

# South Carolina LIVING

## Tasty tomatoes

Tips to perish pests, fight fungus, root out rot and green up your thumb



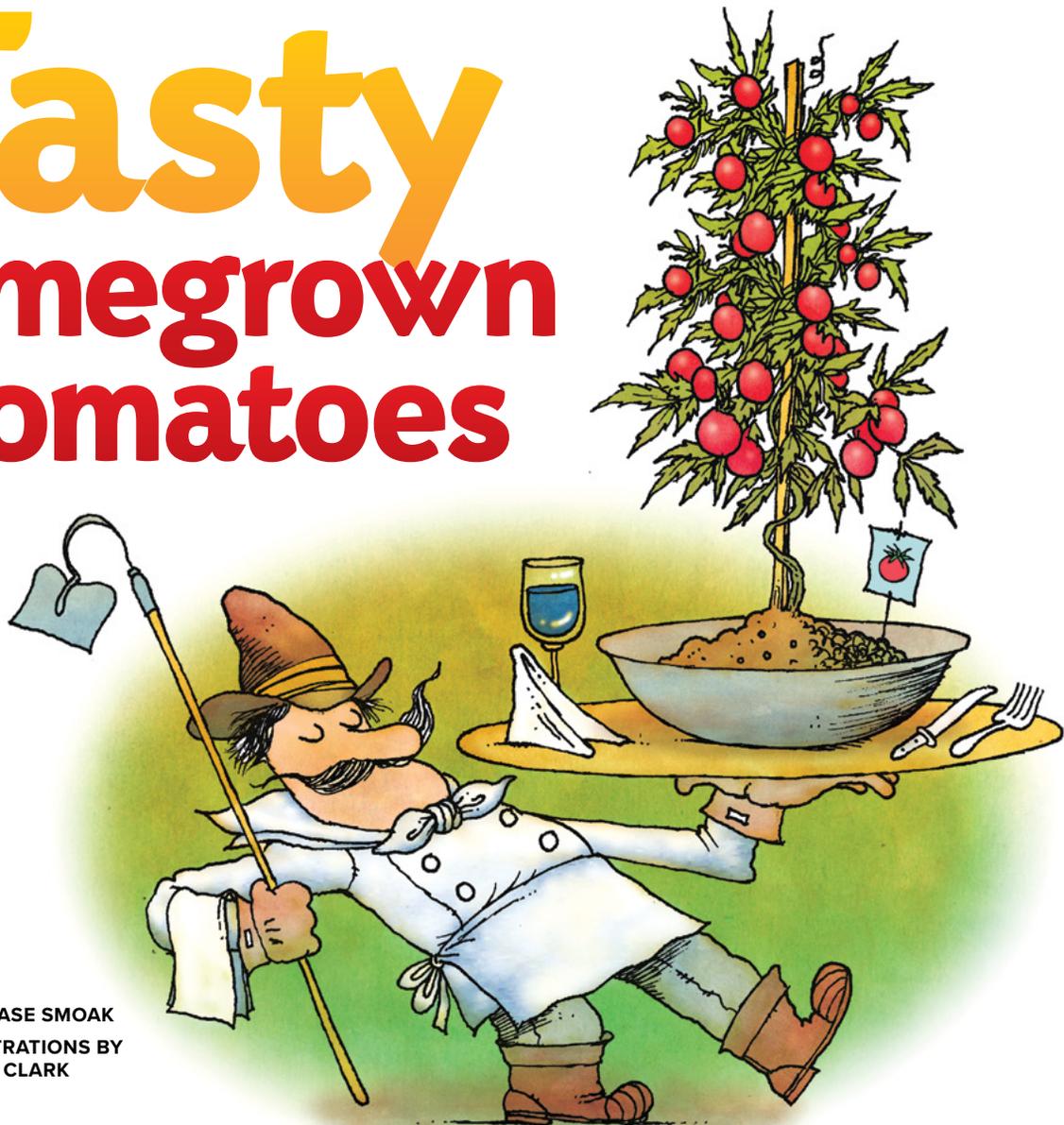
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# Tasty homegrown tomatoes



BY CHASE SMOAK  
ILLUSTRATIONS BY  
DAVID CLARK

**T**ired of losing tomatoes to unwanted garden pests? Worried you'll need to sacrifice excellent taste for improved yield? Take a deep breath and relax—this year, you can have your tomato and eat it, too. With the help of a few new varieties and field-proven tactics, you'll be on your way to growing the best tomato crop yet.

Growing tomatoes can be a challenge in South Carolina, especially when folks are new to the game. Heck, even seasoned gardeners are caught off-guard from time to time, and

that's OK as long as we learn in the process.

If you want to grow delicious, homegrown tomatoes, simply focus on these three stages of gardening: planning, preparing and protecting.

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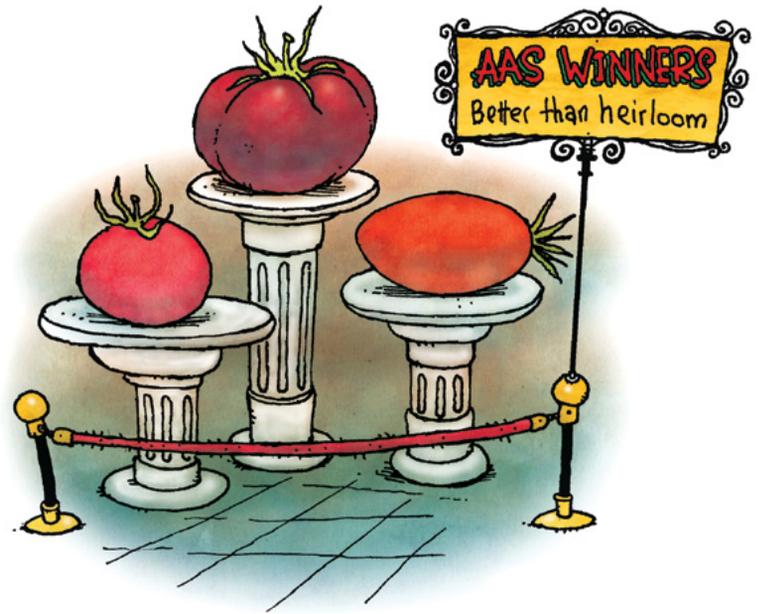
# Planning

## Selecting varieties

Many gardeners claim that if you want great flavor, you'll need to plant heirlooms. People selected these landrace tomato varieties long ago for traits such as shape, size and above all else, taste, so the claim has a basis. In pursuit of a better tasting tomato, however, significant factors like resistance to insects and disease were overlooked.

If you've grown heirlooms, you know how challenging the process can be. This bittersweet truth has left many gardeners wondering if old-timey taste is a thing of the past. Well, there's good news. Consumer demand for resilient, flavorful tomatoes has not fallen on deaf ears. Plant breeders have brought us a number of improved tomato varieties, but with so many options available, how do you make the best choice?

A nonprofit organization called All-America Selections (AAS) can help. The group tests new varieties before they hit



the market, and their trial notes will tell you everything you need to know. How does it work? Professional horticulturists across the country volunteer to grow test plots of new tomato varieties and compare notes on disease resistance, yields and taste alongside established varieties. If the new guy wins, you're onto something special.

"Our judges rate taste and texture first, then everything else second," says Diane Blazek, executive director of All-America Selections and the National Garden Bureau. "You can have the most prolific, cute, unique new tomato, but if it doesn't taste good, nobody wants it."

Here are some 2022 winning tomato varieties, and some old favorites from previous years, to consider growing this season. For a list of AAS-affiliated seed suppliers, including South Carolina's own **Park Seed (parkseed.com)**, visit [all-americanselections.org](http://all-americanselections.org).



**Purple Zebra**



**Celano**

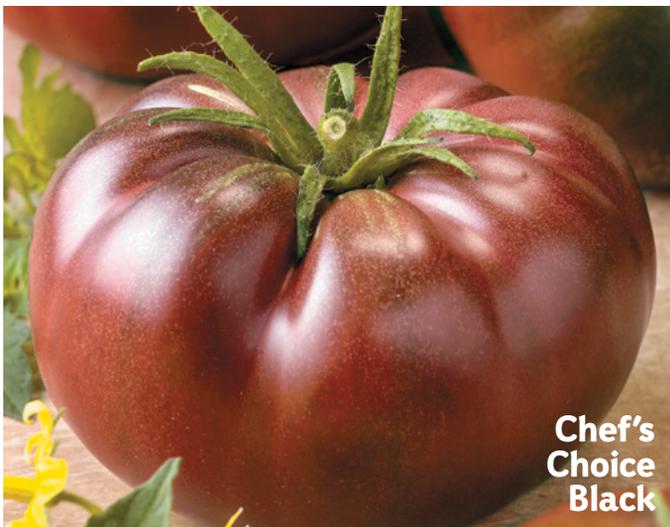
**Purple Zebra.** If you want a tomato that looks just as good as it tastes, search no more. According to All-America Selections, Purple Zebra is a national winner with fruit that is "firm in texture, complex in flavor and has a taste more sweet than acidic." This variety has high resistance to tomato mosaic virus, verticillium wilt, fusarium wilt, and late blight. Start seeds indoors 4–6 weeks before the last frost for best results. In the garden, space transplants no less than 2 feet apart or, if using containers, select 5-gallon pots with drainage. This variety produces 150–200 green-striped, purple tomatoes and requires staking. Most gardeners can begin harvesting tomatoes 80–85 days after transplant.

**Celano.** Another national winner, Celano, is an early-producing, high-yielding grape-type tomato for your patio or garden. According to AAS trial notes, Celano developed fruit much earlier and produced much longer than comparable varieties. Deep-red, oblong tomatoes typically weigh a little over half an ounce and taste sweet. As for disease resistance, this variety has superior tolerance to late blight. Transplants should be spaced at least 2 feet apart in the garden and will benefit from staking.

## STAGE 1



**Red Torch**



**Chef's Choice Black**



**Mountain Rouge**



**Early Resilience**

**Early Resilience.** Early Resilience is a fantastic selection for canning enthusiasts. Each plant will produce roughly 25 tomatoes with good quality flesh and excellent flavor. This variety displayed high resistance to blossom-end rot and numerous diseases. From transplant, gardeners can expect to harvest tomatoes after 70–115 days. For best results, space each plant at least 24 inches apart. Staking may help but is not required. Early Resilience is a bushy variety that only grows 24 inches tall.

**Red Torch.** The red-striped, yellow fruit of Red Torch, though small in size, packs a big punch in the taste department. This plant is a prolific early season producer with the capability to provide 100+ tomatoes per plant. AAS trials in 2019 confirmed this variety's ability to hold up under a multitude of diseases and environmental pressures. Red Torch is an indeterminate variety growing 5–6 feet tall, making stakes or trellising a must. For best results, space plants 24–30 inches apart and separate rows by a minimum of 36 inches. You'll enjoy ripe fruit 60–70 days after transplanting.

**Chef's Choice Black.** Who can resist a giant beefsteak tomato? In 2019 trials, Chef's Choice Black displayed superior disease resistance to some of the South's worst pathogens: Tomato Mosaic Virus, Fusarium, and Verticillium wilt. On taste, AAS says, "The large fruit, weighing 8 to 10 ounces, has a full, sweet flavor with a slight saltiness that complements its overall taste." Gardeners should expect each plant to produce 30 or more fruits throughout the growing season. Plants will ripen early (75 days after transplanting) and grow to a height of 5 feet. Stake or trellis this indeterminate tomato for the best results.

**Mountain Rouge.** Mountain Rouge has proven it's possible to have old-timey, heirloom taste and excellent disease resistance in one package. Resistance to Late Blight, Root Knot Nematode, Verticillium and Fusarium should give this beefsteak tomato an upper hand in hot, humid gardens. The taste of its 12- to 14-ounce pink fruit is described by AAS as a "robust heirloom flavor with a brilliant balance of sweet and acid." In the garden, separate plants by a minimum of 4 feet and support with stakes or trellises. This variety produced fruit 73 days after transplant and has an average output of 75 tomatoes per plant.



# Preparing

## Site selection and planting

Proper site selection and planting techniques are vital to tomato gardening success.

Your tomato garden needs access to full sun (6–8 hours a day) and should have good drainage. Tomato plants hate wet feet and often succumb to root rot when left in waterlogged soils. They do, however, need regular watering throughout the growing season, so select a spot with easy access to water. Irrigating deeply but infrequently strengthens plants and encourages deep, healthy root systems for hot summer days.

Avoid using a place where tomatoes, potatoes, peppers, eggplant and other solanaceous crops have been grown within the past three years. Many pests overwinter in the soil adjacent to plants and will terrorize unsuspecting gardeners.

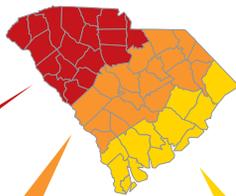
Once you've selected the right spot, make sure to test your soil (see **"Digging up answers with soil samples"**) and amend the ground as indicated. Your local extension agent can help you arrange a test and interpret the results. Tomatoes are nutrient hogs that require a good supply of nutrients from start to finish, so you'll likely need to fertilize before and during the growing cycle.

Adequate moisture is necessary for nutrient uptake. Drip irrigation works well and doesn't soak leaves, which often leads to disease issues.

And don't forget to deal with weeds. They are an often-overlooked source of tomato pests. After clearing the site of any weeds, spread mulch 3–4 inches deep and keep it a palm-width away from the bases of tomato stems.

Planting should only begin after the last frost date for your area. For the majority of South Carolina, this tends to fall between April to May.

### South Carolina gardening regions and planting dates



Piedmont	Central	Coastal
<b>SPRING</b> May 1–30 <b>FALL</b> July 10–July 20	<b>SPRING</b> April 5–April 25 <b>FALL</b> July 10–July 20	<b>SPRING</b> March 25–April 10 <b>FALL</b> July 25–July 30

## Container gardening



Lack the space or time for a traditional garden? No worries. You can grow tomatoes in pots and hanging baskets, too. Follow these tips.

- ▶ Use pots that are at least 6–8 inches deep with holes underneath for drainage.
- ▶ For ease of movement, use dollies or platforms with wheels to shift plants around.
- ▶ Use a lightweight potting mix. Packaged mixes are widely available at most garden centers, but be sure to avoid soilless media that lacks the required nutrients.
- ▶ When using a potting mix with added fertilizer, wait for 8–10 weeks before adding more nutrients. When it's time, use a water-soluble fertilizer at its recommended rate.
- ▶ Choose your variety with care. For containers, I recommend these AAS-tested varieties:

**Terenzo.** A cherry-type tomato with a trailing growth habit and sweet fruit. Height at maturity is 16–20 inches, making it a great addition to any spot with full sun and easy access.

**Lizzano.** This tasty tomato grows 16–20 inches tall and only 20 inches wide. Lizzano produces a copious amount of fruit, which can be harvested 105 days from seeding or 63 days after transplant. One perk of this variety is its noted resistance to Late Blight, meaning it'll likely last later into the growing season.



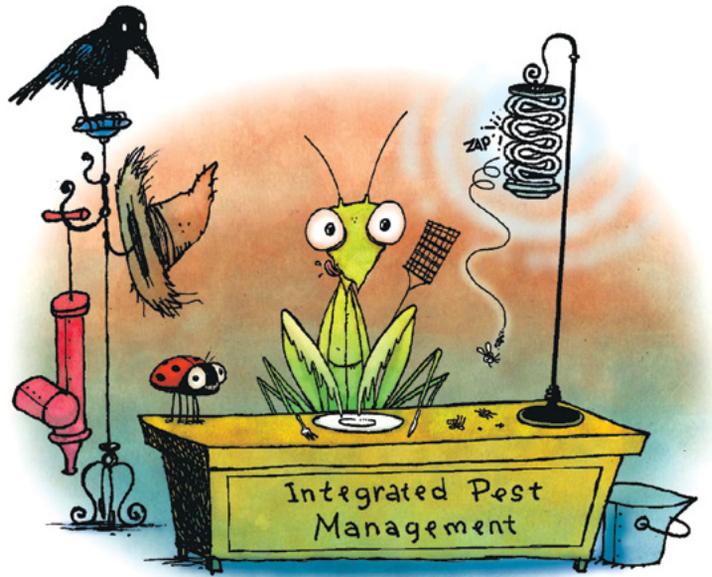
COURTESY OF ALL-AMERICA SELECTIONS

# Protecting

## Pest management

Like the rising of the sun, pests—insects and diseases—are to be expected in every garden. The good news: They can be controlled or even avoided using a process known as Integrated Pest Management (IPM), a commonsense approach to gardening that treads lightly on the environment and minimizes use of garden chemicals.

**Monitor and identify.** Get to know your garden and what lives in it. Every area has specific pests to watch out for and plants that are more likely to facilitate their needs. Familiarizing yourself with the key pests of tomatoes in your area will speed up the monitoring process. Inspect plants for signs of injury or pest presence. Remember, look out for beneficial insects along the way and note how many you see. An increase in predator populations often means there is already a large pest population. Beneficial insects work in our favor to keep pest populations in check and should be protected from harsh chemicals at all costs. Praying mantis and lady beetles are both examples of efficient predators in the garden. Various parasites and diseases also attack pest populations as they increase. Accurately identifying what lives in your yard makes a real difference and helps determine if treatments are warranted. For help identifying insect pests, call your local Clemson Extension agent. They regularly identify a wide variety of garden insects.



**Make a decision.** After spotting a pest or damage on tomatoes, decide if treatment is necessary. Consider whether or not real harm is being done to the landscape. Despite their annoyance, specific small pest populations can often be tolerated. Set thresholds to guide your treatment decisions. For example: You may decide there's little benefit to treating a pest problem if there is less than 10% damage to the plant.

**Choose a treatment.** When choosing a treatment, consider using the least toxic measure first. Cultural methods such as proper watering, plant spacing, and fertilization can help prevent or reduce the numbers of pests. Mechanical means are another option that requires the physical removal of pests and can be useful for small populations. For example, hornworms are easily removable by hand-picking, and aphids are often washed away by a good squirt from a water hose.

If attempts using these approaches fail, reach out to your local Clemson Extension agent for advice. Pesticide labels are the law, and many chemicals may be unethical or even illegal to use on fruit-bearing plants. Err on the side of caution and enjoy a safe, fun-filled growing season.

For more information on the common tomato pests, see HGIC 2217 and HGIC 2218 on Clemson's Home and Garden Information Center at [clemson.edu/hgic](http://clemson.edu/hgic).

## Enjoy the pursuit

Gardening should be an enjoyable release from the fast-paced world we live in. It's an opportunity for us to serve as good stewards of the land, so when the time comes, we pass on something a little better to the next generation. If you really want to experience all that gardening has to offer this summer, focus on using it to produce memories instead of a crop. If you do, you'll find everything begins to taste a little sweeter along the way.

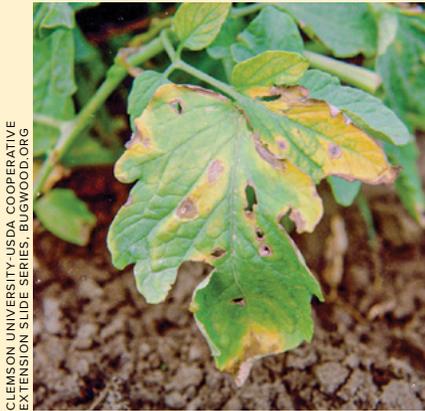


JOEY WILLIAMSON, HGIC, CLEMSON EXTENSION

Healthy tobacco hornworms (*Manduca sexta*) should be removed from plants by hand and dispatched in a bucket of soapy water. However, if you encounter a parasitized hornworm as shown above—one covered in the cocoons of brachonid wasp larvae—leave it be. The hornworm ceases to eat and will die as it nourishes a new generation of the predator wasps.

# Fight the blight

Know the signs and symptoms of common tomato diseases.



CLEMSON UNIVERSITY-USDA COOPERATIVE EXTENSION SLIDE SERIES, BUGWOOD.ORG

## Early Blight

**Signs and symptoms:** Early blight typically appears on older foliage first as small brown lesions. As spots enlarge, concentric rings form in the center of the diseased area, resembling a bull's-eye pattern. Stem lesions are similar in appearance and are capable of girdling the plant, especially those located at the soil line. On fruit, lesions maintain a similar appearance and, over time, will nearly envelop the fruit.

**Prevention and treatment:** Use resistant tomato varieties and pathogen-free seeds. Practice crop rotations, maintain proper soil nutrient levels and adequate plant spacing, and avoid wetting tomato foliage. Eliminate any volunteer tomatoes and weeds growing around the garden area. Apply an appropriate fungicide at the first sign of disease. For help choosing the proper fungicide, reach out to your local extension office.



GERALD HOLMES, STRAWBERRY CENTER, CAL POLY SAN LUIS OBISPO, BUGWOOD.ORG

## Verticillium Wilt

**Signs and symptoms:** Early symptoms usually appear as yellow blotches on lower leaves that eventually spread upward, causing rapid yellowing of plants. Leaf veins will turn brown, and brown dead spots will appear on the leaves. Tomato foliage will eventually die and fall from the plants. Plants infected with verticillium wilt typically appear stunted in growth. Fruit will sometimes develop a yellow coloration and experience a decrease in yield.

**Prevention and treatment:** Use resistant tomato varieties and practice proper crop rotations. Verticillium is a soil-borne fungal pathogen. Remove all debris from infected plants out of the garden. Plants infected with this pathogen cannot be saved, so avoidance is the best option.



EDWARD SIKORA, AUBURN UNIVERSITY, BUGWOOD.ORG

## Late Blight

**Signs and symptoms:** Late blight is a serious disease that worsens during periods of cool, wet weather. First signs of late blight are green to dark lesions with a water-soaked appearance that form on leaves. Lesions rapidly shift to brown coloration as the disease progresses. As the leaf spots enlarge, a white-colored mold will form around the margins of the spots on the underside of the leaves. Often, total leaf drop can occur within 14 days of symptom onset. Tomato fruit will develop shiny, leathery-brown lesions. During wet weather, the entire fruit may become covered by a white, fuzzy growth.

**Prevention and treatment:** Choose late blight-resistance varieties and certified disease-free seeds. When possible, site your garden where it will receive morning sun and avoid using overhead irrigation. Avoid using compost containing rotten, store-bought potatoes in your garden. Maintain proper spacing between plants, remove any volunteer tomato or potato plants, and eliminate neighboring weeds. If warranted, fungicide treatments can be used. For help selecting the right fungicide treatment, contact your local extension office.

## How to stop blossom-end rot



BRENDA KENNEDY, UNIVERSITY OF KENTUCKY, BUGWOOD.ORG

Blossom-end rot, small dark spots that expand over time to form a sizable rotten area, is caused by a calcium deficiency. Proper watering and fertilization are the keys to preventing this common garden blight.



DAVID B. LANGSTON, UNIVERSITY OF GEORGIA, BUGWOOD.ORG

Blossom-end rot is the bane of every tomato gardener's existence. It starts as small brown spots on the blossom end of the fruit and rapidly progresses to form sizable rotten areas. While the rest of the tomato is safe to eat if you cut away the ruined portion, preventing blossom-end rot before it starts is a better strategy for gardening success.

This abiotic disorder is the result of a calcium deficiency, often caused by nutrient-poor soil or extreme fluctuations in soil moisture that interfere with calcium uptake. Here's how to beat it.

**Add organic matter to the soil.** If you are planting in raised beds or if your soil is low in natural organic matter, you may need to provide a little extra. Organic matter is simply the portion of the soil composed of living or dead things in various states of decay, such as plant roots or microbes. Gardeners can contribute this vital soil component by incorporating organic fertilizers like compost and manure. Organic matter helps retain soil moisture and increases a plant's ability to uptake calcium. Check the level of organic matter when testing your soil, and you won't regret it.

**Fertilize responsibly.** Shoot for a pH level of 6.5 and use lime or gypsum to maintain an appropriate calcium supply. When pH drops too low, nutrients like calcium, phosphorus and magnesium are less available to tomato plants. Lime helps raise soil pH and is best applied several months in advance. Gypsum (calcium sulfate) is very useful when your pH level is appropriate, but calcium is too low. Reach out to your local extension agent for advice on soil testing and how best to prepare the ground for tomatoes.

**Mulch the garden.** Spread 2 to 3 inches of mulch around tomato plants to prevent erratic moisture shifts but keep mulch a palm-width away from the base of plants. Failing to do so will merely shift the rot to another spot on the plant.

**Irrigate wisely.** Provide tomatoes with a consistent 1 to 1.5 inches of water per week.

**CHASE SMOAK** is a horticulturist who specializes in plant propagation, and he enjoys nothing more than a tasty, homegrown tomato. He writes gardening columns for multiple publications and frequently appears on SCETV's award-winning program "Making It Grow."

**DAVID CLARK** is an award-winning illustrator with more than 30 years of experience and the co-creator and illustrator of the nationally syndicated comic strip "Barney & Clyde." His work has been featured in The Washington Post, National Geographic, and Air and Space, among many other publications.

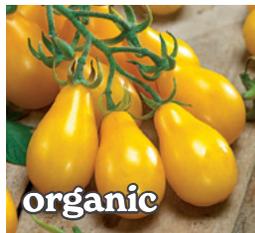
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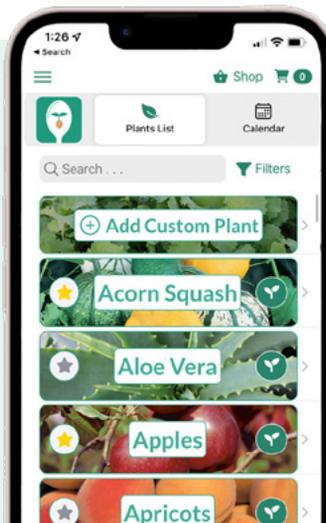
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