



Tomato Diseases Affecting Local Gardens

The two most popular home garden vegetables are tomato and potato. Being close cousins, both get some of the same diseases, and those diseases are causing problems in many area gardens right now.

The two most common diseases of tomato are Septoria Leaf Spot and Early Blight. Although caused by different fungal species, the two diseases are able to be managed with the same techniques, as the disease cycles are the same. Both diseases can be very severe in tomatoes, and Early Blight is very common and can be very bad on potatoes. Additionally, the diseases can impact eggplant and peppers, but are usually not serious on those plants.

Home gardeners really dislike these two diseases. They can turn a lush tomato patch, or even just one or two plants, into standing skeletons that have very few leaves and smaller, lower quality fruit. Both are caused by fungal pathogens which overwinter on plant debris. Thus, one of the primary management methods is to thoroughly remove debris from last year's tomato family plants, especially if you had any of the diseases present. The plant debris can overwinter on the soil, in the upper layers of soil, or on trellises and tomato cages.

During warm, humid weather conditions, last year's infected plant material forms spores on the lesions and these spores can then get moved to this year's growing plants. The spores usually need to get splashed up onto leaves, or have leaves come in contact with the soil. Again, this leads to management opportunities. By having consistent mulch layers under your plants and using trellises or similar to keep the vines off the ground, you can often minimize or slow down the ability of the disease to get started.

Once disease gets started in a plant or in a stand of tomatoes, it will continue to move upward as rain drops or irrigation droplets splash the spores being produced on infected leaves up to the next layer of leaves and form new lesions. As lesions grow, they coalesce and lead to leaflets dying back, often leading to partial or complete defoliation of affected plants. The loss of photosynthetic area lessens fruit yield and fruit quality, sometimes severely.

The two diseases are difficult to tell apart, but the lesions are slightly different. Septoria lesions start as small, circular lesions, usually having a lighter colored center, but otherwise darkly colored. Early blight lesions are larger, more irregularly shaped, and if you look closely you can usually see concentric rings within the lesion that make them look like bullseyes. Early blight can also directly infect the fruit, leading to sunken, brown areas on the stem end of the fruit and very low quality fruit, if they are able to be used, at all.

Fungicide use, staking/trellising & pruning, and rotation & weed control are other management opportunities. Along with mulching, you can use trellises, stakes and ties, or tomato cages to keep the tomato growth as vertical as possible and minimize soil contact to the leaves. Along with this, pruning of lower leaves early in the season helps keep the spores from getting onto the plant. You may also be able to slow the disease down by pruning off leaves which are affected when the disease gets started, or entire plants if only one or two plants are infected.

Rotation can be difficult in smaller gardens and is impossible in containers. If possible, do not plant tomatoes where you had tomatoes, potatoes, eggplant, or peppers in the last 2 to 3 years. However, many weed species (nightshades, horse nettle, jimsonweed, and clammy groundcherry & other

groundcherries) also harbor the disease, so you need to practice good weed control along with rotation to have this be at all effective. Good spacing also helps, so have more space between your tomato plants to get better air flow.

Fungicides can also be used, but the only active ingredients which work well and are readily available to home gardeners are chlorothalonil and mancozeb; along with copper fungicides if you want to use an organic option. You will need to reapply these products, as they will wash off with rain or irrigation events, and their efficacy wears out. Depending on the conditions and active ingredient, you will want to reapply every 5-14 days.

Make sure that you read and follow the label directions carefully, especially for treatment intervals, if you decide to use any type of fungicide. Also, remember that fungicide applications need to be very thorough, as they are protective treatments. Think painting as an example. You need to have 100% leaf surface coverage for the fungicides to truly do their job of stopping spores from infecting new places or new leaves.

You can learn more about these diseases by reading the publication found at: <https://cdn.shopify.com/s/files/1/0145/8808/4272/files/A2606.pdf> and there is another, shorter version found at: https://hort.extension.wisc.edu/files/2014/11/Septoria-Leaf-Spot_0.pdf You can find more pest management resources under the Horticulture – Plant Problems tab, including photos of these diseases, at <https://marinette.extension.wisc.edu/>

You can also contact Scott Reuss, Marinette County Agriculture & Horticulture Agent, at 715-732-7510 or e-mail to scott.reuss@wisc.edu to get more information or if you have any other horticultural or agricultural questions.



Septoria leaf spot advancing through a tomato leaf. Photo by Scott Reuss.



Early blight lesions on potato, showing concentric rings. Photo by Scott Reuss



Initial Septoria lesions on a tomato leaf. Photo by Scott Reuss



Initial Early Blight lesion on a leaf. Note concentric rings and irregular shape. Photo by Scott Reuss