

**July 20<sup>th</sup> 6:00pm**

## **Fall Vegetable Gardening 101**

Does your vegetable garden start slowing down as the heat of summer wears on? Would you like to learn how you can extend your vegetables all the way until frost? Then you'll want to join UT Extension Washington County Horticulture Agent Adam Watson and learn how to grow a fall garden to extend your harvest. In-person location: Jonesborough Farm Bureau Basement Meeting room, 1103 Boones Creek Rd Jonesborough.

**In-person Registration:** <https://tiny.utk.edu/inpersonFallVeg> or call 753-1680

**Zoom Registration:** <https://tiny.utk.edu/FallVeg>



## **Tomato Leaf Curling, Is It A Problem?**



Image from NC State University

It's not uncommon to see a tomato with leaves that are curling, cupping or rolling inward on themselves this time of year. If we are growing a range of tomatoes-different varieties and both indeterminate and determinate types-we can often see some tomatoes with significant curling and others showing little or none. There can be more than one reason this is happening and it might be indicative of a problem, but not always.

The first thing we want to ensure is that this curling is not due to insect feeding on the leaves. Aphids and other sucking insects can cause curling of leaves when feeding. Close examination of the leaf should reveal the presence or absence of insects. If present consider a pest control strategy that might include squishing pest insects you find, removing infested leaves, or the use of an appropriate insecticide such as insecticidal soap.

If there are no insects then we want to consider if the cupping is simply a physiological response to an environmental stress. Hot temperatures will often lead to leaf curling as curling is a way to self-shade the leaf and reduce water loss and leaf temperature. Typically, we'll see this environmental response first on older leaves and often the plant will uncurl overnight as the temperature drops.

We can also see leaf curling under drought stress conditions, too little water, but paradoxically, we can also see curling when there are excessive amounts of water. Often there is knee-jerk reaction to water tomatoes that have curling leaves. I'd suggest pausing and checking the soil moisture by gently digging into the soil a few inches and also considering the recent rain or irrigation. If the top few inches of the soil aren't dry, it may not

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be a lack of water that is causing the leaf curling. If excess water is causing the curling then watering that plant is the last you thing you'd want to do.

Excessive nitrogen fertilization can cause leaves to curl and can also sacrifice flowering by driving vegetative growth. With nitrogen if we are not using a slow release form, we want to look at using a split application where we apply some at the time of planting and a second application mid-season.

There are instances where leaf curling might be partial symptoms of either viral diseases or herbicide exposure. In both of these cases, there will be other symptoms beyond simply curling of the leaves. Often, we'll see that the most affected growth is the newest or youngest growth and often there can be mottling, distorted leaf shape and even thickness. Neither of these should be readily misidentified as simple leaf curl as they are affecting the plant in much more dramatic ways.

So, long story short, leaf curling is not an automatic cause for concern. Double check and make sure you're doing a good job with watering providing neither too little or too much. Use nitrogen fertilizers at suggested rates and use mid-season applications to avoid over fertilizing at the start of season. Inspect or scout the plants to make sure there are not insects responsible for the leaf curling. If all these elements check out good, then we can be assured that it is an environmental response and likely not a true problem for the plant.

Mid-season nitrogen fertilization is important for a number of vegetable crops, including tomatoes, to see their full yield potential as well as maintain their health longer. Check out the table on page 3 of this newsletter or our publication [Getting The Most Out Of Your Home Vegetable Garden Soil Test Report](#).



If you're considering planting an apple or pear tree this fall or next spring, let me encourage to review our [Selecting Apples and Pears for Residential Production in Tennessee](#). Diseases are a significant limiting factor to fruit production in our region so I highly encourage you to choose the most resistant varieties.

Apples and pears are some of the most familiar and commonly grown fruits for the residential grower. However, before diving into tree fruit, it's best to consider the overall goal of your planting and how much time and energy you are willing to commit. For some, production of large quantities of fruit for consumption or preservation is important, while others are satisfied with lower production and lower management time. Keep in mind tree fruits are more space and time consuming than usual fruits, so they may not be best for those with space limitations or those who prefer low maintenance crops. Even for a casual backyard tree or two, proper pruning, cultural practices, and pest and disease management are crucial to harvest high quality fruit.

#### Selecting the Best Site

Apple and pear trees require deep, well-drained soils and full sun sites for good production and health. Planting sites should also be carefully tailored to the mature size of the tree. Standard trees grown on non-dwarfing rootstocks can be up to 30 feet tall. They need to be planted 30-40 feet apart. The use of dwarfing rootstocks (see below) can reduce this spacing considerably by reducing the size of the mature tree but may require more support due to less vigorous root systems. Generally, irrigation is not required, but it is important to have access to water for tree establishment and drought situations. More detailed site selection considerations are discussed in other UT Extension publications.

#### Selecting Apple and Pear Cultivars for Tennessee Climates

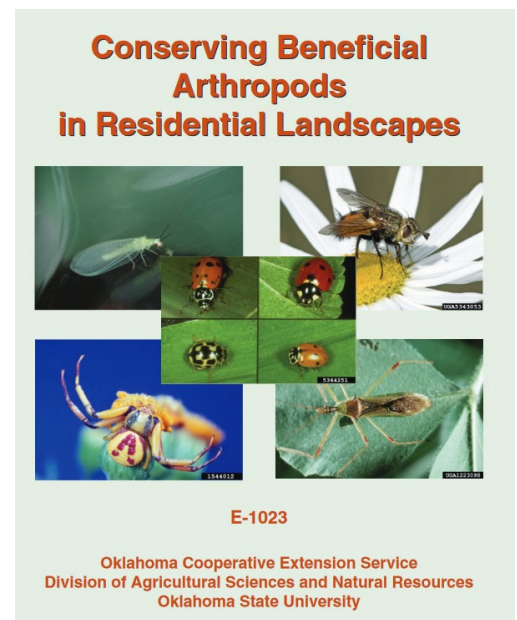
Many tree fruits can be successfully grown in Tennessee if proper care is taken in crop and cultivar selection and management. Apples (*Malus domestica*) and pears (*Pyrus* species) are in the same family and are often together called pome fruits. European pears (*Pyrus communis*) have a traditional shape and texture while Asian pears (*Pyrus pyrifolia*) have crisp flesh and a more apple-like shape. Apples, and to a lesser extent pears, are likely to be more productive over time than the more challenging crops of peaches and sweet cherries. However, many diseases and pests can damage and reduce fruit harvests or even kill apple and pear trees in Tennessee. Selecting cultivars with resistance to the most common diseases is important to enable successful fruit production and harvests. Resistance is often used in conjunction with carefully managed spray programs to prevent or reduce the impact of pests and diseases. Disease and pest tolerant cultivars are a key asset, but don't assume that resistance will enable fruit trees to perform well with little to no management. Cultural management including cultivar selection, site selection, pruning, training, pest and disease control, and sanitation are crucial.

In selecting crops and cultivars, it is also important to be familiar with grafted trees. Most apple and pear trees are sold as grafted trees. Grafting is attaching a shoot piece from a tree with the desired fruit (scion) to another

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Do you ever wonder if the insect you're seeing in the garden is a bad guy or good guy? Feel free to send me picture to identify, but you might also take a look at this publication from Oklahoma State University, [Conserving Beneficial Arthropods in Residential Landscapes](#)



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## In-Season Nitrogen Fertilization for Vegetable Crops

Crop	Timing in season/ fruit or plant size	Application rate/100-ft. row 36-inch centers			
		33-0-0 or 34-0-0 Ammonium nitrate or urea	15.5-0-0 (calcium nitrate)	Bloodmeal, feathermeal (12-0-0) *	Soybean (7-1-2), cottonseed (6-2-1) meal or fish fertilizer (5-1-1)*
Tomato	First fruits are 1 in. diameter	Not recommended	1.5 lbs.	2 lbs.	4 to 5 lbs.
Pepper	First fruits are 1 in. diameter	Not recommended	1.3 lbs.	1.5 to 2 lbs.	3 to 4 lbs.
	Later in season (if needed)	0.5 to 1 lb.	1 lb.	1.5 lbs.	3 to 4 lbs.
Vine crops (Cucumbers, melons, pumpkins, squash)	Vines are 1 ft. long	0.5 lb.	1 lb.	1.5 to 2 lbs.	4 lbs.
Sweet corn	Plants are 12-18 inches tall	1 lb.	2 lbs.	3 lbs.	6 lbs.
Okra, eggplant	3 to 4 weeks after seeding/ transplanting	0.5 to 0.75 lb.	1 to 1.5 lbs.	1.5 to 2.5 lbs.	2 to 4.5 lbs.
	6 to 8 weeks after seeding/ transplanting	0.5 to 0.75 lb.	1 to 1.5 lbs.	1.5 to 2.5 lbs.	2 to 4.5 lbs.
Broccoli, cabbage, cauliflower, Brussels sprouts	2 to 3 weeks after transplanting	0.75 lb.	1.5 lbs.	2 lbs.	3 to 5 lbs.
	5 to 6 weeks after transplanting	0.4 lb.	0.8 lb.	1.2 lbs.	2 to 4 lbs.
Kale, collards, lettuce, spinach, mustard	3 to 4 weeks after seeding	0.4 lb.	0.8 to 1 lbs.	1.2 to 1.5 lbs.	2 to 3.5 lbs.

\* Natural or organic fertilizers will be available more slowly than chemical (often 1-4 months).

\*\* Adapted from Southern Vegetable Crops Production Guide

For questions about your home and garden please feel free to contact me, Adam Watson, Agriculture Extension Agent [watson@utk.edu](mailto:watson@utk.edu) or by cell 423-430-6711. Emailing or texting pictures is a great way to get questions to me.

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