharing, a 20-foot-by-30-foot plot (600 square feet) is a great size. You can produce an abundance of different vegetables and still keep the plot looking good.

Speaking of upkeep, keep the following in mind when deciding how large to make your garden: If the soil is in good condition, a novice gardener can keep up with a 600-square-foot garden by devoting about a half-hour each day the first month of the season; in late spring through summer, a good half-hour of work every two to three days should keep the garden productive and looking good. Keep in mind that the smaller the garden, the less time it'll take to keep it looking great. Plus, after it's established, the garden will take less time to get up and running in the spring.

## Letting the sun shine on your plot



REMEMBER

Vegetables need enough sun to produce at their best. Fruiting vegetables, such as tomatoes, peppers, beans, squash, melons, cucumbers, and eggplant, need at least six hours of direct sun a day for good yields. The amount of sun doesn't have to be continuous though. You can have three hours in the morning with some shade midday and then three more hours in the late afternoon.

However, if your little piece of heaven gets less than six hours of sun, don't give up. You have some options:

- » Crops where you eat the leaves, such as lettuce, arugula, pac choi, and spinach, produce reasonably well in a partially shaded location where the sun shines directly on the plants for three to four hours a day.
- » Root crops such as carrots, potatoes, and beets need more light than leafy vegetables, but they may do well getting only four to six hours of sun a day.



TIP

If you don't have enough sun to grow all the fruiting crops that you want, such as tomatoes and peppers, consider supplementing with a movable garden. Plant some crops in containers and move them to the sunniest spots in your yard throughout the year.

Keep in mind that sun and shade patterns change with the seasons. A site that's sunny in midsummer may later be shaded by trees, buildings, and the longer shadows of late fall and early spring. If you live in a mild-winter climate, such as parts of the southeastern and southwestern United States where it's possible to grow vegetables nearly year-round, choosing a spot that's sunny in winter as well as in summer is important. In general, sites that have clear southern exposure are sunniest in winter (refer to Figure 1-1).

You can have multiple vegetable garden plots around your yard matching the conditions with the vegetables you're growing. If your only sunny spot is a strip of ground along the front of the house, plant a row of peppers and tomatoes. If you have a perfect location near a backdoor, but it gets only morning sun, plant lettuce and greens in that plot.

If shade in your garden comes from nearby trees and shrubs, your vegetable plants will compete for water and nutrients as well as for light. Tree roots extend slightly beyond the *drip line*, the outer foliage reach of the tree. If possible, keep your garden out of the *root zones* (the areas that extend from the drip lines to the trunks) of surrounding trees and shrubs. If avoiding root zones isn't possible, give the vegetables more water and be sure to fertilize to compensate.

## Checking your soil's drainage

After you've checked the site location and sun levels of your prospective garden, you need to focus on the third element of the big three: the soil. Ideally you have rich, loamy, well-drained soil with few. Unfortunately, that type of soil is a rarity. But a key that's even more essential to good soil is proper water drainage. Plant roots need air as well as water, and water-logged soils are low in air content. Puddles of water on the soil surface after a rain indicate poor drainage.



TIP

One way to check your soil's drainage is to dig a hole about 10 inches deep and fill it with water. Let the water drain and then fill the hole again the following day. Time how long it takes for the water to drain away. If water remains in the hole more than 8 to 10 hours after the second filling, your soil drainage needs improvement.

Soils made primarily of clay tend to be considered *heavy*. Heavy soils usually aren't as well drained as sandy soils. Adding lots of organic matter to your soil can improve soil drainage. Or you also can build raised beds on a poorly drained site.

But slow water drainage isn't always a bad thing. Soil also can be *too* well drained. Very sandy soil dries out quickly and needs frequent watering during dry spells. Again, adding lots of organic matter to sandy soil increases the amount of water it can hold.

If you encounter a lot of big rocks in your soil, you may want to look for another spot. Or consider going the raised-bed route. You can improve soils that have a lot of clay or that are too sandy, but very rocky soil can be a real headache. In fact, it can be impossible to garden in.



WARNING

Don't plant your garden near or on top of the leach lines of a septic system, for obvious reasons. And keep away from underground utilities. If you have questions, call your local utility company to locate underground lines. If you're unsure what's below ground, visit [www.call811.com](http://www.call811.com) to have lines or pipes identified for free.

## Deciding On a Layout

Designing a vegetable garden is a little bit of art and a little bit of science. Practically speaking, plants must be spaced properly so they have room to grow and arranged so taller vegetables don't shade lower-growing types. Different planting techniques fit the growth habits of different kinds of vegetables. You also should think about the paths between rows and plants. Will you have enough room to harvest, weed, and water, for example?

Your garden needs to make the most of the space you've got. Homesteaders tend to do some serious multitasking with every square foot of land they have to work with, but not everything can happen on the same patch of dirt. If your homesteading efforts will also include raising chickens, for example, you'll need to give your flock ample room for them to spread their wings, too.

A thoughtful garden layout is critical, even if it evolves (and it probably will) over time.

## Looking at hills, rows, or raised beds

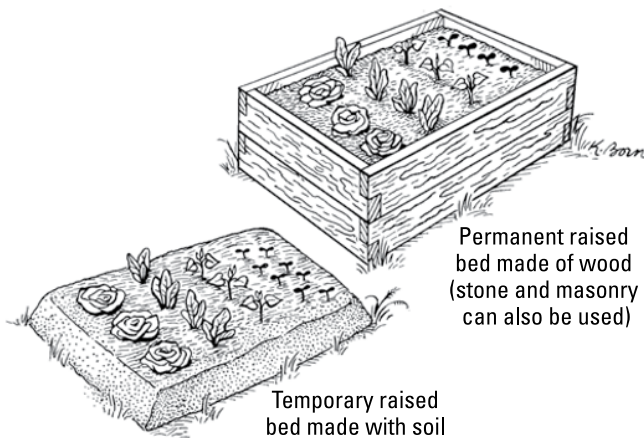
Before you sketch a plan, you need to decide how to arrange the plants in your garden. You can use three basic planting arrangements:

- » **In rows:** Planting vegetables in rows is the typical farmer technique. Any vegetable can be planted in straight rows, but this arrangement works best with types that need quite a bit of room, such as tomatoes, beans, cabbages, corn, potatoes, peppers, and summer squash.

- » **In hills:** Hills are typically used for vining crops such as cucumbers, melons, pumpkins, and winter squash. You can create a 1-foot-wide, flat-topped mound for heavy soil, or you can create a circle at ground level for sandy soil. You then surround the soil with a moatlike ring for watering. Two or three evenly spaced plants are grown on each hill. Space your hills the recommended distance used for rows of that vegetable.
- » **In raised beds:** Raised beds are kind of like wide, flat-topped rows. They're usually at least 2 feet wide and raised at least 6 inches high, but any planting area that's raised above the surrounding ground level is a raised bed. Almost any vegetable can benefit from being grown on a raised bed, but smaller vegetables and root crops, such as lettuce, beets, carrots, onions, spinach, and radishes, really thrive with this type planting. On top of the raised bed you can grow plants in rows or with broadcast seeding.

A raised bed can be *temporary*, with the soil piled 5 or 6 inches high. Or you can build a *permanent raised bed* with wood, stone, or masonry sides, as shown in Figure 1-3. And refer to Book 5, Chapter 1 for instructions on building your own easy raised garden beds.

**FIGURE 1-3:**  
Raised beds can be made with soil alone, or with wood, stone, or masonry sides.



*Illustration by Kathryn Born*

Raised beds have several advantages, including the following:

- » **They rise above soil problems.** If you have bad soil or poor drainage, raised beds are for you. You can amend the garden soil in the raised bed with compost or the same sterile potting soil you use for containers. And because you don't step on the beds as you work, the soil is more likely to stay light and fluffy, providing the perfect conditions for root growth — especially for root crops such as carrots and beets.





WARNING

» **They warm up quickly.** Because more of the soil in raised beds is exposed to the sun, the soil warms early and dries out faster, allowing for early planting and extended harvest seasons.

If you're in a hot climate and have sandy soil, raised beds may not be for you, because they'll dry out and heat up too much.

» **They reduce your work.** By growing your vegetables in raised beds, you can maximize your fertilizing and watering so that more nutrients and water are actually used by the plants rather than wasted in the pathways.

» **They're easy on your back and knees.** If you design the beds properly (about 18 to 24 inches high and no wider than 4 feet), raised beds can make vegetable gardening a lot more comfortable. You can sit on the edge and easily reach into the bed to weed or harvest. You can even cap the edge to make it more benchlike.

» **They're attractive.** You can make raised beds in almost any shape you like — rectangle, square, triangle, circle. Just keep the width less than 4 feet so you can easily reach the center of the bed without stepping on the soil.

Never use pressure-treated wood or creosote-treated railroad ties to construct raised beds. These woods have been treated with chemicals, and although they'll last a long time, research has shown that some of these chemicals leach into the soil and can adversely affect your plants. The risk of poisoning your soil and crops is simply too great and far outweighs any benefits that might come with treated wood.



REMEMBER

The one possible downside of permanent raised beds is turning the soil. Lifting a tiller onto the bed can be difficult, so they may be best turned by hand with an iron fork or with a minitiller. There's more on tilling — including a gardening strategy that avoids it altogether — in Chapter 3 of this minibook.

In dry areas such as the desert Southwest, the traditional bed isn't raised — it's sunken. These *waffle beds* are created by digging into the soil about 6 inches deep and making a small wall of soil around the outside edge of the bed. This design allows the bed to catch any summer rains, protects young plants from the drying winds, and concentrates water where the vegetables grow.

## Spacing your plantings properly

After you know what you're planting and how to arrange the plants, it's time to talk spacing. Make a list of the different types of vegetables that you want to grow,

and then pay attention to these columns in the guide to planting in Chapter 4 of this minibook:

- » **Plants/Seeds per 100 ft. of Row:** This column tells you how many plants/how much seed you need to purchase.
- » **Spacing between Rows/Beds (Inches):** This column includes the ideal distance you should leave between rows or beds of different vegetables. This is usually a little more than the distance you should leave between plants.
- » **Spacing between Plants (Inches):** In this column, you find the ideal distance to allow between individual vegetable plants within a row or planting bed.
- » **Average Yield per 10 ft. of Row:** This column shows you how much you can expect to harvest.



TIP

If you're growing in raised beds, you can plant a little closer together than the guidelines suggest because you'll be concentrating fertilizer and water in a smaller space.



WARNING

Even though closer planting is possible, don't plant so close that plants have to compete with each other for food, water, and light. If you do, you'll eventually get smaller harvests or lower-quality vegetables.

## Following the paths

You can get so involved in the beds, rows, hills, and vegetable varieties that you forget about the paths between everything. Keep the paths at least 2 to 3 feet wide so you can easily walk on them. For larger gardens, consider a few main paths that are wide enough for a garden cart.

## Sketching it out

After you determine the location and dimensions of your garden, you need to sketch out a simple garden plan. A functional drawing is fine; it doesn't have to be a work of art. All you need is a piece of graph paper and a pencil, a list of vegetables you want to grow, and maybe a seed catalog or two. Then just grab your pencil and graph paper and start drawing. First, draw the garden to scale. Leave space from the edge of the paper, draw in the first row, leave room for a path, and then create your next row. Continue filling in the rows with your favorite crops, taking into account the space requirements of the crops you want to grow; whether you want to plant in rows, beds, or hills; and how much of each vegetable you want to harvest.



REMEMBER

Here are a few things to keep in mind as you sketch out your garden plan:

- » **You can't plant everything.** Choose your crops carefully, and grow only what you like to eat. And grow only how much you think you can eat. Eating broccoli for breakfast, lunch, and dinner can get old fast.
- » **Not all plants have it made in the shade.** Tall crops such as corn should be placed where they won't shade other vegetables. The north end of the garden is usually best.
- » **These roots aren't made for walking.** Plan your garden with walkways so you can get to plants easily without damaging roots.



TIP

Planning on paper helps you purchase the correct number of seeds or transplants and use space more efficiently. It's a good way to see the possibilities for *succession planting* (following one crop with another) and *interplanting* (planting a quick maturing crop next to a slower-maturing one and harvesting the former before it competes for space). For example, you might see that you can follow your early peas with a crop of late broccoli, and you'll be ready with transplants in July. Or you might see that there's space to tuck a few lettuce plants among your tomatoes while the vines are still small. You can find out more about these techniques in Chapter 5 of this minibook.

## Thinking Outside the Garden Bed

Not all of your crops have to be planted in the ground. Generations of resourceful gardeners and homesteaders have used various techniques to maximize their planting space well beyond the actual square footage of earth they have to work with. Keep them in mind as you plan your garden, and you may magically find room for a bunch more plants, a few more rows, maybe even a whole additional crop!

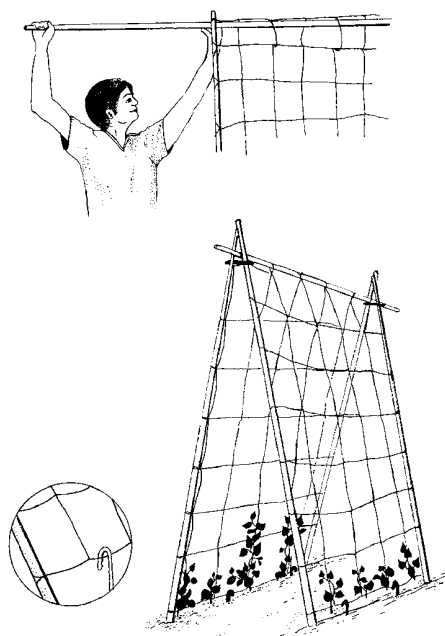
### Going vertical

If you're short on space in your garden or want to plant more than you really have room for, go vertical! You can save space and energy by trellising, fencing, or caging certain vegetables. And by incorporating these vertical growers into your initial design, you can often free up more planting space in your beds. For example, one cucumber plant can take up 15 square feet or more when left sprawling on the ground. Grow your cukes on a trellis, and you can have four plants in that same amount of space.

Vertical gardening can create the additional space needed to help urban homesteaders grow a larger and more abundant vegetable garden, but the same techniques can help suburban gardeners and rural homesteaders maximize the output of a garden of any size!

Climbing vegetables, such as peas and pole beans, need fences or poles to grow on. These devices also save space. Set up a teepee of 6- to 8-foot poles, attach chicken wire to fence posts, or train the plants on an A-frame. (If you use the teepee method, wind some twine around the poles at 6-inch intervals to give the vines something to cling to or wind around.)

Cucumbers, melons, and even some squash love to vine and ramble. You can direct their energy by growing them on a trellis. Place the trellis on an angle, such as an A-frame design (shown in Figure 1-4), instead of straight up and down.



**FIGURE 1-4:**  
An A-frame.



**REMEMBER**

If you're growing vines with heavy fruits, such as melons or squash, make sure that the trellis is very sturdy. You can find step-by-step instructions for building your own trellises and such in Book 5, Chapter 1.

Tomatoes, peppers, and eggplants all can be caged or staked with a pole to keep them growing upright, elevate their fruits off the ground (which can help prevent disease and damage from slugs, mice, and other ground-dwelling critters),

and give you more produce in less space. Commercial growers tie wire or twine between fence posts and weave the growing tomato plants through it. Also, 4- to 5-foot-high wire cages made of hog fencing or concrete reinforcing wire work well. Secure the cages with a tall stake pounded into the ground to prevent them from blowing over.



REMEMBER

Keep in mind that sun exposure is important for good vegetable production. Locate your trellises, teepees, or other vertical structure where the foliage will receive good sunlight without shading other areas of the garden.

## Container vegetables

You can grow almost any vegetable in a container. Whether you're strapped for space in your beds, want to locate certain crops close to a patio or porch, or just want to add some architectural interest to your homestead landscape, containers offer all kinds of possibilities.

In most cases, pots that are bigger (in terms of width and volume) are better, especially for growing large plants such as tomatoes. Lots of root space means that your vegetables are less likely to get cramped; they'll also be easier to water and fertilize.

Pots made of porous materials such as clay dry out faster than those made of plastic or wood, so you must water the plants in them more frequently, especially in hot or windy climates.



REMEMBER

You're not limited to pricey ceramic pots from the garden superstore! Wooden window boxes, affordable plastic flowerpots, and hanging baskets offer alternatives. Of course, any kind of container at all can add a touch of creative whimsy with some plants growing in it: an old boot, a rusted-out galvanized bucket, a chicken feeder, a vintage wheelbarrow, or even an old bathtub can be turned into a planter by an imaginative gardener.



WARNING

All the pots you use for growing vegetables should have drainage holes; fortunately, almost all store-bought pots do. If you repurpose something else as a container, you may need to add a drainage hole so the plant roots don't drown.



REMEMBER

Don't fill your pot with soil from your garden — even if your garden has the very best soil on the planet. It's too heavy and too dirty (you know, weed seeds, bugs, bacteria — stuff that you don't want in your pots), and it may not drain properly in a pot. Instead, use potting soil.

Vegetable breeders have long had container gardeners in mind. They breed many small-space varieties (of even the most sprawling plants) that are ideal for

growing in pots. The following list contains the most common vegetables to grow in containers, but try anything with the words *compact*, *bush*, *baby*, *midget*, *dwarf*, *tiny*, or *teeny* in the name:

- » **Beans:** Bush varieties such as 'Provider' and 'Derby' are best; you can grow three to four plants in a 12-inch pot. You can grow pole types in a long narrow box, but you have to attach some type of trellis.
- » **Beets:** Any variety grows well in a pot, and smaller varieties such as 'Red Ace' even grow well in smaller pots. However, make sure your pot is big and deep enough (at least 12 inches); beets don't like to be crowded.
- » **Carrots:** Carrots are a perfect vegetable to grow in a pot. Start with a baby variety such as 'Little Fingers', 'Short 'n Sweet', or 'Thumbelina'. If you water diligently, you can get a bumper harvest in pots as shallow as 6 to 8 inches deep. Longer varieties need deeper pots. After thinning, you should end up with 20 or so carrots per 12-inch pot.
- » **Cole crops — broccoli, cabbage, cauliflower, and so on:** All the cole crops grow well in containers as long as your pots are big enough; try planting three or four plants in a half barrel.
- » **Cucumbers:** You can't go wrong growing small cucumber types such as 'Bush Pickle' and 'Salad Bush'. Plant large-growing varieties in bigger pots and slip a sturdy wire cylinder into the outside edge of the pot for the plants to climb on.
- » **Eggplant:** An eggplant's purple foliage and compact habit are perfect for pots; any variety works as long the container is at least 5 gallons. Plant one eggplant per 5-gallon pot. If a plant gets floppy, push a small stake in the pot to support the plant.
- » **Lettuce and other greens:** Lettuce and greens may be the ultimate container vegetables. The size of your pot doesn't really matter — just sprinkle some seeds in it, keep the soil moist, and then get out your salad bowl for a great harvest. You can harvest the whole plant or snip off just what you need.
- » **Melons:** Melons aren't ideal container subjects; they're wild and unruly. But through the magic of modern science, some dwarf varieties, such as 'Bush Sugar Baby' watermelon, grow well in containers. Plant one to two plants in a big pot (at least 5 gallons) and let the vines sprawl over the edges, supporting the fruit if necessary. And don't let up on water and fertilizer.
- » **Onions:** Green onions — scallions or bunching onions if you prefer to call them that — grow well in containers. Just buy a bag of sets, plant them 2- to 3-inches deep, and you're in business. You can grow onions to full bulb size; just make sure that you use a big pot (preferably 5 gallons) and give them plenty of room to grow.

- » **Peas:** Go with dwarf pea varieties such as 'Green Arrow' and 'Maestro', English peas, 'Sugar Bon' snap pea, or 'Dwarf Grey Sugar' snow pea. Any variety larger than that needs a trellis. Planting six plants in a 12-inch pot should be fine.
- » **Peppers:** You can grow any pepper variety in a pot, but the bigger the pot the better. Small-fruited varieties such as 'Serrano' and 'Black Pearl' peppers produce so much colorful fruit that their containers become showpieces. A 5-gallon pot should hold one to two plants.
- » **Potatoes:** Potatoes are fun vegetables to grow in a container. Just place 8 to 10 inches of potting soil in a big pot (at least a 5-gallon size). Plant two to three potato eyes 2 to 3 inches from the bottom of the pot, and then water them in. After the plants start to grow, cover the stems with more soil (leaving the very top exposed) until the pot is full. In a couple of months, you can harvest a pot full of spuds.
- » **Radishes:** Growing radishes is quick and easy even in the smallest container. Scatter some seeds in the top of a pot, keep the soil moist, and you'll have radishes in less than a month.
- » **Squash:** Use a 5-gallon pot (or even larger) to grow space-saving winter squash varieties such as 'Cornell Bush Delicata', 'Papaya Pear', or 'Table King'. Plant three seeds in each pot and thin to the healthiest plant.
- » **Tomatoes:** Try your favorite dwarf indeterminate variety, such as 'Bush Big Boy' in a container that's at least 5 gallons (bigger is better), but be ready to stake or cage tall plants. Or you can grow dwarf varieties such as 'Patio', 'Tiny Tim', and 'Window Box Roma', which fit perfectly in pots, even smaller sizes.

Most herbs grow well in containers.

## Vertical containers

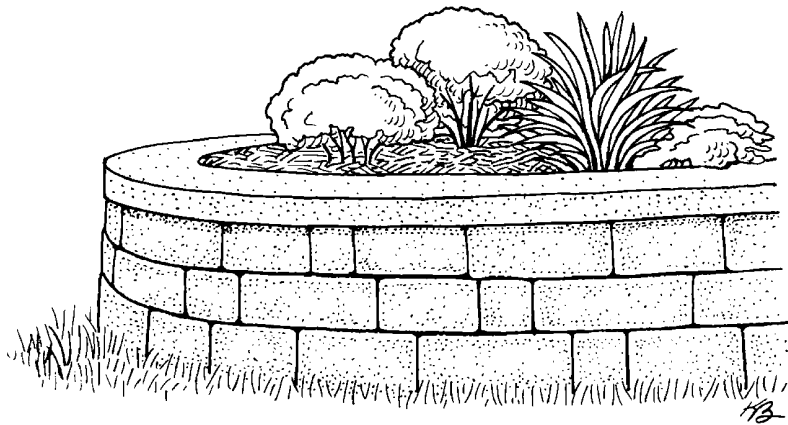
After you wrap your head around the idea of growing things non-horizontally outside the garden bed, and warm up to the concept of growing some of your crops in containers, the next logical step is to take your containers vertical, too, and utilize all of that wall and fence space for growing.

Here is a list of some popular vertical gardening products:

- » **Vertical containers:** Many interesting containers that are made for hanging on a fence, wall, or post are on the market now. Imagine a wall filled with flowering containers of cascading plants, or a monoculture of salad greens!

- » **Pot hangers for containers:** Some garden centers now sell attractive pot hangers from which a terra-cotta pot can be hung on a post, wall, or fence. These hangers can be used to create a multitiered garden of radishes, chard, kohlrabi, lettuce, or other small greens. Other half-round containers are made for attaching to a wall or fence and make great use of limited space in city gardens.
- » **Planter walls:** Manufacturers now include options for planting vertically along both freestanding and retaining walls. Another option to consider when building retaining walls is to divide the wall height and include a terraced area for planting between the walls (see Figure 1-5). For instance, instead of building an 8-foot-high wall, build two 4-foot-high walls with a 2-foot-wide planter between the two wall structures.

**FIGURE 1-5:**  
Example  
of a modular  
planter wall.



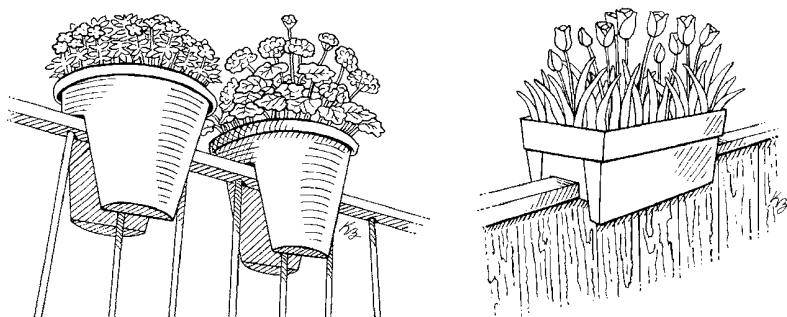
*Illustration by Kathryn Born*

- » **Straddling containers:** Numerous products are available that (like a saddle) can straddle both sides of your balcony railing, even along the top of a fence. The Steckling plants container designed by German designer Michael Hilgers is one example of a modern design that has a look of a simple circular planter (see Figure 1-6, left), whereas more traditional balcony containers are boxier like window planters (see Figure 1-6, right).
- » **Wall hanging pocket gardens:** Wall hanging pocket gardens (see Figure 1-7) are simple pocket planters which can easily hang and affix to walls, rails, and fences and can be used indoors or outside. They all come with simple



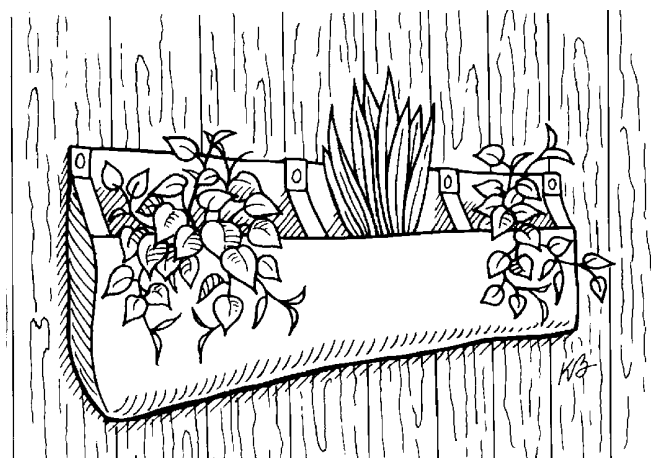
fasteners and anchors that work on masonry, drywall, sheetrock, wood, and metal walls.

- » **Stacking planters:** Imagine picking the fruit from a stand of strawberries 3 feet high! Stacking planters are specifically designed so that when you stack them, they create a column of multiple and interconnected growing facets that may be suspended or just left freestanding. Nancy Jane's Stacking Planters are one product specifically designed so that when you stack them, they create a column of multiple and interconnected growing facets that may be suspended or just left freestanding. Check them out at [www.gardensupplyinc.com](http://www.gardensupplyinc.com).



**FIGURE 1-6:**  
Different types  
of straddling  
containers.

*Illustration by Kathryn Born*

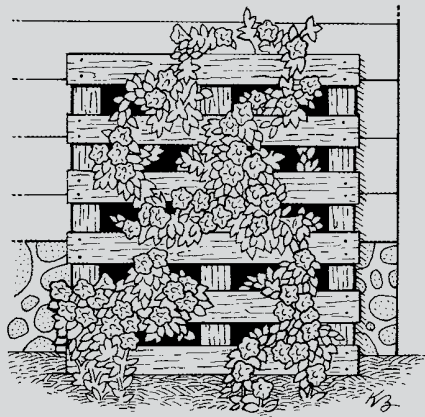


**FIGURE 1-7:**  
A wall hanging  
pocket garden.

*Illustration by Kathryn Born*

## PALLET GARDENING: HOW DOES IT STACK UP?

Shipping pallets are being reused extensively in the garden today (see the figure), often being reconstructed into vertical garden features which are great for small or tight spaces. (You can remove and relocate some of the planks to form a series of tiered horizontal planter boxes along your pallet garden.) But many pallets are made with treated wood, and the chemicals used in that process may slowly leach into the soil over time. As cool as pallet gardens are, you shouldn't use them for vegetable gardens because the pallet wood may have been chemically treated, even if it might not look like it. Save the pallet garden for flowering annuals or other non-edibles only.



*Illustration by Kathryn Born*

## Keeping Critters Out

A discussion of garden planning wouldn't be complete without considering the animals that may plague your gardens: deer, rabbits, groundhogs, and the like. Some of these larger critters can quickly eliminate an entire plant — or row of plants. Deer, rabbits, and woodchucks can consume a whole garden! The best way to deter these animals from helping themselves to your homestead is to figure out up front how you're going to keep them out, rather than wait until you already have a problem.

We'll deal with how to install various types of fencing in Chapter 3 of this minibook. Here, for your garden planning purposes, we'll limit ourselves to which members

of the wild kingdom you need to be on the lookout for, and on guard against. (Animals are ordered from most to least damaging to a vegetable garden.)

## Deer

Deer are among the most troublesome of garden pests. They live in wooded areas but also in suburban and urban locales, and in many places their numbers are increasing. When food is scarce, they eat just about anything. A deer or two can ravage an entire garden overnight.

To identify deer damage, look closely at affected plants. Deer don't have upper front teeth, so when they eat, they tear plant tissue rather than cutting it, leaving ragged edges. Deer prefer tender new growth when it's available, but eat buds and twigs in winter. They tend to feed on the edges of wooded areas so that they can duck for cover if threatened.

Deer can reach as high as 6 feet, so if you see damage at eye level, you're probably dealing with a deer, not a mutant rabbit. Look for telltale hoofprints and piles of deer scat (usually rounded pellets with a dimple on one end, about the size and shape of a chocolate-covered peanut or small black olive). Deer are most likely to visit gardens when other food sources are scarce, especially in late winter and early spring.

Fencing is the most common deer deterrent. But be prepared to think big (and potentially expensive). You might be surprised how high (and effortlessly) deer can jump. A 6-foot fence won't cut it; make it at least 8 feet high.

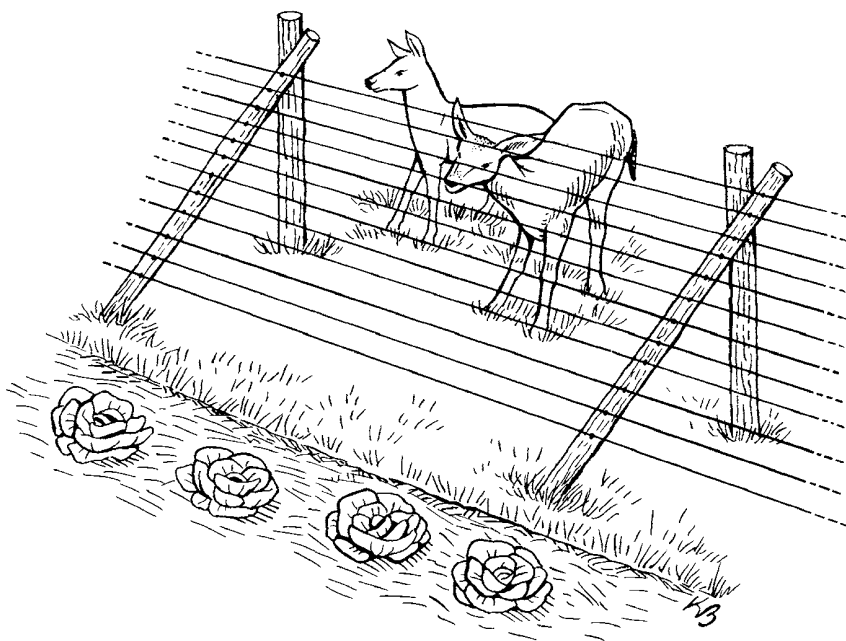


TIP

You can even make a 5-foot-fence more deerproof by using taller posts and attaching strands of wire above the fence, such as at 7 feet and 10 feet.

Consider slanting your fence outward, as shown in Figure 1-8. Deer are less likely to jump a wide fence, apparently intimidated about jumping when they can't tell how much distance they have to clear or how much space they'll have once they land. A slanted fence can be just 4 to 5 feet high and still be quite effective, but it does take up more yardspace.

Some gardeners rely on a double fence of sorts, with a 5- or 6-foot fence surrounding their garden, and a much shorter fence (or even a row of stakes with string run between them) just outside it. This visual barrier can confuse deer, who have poor depth perception, and encourage them to look elsewhere for their meal. Deer are creatures of habit; some gardeners find they can remove this outer barrier after the deer in their area change their travel pattern. If deer return, it's easy enough to reinstall the short outer fence.



**FIGURE 1-8:**  
A slanted fence is  
the best design to  
keep deer out of  
your garden.

*Illustration by Kathryn Born*

Electric fencing or netting is the answer for other gardeners. Not intended to be a physical barrier, electric fencing uses a strong shock to convince deer that entering the garden is too painful to be worth the trouble. Some electric fences are solar powered, and some use scented bait to attract deer to the fence, where they touch an electrified strand and learn to avoid contact.

These are a few other tactics gardeners use to dissuade deer, from the ultra-practical to the super-weird.

- » **Scare tactics:** Motion-detector-activated sprinklers may deter deer for a short time. (Just be sure to turn them off before you venture into the garden.) Playing a radio in the garden at night may work for a few days, but the deer will catch on quickly, and if they're hungry enough, they won't care.
- » **Row covers:** In early spring, spread row-cover fabric over tender new growth, supporting the covers with wire cages or hoops if necessary. These row covers can deter the deer long enough to give your plants a head start and allow time for their natural wild food plants to become plentiful. Refer to Chapter 7 of this minibook for info on row covers.

- » **Sprays:** Some gardeners swear by predator urine (which repels by scent) along with a bad-tasting hot pepper spray. But if you continually use the same deterrent, the deer will get used to it and ignore it.
- » **Soap:** Hang bars of soap from low tree branches or from stakes so that the bars are about 30 inches off the ground. Fragrant, tallow-based soaps such as Irish Spring work best.
- » **Hair:** Ask your barber or hairdresser if you can have some hair trimmings. Human hair hung in mesh bags about 3 feet off the ground may deter deer. Dog hair may work for some, too.
- » **Homemade repellent:** Use spray repellents on foliage. One recipe: Mix three raw eggs in a gallon of water and spray the mixture on plants. This substance apparently smells worse to the deer than it does to you.



REMEMBER

Many plants are touted as deer resistant, but if deer are hungry enough, they'll eat just about anything. Still, if you live in an area where deer pressure is high, including plants such as catmint, hellebore, and yarrow increases the likelihood that at least something in your garden will survive.

## Rabbits

Some homesteaders choose to raise rabbits (see Book 4, Chapter 3), but most prefer to keep Peter Cottontail and his friends away from their crops.

Rabbits are homebodies. They tend to stake out a rather small territory — 10 acres or less — and not wander elsewhere. They make their homes in natural cavities in trees, in other animals' abandoned burrows, in brush piles, and under buildings. They nibble the foliage of almost any plant, returning again and again, day and night, to finish the job.

Unlike deer, rabbits have both upper and lower front teeth, and you can identify their damage by a clean, angled cut on the ends of leaves and twigs. If you suspect rabbits, look for their droppings, which are round or slightly flattened; think marbles or M&Ms. The individual pellets are smaller and rounder than the more elongated deer scat.

Rabbits tend to eat vegetables and flowers in spring and summer. The best way to keep rabbits away from your plants is to fence them out. Because they burrow, a fence must also extend underground. Choose a 4-foot-high, chicken-wire fence with 1-inch mesh. Bury the bottom foot of the fence, bending the lowest 6 inches into a right angle facing outward.

Some folks have luck using hair gathered from hair salons and dog groomers as a repellent. Sprinkle it around the boundary of a garden and replenish it every few weeks. Most commercial spray repellents are not suitable for use on vegetables, as they affect the plants' taste, to both the rabbits and you.

## Groundhogs

These slow-moving rodents, also called woodchucks and whistlepigs, live in an extensive system of underground dens and tunnels, and they defy you to find all their tunnel entrances. A tunnel can extend nearly 70 feet. If you see a mound of excavated earth surrounding a foot-wide hole, you're probably looking at the entrance to a groundhog tunnel.

Groundhogs generally stay within about 100 feet of their dens, venturing out morning and evening to find food: your tender veggies. They favor beans, squash, peas, and brassicas (the genus of plants that include broccoli, cabbage, and cauliflower) and they can mow down a row of seedlings overnight. They also gnaw and claw woody plants.

If you suspect groundhogs, scan your landscape in the morning and evening hours. They are relatively bold, and you may catch a culprit red-handed. Here are some deterrents:

- » **Fencing:** Groundhogs can climb up almost as well as they can dig down, so use a sturdy 4- or 5-foot fence, and bury the bottom 18 inches underground. Bend the top of the fence outward so that a groundhog falls over backward if it attempts to climb over. Two strands of electric fence — one 4 inches above the ground and the other 8 inches high — may also keep them out.
- » **Repellents:** Hot pepper wax sprays may act as deterrents; groundhogs don't seem to be fazed by other repellent sprays.

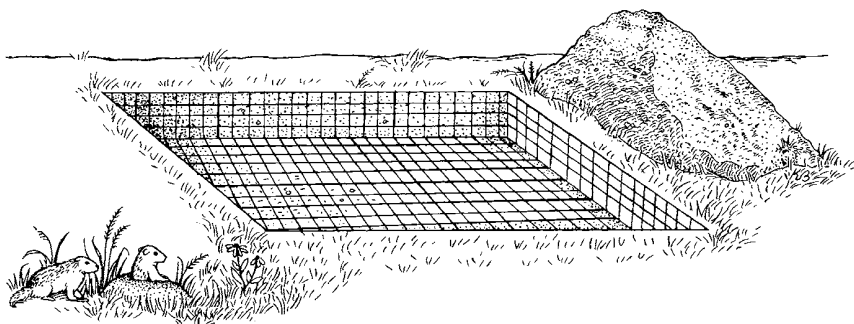
## Gophers

These burrowing rodents live in underground tunnel systems extending as far as 200 yards. They feast underground on plant roots and bulbs, occasionally emerging to eat aboveground parts of those plants located near the tunnel openings. Most gopher species live in the western two thirds of the country; one species is native to the Southeast. (If you live in New England, don't blame your garden problems on gophers.)

The telltale sign of gophers is a collection of fan-shaped soil mounds, with new mounds appearing daily. You won't see a tunnel entrance; the critters keep the entrances plugged with soil.

Gophers are difficult to scare or repel. Castor oil sprayed on the garden may repel them. If gophers are a serious problem, you may want to go to the trouble of lining the sides and bottom of your garden at a depth of 2 feet with hardware cloth to keep the gophers out. (See Figure 1-9.) Gopher-resistant wire baskets, which can be placed in planting holes before planting, are commercially available. For persistent problems, use traps.

**FIGURE 1-9:** Buried fencing is the safest and most effective way to deter digging animals such as gophers.



*Illustration by Kathryn Born*



**TIP**

Research has shown that vibrating devices such as large whirligigs stuck in the ground near tunnels have little effect. Apparently, gophers in a home landscape even get used to the sounds and vibrations of mechanical equipment such as lawn mowers. So don't waste your money on these devices.

## Mice and voles

Mice and voles look similar. Both are small rodents, but the tail of a vole is much shorter than that of a mouse. Mice are fond of young seedlings, especially those growing in a greenhouse on a cold winter day; they're omnivores, though, and eat almost anything. (They can be particularly problematic for backyard chicken-keepers, as we discuss in Book 4, Chapter 4.) Voles, on the other hand, are almost exclusively herbivores and are the more troublesome pest for gardeners.

Voles create extensive networks of tunnels that, if located under your garden or lawn, can cause root damage. Chewed root vegetables probably are the work of voles. Look for the tiny, 1/8-inch-wide chisel marks left by their incisors. Damage to stored vegetables, on the other hand, probably is the work of mice.

Voles are hard to control, but you can discourage them by keeping grass mowed and your yard free of weeds. (More on why and how to control weeds in Chapter 5 of this minibook.) Surround valuable plantings with a fence made of 1/4-inch hardware cloth buried 6 inches deep and rising at least a foot off the ground. Keep the perimeter mowed and free of plant debris.

## Raccoons

Raccoons like to eat pretty much anything. They seem to appear out of nowhere to pilfer your fruit and corn just before you get out to harvest it. They also eat grubs and, like skunks, dig up your lawn to find them, damaging plants in the process.

Repellents and motion-detector-activated sprinklers may provide enough protection to allow your crops to ripen. Controlling grubs in the lawn can also help. A low, two-strand electric fence, described in the “Groundhogs” section, might keep raccoons out of your vegetable garden.

You might also consider a 5-foot wire-mesh fence specially modified to use the raccoon’s body weight against it. Bury the bottom 12 inches of fence, curving the material away from the garden, allowing 4 feet of fence to stand aboveground. But leave the top 18 inches unattached to support posts; if a raccoon attempts to climb the fence, it will bend back down under the animal’s weight.

## Squirrels

Squirrels are so bold, it’s likely that you’ll catch them in the act of digging in your garden. These agile, fearless creatures can cause quite a problem, eating fruits, nuts, berries, seedlings, and bark. . . even pilfering softball-sized tomatoes!

You can’t get rid of squirrels permanently. If you evict your current residents, new ones will come to take their place. You can try deterrents such as spraying bad-tasting sprays on favorite plants, however.

For some crops, you can cover newly planted beds with chicken wire; the plants will grow right through it in spring. Motion detector-activated sprinklers can offer short-term help.



WARNING

Despite advice you may have heard, don’t use mothballs in the garden as a squirrel deterrent. You don’t want this potential carcinogen contaminating your soil.

## Birds

Birds in the yard are a mixed blessing. You appreciate their appetite for insects, but when they nibble on the tomatoes and devour the ripe blueberries, they cross



the line into nuisance territory. You can keep birds away from your plants by draping bird netting or row covers over them, but this solution isn't always practical.

To keep birds from eating seeds or pulling up newly sprouted plants, protect your seedbed with a bird tunnel (see Figure 1-10) or a floating row cover. By the time the plants outgrow the cover, they're no longer appetizing to birds.

**FIGURE 1-10:**  
Covering seedlings with a portable bird tunnel is a sure way to keep birds away.

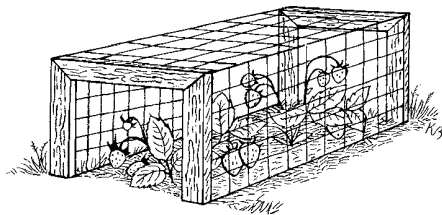


Illustration by Kathryn Born

Noise, fluttering objects, and anything resembling a predator can startle birds. Try bordering your garden with strings tied to stakes and fastening aluminum pie plates or unwanted CDs to the string. The noise and flashing of the sun on the shiny surfaces can scare birds away. Or instead of string, use only a thin nylon line, which will vibrate and hum in the breeze.

*Flash, or scare, tape* is effective. Available in long rolls, this lightweight iridescent ribbon is cut to size and can be hung anywhere birds are a nuisance. The streamers flutter in even a slight breeze, scaring away birds with both noise and bright reflected light.

You can use the modern version of the scarecrow: balloons and kites with images of predators, such as owls and hawks. Place them in the garden to convince birds that their enemy is on guard.



TIP

Birds catch on quickly, so change your scare tactics regularly.

## Assembling Tools

You've probably heard this saying at least a hundred times: "Use the right tool for the job."

When planning a new vegetable garden, however, you may find that knowing which tools to pick is often confusing. You can spend hundreds of dollars buying tools for every imaginable use, but you may end up spending more time in your

tool shed than in your garden. So when you're selecting your tools, it's best to start simple — here are the ten essential tools. And keep in mind that even these tools may not be appropriate for all garden situations.



TIP

To keep your metal hand tools functioning for years, clean and store them properly. After you're finished using a tool, wash all soil off it. Yearly, sharpen the blades of weeders, spades, and shovels; oil wooden handles with linseed oil; and tighten any nuts and screws on the handles.

## Watering hoses and cans

Even if you have a fully-operational irrigation system (you'll find options in Chapter 3 of this minibook), there will be times when it's best to water by hand with a good old-fashioned hose and watering can. (One of these times is when caring for seedlings and new plants, as discussed in Chapter 4 of this minibook.)

Rubber hoses are less likely to kink than vinyl or nylon hoses, but they tend to be much heavier to move around. Whatever material you choose, be sure to get a hose that's long enough to reach plants in all areas of your garden without having to shoot water across the beds to reach distant plants. Choose a hose that has brass fittings and a washer integrated into the hose; these elements make the hose less likely to fail after prolonged use.

Watering cans can be made of simple, inexpensive, brightly colored plastic or high-end, fancy galvanized metal. Plastic is lighter, but galvanized metal is rust-proof and more attractive. Watering cans also come in different sizes, so try a few out for comfort before buying. Make sure you can easily remove the sprinkler head, or rose, for cleaning.



TIP

For watering tender seedlings, buy a can with an oval rose that points upward and applies water with less pressure. The traditional round rose is better for watering more mature plants.

## Hand trowels

*Hand trowels* are essential for digging in containers, window boxes, and small raised beds. The wider-bladed hand trowels, which are scoop shaped and rounded on the end, are easier to use to loosen soil than the narrower-bladed, V-pointed ones. These narrower blades are better for digging tough weeds, such as dandelions.

Hand trowel blades usually are made of steel or plastic. Steel blades are more durable, but plastic blades are lighter. Although stainless steel versions are more expensive than plastic ones, they're easier to clean and easier to find if you lose

them. The handles may be steel, wooden, or plastic. Choose a trowel that's forged as one piece of metal or that has secure attachments between the blade and handle.

Try different hand trowels before buying, choosing one that feels comfortable and that fits your hand well. Ergonomic versions of hand trowels have forearm supports and cushioned grips.

## Hand cultivators

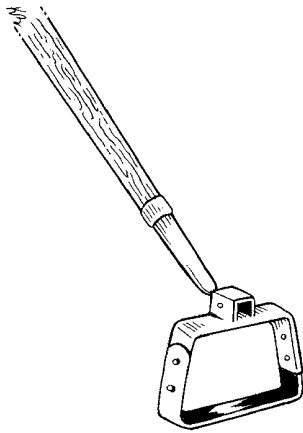
A *three-pronged hand cultivator* is a handy tool to break up soil clods, smooth seed beds, and work in granular fertilizer. Plus, after you plant your small container or raised bed, the weeds will come whether you like it or not; a cultivator serves as a great tool to remove these young weeds as they germinate. When you're digging a planting hole, a hand cultivator breaks up the soil more easily than a hand trowel.

As with a hand trowel, be sure to choose a hand cultivator that feels comfortable in your hand and that has a handle securely fastened to the blade. The steel-bladed types are the most durable.

## Garden hoes

Hoes are available for all occasions — hoes for digging furrows, hoes for weeding, hoes for wide rows, hoes for tight rows, hoes that scuffle, hoes that oscillate, and even hoes for specific vegetables such as the onion hoe. What you need largely depends on the design of your garden. The best hoes have long hardwood handles and single-forged steel blades strongly attached to their handles. Here are three favorites:

- » **Common garden hoe:** This classic hoe has a broad, straight, 6-inch steel blade that's good for all types of gardening, including digging, weeding, chopping, hilling, and cultivating. Longer- and narrower-bladed versions, such as the collinear hoe, are good for weeding in tight spots.
- » **Oscillating hoe (also known as a stirrup hoe):** This hoe, shown in Figure 1-11, is primarily used for weeding. Unlike other hoes — which cut weeds on the pull stroke — this hoe cuts weeds on the pull stroke *and* the push stroke, enabling you to weed faster. The 4- to 7-inch-wide steel stirrup is hinged so it moves back and forth, digging about 1/4 inch deep into the soil and scalping off young weeds. This hoe works well in gardens with clearly defined rows and spaces between plants.
- » **Tined hoe:** This hoe has 3 or 4 steel tines attached to the bottom of a 5- to 6-inch-diameter steel head. Tined hoes are good for weeding, cultivating, digging, chopping, hilling, and breaking up soil clods. They're lighter, more versatile, and easier to use than common hoes.



**FIGURE 1-11:**  
An oscillating hoe.

## Spades and shovels

Spades and shovels are two of the most commonly used gardening tools. The difference between the two is simple: A *spade* is designed for digging, and a *shovel* is designed for scooping and throwing. Shovels traditionally have rounded and pointed blades, whereas spades have flat, straight, almost rectangular blades. A good shovel is essential in any garden for spreading compost, manure, or fertilizer. A spade is essential for edging or breaking new ground. However, many gardeners use spades for anything from cutting open fertilizer bags to hammering in stakes. Good spades are rugged.

Both spades and shovels come in short- and long-handled versions. A long handle gives you more leverage when digging holes, so keep that in mind if you're purchasing a new spade. Choose a spade or a shovel that has a single piece of metal attached to a wooden handle with either a single socket or a single socket that runs 1 foot up the handle (referred to as a *solid-strap* connection). These models are heavier, but they're much more durable.



**TIP**

To get a more comfortable grip on long-handled tools such as spades and shovels, try low-cost foam grippers that fit on the handles. These grippers make the diameter of a handle larger and more cushioned, reducing the amount of blistering and cramping in your hands. They're available at local garden centers or on the Internet.

## Garden forks

As handy as a spade is for turning fresh garden soil, an *iron fork* (also called a garden fork, a spading fork, a digging fork, or even a border fork) is a better tool for turning beds that have been worked before. The fork digs into the soil as deep as

12 inches, and at the same time breaks up clods and loosens and aerates the soil better than a spade. Iron forks look similar to short-handled spades except that they have three to four iron tines on their heads. The best ones are those forged from one piece of steel with hardwood handles firmly attached. They're great not only for turning soil but also for turning compost piles and digging root crops, such as potatoes and carrots.

One tool you may want to consider is the *broadfork*. With two long handles and a series of deep curved tines between them (see Figure 1-12), the gardener steps onto the crossbar of the broadfork (sometimes called a U-fork or *grelinette*), using body weight to till and break up garden beds without destroying the soil's structure.



**FIGURE 1-12:**  
A broadfork uses  
body weight to  
efficiently break  
up garden soil.



A heavy-duty broadfork can be quite expensive; many gardeners get by with a conventional pitchfork. Some even roll up their sleeves (and ingenuity) to make their own broadfork!

## Garden rakes

After you dig soil, you need to level it, break up soil clods, and smooth the seedbeds (especially if you're growing raised beds). An *iron rake* is the right tool for the job even though you may use it for this purpose only a few times a year. A 14-inch-diameter, iron-toothed rake should have a long, wooden handle that's securely attached to a metal head. You can flip the metal head over to really smooth a seedbed flat. For a lightweight but less durable version of an iron rake, try an aluminum rake.

## Buckets, wagons, and baskets

You may not have a 1,000-square-foot garden. But you still need to carry seeds, tools, fertilizer, produce, and other items around. Here are three essential containers:

- » **Buckets:** For fertilizers, potting soil, and hand tools, a 5-gallon plastic bucket is the perfect container. You can probably get one free from a construction site; just make sure to clean it out well. For a more durable but smaller bucket, buy one made from galvanized steel.
- » **Wagons:** For bulkier items, such as flats of seedlings, use a child's old red wagon. Wagons are great for moving plants and small bags of fertilizer in your garden, and the lip on the wagon bed helps hold these items in place when you cover bumpy ground. If you're interested in a wagon to move yourself (and not just equipment) around the garden, try a wagon with a seat. This type of wagon usually has a swiveling seat and is perched on four pneumatic tires, allowing you to sit and push yourself through the garden as you work (see Figure 1-13). It has storage space under the seat as well.
- » **Baskets:** To gather all that great produce you grow and harvest, invest in a wire or wicker basket. Wire baskets are easier to use because you can wash the produce while it's still in the basket. Wicker and wooden baskets, though less durable than metal, are more aesthetically pleasing and stylish in your garden. Piling your produce in either basket is a lot more functional than trying to balance zucchinis in your arms while carrying them from your garden to your kitchen.

**FIGURE 1-13:**  
A wagon with a  
seat and storage  
space is useful in  
the garden.



Illustration by Kathryn Born

## Wheelbarrows and garden carts

Invariably you need to move heavy items such as soil and fertilizer from one spot to another in your yard or garden. The two main options for moving stuff that's "larger than a bread box" are wheelbarrows and garden carts. The basic difference between the two vehicles is the wheels. *Wheelbarrows* have one or two wheels and an oval tray; *garden carts* have two wheels and a boxy rectangular wooden tray.

Wheelbarrows are maneuverable in tight places, can turn on a dime, and are easy to dump. A contractor-type wheelbarrow has a deeper box and is worth the extra investment because of its superior quality. For a lightweight wheelbarrow, try one with a box made out of plastic.

Garden carts are better balanced, can carry larger loads, and are easier to push than wheelbarrows. A larger-sized garden cart can easily handle loads of compost, soil, rocks, and bales of hay. Some garden carts even have removable back panels that make dumping easier.

## Power tillers

The old-fashioned rear- or front-tined *power tiller* was designed to help large-scale gardeners save time breaking ground in their gardens. The large power tillers (more than a 5-horsepower engine) are best if you have 1,000 square feet or more to till. They also can be indispensable tools for forming raised beds and breaking sod.



TIP

If you need to use a large tiller only once a year, consider renting one from a local rental store.

Because home gardens have become smaller, tiller manufacturers have responded by designing a new group of tillers called *minitillers* (see Figure 1-14). These two-cycle, 1- to 2-horsepower tillers weigh only 20 to 30 pounds, are easy to handle, and can till in tight places. They not only have tilling tines but also come with other attachments such as lawn aerators, edgers, and lawn dethatchers.



**FIGURE 1-14:**  
A minitiller is  
perfect for  
smaller home  
gardens.

*Illustration by Kathryn Born*

Minitillers work best in previously worked, loamy soil without large stones. Unlike their larger cousins, minitillers are easy to handle when you're weeding between rows of vegetables and close to plants. However, they aren't good for breaking new ground or tilling stony or heavily weeded areas in your garden. Because they're lightweight, they till raised beds and small gardens very well. Electric models are available if you don't like the noise and smell of a two-cycle engine.



- » Selecting crops that best suit your growing conditions
- » Choosing vegetable, fruit, and herb varieties with success

## Chapter 2

# Deciding What to Grow

**F**ew things are better than fresh fruits and vegetables, and growing your own can be very rewarding. You may want to grow just enough for yourself, or you may decide to grow extra so you can pocket a little cash. And if you have animals, you may want to raise crops to feed them.

As you plan your garden, you need to consider how much of your day you want to devote to caring for crops, how long you want the growing season to last, which types of crops you want to grow, what kind of soil you have, and how to supplement the soil so it makes for a perfect environment. This chapter helps you answer some of those questions and describes common fruits and vegetables and how best to grow them.

## Understanding Veggie Varieties

Before you go drooling over the luscious veggies in catalogs, in garden centers, and online, it's good to know a little about the varieties you can choose from. If you select your veggie varieties before you design your garden (as laid out in Chapter 1 of this minibook), you can ensure that you have the proper amount of space and the best growing conditions.

A *variety* is a selection of a particular type of vegetable that has certain predictable, desirable traits. These traits may include the following:

- » **Adaptation:** Some varieties are particularly well adapted to certain areas and climates. For example, some tomato varieties produce good-tasting fruit in the cool, foggy coastal climates of the Pacific Northwest. And certain bean varieties are better adapted to the hot, dry deserts of the American southwest.
- » **Appearance:** You can choose from a rainbow of fruit and leaf colors, such as purple peppers, yellow chard, and orange tomatoes. Leaf textures and shapes range from frilly to smooth to puckered. The flowers of some vegetables, such as okra and eggplant, are attractive in their own right. You get the idea. The more beautiful the vegetables, the more beautiful the vegetable garden — and the more stunning the food.
- » **Cooking and storage characteristics:** Certain varieties of beans and peas, for example, freeze better than others. Some winter squash varieties may be stored for months, but others need to be eaten immediately.
- » **Days to maturity (or days to harvest):** Days to maturity refers to the number of days it takes (under normal conditions) for a vegetable planted from seed (or from transplants) to mature and produce a crop. This number is especially important for vegetable gardeners who live in short-summer climates. Average days to maturity are listed for each type of vegetable in Chapter 4 of this minibook.
- » **Extended harvest season:** A certain variety of corn, for example, may ripen early or late in the season. By planting varieties that ripen at different times, you can start harvesting as early as 60 days after seeding and continue for five or six weeks. Seed catalogs and packages often describe varieties as early season, midseason, or late season in relationship to other varieties of the same vegetable.
- » **Pest resistance:** Many vegetable varieties are resistant to specific diseases or pests — a very important trait in many areas. Some tomato varieties, in particular, have outstanding disease resistance. See Chapter 6 of this minibook for more on pest control.
- » **Plant size:** The trend in vegetable breeding is to go small. Tomato, cucumber, and even winter squash varieties are available in dwarf sizes. These varieties are perfect for container growing or small-space gardens.
- » **Taste:** Choose a flavor and you can find a vegetable that stars in it. You can grow fruity tomatoes, super-sweet varieties of corn, bitter melons, and spicy peppers. You'll discover flavors for every taste bud.



REMEMBER

To realize the scope of your vegetable variety possibilities, it's important to note that you can categorize a variety as a hybrid, an open-pollinated, or an heirloom variety. Here's what these terms mean:

- » **Hybrid:** Hybrid seeds (also known as F-1 hybrids) are the result of a cross of selected groups of plants of the same kind, called inbred lines. (A cross is when pollen from one flower fertilizes a flower from another similar plant, resulting in seed.) Hybrid seeds generally are more expensive than open-pollinated seeds, and they can't be saved and planted the next year because the offspring won't have the same characteristics as the parents. If you did plant them next year, you'd get a mix of characteristics — some desirable and some not. The plants are uniform, but they often lack a diversity of shapes, colors, sizes, and flavors. However, hybrid plants are more vigorous, productive, and widely adapted than other varieties.
- » **Open-pollinated:** Open-pollinated varieties basically are inbred lines allowed to pollinate each other in open fields. They produce offspring that are similar to their parents. Before the arrival of hybrids, all vegetable varieties were open-pollinated. Some gardeners like these varieties for their flavor, their diversity, and the fact that they can save the seeds each year to replant. The resulting offspring are pretty predictable, but they don't provide the consistency of hybrids.
- » **Heirloom:** Any open-pollinated variety that's at least 50 years old is generally considered an heirloom. Heirlooms are enjoying quite a revival because of the variety of colors, tastes, and forms that are available. They're worth trying, but keep in mind that some varieties may not have the disease resistance and wide adaptability that hybrids generally have.

## Deciding How Much to Grow

Just because you have a bit of land for growing veggies doesn't necessarily mean you're interested in taking on the task of planting, tending, and harvesting crops on the whole plot. That's a lot of work for a homesteader! But maybe you do want to do it. Maybe you have dreams of raising enough to sell to the local grocery stores and farmer's markets and of lining your pockets with some extra cash. Or maybe you have dreams of becoming a full-fledged, full-time farmer, and you need to get your feet wet on a smaller scale before taking the giant plunge.

Before you plant your first seed or seedling, you need to determine how much to grow to suit your purposes, and think about the time you have available for managing your crop or garden. You may be surprised at how much you can grow in a

small space. Sometimes, the smaller the space, the more attention you can give, and thus the more yield you get.

## Supplementing your grocery needs and sharing with friends

Have you ever added up how much you spend on fruits and veggies per year? Wouldn't it be cool if you could reduce or even eliminate that expenditure? Well, with a little bit of acreage, a little knowledge, and a little work, that's very possible.

As far as the amount of space you need, you may hear all kinds of suggestions. One source says with 500 square feet, you can grow 90 percent of a person's annual vegetable requirements; however, your results will undoubtedly vary.

If your intention is not only to feed yourself but also to treat your relatives, friends, neighbors, and coworkers, you need a few more plants. Or you may just be content to share any overabundance that grows from what you've planned for yourself. Many plants produce all their fruit within the span of a few weeks, so if your freezer is getting just a little too full of grated zucchini, share the wealth!

To determine how much you'll need, ask yourself how much your family consumes: How big is your family? Do the little ones even like vegetables? A couple of tomato plants may be sufficient for a family of two who mostly uses tomatoes as a garnish or maybe as an accent in sandwiches, but for a family who loves and eats salads at every dinner, you want to go with several plants. Chat with neighbors, the county extension agent, and the people at the seed stores for advice. You'll most likely go through a few seasons of trial and error before getting the garden size right.

## Selling at the market

If you have enough land and time, planting a lot more, with the intention of selling to local markets — or setting up a table at the various farmer's markets that crop up in the summertime — can very well give you some well-deserved pocket money, as well as a little fun socializing with the people who come to visit. To get an idea of just how much you should plant, ask neighbors for suggestions, inquire at your local cooperative extension office, or even chat with farmers at the farmer's markets (which can give you planting ideas for next year).



WARNING

A lot of rules and regulations come with selling food to the general public, and each state defines its requirements. If you operate as a produce stand — you handle only raw, unprocessed fruits and vegetables as opposed to selling prepared food — you may get away with anything from very limited rules to having a food handler's certificate or specific equipment (such as refrigeration) at your booth.

## Going all the way to a subsistence-level operation

Being completely self-sufficient — growing enough to meet your basic needs — requires a bit more work. You have to be diligent about caring for the plants, dealing with pests, and so on, and you'll be spending more of your time out in the field than inside enjoying a warm fire or a cold beer.

Although being able to fend for yourself may seem like a romantic concept, you may want to read about some of the hardships American pioneers and homesteaders faced. And no, I don't mean using buffalo chips for fuel, repairing broken wagon wheels, building houses out of sod, and using oxen-drawn plows, because in this day and age, most of those problems are a thing of the past. But you may still face droughts or insect infestations that may mean little or no food one year. Of course, today, you'll always have a backup in place (a grocery store nearby) to run to if your crops fail.

For a subsistence-level operation, you freeze, dry, or can fruits and veggies to preserve them for the off-season. The freezer is definitely an advantage you have over the homesteaders. Instead of having to dry veggies or smoke meats, you can simply toss things in the freezer and have at them as needed, well outside the growing season. (See Book 2 for more about enjoying the fruits of your labor.)



REMEMBER

You'll probably have to do a few seasons of trial and error until you find out just how much you need to plant. That means estimating what your family consumes in a year and planting what you think will cover that, adding a little extra as a buffer in case some of the plants fail. You may even consider growing a bit more than you'll consume so you can harvest the seeds, dry them, and use them the next season. Then see where you stand at the end of the winter when it's time to start the growing all over again. If you find that you misestimated, adjust accordingly.

Even with all this calculation, you may not be able to be completely self-sufficient. You may get the plants right, but if you want to eat meat, you may need to find a good butcher. Or perhaps you want to do some bartering for something your neighbor grows, exchanging some corn for some okra. Or how about trading some tomatoes for some fresh goat's milk?

## Succeeding with Vegetables

With so many options for veggies to pour your time, money, and heart into, the possibilities may seem endless. Some limitations that can help you make your decision are the amount of space you actually have to devote to crops, the quality