

## Tomato Physiological Fruit Disorders

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The following problems in tomatoes are not caused by infectious diseases or even insects but are rather a result of environmental stresses on the plant.

**Blossom-end rot** – Characterized by light brown patches that become sunken occurring at the blossom end. Secondary organisms will usually invade the dead tissue. Blossom-end rot is caused by a localized calcium deficiency in the fruit, aggravated by unfavorable growing conditions, especially drought. Where water is limited, plant growth slows and subsequently nutrient availability is reduced. Calcium concentrations in the plant are then reduced as calcium is carried through the plant in water flow. Ensuring a steady and adequate supply of water and avoiding excess nitrogen fertilization will help to alleviate blossom-end rot.

**Fruit Cracking** – Concentric fruit cracking and radial fruit cracking are the two types. This is a physiological disorder that occurs as the fruit is sizing and results from variations in soil moisture and temperature. Growth cracks can occur during periods of rapid fruit growth when relative humidity and air temperatures are high or when water becomes abundantly available after a drought period. These cracks are easily invaded by secondary organisms that promote fruit rot. Varieties vary in their susceptibility to fruit cracking.

**Catfacing** – This disorder occurs during the early stages of flower bud development, 2-3 weeks before blossoming or when temperatures drop below 50F during flowering and fruit set. However, any other impediments to flower bud development can also result in catfacing. High levels of soil nitrogen and excessive pruning can aggravate the problem. Affected fruit have deep indentations and large bands of cork-like scar tissue on the blossom end of the fruit.

**Blotchy Ripening** – Blotchy ripening of tomatoes is characterized by areas of the fruit that fail to ripen properly. White or yellow blotches appear on the surface of the ripening fruit while the tissue inside remains hard. It has been linked to potassium or boron deficiency and to high nitrogen levels. Follow a well balanced fertilizer program to help minimize the disorder.

**Puffiness** – Fruit affected with puffiness appears somewhat bloated, light in weight and soft. When the fruit is cut, the cavities may be only partially filled with gel or even empty. Puffiness results from incomplete pollination, fertilization, or seed development - often a result of cool temperatures that negatively affect nutrient uptake and availability. High nitrogen and low potassium have also been linked to puffiness. Some varieties are more vulnerable than others.