

Cape Elizabeth Community Garden, Organic Bulletin #1

Septoria Leaf Spot

What is it?

Septoria leaf spot is caused by the fungus *Septoria lycopersici*. This fungus can attack tomatoes at any stage of development but symptoms usually first appear on the older, lower leaves and stems when plants are setting fruit. See pictures on link below.

How is it Spread?

Spore production is abundant when temperatures are between 60°-80°F. Spores are usually spread to healthy tomato leaves by windblown water, splashing rain, and overhead irrigation. However, spread can also occur on hands and clothing of pickers, cultivation equipment, and through the activities of several types of insects including Colorado potato beetles, flea beetles, tomato worms, and aphids.

How is it managed?

During the growing season, it is important to start with healthy, disease-free transplants.

SPACING OF PLANTS -- allowing plenty of space between plants is important to allow for good air circulation to keep the leaves as dry as possible. Determinate varieties (smaller bush-type) should be at least 15-20" apart if they are supported with a stake or cage and 24" apart if not supported. Indeterminate varieties (larger vine-type) need more spacing -- 24-30" apart and should be staked or caged, especially in our small plots. You'll get more and bigger tomatoes from plants that are well-spaced. If you don't know which type of plant you have, check the plant marker if you bought the seedlings or the seed package or catalog if you started plants from seed.

PRUNING -- prune off all the lower leaves below the first flower cluster. These are the leaves that touch the ground or are close to the ground -- the spores can splash on the lower leaves when it rains.

Since water is important to both the spread and development of Septoria leaf spot, it is helpful to avoid overhead watering or to water early in the day so that the leaves dry; **water the soil around the plants and not the leaves**. With late afternoon or nighttime watering, the leaves stay wet longer and this provides optimum conditions for infection by the fungus.

Staking and mulching can also help reduce infections. Staking increases air circulation and helps to dry the leaves—this reduces favorable conditions for infection. Mulching acts as a barrier between the soil (containing infected fragments of plant debris) and the tomato and prevents splashing of spores onto the lower leaves. This is often the primary way the disease gets started each season.

REMOVING DISEASED LEAVES -- diseased leaves should be removed from the plant and put in a plastic bag/trash (not composted) to prevent the spread of the disease to other leaves and plants. Diseased leaves that drop to the ground will allow the spores to overwinter in the soil.

The final strategy for managing Septoria leaf spot involves the proper selection, timing, and application of fungicide spray. Organic Gardeners should consider using **Serenade** organic fungicidal spray, made from *Bacillus subtilis*; certified for organic gardens, and approved by MOFGA! There is a quart plastic bottle in the shed of Serenade -- it's a concentrate to be mixed with water in a quart hand spray bottle.

See also:

http://www.ct.gov/caes/lib/caes/documents/publications/fact_sheets/plant_pathology_and_ecology/septoria_leaf_spot_of_tomato_06-30-08r.pdf

Tomato varieties listed in order of ability to withstand Septoria:

Mountain Magic - nearly bulletproof

Chello (a gold, open pollinated cherry) - no problems ever

Red Brandywine, Landis Strain - awesome tolerance

Druzba - almost as tolerant as was RB, Landis

Sun Gold - nearly bulletproof

Indian Stripe x Sun Gold - intermediately bulletproof (LOL)

West Virginia 63, also intermediately resistant to Late Blight

Indian Stripe - decent tolerance to Early Blight and Septoria but eventually will succumb to Septoria later in season, never seen it go down to Early Blight though

Bear Creek - Had lots of Septoria on lower leaves but vine persisted in nearly

rampant growth, set and ripened fruit form palm-like upper fronds while lower stems were completely denuded. Last plant in garden in fall to produce and ripen decent tomatoes.

Daniels - fairly tolerant and reported to be tolerant to Late Blight, too. Yeah, it got Septoria but it went on to produce good, sound fruit and basically outgrow the plague.

Mozark - a determinate that may get Septoria but will still set and ripen a concentrated crop (40 - 50 tomatoes) before succumbing, the tomatoes will be red and ready.

Mozark x Sioux - good so far this year while others on both sides went down

Ananas Noir - completely free of Septoria until late in production cycle

Traveler 76 - after a severe bout early was able to outgrow and withstand

Cherokee Purple - same comment as Trav. 76

-cjp, 5/25/12