

# Vegetable Gardening

## Prevent Blossom End Rot



### What is blossom end rot?

Blossom end rot is the scourge of many gardeners. While commonly found on tomatoes, it can also affect peppers, eggplant, squash, and watermelons.

On tomatoes it is most commonly seen on larger fruited cultivars. Long-fruited varieties, such as Roma, are more susceptible than round varieties.

Blossom end rot starts as a light tan spot at the end of the fruit where the blossom was on the opposite end from the stem. The spot will grow in size and eventually turn black and leathery.

### What causes blossom end rot?

Contrary to popular belief, blossom end rot is not caused by a disease or insects. Blossom end rot is a physiological disorder believed to be caused by low levels of calcium in developing fruit.

### Why isn't the plant getting enough calcium?

The most common reason a plant may not be getting enough calcium has to do with how the plant gets nutrients. Plant leaves must lose water to absorb more water along with nutrients from the soil in a process called transpiration. Anything that gets in the way of transpiration can slow how much calcium the plant can get from the soil.

- Soil: Most of the time, there is enough calcium in the soil so this is rarely the cause.
- Drought stress
- Fluctuating soil moisture
- Cold and/or waterlogged soils
- Rapid growth due to too much nitrogen fertilizer

High concentrations of ammonium, potassium, and magnesium in the soil, often due to over-fertilization, can also lead to issues with calcium uptake.



Photo by Ken Johnson, University of Illinois Extension. Early symptoms of blossom end rot on a tomato.



Photo by Scot Nelson, flickr.com. Blossom end rot on developing tomato fruit.



**It could be abiotic stress:** Others argue that abiotic stress such as drought, high light intensity, or heat causes cells in the fruits to die which results in blossom end rot. Some experiments have shown that fruit in the early stages of blossom end rot have similar calcium levels to healthy fruit.

### How to prevent blossom end rot

Prevention is the only way to treat blossom end rot. Once a fruit has blossom end rot, it is best to remove the fruit and discard it.

- Conduct a soil test to see if your soil needs any calcium added.
- Choose plant varieties that are less prone to developing blossom end rot, such as ‘Celebrity’, ‘Mountain Pride’, and cherry tomatoes.
- If planting in containers, check the soil mix nutrient levels. It may be necessary to fertilize plants.
- Water plants deeply from fruit formation to maturity. Plants need about 1 inch of moisture a week, either from rain or irrigation.
- Use mulch to help keep the soil evenly moist.
- If growing tomatoes in containers, water daily or

twice daily during hot, dry weather because soil in pots dries faster than in the ground.

- Avoid over fertilizing plants, especially with fertilizers that use ammonium as their nitrogen source, during early fruiting.
- Applying liquid calcium fertilizer directly to leaves has limited effectiveness because calcium doesn’t move very far in plants. If calcium is applied, it should be done when the fruits are small.

### Author

Ken Johnson, University of Illinois Extension horticulture educator serving Calhoun, Cass, Greene, Morgan and Scott counties.

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