



16125 22 Mile Rd Macomb, MI 48044 586-247-5533 13790 W. Highland Rd. Hartland, MI 48353 248-714-5720



**V#17**

## **Blossom End Rot**

**Blossom end rot is a serious nonparasitic, noninfectious disorder of greenhouse and field tomatoes, caused by low levels of calcium. It is not associated with soil contact or with damage to other plant parts. This disorder is usually most severe following extremes in soil moisture (either too dry or too wet). These conditions result in a deficiency of calcium available to the maturing fruit.**

### **Symptoms**

**This first visible symptom of the disorder is a small darkened or water – soaked area around the blossom end of the fruit, appearing about the time the fruit begins to ripen. The spot darkens, enlarges and becomes sunken as the fruits mature.**

**Large lesions may show concentric rings. The affected tissue is leathery and firm unless invaded by secondary decay organisms. Blossom end rot usually causes the fruit to ripen prematurely and to be inedible.**

**The calcium deficiency producing blossom end rot is most often a result of climatic or cultural problems. It is related to several factors, including calcium, nitrogen and soil moisture levels. The severity of this condition can be compounded when two or more of these factors interact with each other. It can occur even when there is abundant calcium in the soil.**

**Because calcium has to be taken up from the soil by the roots, calcium sprays on the leaves and fruit are ineffective in preventing blossom end rot. When calcium deficiency occurs in the end of the fruit, it causes cells to collapse producing the sunken lesion symptom of blossom end rot.**

**Water stress during early fruit enlargement can also cause blossom end rots because the fruits are the last to receive adequate calcium. An alternation of excessively dry and excessively wet soil conditions generally increases the problem. The tomato fruit requires more calcium for development than the leaves and stem of the plant.**

**When plants are set out too early in cold soil, it causes slow water uptake, allowing blossom end rot to show up early. Plants cultivated closely are more susceptible to blossom end rot due to having a reduced root system available for the water transport.**

**Another cause is over-fertilization, especially with nitrogen, which stimulates vegetative growth. Excessive vegetative growth increases the rate of transpiration.**

**Tomato varieties differ in their resistance to blossom end rot. In general, pear or plum tomatoes used for processing and canning are most prone to this disorder.**

## **Prevention**

**Incidence of blossom end rot may increase where there is a low ratio of calcium to certain other nutrients such as potassium and nitrogen. The use of 5-10-10 fertilizer in place of 10-10-10 or 13-13-13 on tomatoes will help reduce the nitrogen problems associated with blossom end rot.**

**Fluctuations in soil moisture during periods of rapid plant growth create moisture stress and limit calcium distribution to the fruit.**

**Adequate soil moisture throughout the season through mulching and water management is essential for avoiding the disorder. Straw, pine straw, ground leaves or newspapers are all good mulches to conserve and maintain a uniform moisture supply, thereby helping to reduce blossom end rot.**

**Avoid severe pruning of plants. Severely pruned tomato plants are more prone to develop blossom end rot than unpruned plants. Tomato plants require 1.0-1.5 inches of water per week during growth and fruiting depending on soil type and weather conditions. Extreme fluctuations in soil moisture can cause an increase of blossom end rot. Preventing moisture stress is important to control blossom end rot, especially during fruit set and fruit enlargement.**

## **Summary**

- **Allow spacing between each plant for airflow and root system development**
- **Consider either crop rotation or amending the soil each year to allow for healthy tomatoes**
- **Too much nitrogen promotes vine and leaf growth rather than fruit development**
- **Tomatoes need calcium to avoid blossom end rot, but too much is not good either**
- **Uniform water moisture helps reduce blossom end rot. Consider mulching.**
- **Remove affected fruits at first sight to promote development in the other fruits**