

From the Plant Diagnostic Clinic

September/October 2022 Update

By Ann Hazelrigg

End of the summer problems usually include the two main tomato leafspot diseases, Alternaria/early blight and Septoria leafspot. These fungal diseases overwinter on dead tissue, producing spores in early summer that are splashed onto lower leaves and then work their way up the plant as the season goes on. The leafspots move higher in the plant with each infection period (rain, dew, overhead sprinkling, etc).



Alternaria leaf spot with bull's eye appearance.
Gerald Holmes, California Polytechnic State University at San Luis Obispo, Bugwood.org



Septoria leafspot with dark gray circles.
Nancy Gregory, University of Delaware, Bugwood.org

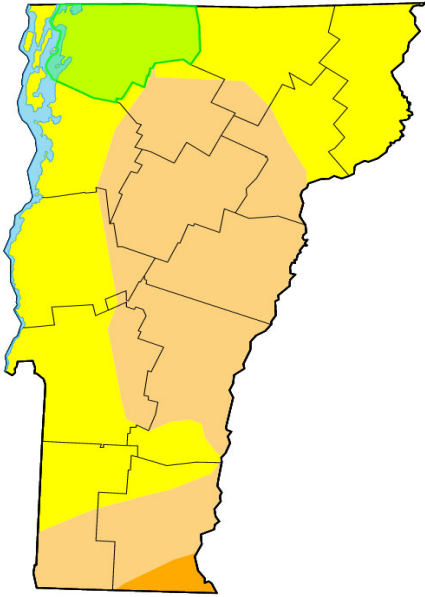
Blossom end rot has also been common on both tomato and peppers due to our fluctuating/lack of rainfall. Look for brown or black dead portions of the blossom end of the tomato and side browning on the peppers. This disorder usually affects the first tomatoes but I have noticed it on my later tomatoes this year. The healthy part of the fruit is fine to eat. For more information on these problems and their management, check out this factsheet: <https://www.uvm.edu/sites/default/files/Tomato-Problems.pdf>



Blossom end rot on tomato. USU Extension

Drought has been a problem again throughout the state with most areas just abnormally dry but there is one corner of the state under severe drought. According to the U.S. Drought Monitor for Vermont, as of September 8, 2022, the yellow areas signify "abnormally dry", the lighter tan is "moderate drought" and the lower corner of the state with the orange color is classified as "severe drought." What this means for plants, is higher stress, making them less able to withstand insect or disease problems. This is also

important in terms of winter stress and desiccation in evergreens. Be sure your evergreens and broadleaf rhododendrons go into the fall watered since they continue to transpire moisture through needles and foliage all winter. For current drought conditions go to <https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?VT>



Drought Map Vermont as of 9.8.22

Along with drought usually comes heat. Temperatures over 85 F can wreak havoc with vegetables that need to be pollinated. Hot day and nighttime temperatures cause flowers to drop in tomatoes, peppers, zucchini and beans, so if you are seeing a reduction in fruit, it may be due to the hot temperatures. When weather is cooler, the fruit production will resume. Hot temperatures will also influence the sex of the flowers produced in cucurbit crops (pumpkins, squash, melons and cucumbers). With high temperatures (over 90° F during the day and 70° F at night) these vining crops tend to produce more male flowers than female flowers, so if you are seeing a lot of flowers but little fruit, the flowers may be all male. Under hot temperatures pollen becomes sticky and bees do not like to work over 90 F. Although pollination may occur, it may be incomplete, resulting in misshapen cucumbers, summer squash and melons.

Powdery mildews are common this time of year on a lot of different plants including cucurbits, phlox, lilacs and roses, since the pathogen causing the disease likes warm, humid weather. The fungal disease may look like it is spreading from cucumbers to lilacs, but this pathogen is very host specific, meaning a cucurbit powdery mildew will ONLY attack cucurbits. Powdery mildews all like warm, humid weather so that is why we see them all at once, usually in late summer. Management strategies include spreading plants farther apart to avoid overcrowding, use of resistant varieties and the use of biorational fungicides. There are some very effective organic fungicides that can control the disease if applied at the first sign of the white powdery spores on the leaves including potassium bicarbonate, copper, wettable sulfur and products with *Bacillus subtilis* strain QST.



Deformed cucumbers due to incomplete pollination.
Gerald Holmes, California Polytechnic State University at
San Luis Obispo, Bugwood.org