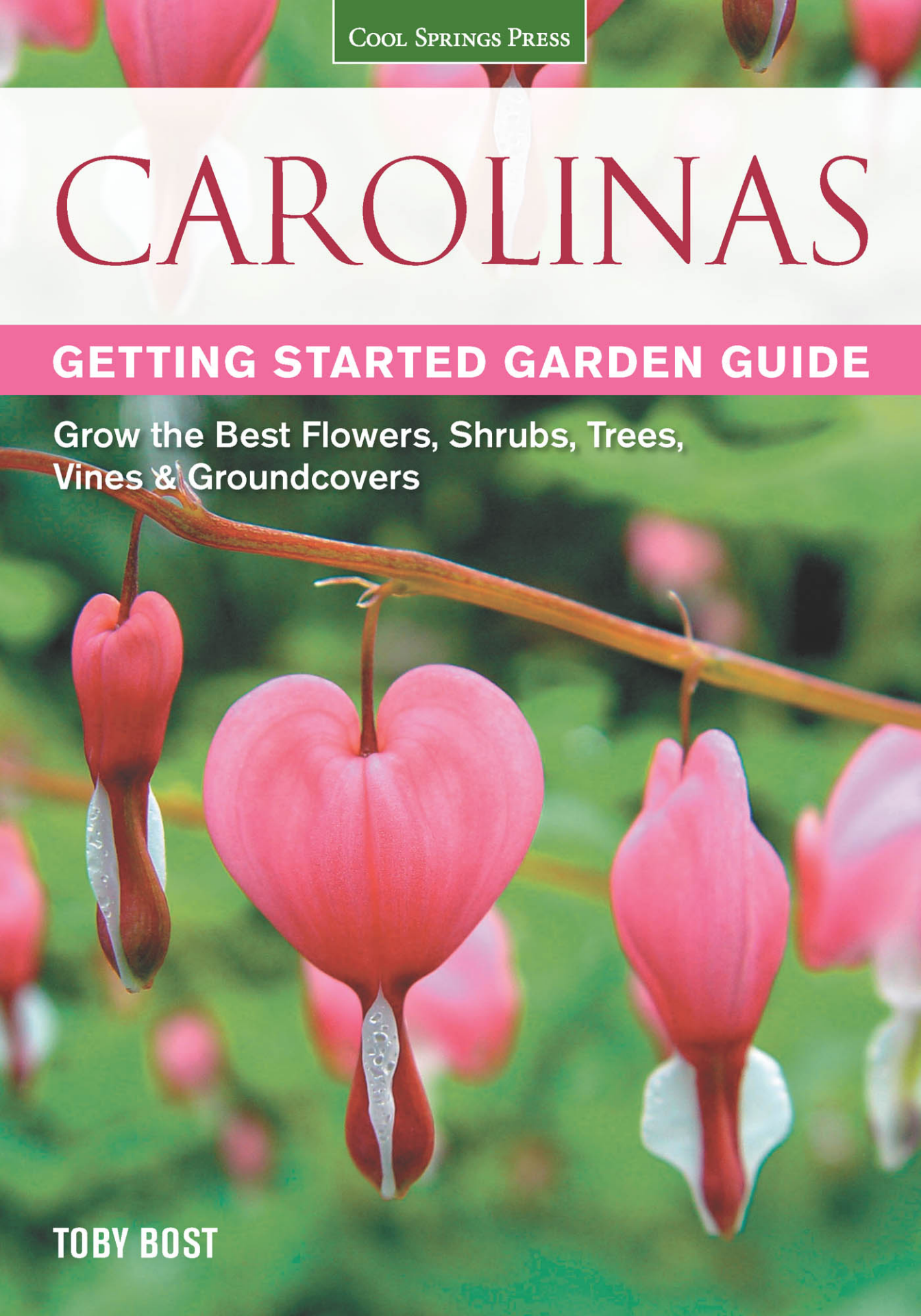
Cool Springs Press

CAROLINAS

GETTING STARTED GARDEN GUIDE

Grow the Best Flowers, Shrubs, Trees, Vines & Groundcovers



TOBY BOST

CAROLINAS

GETTING STARTED GARDEN GUIDE

Grow the Best Flowers, Shrubs, Trees, Vines & Groundcovers

First published in 2015 by Cool Springs Press, an imprint of Quarto Publishing Group USA Inc., 400 First Avenue North, Suite 400, Minneapolis, MN 55401

Digital edition: 978-1-62788-628-4

Softcover edition: 978-1-59186-900-9

Library of Congress Cataloging-in-Publication Data

Bost, Toby, author.
Carolinas getting started garden guide : grow the best flowers, shrubs, trees, vines & groundcovers / Toby Bost.
pages cm
Includes bibliographical references and index.
ISBN 978-1-59186-900-9 (sc)
1. Gardening--North Carolina. 2. Gardening--South Carolina. I. Title.

SB453.2.N8B67 2015
635.09756--dc23

2014039035

Acquisitions Editor: Billie Brownell
Design Manager: Cindy Samargia Laun
Layout: Kim Winscher

Printed in China
10 9 8 7 6 5 4 3 2 1

Carolinas

GETTING STARTED GARDEN GUIDE

Grow the Best Flowers, Shrubs, Trees, Vines & Groundcovers

Toby Bost

Cool Springs Press
Home and Garden Experts™
MINNEAPOLIS, MINNESOTA

DEDICATION AND ACKNOWLEDGMENTS

To my children and their spouses, Brandon and Lauren Bost, and Alex and Terri Moy, who have new homes of their own and who will find this book helpful for many years to come. Much success with the plants you grow and the love you know.

A work of this kind would not be possible without the help and support of many people. I cannot thank everyone enough for all they have done. Even though this book is dedicated to my children who are getting started with new homes and gardens, I want to give special thanks to my wife, Becky, for her constant support and understanding of my commitment to this writing project.

Also, Cool Springs Press is long overdue recognition. Their contemporary state and regional books meet the diverse needs of gardeners throughout the country who face various geographic challenges in their search for outstanding plants. Their books guide gardeners toward the results they desire and in turn a lifelong love for gardening. Further, I would like to thank my editor, Billie Brownell. Her expertise and commitment helped make this book accurate and beautiful. Without her guidance this work would not be the accessible, friendly tool for gardeners throughout the Carolinas. Many thanks to the rest of the Cool Springs Press team, especially Tracy Stanley.

The following people have helped me gather information and prioritize plant lists so that Carolina gardeners could have more tools in their toolbox. Landscape professionals are most generous with the cutting-edge plant knowledge they share when asked. I would like to acknowledge the individuals who graciously provided me with technical information to update the manuscript as I worked through each chapter, often during their busiest time of year—Adrienne Roethling, horticulturist at the Paul J. Ciener Botanical Garden for contributing bulb and perennial text; Scott Welborn, Extension Agent, edited the lawn section; and, P.J. Gartin, garden writer/Master Gardener helped organize the plant list. Others offered plant variety and cultural advice—Mike Garner, Sedge Garden Nursery; Jimmy Speas, Winston-Salem Rose Society rosarian; Frank Sink, Frank's Perennial Border; Mark Abee, AB Seed Garden Center; John Hoffman, Hoffman Nursery; Doug Chapman, Plantworks Nursery; and Tony Avent, Plant Delights Nursery. Finally, I appreciate the help from various green industry business websites and returned telephone calls from staff employees of Park Seed Company, Tinga Nursery; Hawksridge Farm, Piedmont Carolina Nursery, Wayside Nursery, Monrovia Nursery, L.A. Reynolds Garden Showcase, Lowes Company, Home Depot, Nurseries Caroliniana, and Riverbanks Botanical Gardens. You guys were great!

With the death in 2011 of legendary gardener Jim Wilson, I consider his gardening wisdom passed along to me as coauthor of *Carolinas Gardener's Guide*, a gift that I will always cherish. Hopefully, readers will appreciate the richness of a new edition, in *Carolinas Getting Started Garden Guide*. After much scrutiny, I have attempted to highlight the very best ornamental plants and grasses, both native and nursery-introduced, that flourish in Carolina landscapes with minimal care for establishment.

Considering all the talk in the scientific community about global warming and sustainability, it is my humble prediction that new plant selections will continue arriving at the current rate of more than 350 cultivars annually. Landscape gardeners in the future will have no shortage of plant materials to fill the spaces they have available to naturalize woodlots, beautify homes, and design formal gardens.

Happy landscape gardening!

CONTENTS

Welcome to Gardening

IN THE CAROLINAS

There is precedent for combining North and South Carolina into one book about gardening. After all, they share the same hardiness and heat zones and generally the same soil types. Prevailing southwest to northeast winds warm both states and hurricanes brush both shores. Both South and North Carolina have three geographic regions: Mountains, Piedmont, and Coastal. A strong cadre of knowledgeable nursery owners, landscape professionals, and garden center operators can be found in every region. Thankfully, gardeners are not far from a ready source of plant information. The Cooperative Extension, a marvelous public service in every county, overwhelmingly supports lawn and garden activities in both Carolinas.

The land area in the two Carolinas is considerable in size. From Boone, North Carolina, in the northwest mountains of North Carolina to the sunny beaches of Charleston, South Carolina, the topography and microclimates are significant to successful gardening. Mount Mitchell in North Carolina at 6,680 feet is the highest peak east of the Mississippi River. Gardening at that altitude presents a set of challenges totally unlike the challenges experienced while planting the sandy soils at sea level in Brookgreen Gardens, Pawleys Island, South Carolina. Coastal gardens, whether located in the tidewater or farther inland, have unique concerns with salt spray and high water tables. On any summer day in the Carolinas the average daytime temperature can vary 20 degrees. Plant establishment, growth, and sustainability are impacted greatly by winter weather and summer night temperatures. Unfortunately, the weather can change quickly in the South, and the four seasons, as glorious as they are, may not be constant from year to year.

During much of the 20th century, it is fair to say that only two of the four seasons were fully utilized by flower gardeners in the Carolinas. They had azaleas, dogwoods, and rhododendrons in the spring, camellias in the fall, and a long stretch of green in between. The spring and fall seasons also brought food gardening. That's all changing now. Thanks to heat- and humidity-resistant flowers, landscapes can glow with color during the summer. New woody shrub and tree introductions have fewer pest problems and dwarf forms are available for numerous species. Rock-hardy winter annuals can brighten the dark winter days. Ornamental grasses are appearing to add interest

and motion to otherwise static borders. Herbs and edibles planted in raised beds are making all-season food gardening not only enjoyable but gratifyingly productive.

But let's be honest about gardening in the Carolinas. Except high in the mountains, summertime gardening is an early morning and late evening activity. Midday gardening is not fun; the risk of dehydration, heat stroke, and skin cancer is real. That's why experienced Carolina gardeners plant shade trees as a first order of business. They know from trial and error that when books say, "grow in full sun," that plants will grow just as well with afternoon shade, and that the same shade is a great place for a comfortable seat and a glass of sweet tea.

Though the sun can be your enemy, you can make it your gardening friend, unlike some pesky critters. Dog and deer ticks lurk on plants waiting for you to come along; stinging caterpillars take refuge under tattered foliage; yellow jackets bore holes in inconvenient places. Slather repellent from head to toe before venturing into your summer garden to deter the ticks. Wear leather gloves in perennial gardens in late summer to protect your hands from stinging caterpillars. Products with DEET® repel mosquitoes. And a hornet-wasp killer aerosol sprayed into their entrance at dusk will prevent unsuspecting passersby a lot of pain. Well, you didn't really expect four seasons of good gardening weather to come without a downside, did you?

Once you get into the swing of gardening in the Carolinas, you can make the trying weather and intractable soil your servant. Gardeners moving to the Carolinas from up north often complain about the sun "not being in the right place for the time of day." Summer days in the Carolinas are shorter, nighttime comes with a rush, and winter days are significantly longer. And they complain about "that awful clay." Give it a chance and it will grow beautiful plants when adequately modified with soil conditioners.

When you study this book, filled with years of experience, gardening will become more enjoyable and productive. You will look forward to spending time in your garden rather than dreading the prospect. With each passing year you will gain skill and confidence. You could even become that person that all the neighbors turn to for advice—a "master gardener."

Getting Started

The Benefits of Organic Matter

Organic matter is a component that increases a soil's water-holding capability while giving it a dark, earthy appearance. It is found in manure, compost, aged leaves, sawdust, and decomposing mulch.

Peat moss is readily available to gardeners and is suitable for amending sandy soils and for use in container gardening. In the Piedmont's clay soils, finely ground composted pine bark is one of the best amendments. (Its general particle size should be ½ inch or smaller.) Tight clay soils can be improved if 20 to 30 percent (by volume) of pine-bark soil conditioner is tilled into the garden (spread a 2-inch layer over the bed and spade or till 6 inches in depth). Other good amendments are leaf compost, granite screening, small pea gravel, and Perma-Till™. Hardwood bark should not be

used as a soil conditioner; however, aged hardwood bark makes a fine landscaping mulch.

Grass clippings and leaves combine well for composting.

Making "Black Gold"

Compost is biologically active organic matter that can be made at home by nature (humus or "woods dirt"). No gardener should be without a compost bin. Stir a little compost into the top few inches of soil, and your plants will flourish. (Compost does for plants what steroids do for athletes—but safely, of course!) Gardeners gloat over their compost. Some even call it "black gold." The billions of living creatures found in compost help plant roots absorb water and nutrients. Organic gardeners know that you feed the soil, not the plants.

Making compost is simple. Just layer "green and brown" organic yard wastes, maintain moisture content, and turn the pile a few times. In six months to a year, you will have a high-quality organic material that can be used as a soil amendment. A simple compost recipe calls for two trash bags of shredded hardwood leaves combined with one bag of grass clippings. There are numerous recipes and instructions for composting available at any Cooperative Extension office or public library. You will need 2 cubic feet of compost for every 8 square feet of garden bed you plan to amend.

How to Prepare a Bed

Poorly drained clay soils are the norm throughout much of the Carolinas. When preparing a new bed for planting, several tricks will help you avoid "wet feet" and subsequent root rot. The simplest method is to borrow topsoil from one area and add it to the new bed. Rototill the bed and rake it smooth. Adding a few inches of topsoil can have a profound influence on whether a plant lives or flounders.

Landscape timbers or ties, rock retaining walls, and steel edging materials are frequently used to facilitate bed preparation. Or you can create berms for planting, using another technique that involves sculpting high mounds of amended native soils that serve a dual purpose as planting bed and privacy screen. If sand is used in clay soil to improve drainage, the volume of sand must exceed 70 percent.

Finally, where soil drainage is questionable, install a "French drain." This project is best performed using a backhoe. Lay slotted drain tile in the bottom of a 2-foot-deep trench that has a 2-percent slope to daylight. Surround the drain pipe with a bed of crushed stone and then backfill with a loose soil mix. This is the method often used for preparing beds for roses and rhododendrons.

After all is said and done about bed preparation, many gardeners will continue to dig a planting hole and throw a few inches of gravel into the bottom. Though

Add compost and soil amendments to new beds.

they may feel good about this effort, it is a total waste of time and will more than likely worsen soil drainage. Digging a hole in a poorly drained site is something like constructing a pool or creating an in-ground aquarium—only riparian plants thrive under such conditions.

When in doubt, check soil drainage before planting. You can do this with a post-hole digger or shovel and a bucket of water. Dig a hole 1 foot deep and fill it with water. Let it drain cleanly, then refill with water. If the water is still there the next day, don't plant until you install drain tiles or create berms.

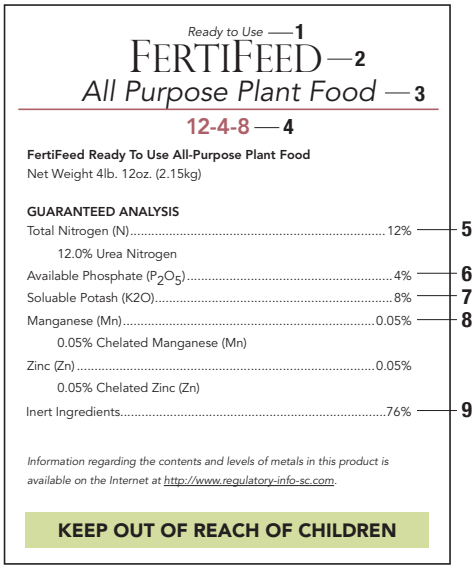
Fertilizing: Just a Numbers Game

1. Type of fertilizer. "Ready to use" means that you can directly apply according to the instructions. Fertilizer marked as "concentrated" has to be mixed with water before spreading on plants.

2. The fertilizer brand name. There are different brands of fertilizer, just like there are different brands of clothes.

3. Intended use. This tells you which plants the fertilizer is for. Use different fertilizers for grass, vegetables, and flowers.

4. Fertilizer analysis. Every fertilizer has three numbers on the bag, separated by dashes. This is called the analysis, or sometimes the N-P-K number. The first number is the percentage of nitrogen in the fertilizer, the second number is the percentage of phosphorus, and the third number is the percentage of potassium. This number is also a ratio. For example, a fertilizer with analysis 10-10-10 has a ratio of 1:1:1; in other words, the same percentage of available nitrogen, phosphorus, and potassium in the fertilizer. A 12-4-8 fertilizer has three parts nitrogen to one part phosphorus and two parts potassium.



5. Nitrogen content. This number indicates the percentage of nitrogen in the contents of the package. In this example, a 4-pound bag with 12 percent nitrogen has .48 pounds of nitrogen.

6. Phosphorus content. This shows the amount of phosphorus in the fertilizer.

7. Potassium content. This number shows the amount of potassium in the fertilizer. This fertilizer example has .32 pounds of potassium in a 4-pound bag. If you need to apply 2 pounds of potassium per 1,000 square feet, you would need 6.25 bags of this fertilizer.

8. Nutrients other than N-P-K. These are micronutrients, other nutrients that plants need in smaller amounts than nitrogen, phosphorus, and potassium.

9. Other ingredients. Other ingredients make the fertilizer easier to spread.

Although seventeen essential nutrients are required for plant growth and development, only three are important to remember when gardening in the Carolinas. A healthy plant will consume the largest amounts of three nutrients, nitrogen (N), phosphorus (P), and potassium (K). These elements are the main ingredients in fertilizer and are expressed in terms of a percentage weight. For example, a general garden fertilizer labeled 10-10-10 contains 10 percent nitrogen, 10 percent phosphorus, and 10 percent potassium. The other 70 percent is filler or clay.

Each nutrient serves a function in the overall health of a plant. Nitrogen promotes vegetative or foliar growth; higher nitrogen percentages in a bag are beneficial for lawns or evergreen plants. Phosphorus enhances root and flower development; "starter" fertilizers and "bloom-boosters" are rich in this nutrient. Potassium is important for the overall health of a plant; "winterizer" fertilizers have a high percentage of potassium and may help a plant tolerate drought, cold, or disease. (A general rule of thumb when applying garden fertilizers is to use 1 pound of actual nitrogen per 1,000 square feet. That's equivalent to 1 gallon of 10-10-10 for every 1,000 square feet of garden area.)

The soil's pH determines the availability of the nutrients to the plants; acidic soils starve plants by locking up vital nutrients, thus creating deficiencies. Monitor the soil pH with soil testing. Limestone neutralizes acidic soils and helps fertilizers work. Acidic soils can waste more than half the nitrogen fertilizer applied, and wasted fertilizers are an environmental hazard.

Although selecting the right fertilizer can be a bit frustrating, it's really just a numbers game. Compare the costs of fertilizer products by the amount you are paying for each pound of nitrogen or other dominant nutrients in the package. Controlled-release fertilizers (CRF) generally cost more, but they have some distinct advantages over common garden fertilizers. They slowly release nutrients to plants and are less likely to burn roots from high salt concentrates. For best results, apply a fertilizer with at least 40 to 50 percent of its nitrogen in the ammoniacal or urea form. "Slow-release" fertilizers are an ecologically sound way to supply nutrients since excess nutrients will not leave the garden after a heavy rain. It is prudent to clean up after granular fertilizer and pesticide applications. Sweep hard surfaces, like drives and walks, to keep these materials from entering storm drains and polluting our water. Last but not least, fertilizers need not be applied more often than once or twice each season, freeing the gardener for more important tasks.

The Importance of a Soil Test

When it comes to soil-testing kits, you get what you pay for. The inexpensive chemical kits and probes are acceptable for a "ball park" analysis. If you test this way, we still recommend the services of a professional laboratory every few years, especially for major garden installations. In the Carolinas, either the Department of Agriculture's Agronomic Services will analyze your soil or you can contact a Cooperative Extension office for a free soil test kit. Many large farm-supply stores offer their customers a similar service.

No amount of fertilizer will compensate for a soil pH that is out of kilter. More than

half the problems identified by the Plant Disease Clinic at North Carolina State University were caused by fertilizers—too much, in most cases. The optimum pH for most lawns and gardens is 5.5 to 6.5. (Remember that a pH below 6.9 is acidic and a pH above 7 is considered alkaline.) The addition of limestone reduces the acidity of soil and raises the soil pH. How much limestone you need depends on the type of soil, amount of organic matter, residual nutrients, and the limestone product purchased.

The Best Defense Against Pests

The conditions that make our gardens flourish also make for a happy homeland for insect and disease pests. Mild winters and wet, humid summers favor healthy populations of bugs and blights each growing season. Quarantines for gypsy moths, emerald ash borers, and fire ants are currently in place. Gardeners and homeowners are holding their breath in hopes that these and other garden pests will not become widespread throughout North and South Carolina. A prudent axiom to garden by is "The best defense against pests is a healthy plant." Most garden plants can tolerate moderate amounts of leaf injury before a pest-control strategy should be implemented. Natural predators often lurk on the garden fringes, waiting to help when problems arise. Second only to a vigorously growing plant is variety selection. The strength of this book is in its plant variety recommendations. The industry has made great strides over the last three decades in the selection and breeding of genetically superior plant varieties. Choose these plants, and you will have an ally in the fight against pests.

Integrated Pest Management

Our approach to pest control in the lawn and garden incorporates the principles of Integrated Pest Management (IPM). Proper identification of the pest and of the host plant is of paramount importance in the IPM system. This may appear to be a slow, painstaking course of action, but it does make more sense than the "Spray and Pray" philosophy of some gardeners today. In one situation, pruning a diseased twig may solve the problem. In another case, a fungicide application may be justified. Removal of a certain plant variety may be required in another situation. IPM is here to stay—learn more about it.

Weed Control

Ask any gardener what he or she dislikes most about gardening, and nine out of ten times the response will be "weeding." Gardeners and professionals alike go to great lengths to keep weeds under control.

The most ecologically sound approach to weed control is mulching landscape beds and gardens. Organic materials such as bark, compost, and pine needles are good choices for mulch. On steep banks and slopes, use shredded hardwood bark or pine needles; on flat surfaces, use bark nuggets that won't float off in a rainstorm. The rule for mulches is to apply to a depth of 1 to 3 inches, and don't heap the mulch up against the trunks of trees. Landscape fabrics can be useful in areas where irrigation is not an option.

Use a hard rake or a four-tine claw to rake the mulch around the bed.

After spreading the mulch in the landscape bed, pull the mulch slightly away from plant stems and leaves.

There are some excellent pre-emergent herbicides for keeping crabgrass out of beds; apply these in late February or March. To get the grassy weeds out of shrub and perennial borders, hand weed or apply a grass killer that contains sethoxydim. Nonselective herbicide containing glyphosate is excellent for clearing a new bed prior to planting. If you spot-spray with any glyphosate product, be sure it doesn't contact the green tissues of any garden plant because it systemically kills everything green.

The Need for Water

Unless you incorporate drought-tolerant plants into your garden design, irrigation will be necessary. There is no substitute for water in gardening! Plants cannot produce their own food via photosynthesis without sufficient water.

While lawns consume a lot of water, herbs and groundcovers prefer drier conditions by virtue of their native habitats. Most regions of the Carolinas receive 35 inches of rainfall each year, and some have twice this amount. The wet periods are interspersed with dry seasons, and supplemental irrigation can play a vital role in garden survival.

Most plants in our gardens need at least 1 inch of water a week, whether measured with a rain gauge or a tuna fish can. That's the equivalent of 600 gallons of water a week for a 25- by 50-foot garden. It would take several hours to apply this amount with a handheld garden hose, so it is best to buy sprinklers of some type.

Supplemental watering is a must during the first season. With the use of sprinklers, hand-watering, or more elaborate permanent systems that have time clocks, the garden can be kept in good health. In clay soils where soils absorb water slowly, drip irrigation in combination with mulch is the preferred method for watering woody ornamentals. An inexpensive water timer and a few soaker hoses can be the gardener's best friends.

Use a watering wand to water at the base of your plants.

Many gardeners prefer to water "on demand," especially in established gardens. Given time and experience, even the novice can take this approach. You must learn to recognize the symptoms of water stress before irreparable harm is done to the garden because of negligence or oversight.

Sunlight Requirements

For the best results, plants need to be placed where they will receive the proper amount of sunlight. The amount of sunlight suitable for each plant's growing requirements featured in this book is noted with "symbols" for suggested light exposure.

Hardiness Zones

Zone maps rate how much cold a plant can endure, giving an idea of its survivability at low winter temperatures. The most common map in current use is the United States Department of Agriculture (USDA) Plant Hardiness Zone Map. Each 10-degree drop in average minimum winter temperature places a region in the hardiness zone with the next lower number. In North Carolina, gardeners in the mountain regions are in Zone 6, while gardeners near Charleston and farther south live in Zone 8b.

Remember that these are averages, and seasonal extremes of cold will limit what grows in your garden. Another map available from Rutgers University accounts for rainfall and sunshine, two other important climatological factors that determine a plant's hardiness in the garden. The newest map developed by the American Horticultural Society (AHS) determines which plants will survive summer's hottest days. The AHS Plant Heat-Zone Map divides the country into twelve zones; each zone corresponds to the average number of days each year with temperatures over 86 degrees Fahrenheit. The Piedmont region is in Heat Zone 7 and averages sixty to ninety days above this temperature.

What's in a Name?

Although common names are easier to remember and pronounce, a scientific or botanical name allows you to communicate with a gardener in China or a horticulturist in Brazil. The new world opening up to us via the Internet makes knowledge of plant nomenclature even more essential.

Both common and botanical names are used throughout this book. A plant's botanical name consists of a genus and a species epithet, both italicized. For example,

Ilex x *meserveae* 'Blue Girl'

Ilex crenata 'Compacta'

all hollies belong to the genus *Ilex*. The epithet identifies a specific kind of holly: *Ilex cornuta* is a Chinese holly. To identify a plant even more closely, a cultivar name describes a special feature or tells the name of the person who selected the plant. The cultivar name is set off by single quotation marks. For example, the needlepoint holly's botanical name is *Ilex cornuta* 'Needlepoint'. Some plants that occur naturally in the wild may be denoted with the abbreviation "var." and another word following the epithet.

Knowing these straightforward rules of taxonomy will be of use as you search catalogs and websites for new and interesting garden varieties.

Gardening Made Simpler

The turfgrasses and garden plants described in this book are time-tested and durable in Carolina gardens. Many are cultivars of native plants, and most are appropriate for sustainable landscape gardens. These plant lists are by no means complete. It was necessary to exclude some fine ornamentals, but the plants on these pages are readily available at the major wholesale and retail nurseries in our states. Landscape professionals will recognize most of the plants from the required plant lists provided by their trade associations for the Contractor's exam and other certification credentials. Certainly the list is a good starting point for creating a new garden or revitalizing an existing one in the Carolinas.

Gardening is America's number one "leisure" activity—it should not be drudgery. Gardening books should be enjoyable to read and motivate one to try new plants.

I hope the *Carolinas Getting Started Garden Guide* will accomplish its goal of taking the mystery out of gardening in our states. This book offers a wealth of information gathered through networking with home gardeners and professionals alike. It contains the latest research findings on plant varieties, practical gardening techniques, and "how-to" suggestions set in an easy-to-read format.

Good luck with your Carolina garden!

How to Use This Book

The information in this book can be applied throughout both states. Each entry in this guide provides you with information about a plant's particular characteristics, its habits, and its basic requirements for vigorous growth as well as my personal experience and knowledge of it. Hopefully, the information you need to realize each plant's potential is found with its profile. Only when a plant performs at its best can one appreciate it fully. You will find such pertinent information as mature height and spread, bloom period and seasonal colors (if any), sun and soil preferences, planting tips, water requirements, fertilizing needs, pruning and care, and pest information. Each section is clearly marked for easy reference.

Sun Preferences

For quick reference, symbols represent the range of sunlight suitable for each plant. "Full Sun" means a site receiving eight or more hours of direct sun daily. "Part Sun" means a site that receives direct afternoon sun for six hours a day, or partial sun all day. "Part Shade" means a site that receives morning sun/afternoon shade. "Shade" means a site that is in dappled or even in deep shade all day. Some plants grow successfully in more than one sun exposure, which will be indicated by more than one sun symbol. Note: Afternoon sun is stronger than morning sun, and this exposure is more apt to stress certain plants.


Full Sun


Part Sun


Part Shade


Shade

Additional Benefits

Many plants offer benefits that further enhance their appeal. The following symbols indicate some of the more notable additional benefits:


Native: these plants are indigenous to the United States


Drought tolerant: after establishment, these survive on rainfall or minimal watering


Attracts hummingbirds: their flower color and nectar will attract hummers


Deer & rabbit resistant: these are not attractive to deer or rabbits


Fall foliage: these have seasonal color or variegation, in addition to spring flowers.


Attracts beneficials: includes honey bees, butterflies, and pollinating insects


Edibles: bears fruit/flowers/leaves edible for people or birds

Companion Planting and Design

This section provides suggestions for companion plantings and different ways to showcase your plants. This is where many people find the most enjoyment from gardening.

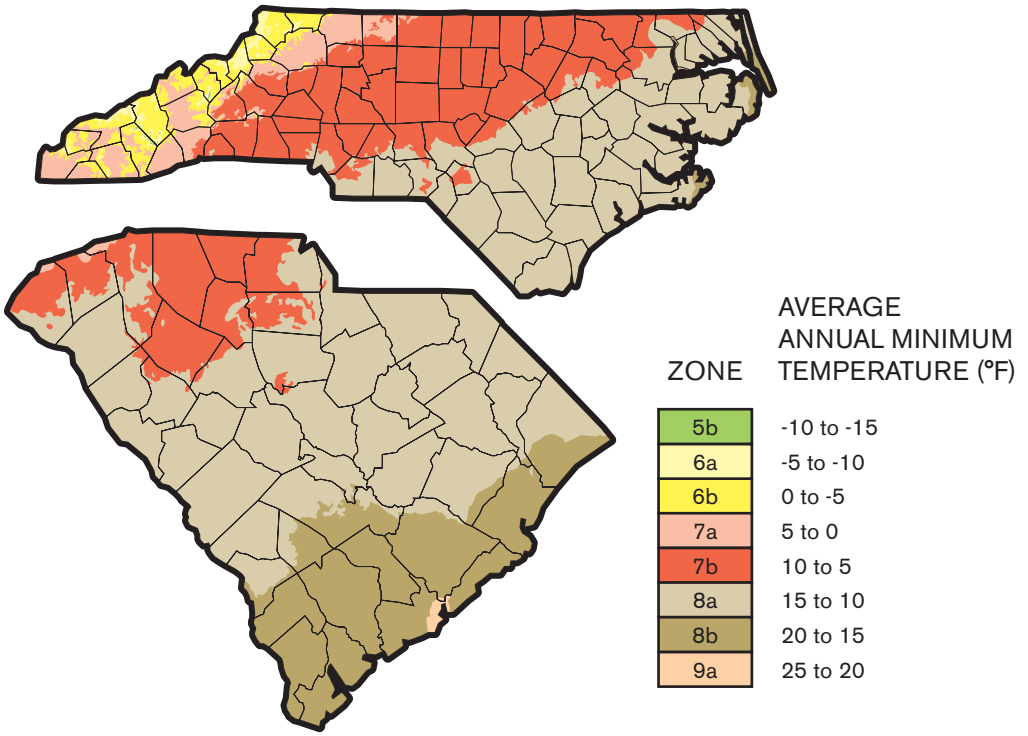
Try These

This section describes those specific cultivars or varieties found to be particularly noteworthy. Or, sometimes other species that are also good choices. Give them a try . . . or perhaps you'll find your own personal favorite online or a new release.

USDA Hardiness Zone Map

The United States Department of Agriculture (USDA) developed the cold-hardiness zone designations. They are based on the minimum average temperatures all over the country. Each variation of 10 degrees Fahrenheit represents a different zone, indicated by colored bands on a zone map. Because perennial plants, whose roots survive winter, vary in their tolerance for cold, it is important to choose plants that are suitable for the zone of your region. Consult this map to learn in which zone you live. Most of the plants in this book will perform well throughout the area. Although a plant may grow in zones other than its recommended cold-hardiness zone, it is best to select plants labeled for your zone.

Note that all featured plants are appropriate for gardens across the Carolinas unless they're flagged with a specific ZONE subhead as noted with the added benefit symbols. For example, Zone 8 plants will struggle with the low winter temperatures found in Zone 6.



USDA Plant Hardiness Zone Map, 2012. Agricultural Research Service, U.S. Department of Agriculture. Accessed from http://planthardiness.ars.usda.gov.

Annuals

FOR THE CAROLINAS

Annuals complete their life cycles in one growing season. These jewels, also called bedding plants, are cheerful workhorses of the landscape. They transform uninteresting spaces into colorful flowerbeds. Many bloom continuously from spring until a hard frost in autumn ends the bedding plant season. Annuals are the backbone of the summer garden and are important for supplying early color in perennial beds. They are easy to plug into otherwise bleak gardens that are just waking up from their winter dormancy. Many dazzle your eye with lovely colors. Most are sun lovers, though a few are appropriate for lightly shaded landscapes.

The Versatility of Annuals

Most gardeners buy seedlings in pots or cell-packs from garden centers for planting after danger of frost has passed. Many quick-sprouting annuals lend themselves to direct-seeding in the garden. New gardeners may feel uncomfortable with seed germination at first, so it may be better for them to stick with the greenhouse-grown transplants. For more experienced gardeners, starting the newest annual introductions from seeds in February can provide a diversion from the winter doldrums.

Annuals can be massed in beds for color impact. Some gardeners find monochromatic plantings effective, such as a "white garden" that consists of white periwinkle, white petunias, and white fan flower or white zinnias. Most Southerners like to celebrate with garden color and find it difficult to stay with a single color scheme. Stylish color combinations are seen along every residential street, but you will seldom see the stereotypical "petunias in old tire planters." Heat-resistant annuals in containers as large as half-barrels provide fabulous color accents.

Gardeners with a sharp eye for color tend to look at the color of their house and garden accessories before choosing flower colors. Dark-colored homes in green surroundings may look somber and can benefit from bright flower colors. Light colors will make a small garden space appear larger.

Annuals Are Hard to Beat

For the display of color you will get for your expenditure and effort, annuals are hard to beat. Keep in mind the two groups of annuals. The ones with tiny seeds should be sown indoors eight to ten weeks before the planting season in order for them to develop and flower on time. This is especially important where short growing seasons prevail, such as in the mountains. Also, the quick-sprouting annuals will bloom rapidly from direct-seeding in the garden. Some of these will "self-sow," which can be

a blessing or a curse. For me, 'Flamingo Feather' celosia became a nuisance, providing far too many seedlings in my flower bed. However, volunteer seedlings of impatiens and globe amaranth can be useful every year as filler flowers in borders.

Many annuals, such as these impatiens, are sold in cell-packs ready for planting.

The Possibilities Are Endless

Hundreds of annual varieties are available, and there is no shortage of opportunities for creating stunning beds. Some annuals, such as snapdragons, cosmos, and sunflowers, are perfect for cutting gardens. Peruse seed catalogs for the newest flower selections for sowing at home or buy healthy, compact transplants at a garden shop each spring. Tall, long-stemmed varieties for cutting are easier to find in seed catalogs than in displays at garden centers. Homegrown seedlings can be planted out in the garden in April or May after the chance of late frost is past. Annuals are easy to grow and require attention only to routine fertilizing, irrigation during dry periods, and control of weeds that can spoil the floral display.

Planting Tips

Most kinds of annual flowers with freshly opened blooms are offered for sale as bedding plants. Some are in tiny, 2-inch cells; others are in 3- or 4-inch pots. A few may be for sale in larger pots but at much steeper prices. Consequently, many gardeners buy flats of three to six dozen individual colors in cell-packs, while others with smaller gardens settle for six-packs or individual pots.

Some gardeners, having experienced mediocre success transplanting small plants of annuals directly to the garden, routinely pot up small annuals into 4-inch pots and grow them for two or three weeks before setting them into the garden. In good potting soil, the plants develop more substantial root systems and survive the rigors of transplanting with little loss of momentum.

Whether you transplant small annuals directly to a flowerbed or container, or grow them in a larger pot, consider "butterflying" their rootballs. Root systems can become so congested that they encase the rootball in a solid mat of rootlets that are reluctant to foray out into the surrounding soil once set into a flower bed. This condition is described as "potbound." Butterflying the rootball consists of pushing or tapping the rootball out of the cell or pot, grasping it with both hands, and, with your fingertips across the bottom of the root system, cracking the rootball. New feeder roots will grow out of the crack and into the surrounding soil to take up water and nutrients.

Before butterflying or shifting annuals to larger pots, prepare your soil. Ideally, you will have submitted a soil sample to your county Cooperative Extension office for testing. If you lack test results, liming is called for on all Carolinas soil types except a few near the coast. As a general rule, incorporate limestome into the soil prior to planting. On sandy soils apply ½ pound per 10 square feet. On clay soils, apply 1 pound per 10 square feet. Use pelletized dolomitic limestone that supplies both calcium and magnesium, and work it in thoroughly. Liming soils helps in two ways: it counteracts excessive acidity in the soil releasing mineralized nutrients, and builds soil structure for improved drainage and aeration. It's money well spent.

Spade or till the soil before spreading limestone. Remove roots of perennial grasses or weeds. For consistency of coverage, divide the recommended application of limestone into two parts. Broadcast half walking in one direction and the other half while walking across your initial path. This is a good opportunity to add organic soil conditioner as well-aged, ground pine bark, mushroom compost, or composted manures, and so forth. Spread a 2-inch layer. Finally, spread fertilizer to add the major plant nutrients nitrogen, phosphorus, and potassium. A controlled-release fertilizer will do the best job; it will feed annuals through most of the growing season. Spade or till these amendments into the soil.

Read the label that came with your plants. If it calls for full sun all day, you can be assured that the plant will benefit from afternoon shade, especially in Zones 8b to 9.

Most sun-loving annuals can endure full sun all day, but they need more frequent watering. If the label calls for shade, set your plants where they will get light or high shade during much of the day. Few flowering annuals do well in moderate to deep shade;

Geranium, million bells, and sweet potato vine combine in this elegant container planting.

foliage plants fare better because their broad leaves trap the limited light that bounces into shaded areas. Follow the plant spacings recommended on the label. On large flowerbeds, leave "sneak paths" behind two or three rows of plants. Run the path across the line of sight and make it just wide enough to traverse without stepping on plants.

Now you can "set out" your plants into your flowerbed or into a container that's at least 7 gallons. Use inexpensive white plastic labels to temporarily mark where each plant is to go. Keep a filled watering can handy; don't add water-soluble fertilizer to the initial watering. Dig individual holes with a trowel and butterfly the rootballs just prior to transplanting. Position the plant so that the top of the rootball is level with or slightly above the surface of the surrounding soil. Pull the excavated soil (backfill) around the rootball and firm it slightly with your hands. Water the plant before moving on to the next. Collect the marker labels as you go.

Don't pinch the tops out of annuals when planting. This outdated practice is a holdover from the days when most annuals grew tall. Now, most are bred as compact forms. Seedlings need all their leaves to establish quickly. After planting, water the entire bed. Let a sprinkler run for an hour, or long enough to saturate a bed without runoff. Leave it in place because you will need to water your new flowers every morning for three or four days. Once they begin looking happy, reduce watering to every three days; then taper off to a weekly and as-needed basis.

Now What?

If you build a flowerbed, weeds will come. Keeping beds weed-free is important. The best way to minimize weeding is to spread a 2-inch layer of mulch. Pine or hardwood bark works well. Don't pull the mulch up close to the stems of annuals; it can hold moisture and cause plants to rot. Pine straw is difficult to work in between annuals and is usually reserved for larger perennials and shrubs.

Broadleaf weeds and grass will find a way to emerge. Take a dandelion digger with you to pry out the entire root system with minimum soil disturbance. Collect the weeds and dump them in your compost heap. If you recognize the terrible weeds called Florida betony and mugwort, take a spray bottle of a nonselective herbicide with you. Set a tin can or plastic milk jug (bottom removed) over the weed before spraying, to avoid spray drift. These weeds try to regrow; respray in three or four weeks. Any aggressive perennial spreaders, such as chameleon plant or culinary mint, can be eradicated this way.

Drip irrigation is the easiest, most responsible, and efficient way to water a bed during dry periods. Flowers like about 1 inch of water per week, twice that on sandy soils, which tend to dry out faster. "Leaky hose" is the simplest drip irrigation system. Weave the porous hose through the flowerbed so that no plant is more than 9 to 12 inches from the hose. Connect the leaky hose to a water faucet and let it run for an hour twice a week during dry weather. Some gardeners object to the look of leaky hoses and conceal them beneath mulch. That can lead to damaging the hose with a hoe or dandelion digger. If you leave the hose on the surface, annuals will soon cover it.

Removing old flower heads, called "deadheading," can be a dreaded task or a way to calm your mind while doing no-brainer work. Either way, deadheading leads to a second flush of color and to neater-looking flower beds. A few annuals such as coreopsis, sunflower, and cosmos can provide food for finches and are often allowed to go to seed.

Starting Annuals from Seeds

If you have a sunny south- or west-facing windowsill, you can sprout seeds of annuals successfully and grow them to transplant size. Even better is a fluorescent light fixture that can be lowered to within 2 inches of the tops of seed pans. Some gardeners use metal halide lamps that come closest to imitating the full spectrum of sunlight and can deliver the footcandles needed by plants when placed farther away than fluorescent tubes.

Most flower seeds will sprout (germinate) at soil temperatures of 60 to 65 degrees Fahrenheit. Some species that have a tropical provenance sprout more rapidly at 70 to 80 degrees Fahrenheit. Such warm temperatures can be produced atop a hot water heater or by using an electrical heating mat with an adjustable thermostat. It is important that you move the seed pan to a somewhat cooler area just as soon as you green seedlings emerge. Some gardeners cover seed pans with clear plastic wrap to maintain high humidity; remove covers promptly when green seed leaves appear.

Plastic meat trays about 3 inches deep make good seed pans. Use an ice pick or a large nail to punch six to eight drainage holes. Fill pans to within ½ inch of the rim with "seed starting mix," which is formulated from fine Canadian sphagnum peat moss and fine particles of vermiculite or perlite. Use a short length of board to firm and level the mix. Moisten the starter mix by setting the filled pan in a tray of warm water. Capillarity will pull water up into the mix and saturate it.

Gardeners usually plant the contents of a standard seed packet in a single seed pan. Some prefer to scatter the seeds evenly over the surface; others prefer to plant seeds in three or four straight lines or "drills." The best topping to cover seeds is "milled sphagnum moss," which is produced by grinding the ropy moss from the surface of peat bogs. It has biological properties that greatly reduce the incidence of "damping-off," an infection that kills seedlings at ground level. A very thin topping of seed starter mix will work nearly as well. Certain species require light to sprout, but enough light can penetrate a thin topping to initiate germination.

Gardeners usually start seeds six to eight weeks prior to the spring frost-free date, earlier on species that can tolerate light frosts and later on fast-sprouting, fast-growing species. The initial bottom-watering should suffice to sprout the seeds, especially if the seed pan is covered with clear plastic wrap. Overwatering seed pans is a fast track to damping off, especially if the germinating area cools to 50 to 60 degrees Fahrenheit at night.

The rate of growth of seedlings depends greatly on the seed size. Large seeds produce robust seedlings with enough stored carbohydrates to nourish them for up to three weeks. If they're given adequate light and the proper range of heat, you can almost hear them grow. Tiny seeds produce seedlings almost too small to see. They grow excruciatingly slowly until they produce enough foliage surface area to trap a significant amount of light.

Dusty miller adds needed contrast in flower gardens and containers.

When seedlings develop four to six leaves, transplant to individual 2- to 3-inch pots filled with high quality potting soil formulated for bedding plants. They can be "pricked out" (pried out) of seed pans with a Popsicle stick or a similar tool. Hold seedlings by their leaves, not by their stems, to avoid crushing tender stem tissues.

Poke a planting hole in the center of the filled pot and lower the seedling into it so that the top of the root system is level with the surface of the soil. Firm the potting soil around the root system. Set the potted plant aside for bottom-watering when all the seedlings have been transplanted. Certain species such as lobelia and begonia have such tiny seedlings that they are customarily transplanted in small clumps, grown for a few weeks, then divided into individual plants for transplanting into pots.

Invariably, first-time seed starters are surprised, even overwhelmed, by the geometric increase in space needed at transplanting. You can go from fifty seedlings in a small pan to fifty individual pots of 2- to 4-inches in diameter. All of a sudden, the area lighted by two 48-inch fluorescent tubes must strain to hold the plants from one seed pan. Many gardeners keep a "coldframe" handy, lighted by the sun and perhaps warmed with grounded electric light bulbs, to handle the overflow of plants.

You may ask, "Why bother?" If you like to try the very newest annuals, you can usually buy seeds a year or two before started plants become widely available. Also, tall varieties of annuals that are preferred for cutting gardens are rarely available as started plants because they take too long to show color and grow too tall in the process. Neither growers nor retailers like to handle them. Starting from seeds gives gardeners a way to propagate heirloom varieties that are no longer grown by seed companies and to produce plants at a lower unit cost. Last but not least, starting plants from seed teaches patience, a virtue that is common among seasoned gardeners.