

## Tomato Variety Selection for Disease Control

Mid to late summer many of the calls coming into the Shawnee County Extension Master Gardener Response Line are tomato related.

“What are these spots on my tomato leaves?” “What are these knots on my tomato roots?” and “My plant just died—what happened?” are among our most common questions. The answers often end up being “Early blight”, “Nematodes” and “Verticillium or fusarium wilt”. These are just a few possible issues, but they can be devastating to your crop.

Often when these gardeners come in, it’s too late. Sanitation and other cultural methods can help control the problem, a topic we’ll discuss next week, but variety selection can also play a key role.

There is nothing more frustrating than working all season caring for tomato plants that fail only to find that another choice would have yielded a more favorable result.

Variety selection is key to solving many common plant issues. Tomato selection may only impact your garden for a season, but choosing a tree that is susceptible to a common pest, when there is a resistant variety, is a choice that may plague your yard for decades.

Disease or pest-resistant varieties are not a cure all for issues. They offer protection, but under favorable disease conditions, high pest densities or poor sanitation, a resistant plant may still succumb to the issue at hand.

Taste can also be a limiting factor in selection. Your favorite cherry tomato may not have any resistance to fusarium wilt putting all the pressure on your gardening practices, the weather and a bit of luck. Resistant varieties are primarily helpful to those whom have had issues in the past. Depending on the problem this may signify that your soil contains a pathogen that resistance can help to combat.

**Fusarium Wilt:** Although similar to verticillium wilt, this disease is more prevalent. Occurring midsummer, during periods of high soil and air temperatures, this disease develops yellowing on the oldest leaves—those closest to the ground. This yellowing is restricted to one side of the plant or even on leaflets only showing on one side of the petiole. These leaves wilt and dry up, but stay on the plant. Wilting continues to move to younger foliage and will result in the death of the plant. Stems will remain green and firm on the outside but have a brown discoloration in the interior vascular tissue. There are three strains of fusarium, the following are listed as having resistance to at least one.

Resistant varieties for garden tomatoes: Sun Start, Sunny, Daybreak, Mt. Spring, Mt. Fresh, Celebrity, Floralina, Jet Star, Merced, Sunmaster, Sun Leaper, Carolina Gold.

Cherry resistant: Cherry Grande, Mt. Belle, Sweet Chelsea.

Pasta/Roma resistant: Roma, Plum Dandy, Super Marzano.

**Verticillium Wilt:** This disease tends to develop in the cooler spring months. Older leaves are affected first, turning yellow and wilting, eventually dropping off the plant. This yellowing of the leaves will be uniform, unlike fusarium wilt. With disease progression, younger leaves begin to wilt and die, leaving on a few healthy leaves at the top of the plant. Diseased plants aren’t killed, but they can be severely stunted, weak and produce extremely small fruit. The same varieties resistant to fusarium are listed as resistant to verticillium.

**Tobacco Mosaic Virus:** This disease can attack tomato, pepper, eggplant, tobacco, spinach, petunia and marigold. On tomato, virus infection causes light and dark green mottled areas on the leaves. Generally the dark green areas tend to be thicker than the lighter portions. Plants are stunted, leaves are distorted, curling downward, and look more like fern leaves than tomatoes. Some strains can cause mottling, streaking and necrosis (decay) of the fruit. Although infected plants survive, fruit quality and yield are poor.

Resistant varieties for garden tomatoes: Sun Start, Sunny, Merced.

Cherry: Sweet Chelsea

Pasta/Roma: Super Marzano

**Nematodes:** Nematodes are microscopic, wormlike animals that damage plant roots with their underground feeding. This feeding can cause stunting, deformation and poor yield. Nematodes can cause plant death during periods of drought, as severely effected plants cannot take up water properly.

Resistant varieties for garden tomatoes: Sunny, Daybreak, Celebrity.

Cherry: None.

Pasta/Roma: Super Marzano.

**Early Blight:** Early blight is one of the most common diseases of tomato. Although it can occur anytime in the growing season, the disease typically becomes more severe after blossom-set. Early blight can cause defoliation, resulting in sunscald of fruit and a reduction in fruit yield. Signs of early blight include irregular, brown leaf lesions or spots that can be as large as ½" in diameter. Within this lesions are dark, concentric rings making the spot look like a target. Although these spots are primarily on the leaves, they can develop on the fruit as well. On the fruit these lesions are tan to brown, leathery and typically originate at the stem end of the fruit.

Resistant varieties for garden tomatoes: Mt. Fresh.

Cherry: None.

Pasta/Roma: Plum Dandy.

For more details on resistant tomato plants and tomato plant care visit:

<https://www.bookstore.ksre.ksu.edu/pubs/mf312.pdf>