

## Blossom End Rot

The 2001 growing season is setting itself up as a potential banner year for a physiological disorder known as blossom end rot. Most people consider it a disease, but it really isn't, because it is caused by physical problems, not by a plant pathogen.

### Symptoms:

Blossom end rot can occur in a few fruiting vegetables, but is most commonly found on tomatoes, as well as zucchini and other summer squashes. It begins as a water-soaked spot at the blossom end of immature fruits. The spots rapidly enlarge, becoming shrunken and leathery on the surface and dark brown to black in color. These areas are very susceptible to secondary fungi and bacteria that may then cause the entire fruit to rot. If you catch the fruit before secondary invaders take over or if they ripen before this occurs, the fruit are perfectly edible, just cut away the affected portions and make fried green tomatoes, or use ripe ones in any normal manner.

Fruit can be affected anywhere on the plant and will ripen faster than non-affected fruit once inflicted. Occasionally, the typical lesions will not form, but a fruit will have internal discoloration and/or tissue collapse. Lesions forming on the sides of fruit instead of centered at the blossom-end is also an occasional occurrence.

### Cause:

Blossom end rot is caused by a calcium deficiency in the developing fruits. However, the reason for the calcium deficiency may be one of many possibilities. The most common cause is insufficient water availability to the fruit due to dry soil conditions. However, excess moisture can also cause calcium uptake problems, as can very high humidity levels. Root pruning, root rots, or high salt concentrations in the soil will also increase the likelihood of calcium balance difficulties. Even short periods of water unavailability can cause it to begin on some cultivars. Plants that are growing rapidly and have larger numbers of fruit are more susceptible, as are plants that have been fertilized with ammonium nitrogen sources.

### Control:

In our area, the most important consideration is making sure that your plants are consistently watered, especially during the primary fruit set and fruit development stages. If growing tomatoes in buckets or in extremely sandy soils, you need to mix in some fine garden lime with your soil mix. This will provide a slow release of calcium to your plants and prevent them from running out of calcium, which can very easily occur in patio-grown tomatoes. Cultivar selection can also be a factor in these situations. You should try to avoid pear-type varieties and choose cultivars that are known to be less susceptible, although none are considered truly resistant.

Other things to remember including not letting salts build up in your soil due to chemical fertilizer usage, de-icers, or irrigation water. Also, if doing mid-season fertilization, make sure your N source is a nitrate-provider, not an ammonium-provider. You should also not use a manure-based mulch or have any nutrient sources that are high in nitrogen. If you expect blossom end rot to be a problem, you can also try to use foliar applications of calcium chloride solutions, at a rate of 1 tablespoon per gallon water onto 75 - 100 feet of row. There is no guarantee that this will work, and it needs to be done once or twice weekly before and during stressful periods. But you need to be very careful about this type of application, as you can cause foliar damage due to chloride accumulation, so only apply as truly necessary.