

## Tomato Problems

Although tomatoes are backyard gardeners' most popular vegetable, they are certainly not the easiest to grow. In the Puget Sound area we don't get as much heat as tomatoes prefer. We have to choose the right short season varieties (Early Girl, Stupice, Sun Gold, Sweet Million, IPB, Fantastic, Lemon Boy, Champion, Celebrity, Carnival, etc.) and then coddle them a bit. Eventually we get ripe tomatoes so delicious that they make all the trouble worthwhile. We do, that is, unless the tomatoes get diseased.

**Late blight** is the worst disease in our region. This fungal disease usually strikes toward the end of summer, but it seems to be earlier and more widespread in recent years. Dark, dead areas appear on leaves, stems and fruit. The vines may collapse as though hit by an early frost. Infested green fruit rots before it ripens.

This disease does have one requirement that gardeners, if they are aware of it, can use to protect their tomatoes. There must be free moisture on the plant for the spores to infect. The goal, therefore, is to keep the plant dry. Staking the plant off the ground is essential. Water it only at the base of the plant. Drip or soaker hose irrigation is perfect; it wets the soil not the plant. It is recommended that gardeners remove the lower leaves that touch the ground.

Unfortunately, rain dampens tomato plant foliage and may allow the disease to get started. Many gardeners are growing tomatoes under clear plastic shelters of one sort or another. Assuming your tomatoes are exposed to rain, the plants must be able to dry quickly after it stops. This means thinning and spacing the vines for the best possible air circulation around them.

Several fungicides can be used to combat late blight. One used by commercial growers (chlorothalonil) is available to home gardeners under the trade name Bravo. Organic gardeners may want to try fixed copper or Bordeaux sprays. Read and follow product labels carefully. These must be applied before the disease gets started, and plants will need multiple treatments. If you start seeing symptoms on a few leaves, pick those off and get rid of them. You may be able to hold the disease at bay long enough to get a few more mature fruits. Clean up and dispose of diseased vines as soon as possible. Do not compost them! This goes for potato vines too, since potatoes are also very susceptible to late blight.

Rotate your plantings each year and quickly get rid of any volunteers that come up the following season. Volunteer potatoes are often a source of over-wintered spores.

As though late blight was not enough, tomatoes have a variety of problems with cultural or environmental causes.

**Blossom end rot (BER)** is very common. It causes dark, leathery, sunken blotches on the bottoms of your beautiful, ripening tomato fruit. (It also affects peppers.) BER is considered a nutritional disorder, since it is caused by lack of calcium in the growing fruits. Practically, however, the cause is usually lack of proper irrigation.

Calcium, unlike many other nutrients, doesn't move around within the plant. Upon absorption, it moves into growing tissue -leaves, stems, fruit, etc. - and there it stays. For proper growth, therefore, the plant needs a constant supply of calcium. Calcium is supplied by lime, but, even if you lime your garden, you may get BER. Water is essential to calcium absorption. If you are not watering enough, you will soon start to see symptoms. For this reason, drought can be said to cause BER

To avoid problems: Lime your soil every second or third year to keep the pH between 6.3 and 7.0, so that calcium will be present. Keep the plants well watered, so the calcium will be available. Use a thick organic mulch around plants to help hold in moisture. Avoid over-fertilizing with nitrogen, since that seems to make them especially susceptible. If you use black plastic mulch, make sure there are enough holes for water to penetrate it. Shape your beds with concave tops before covering them with plastic to avoid shedding all your water to the paths.

**Leaf rolling** is common, but not really a problem, because it does not effect production. Some varieties are more susceptible than others. Many tomatoes "outgrow" this problem as the season progresses. (East of Cascades there is a serious pathological disease that displays leaf-rolling symptoms, but luckily we don't have that disease here.)

**Deformed fruit** has a variety of causes. Most common are the puckers called "cat-facing" that are due to incomplete pollination. "Zipperstreaks" are thought to be caused by the flower petals sticking to and tearing the wall of the tiny developing fruit. Both are purely cosmetic, the fruit is fine to eat. Both deformities are much more prevalent on the earliest fruit of larger varieties and when cold, wet weather happens at flowering time.

**Cracked fruit** is a more serious ailment, since fruit rots and black molds often develop on the crack, making the fruit inedible. Cracks often make concentric circles around the stem or may be in lines radiating from the stem. They are most common when high temperatures and rainfall follow a period of dry weather. Sudden, rapid growth as the fruit is ripening causes the fruit to "outgrow" its skin. Keeping the soil evenly moist with proper watering techniques and mulches will prevent cracking on most varieties. Fruit exposed to sun is more susceptible, so do not remove the upper leaves from plants.

**Sunscald** causes white or yellow spots on one side of green fruits. Some varieties are more susceptible, because they produce less abundant foliage. Again, do not remove upper leaves from tomato plants.

**Blotchiness** in tomatoes takes several forms. Usually it is spots of white, yellow or green tissue, sometimes containing brown strands. These discolored areas are usually much harder than the surrounding red-pigmented flesh. Blotchiness is often located around the stem end and is called "green shoulders." Some varieties are more susceptible, but there is no known control for this condition. Some heirloom varieties have blotchy skin, green shoulders and other unusual coloration because of their genetic make-up. This, of course, is natural and not a problem.

03/10