

The Gardener's Dirt Newsletter

March 2019

Feature Article:

Harvesting Your Tomato Dreams

By: Roger & Rose Crickenberger
Extension Master Gardener Volunteer

Are you dreaming of a thick, red, juicy tomato on a sandwich? Or a bowl of cherry tomatoes waiting to be popped into your mouth? We certainly are, and since we grow over a hundred plants consisting of 15 or more varieties, we were asked to share a few tips for successfully making your dream come true.

Tomatoes basics: fertile, well-drained soil; full sun and warm temperatures; consistent moisture. **Soil should be tested periodically** and recommended amendments added, or purchase a good quality soil mix for pot culture. Throughout the growing season, use your favorite commercial or organic fertilizer to feed your plants, following product recommendations. Select fertilizers that have a higher percentage of phosphorus than nitrogen, e.g., 5-10-5 or 5-10-10 or equivalent to aid in plant development and fruit set. Plant as soon after the last chance of frost, but remember, tomatoes grow more rapidly when daytime temperatures have warmed up in the spring. **Make sure that your plants are located in full sun. Tomato plants need 1 to 1.5 inches of water per week.** For our garden, if we do not have sufficient rainfall, tomatoes are irrigated at least weekly to keep the soil uniformly moist but not water-logged. For pot-grown tomatoes, expect to water well at planting and then once daily and maybe twice daily during the warmer summer months. As a guide, a 24-inch pot would require about two gallons of water per week, applied in smaller amounts throughout the week to provide that total amount. Do not apply water from overhead; water at ground or pot level to help minimize diseases.

There are two types of tomato plants-determinate and indeterminate. **Determinates** grow to 4 to 5 feet tall, and most fruit is set and then ripens over just a few week's time. Determinates are equally suited to field or pot growing systems, and staking or caging is often used, depending on the number of plants grown. **Indeterminates** are more suited for field growing, using some kind of trellis or taller staking system. Indeterminates continue to grow and set fruit as long as the plants stay healthy, and they may grow to 10 feet or more in a season. Some growers will remove the growing tips on a plant once it reaches to top of the cages or staking system to control the plants. A number of Extension services, seed

companies and growers have produced YouTube information on systems of staking and caging tomatoes, including the basket-weave and Florida-weave methods.

Tomatoes are sometimes a challenge to grow successfully in our area of high rainfall and humidity, primarily because of a **variety of air-borne and soil-borne diseases (particularly nematodes)**. Three strategies are useful to overcome this challenge: **first, select disease and nematode resistant varieties; second, set plants a minimum of 2.5 feet between plants, and train and prune plants to promote good air circulation; third, use approved chemical or organic disease control agents as needed.** Extension services, NC Ag Chem Manual, seed catalogues and materials on YouTube provide lots of information regarding each of these strategies.

We have found that **harvesting** is important. There's nothing like picking a completely red-ripe tomato off the vine and within a minute it's between two slices of bread slathered with Miracle Whip! However, we have found that it's better to harvest fruit when they develop a distinct pink to red blush (see photo). This helps avoid deterioration due to excess water, insect damage and splitting. We lay them out in a single layer on newspaper, and in a few day's time, they ripen nicely. You end up with a lot more, higher quality tomatoes.



Harvest time in the Crickenberger Garden, 2018

Favorite varieties:

- **Sungold** is a gold, cherry type tomato. Plants are hardy and high yielding. They have to be picked frequently to avoid splitting. Their sweet flavor is outstanding for mouth-popping or salads. Transplants relatively available
- **Celebrity** is a slicing size tomato. Determinate plants are hardy, high yielding and produce large, well-shaped fruit. Transplants commonly available.
- **Fourth of July** is a salad type tomato (up to 2 in. diameter) that grows on aggressive, indeterminate plants. They are high and long yielding and produce very flavorful fruit. Plants may not be available at local garden centers. NC State's **Mountain Magic** is a good alternative.

- **Better Boy.** Large red slicing tomatoes on hardy, indeterminate plants. Yields well and produce flavorful fruit. Plants commonly available.
- **Mountain Merit** is a determinate NC State variety that has a excellent disease resistance package. It produces flavorful, red slicing fruit. Seeds readily available through seed catalogues; transplants may be harder to find.

What Are the Best Tomato Varieties?

By: Tim Matthews

Harnett County Extension Director



Tomato varieties that produce medium size fruit are generally easier to grow in the south than extra-large 'beefsteak' types.

Tomato planting season is upon us, leaving gardeners with a pretty big decision to make. The tomato variety you select now will have a huge impact on your future success, but hundreds of different varieties are available. Will you go with hybrids or heirlooms? Determinate or indeterminate? Large or small fruits? Sorting through this confusing array will help you choose the right varieties for your garden.

Fruit Size

One way tomato varieties are classified is by the size of tomato they produce. The smallest are the grape and cherry tomatoes, which bear small fruits in long clusters. As a

group, these types are by far the most reliable and productive for our region. No garden should be without a few cherry tomato plants. Gardener's favorites include 'Sweet Million', 'Super Sweet 100' and 'Juliet', though to be honest I have never seen a cherry tomato that did not thrive.

The tomatoes most gardeners are interested in growing are the large, round fruited types. The problem we face growing tomatoes in our climate is the larger the fruit, the more difficult it is to grow. If your dream is to grow tomatoes large enough for a single slice to cover a piece of bread, you may be gardening in the wrong area.

This does not mean we cannot grow decent size tomatoes. Varieties that produce medium size fruits are your best bet. These include old favorites like 'Celebrity' and 'Better Boy'. If you want to try the larger types, look for 'Big Beef', 'Big Boy', or 'Beefmaster'; just expect yields to drop during the heat of summer.

Determinate and Indeterminate

Another way tomatoes are classified is by the way the plants grow and produce. Determinate varieties stop growing once they reach full size, which is usually three to four feet tall. As a result plants set all their fruit at once, bearing over a four to five week period and then are done. Most modern hybrids are determinate.

Indeterminate varieties continue to grow all season, setting successive crops of fruit all summer and into the fall, if you can keep pests away. Because they keep growing, indeterminate varieties get large, often six feet or more, and need heavy duty cages for support. Most cherry tomatoes are indeterminate, as are most heirlooms. The large fruited varieties mentioned above are also indeterminate, as are the medium size fruited varieties 'Early Girl' and 'Better Boy'.

Heirlooms and Hybrids

Heirloom varieties have been in cultivation for generations, with seeds saved and passed on from year to the next. These varieties were selected for flavor above all else. Many heirlooms are regionally adapted and not all produce well in the south. If you would like to try heirlooms look for 'German Johnson', 'Marglobe', 'Cherokee Purple' and 'Homestead', all of which have proven tolerant of southern heat and humidity.

Disease resistance has been one of the main goals for developing modern tomato hybrids. Planting disease resistant hybrid varieties will increase your chances of success, but keep in mind no one tomato variety is resistant to all, or even most, of the diseases that commonly plague this popular crop.

Of the hybrid tomato types, 'Celebrity', 'Better Boy', and 'Early Girl' are favorites for the south. All three produce medium to large fruits and are resistant to fusarium, one of several diseases that can cause tomato plants to wilt and die. 'Celebrity' and 'Better Boy' have the added bonus of also being resistant to nematodes, a type of microscopic worm that attack tomato roots, stunting plants and reducing productivity. If you have limited space or are growing in containers, consider planting the determinate fusarium and nematode resistant varieties 'Bush Celebrity', 'Better Bush', or 'Bush Early Girl'.

For even more disease resistance seek out varieties that are resistant to tomato spotted wilt virus (TSWV), a serious and deadly disease that usually attacks tomato plants in May and June in our region. TSWV resistant varieties include 'Southern Star', 'Amelia', 'Crista',

'Red Defender', 'Primo Red', and 'Talladega'. Give yourself the best chances of success by planting a diversity of tomato varieties, including some cherries, some heirlooms, and some hybrids. Be sure to include at least one TSWV resistant variety in the mix and plant a couple in containers to avoid soil dwelling wilt diseases.

Veggie Tale:



How to Grow Heirloom Tomatoes

**Reprinted from the 2019 Southeastern US
Vegetable Crop Handbook**

Heirloom tomatoes are varieties that have been available for 50 years or more, are open pollinated, and grow "true to type" from seed saved from fruit

each year. They are generally indeterminate, requiring trellising and constant pruning. Most varieties have little disease resistance. The fruit are usually thin-skinned, soft, and tend to crack. Consumers are attracted to heirloom tomatoes because many varieties are very flavorful, colorful, come in many sizes and shapes, and have interesting names. For the growers, heirloom tomatoes are challenging to produce and difficult to ship, but can bring high prices on the local market.

There are hundreds of varieties of heirloom tomatoes available. Some of the most popular varieties include Brandywine, German Johnson, Mr. Stripey, Cherokee Carbon, Cherokee Purple, and Green Zebra.

Because most heirloom tomatoes are indeterminate, they must be grown on a tall, strong trellis. A trellis can be constructed of 3 inch diameter, or larger, posts set 10-15 feet apart within the row. Use 7-8 ft. long posts, leaving 6-7 ft. above ground. Run a stout wire (12 gauge) across the tops of the posts and secure it with staples. Pieces of twine, long enough to reach the ground, should be tied to the top wire above each plant. The twine can be anchored with a loop to each plant or to a bottom line of twine that is strung about 6 in. off the ground and secured to the posts. Some growers use the standard string and weave-staked culture system for heirloom tomatoes, as described for the determinate tomatoes, but they use 6-ft. long stakes instead of the normal 4-ft. long stakes.

In a trellis system, plants are usually spaced 8-10 in. apart within the row and pruned to a single stem system. A two stem system may also be used, in which the plants should be spaced 18-30 in. apart within the row. If using a standard staking system, plants should be spaced 18-24 in. apart. Once the plants are established, suckers must be removed several times a week. If the main growing point is broken off, a sucker can be trained to take its place.

Because most heirloom tomatoes have little disease resistance, it is important to maintain a good fungicide spray schedule. For organic production, it might be necessary to grow heirloom tomatoes under high tunnels, especially in areas with high disease pressure. Grafting heirloom varieties onto diseases resistant rootstocks might also increase your success at growing organically.

Tomato Planting Dates: Spring 4/15 - 5/10 Fall 8/1 - 8/15

2019 Southeastern US Vegetable Crop Handbook

<https://content.ces.ncsu.edu/southeastern-us-vegetable-crop-handbook>

Note: If your soils contain a tomato wilt disease, then it is better to plant the tomatoes in large containers using a purchased soil mix and prevent the root system from coming in contact with the soil.

March Quick Tip:

Tomato-Amendments

By: Barb Barakat

Extension Master Gardener Volunteer



Spring Tomato Transplanting Dates - April 15 - May 10

Choose transplants that are: stocky, medium-size, deep green color, not-yet flowering

Choose disease resistant varieties that are proven in our area

Harden off transplants over 7-10 days before planting

Avoid planting tomatoes in the same location year after year

Space tomato plants 3' apart & place a cage around plant for support

Tomato Amendments

- Need deep, rich soil - amend with compost pH 6.5
- **Starter solution** at time of planting:
- **Sidedress** -when plants start to set fruit & every 4-6 weeks thereafter
- **Water** to a depth of 6-8" at 7 day intervals
- **Mulch** with wheat straw to conserve soil moisture in July & August

- 3-4 T of 10-10-10 fertilizer dissolved in 1 gallon of water
- Apply a maximum of ½ - 1 c liquid fertilizer solution/transplant
- If your soil is below pH 7, amend with lime @ rate of ½-¾ c per plant
- 2-3 T of 10-10-10 fertilizer
- lay pellet fertilizer 4-6" out from plant stem to prevent burn

L Bass <https://content.ces.ncsu.edu/growing-tomatoes-in-the-home-garden>

Ask An Expert:

Tomato Diseases

By: Inga Meadows
Extension Plant Pathologist

Home-grown tomatoes are tasty, but they require a lot of maintenance to produce good yields. The climate in North Carolina makes tomato production difficult, given our warm to hot temperatures, high humidity, regular (sometimes heavy) rainfall, and morning dew (in the mountains). These conditions are ideal for fungal and bacterial diseases (Figures 1-3). For the homeowner, proper disease management includes several cultural practices.



Figure 1. Early blight on tomato leaf
(I. Meadows)

Figure 2. Late blight on tomato leaf
(I. Meadows)

Figure 3. Bacterial spot on tomato fruit

Healthy transplants. If you plan to purchase transplants, avoid those that already have spots on the leaves. These spots are most likely caused by bacteria or fungi that will spread and advance once they are in your garden. If you grow your own plants from seed, purchase from a reputable source (e.g., Burpee, Johnny's Seed catalogs).

Disease resistant varieties. There are several varieties of tomato that are resistant to diseases that occur in NC. Disease resistance information is often provided by the seed company on their website or catalog. You can also search for particular varieties in the [Southeastern Vegetable Crop Handbook](#) or by talking with your county extension agent.

Remove plant debris from the garden. At the end of the season, remove all crop debris from your garden. Fungi and bacteria can survive on crop

debris between seasons, so removal will reduce disease pressure the next year.

Crop rotation. Some fungal and bacterial plant pathogens survive in the soil for long periods of time. However, the amount of the pathogen in the soil will decrease over time if deprived of a suitable host. Therefore, avoid planting the same plant family in the same area every year. Instead, rotate where your tomatoes are planted each year.

Proper location and nutrition. If your tomato plants do not get adequate sunlight, water, and nutrition, they will be more susceptible to disease. Be sure to select the proper location and provide your plants with adequate, but not too much, nutrition. Over fertilized plants can be just as prone to disease as under fertilized plants.

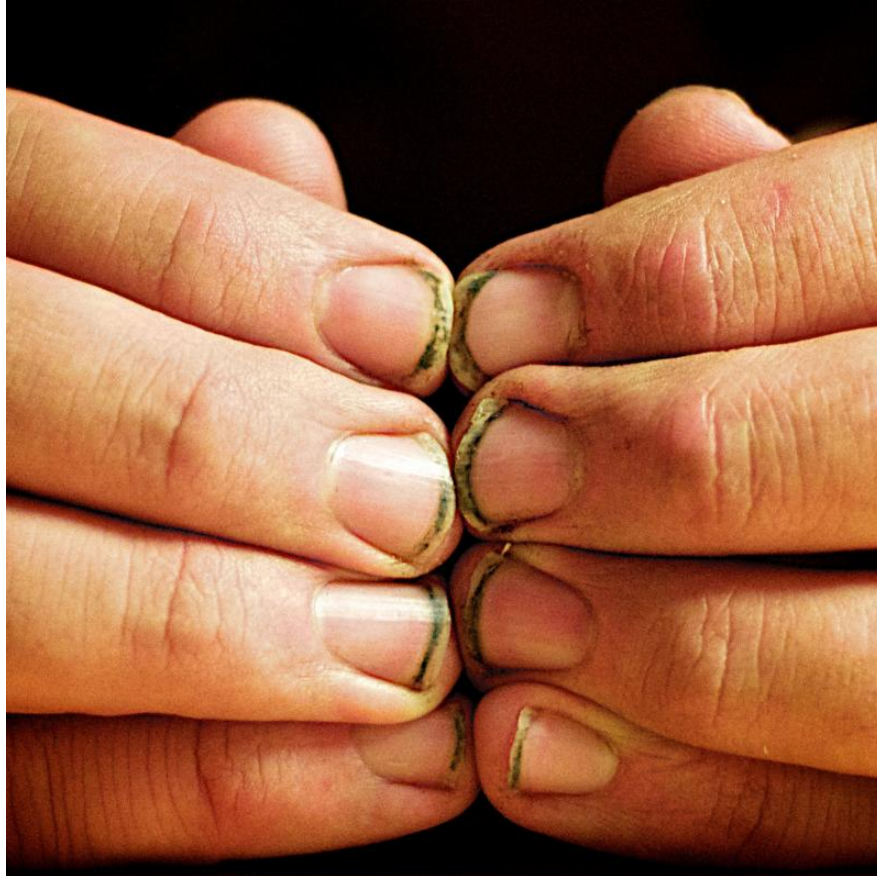
Mulch. Laying a plastic mulch or plant-based mulch will reduce the amount of soil that is splashed onto the lower leaves of your tomato plants. That soil can harbor plant diseases, so by laying down a barrier you can protect your plants from those diseases.

Water management. Fungal and bacterial pathogens are easily spread by water-splash and any water droplets that remain on your plants overnight promotes disease progression. Water your plants in the morning so the foliage can dry before nighttime.

Preventative fungicides. There are some fungicides available to homeowners that can be used preventatively (before disease begins). Talk with your county agent to get more information.

Good luck!

March Gardening Tasks:



Lawn Maintenance

- The best defense against weeds is a healthy lawn. Learn how to care for your lawn throughout the year. Visit [TurfFiles](#) and click on Turf Tips to learn more about your lawn type. Keep it happy, healthy and weed free.
- Control existing weeds now, before they get large and/or set seed.
- For yards with an established weed problem, use pre-emergent herbicides to kill seedlings as they germinate. Pre-emergent herbicides can be used to control crabgrass and other broadleaf weeds. Pre-emergent herbicides should be applied while the forsythia is in bloom late February to mid-March.
- Sharpen mower blades! A sharp blade cuts. A dull blade tears, making grass susceptible to diseases.

Trees, Shrubs, and Ornamentals

- Divide fall-blooming perennials that are overgrown, such as asters, primrose, irises, Shasta daisies and mums. This is an easy way to enlarge your garden.
- Control leaf gall on azaleas and camellias. Leaf gall, a fungal disease, shows up as swollen leaves covered with a white powdery material. It is unsightly but generally not harmful to the plant. Pick off the affected leaves and dispose of them to avoid spreading the fungus.
- Do not compost diseased plant material.
- Remove protective winter mulch from tender perennials in early March to warm the soil and stimulate the plant to grow.
- Apply fresh mulch in April after perennials have emerged. Mulch helps with water conservation and weed control.
- Spring flowering shrubs such as quince, spirea, forsythia, azalea, Camellia japonica, Carolina Jessamine, viburnum, mock orange, weigela, Oriental magnolia and Indian Hawthorn flower on old growth. Prune them soon AFTER they bloom.

• Time for heavy, rejuvenation pruning of summer-blooming shrubs. Prune holly, Nandina

and Beautyberry before new growth begins. Althea, Buddleia, Vitex, Crape Myrtle and Pomegranate can be pruned at the beginning of March to stimulate more flower production later.

• Prune roses before bud break. <https://content.ces.ncsu.edu/roses-for-north-carolina>

• For a better show next spring, let the foliage of spring-flowering bulbs die back naturally.

• Mulch or living ground covers are better choices under large trees. Ground covers act as "living mulch." Low-maintenance, shade-tolerant ground covers include pachysandra,

periwinkle (vinca), ajuga (bugleweed), liriope and mondo grass. A 2"-3" thick layer of composted mulch conserves moisture, reduces erosion and provides nutrients to the tree. Keep mulch away from the trunk of the tree to discourage rodents and rot.

• Protect shade tree roots from injury. Remember that most of a tree's feeder roots are near the soil surface, under and just outside the tree canopy. If digging, foot traffic, or vehicles injure roots then damage to the tree can range from slowed growth (minor) to the death of the tree (major!). Some trees, such as dogwoods, are very susceptible to root

damage; others, like maples, are more tolerant.

Edibles

• Blueberries need pruning to produce the largest berries.

<https://blueberries.ces.ncsu.edu/wp-content/uploads/2012/10/blueberry-pruning-diagrams.pdf?fwd=no>

Blueberries do not require much fertilizer; apply according to soil test results, in split applications beginning at leaf-out in spring. For young bushes, apply small amounts every 4-6 weeks, rather than all at once. Lime is generally NOT used. To avoid winter injury, do not fertilize in the fall.

• Blackberries: Mixed fertilizers are satisfactory for blackberries. For best results, apply fertilizer in early spring when growth starts and again in summer just after harvest. Use a 10-10-10 commercial mix at the rate of 5 pounds per hundred linear feet of

row. <https://content.ces.ncsu.edu/southeast-regional-caneberry-production-guide>

• Plant cool-weather vegetable crops such as lettuce, mustard greens, sugar snap peas,

radishes, onions, potatoes, spinach, and cole crops (such as cabbage and collards) as soon as soil can be worked.

• If a ball of soil crumbles when squeezed in your fist, the soil is workable.

• Take a soil test to see how much fertilizer to apply around pecan trees. It's time!

• Beets, broccoli, cauliflower and Chinese cabbage can be started by the third or fourth week of March. Now is the time to start seeds indoors for vegetables such as tomato, pepper, eggplant, and others to get a jump-start on the summer growing season.

Wildlife & Insects

• Put up martin and bluebird houses by mid-March to encourage these birds to nest.

Learn how to build a bluebird nest box at <https://content.ces.ncsu.edu/building-songbird-boxes>

• Clean out last year's birdhouse nesting materials to make them more attractive to house hunting birds.

Landscape Ideas

- Take photographs of your yard while your spring bulbs are blooming to help you remember where to plant more bulbs in the fall.

Cool Connections:



Helpful Links from N.C. Cooperative Extension Johnston County

[Additional Informative Links](#)

[Basic Steps for Home Landscaping](#)

[Carolina Lawns](#)

[NC Extension Gardener Handbook - Landscape Design](#)

[Vegetable Gardening: A Beginners Guide](#)

Upcoming Events:

The Johnston County Extension Master Gardener Volunteers
Proudly Present Their Annual

Plant Sale



NC STATE EXTENSION

Master Gardener | Volunteer Association

Natives, annuals, perennials,
vegetables, herbs, house plants
& more, all grown by JoCo's
Master Gardeners! Also for sale,
trees and shrubs grown by local
nurseries, gardening books,
tools, equipment, & garden art.

Please Join Us!

8am - 1pm

Clayton Community Center
715 Amelia Church Rd.
Clayton, NC 27520

Need For More Info?:
Johnston County Extension
<http://Johnston.ces.ncsu.edu>

Proceeds help fund local JoCo schools and community outreach programs.



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SEPT 14, 2019
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NATIVE
CHRIS MOORMAN - BIRDS
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ANNE SPAFFORD - GARDEN DESIGN

NC STATE EXTENSION

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For accommodations for persons with disabilities, contact Bryant Spivey at (919) 989-5380, no later than five business days before the event.

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