

# NEWSLETTER



## Save The Dates

### EDUCATIONAL PROGRAMS FOR THE OWSLEY COUNTY C.A.I. P. PROGRAM

#### SOIL TESTING AND WHY ITS' IMPORTANT

TUESDAY, JULY 9, 2024 10:00 A.M.

TUESDAY, JULY 9, 2024 6:00 P.M.

THURSDAY, JULY 18, 2024 10:00 A.M.

**\*NOTE\*** YOU WILL ONLY NEED TO ATTEND ONE  
OF THE THREE CLASSES.

#### BEEF QUALITY AND CARE ASSURANCE "BQCA"

THURSDAY, JULY 11, 2024 6:00 P.M.

#### THE OWSLEY COUNTY FARMERS MARKET IS NOW OPEN

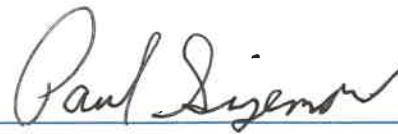


TUESDAYS 2:00 P.M. UNTIL 5:00 P.M.


SATURDAYS 9:00 A.M. UNTIL 12:00 P.M.



Owsley County Extension Service  
92 Lone Oak Industrial Park Rd.  
Booneville, KY 41314  
Phone: (606)593-5109



PAUL SIZEMORE - OWSLEY CEA  
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Disabilities  
accommodated  
with prior notification.

## **Why Should I Have my Hay Tested?**

Do you wonder if your hay is of the highest quality? Forage testing assesses the nutrient composition of forages, allowing Producers to develop feeding programs and commercial hay producers to develop marketing strategies. Because hay and other stored forages play a major role in winter-feeding programs, testing hay now will provide producers with enough time to design a good feeding program that optimizes hay usefulness and livestock performance. Forage testing provides accurate information about its nutritive value. Testing can tell you how to adjust the amount of protein and energy supplements necessary to meet animal requirements.

Forage quality is defined as the potential of forage to produce a desired animal response. It involves consumption, nutritional value, and the resulting animal performance. Hay quality includes palatability, digestibility, intake, nutrient content, and anti-quality factors. The primary reason for livestock producers to test their hay is to increase their net profit. Not knowing the forage's nutrient composition might cause the producer to underestimate or overestimate nutrient requirements and cut profitability.

If you have questions or would like to have your Hay tested contact the Owsley County Extension Office at 606-593-5109



## **Summer Heat Safety**

By Jane Marie Wix - National Weather Service Jackson, KY

Summer heat arrived with a bang in mid-June across Kentucky! Unfortunately, we are only getting started with the summer season - there will most certainly be several months of hot weather ahead. Summer is also the season when everyone wants to be outside, either working or having fun. As much as we love this time of year, it is also a very dangerous season.

Heat continues to be the deadliest form of weather across the country. Higher than flooding, tornadoes, and hurricanes. Sadly, statistics for last year showed a higher-than-average fatality rate. Heat related deaths have been creeping up every year for the last few years.

During excessive heat, avoid heavy activity and direct sunlight. Stay hydrated, find a cool indoor place, and check on children, the elderly, and pets. Protect yourself outside by wearing light, loose-fitting clothes, stay hydrated, and spend time in the shade. Also, never leave anyone (or pets) alone in a locked car, even in the winter, as death can occur in as little as 10 minutes.

Know the signs:

**Heat Exhaustion:** Becoming faint or dizzy, excessive sweating, cool/clammy skin, nausea, rapid/weak pulse, muscle cramps.

**Heat Stroke:** Throbbing headache, no sweating, red/hot/dry skin, nausea, rapid/strong pulse, possible loss of consciousness.

If someone experiences these symptoms, get them to a cooler place and try to cool the body (loosen clothing, drink cool water, etc.). If it's a heat stroke, call 911 IMMEDIATELY.

# Blossom End Rot

Rachel Rudolph<sup>1</sup>

## Introduction

Blossom end rot is a physiological disorder, or non-biotic disease, common to many fruiting vegetable crops, especially tomatoes and peppers. Squash and watermelon can also be affected. Blossom end rot is caused by a lack of calcium in the blossom (or distal) end of the fruit. Calcium is essential to plants because it acts as a binding agent between cell walls. It is also important for cell elongation in shoots and root tips.

## Symptoms

The first fruit of the season are often the ones most affected by blossom end rot. The blossom end of immature fruit begins to appear soft and a bruise-like spot forms. The spot enlarges and becomes dark brown or black and sunken with a leathery texture. On pepper fruit, early blossom end rot can look similar to sunscald. Bacterial or fungal pathogens can invade this compromised tissue, which leads to secondary infections. It is important to distinguish between the primary issue and a secondary issue. In the case of blossom end rot, pesticide applications will not improve fruit quality because the pathogen only took advantage of fruit tissue that was already deteriorating. Fruit affected by blossom end rot are considered unmarketable.

## Causes and management

### *Water stress*

Calcium enters the plant with the flow of water. A lack of calcium in the fruit does not necessarily mean there is a lack of calcium in the soil. It may mean that the plant is unable to take up calcium and/or transport calcium to the fruit because there is simply not enough water to transport the calcium. Calcium transport can also be inhibited if there are not enough roots to take up the calcium. Root growth can be very slow in excessively wet or dry soils. Additionally, high humidity slows water movement in the plant and consequently movement of calcium into the fruit. Blossom end rot is



often more severe early in the season when rapidly growing plants are exposed to water stress. On bare ground plantings, cultivation too close to the plants can cut roots, inducing drought stress and blossom end rot. Maintaining consistent soil moisture especially during high temperatures will help reduce and prevent blossom end rot. Drip irrigation is an efficient and effective way to maintain a uniform soil moisture level. Applying mulch can help regulate soil temperatures and moisture. If growing in a high tunnel or greenhouse, consider covering the structure with shade cloth to reduce heat stress.

### *Low soil pH*

Calcium is less available to the plant when the soil pH is below 6.0. Most vegetable crops prefer a soil pH between 6.5-7.0. Before planting, collect a representative soil sample and have your soil tested. Lime can be applied to raise the soil pH, but is most effective when applied several months prior to planting. Consult the

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[www.uky.edu/CCD](http://www.uky.edu/CCD)

University of Kentucky publications [Vegetable Production Guide for Commercial Growers \(ID-36\)](#) or [Home Vegetable Gardening in Kentucky \(ID-128\)](#) for more specific soil pH recommendations based on the vegetable crops you intend to grow.

<sup>1</sup>Rachel Rudolph is an Assistant Extension Professor and Extension Vegetable Specialist with the UK Department of Horticulture.



### *High nitrogen fertility*

Excessive additions of nitrogen (N) to the soil can cause an increase in vegetative (leaf) growth. Water will go to areas of new growth due to the increase in transpiration. Because calcium is moved by water through the plant, it will be taken to the new vegetative growth along with the water. It is not able to then be moved from the leaf tissue to the fruit. For peppers and tomatoes at bloom stage, the percent of N in leaf tissue should be between 4 and 6%, and no higher than 6%. A foliar tissue analysis will indicate whether or not nutrient concentrations are sufficient. Prior to planting tomatoes, it is recommended that 50 lbs./acre of N is applied and incorporated into the soil. After plants are established, an additional 75-100 lbs. of N/acre is recommended. This can be side-dressed or applied in weekly increments via drip irrigation. For more detailed recommendations for tomatoes or other vegetable crops, consult UK's ID-36.

### *High concentrations of cations*

High concentrations of ammonium (NH<sub>4</sub><sup>+</sup>), magnesium (Mg<sup>2+</sup>), potassium (K<sup>+</sup>) and sodium (Na<sup>+</sup>) in the soil will cause a reduced uptake of calcium by the plant. These cations compete with calcium for uptake. When one is present in greater than sufficient quantities compared to calcium, the result may be a calcium deficiency in the plant and fruit. Overfertilization with ammonium-N and/or potassium during bloom or fruiting stages will lead to excessive shoot growth, which can lead to blossom end rot. There are many fertilizers that contain or form ammonium-N. Common fertilizers containing or forming ammonium include urea, ammonium nitrate, diammonium phosphate, and ammonium sulfate. Fertilizers high in nitrate-N (NO<sub>3</sub>) are preferred and include calcium nitrate and potassium nitrate.

### *Low Calcium*

As previously mentioned, soil should be tested prior to planting. Kentucky soils are rarely deficient in calcium, but if the soil analysis determines that your soil is deficient in calcium, applying lime pre-plant will supply the needed calcium. Calcium levels greater than 800 lbs. of calcium/acre should be sufficient for crop growth. Foliar tissue analysis will determine how much calcium is in the plant. Sufficient levels of calcium will change depending on the type of crop and the stage of growth. For tomatoes, the percent range for calcium at or just prior to



bloom is 1-3% calcium. For peppers at or prior to bloom 1-2.5% calcium is sufficient. Calcium chloride foliar sprays have not been found to be effective in reducing blossom end rot because the fruit does not take calcium in through its epidermis and leaves do not transport calcium to the fruit.

### *Cultivars*

Vegetable cultivars vary in their susceptibility to develop blossom end rot. Tomato cultivars that have been shown to have a high incidence of blossom end rot include 'Whopper,' 'Wonder Boy' and 'Big Boy.' 'Je Star,' 'Early Girl' and 'Better Boy' have been shown to have lower incidence of blossom end rot. Plum or pear-shaped tomato cultivars are considered to be more susceptible. Cherry tomatoes are not known to develop the disorder. Peppers are considered to be less prone to develop blossom end rot than tomatoes. Once blossom end rot is observed on fruit, it is recommended to remove the fruit from the plant as it will not recover and this will limit the amount of energy the plant will further contribute to unmarketable fruit.

### **Suggested Citation:**

Rudolph, R. (2019). *Blossom End Rot*. CCD-FS-11. Lexington, KY: Center for Crop Diversification, University of Kentucky College of Agriculture, Food and Environment. Available: [http://www.uky.edu/ccd/sites/www.uky.edu/ccd/files/blossom\\_end\\_rot.pdf](http://www.uky.edu/ccd/sites/www.uky.edu/ccd/files/blossom_end_rot.pdf)

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*Reviewed by John Strang, UK Extension Specialist, and Shawn Wright, UK Horticulture Specialist*

*Photos courtesy of Brenda Kennedy, University of Kentucky, [Bugwood.org](http://bugwood.org) (Page 1), and Paul Bachi, University of Kentucky Research and Education Center, [Bugwood.org](http://bugwood.org) (Page 2).*

**July 2019**

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For additional information, contact your local **County Extension agent**

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## Millipedes

Millipedes are ½ to 1½-inch long gray or brown cylindrical worm-like arthropods. They have a pair of antennae and 2 pairs of short legs on each body segment. Millipedes are common under moist leaf litter and in heavily mulched landscapes where they feed on decaying organic matter. The life cycle of these decomposers includes egg, nymph and adult stages.

Large numbers of millipedes become active during their mating season, crawling over lawns and sidewalks, and occasionally entering buildings. **They are a nuisance but do not cause damage nor can they live long indoors.** Prevent invasion by removing leaves and compost around buildings and by sealing cracks in foundation walls and around doors, basement windows, crawl spaces, and vents.

**Spraying a 10-foot wide strip around the foundation is helpful in control.** Repeat applications may be necessary during periods of heavy migration.

*Millipedes are slow-moving decomposers with 2 pairs of legs per body segment.*



## Centipedes

Centipedes are **fast-moving predators that use sharp fangs to inject venom into the insects and other small creatures on which they feed.** They are usually active at night and hide in cracks or under objects. These arthropods prefer dark, humid areas under rocks, mulch, leaf litter, or beneath loose bark in rotting logs. Individual centipedes may live for a year or more.

Centipedes can enter homes by crawling under doors. They may enter through most any small opening, such as where pipes or wires enter a structure. Once inside, they favor undisturbed areas in garages, bathrooms, basements, and crawl spaces that provide hiding spaces and food. Long-legged house centipedes are relatively common in houses. They run across the floor very quickly, stop suddenly for a moment and then run off again, trying to crawl under something if they can.

As with millipedes, **problems with these pests often coincides with excessively wet weather;** patience and drier conditions often will correct the problem. The most effective, long-term measure for reducing entry of centipedes and their prey is to **minimize moisture and hiding places, especially near the foundation.** Remove leaves, grass clippings, heavy accumulations of mulch, boards, stones, boxes, and similar items lying on the ground. These items often attract and harbor pests. Any that cannot be removed should be raised off the ground.



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