

## Blights and Wilts



### Septoria leaf spot

Spots with tan centers appear on lowest leaves and move upward. Leaves yellow, brown and die.



### Early blight

Brown, target pattern spots appear on lowest leaves and move upward. Leaves, yellow, brown and die.

**Treatment for both:** Pick off spotted leaves immediately. Destroy, don't compost. Mulch soil under plant. Avoid wetting leaves. Space plants and thin out leaves or prune and stake to speed-up drying. Fungicides include copper for organic gardeners or chlorothalonil. Rotate planting location yearly for 3 – 4 years. Choose resistant varieties.



### Late blight

Greenish, water-soaked looking, irregular blotches appear on leaves and stems. Plants collapse and die in 7 – 10 days. Treatment similar to above blights. Wait for Extension recommendation before using fungicide sprays.



### Verticillium & Fusarium wilts

In mid-summer, plants suddenly yellow, wilt, turn brown and die. Caused by soil-borne fungus. No cure. Select resistant varieties. Rotate planting location yearly for 3 – 4 years.



### Black walnut toxicity

Tomato plant wilts when roots contact roots of nearby black walnut tree. Do not plant tomatoes within 60' of a black walnut tree.

## For More Information

### UW-Extension Horticulture Team

<http://hort.uwex.edu>

Septoria leaf spot-XHT1073

Early blight-XHT1074

Late blight-XHT1195

Blossom end rot-XHT1140

Black walnut toxicity-XHT1017

Hornworms-XHT1107

### UW Extension Publications:

<http://learningstore.uwex.edu> • 1-877-WIS-PUBS

Home-grown Tomatoes for WI-A1691

Tomato Fusarium & Verticillium-A2617

Tomato Physiological Fruit Problems-A3798

### Horticulture Help Lines

Milwaukee County 414-256-4664

Waukesha County 262-548-7779

### UW-Extension Horticulture Center

at Boerner Botanical Gardens

in Whitnall Park, Hales Corners, WI

## Become a Master Gardener Volunteer

### Milwaukee County UW-Extension Office

414-256-4600

<http://fyi.uwex.edu/sewmg>

9501 W Watertown Plank Rd Building A

Wauwatosa, WI 53226-3552

### Waukesha County

### UW-Extension Office

262-548-7770

<http://www.uwex.edu/ces/cty/waukesha>

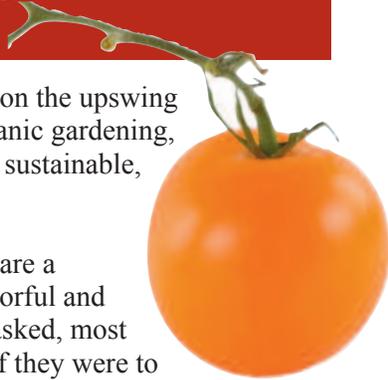
515 W Moreland Blvd., AC-G22

Waukesha, WI 53188



## SouthEast Wisconsin Master Gardeners

## Growing Tomatoes



Vegetable gardening is on the upswing again fueled by the organic gardening, local foods, renewable, sustainable, green movement.

Home grown tomatoes are a special case. Juicy, flavorful and warmed by the sun. If asked, most people would say that if they were to grow only one vegetable, the tomato would be it. Others grow dozens of several varieties and are generous enough to share with those who don't.

## Problems of Care & Climate



### Blossom end rot

Black leathery bottoms on fruits. Caused by uneven distribution of calcium. Water regularly, avoid drenching and drought. Mulch to hold moisture. Tomatoes are safe to eat. Some resistant varieties.



### Catfacing

Tomato bottoms misshapen with folds and bulges. Caused by cool temperatures when young. Some varieties less susceptible.



### Cracking

Appears in rings around the stem or in lines in rays from the stem. Excess moisture or fertilizer causes rapid growth. Keep evenly moist and mulch to hold moisture. Some resistant varieties.

## Tips for Trouble-Free Tomatoes

Somehow, millions manage to grow gazillions every year. They say the devil is in the details when growing this fruit of the gods. Here are a dozen details that make it work and how.

- **Rotate the planting location.** Don't grow the same crop in the same spot for at least 3 years. That way last year's diseases won't be in this year's soil. Also the roots of a black walnut tree make juglone, a chemical that keeps tomatoes from growing near them.
- **Buy healthy, resistant varieties.** Choose varieties that are resistant to fusarium and verticillium wilts, late blight, blossom end rot and cracking.
- **Plant on June 1st.** Even if you protect them from frost, cool temperatures keep growth slow and prevent fruit set. Once fruits start to form, cold temperatures cause the blossom end to become deformed which is called catfacing.
- **Space plants at least 5' apart.** Air moving between plants and among the leaves allows them to dry quicker so that fungal spores of septoria, early blight and late blight are less able to cause infections.
- **Prune out branches and support plants with cages or stakes.** Supports keep them from laying in a pile on the damp ground. Removing some stems helps open up the plant for better air circulation. "Vining" using only one stem per plant supported on a stake or trellis is best however fewer stems means fewer tomatoes. Plus without the extra leaves, they can get "sunburned".



- **Fertilize once after the first fruit have started to form.** Too much nitrogen makes leaves grow instead of the flowers which are what turn into the tomatoes.
- **Mulch the rootzone.** Use 1 – 4" of straw, dry grass clippings, or compost. Use just enough to cover any fungal wilt spores on the soil to prevent them from splashing up onto plants. A little more mulch keeps soil moist longer so you can water less often and keep the roots more evenly moist which will reduce blossom end rot.
- **Water regularly.** Evenly wet soil keeps calcium moving throughout the plant. When the soil dries, calcium is not moved all the way to the blossom end of the fruit which causes blossom end rot. Soil kept too wet causes tomatoes to crack in lines from the stem outward or in rings around the stem end. The roots can also rot.
- **Keep leaves dry – water directly to the roots.** The less time the leaves are wet, the less time fungi spores for septoria, early blight and late blight can cause infection. This also conserves water because very little is wasted through evaporation.
- **Remove and destroy infected leaves as soon as they appear.** DO NOT COMPOST or pile up diseased leaves since spores can travel back to the garden on wind and rain.
- **Clean up well after frost and do not compost infected plants.** Late blight spores are killed when they freeze. The others are not so remove and destroy infected plants completely at the end of the season.

- **Use fungicides as a last resort to control blights.** Organic gardeners can use copper products for all three blights. Chlorothalonil is a synthetic fungicide that is very effective if used every 7 – 14 days. As with all pesticides, read and follow all label instructions before use. Fungicides are ineffective on fusarium and verticillium wilts.