BALLTECH ON DEMAND™

IDENTIFY & TREAT BACTERIAL LEAF SPOT (XANTHOMONAS)

While "leaf spots" can be caused by a wide range of pathogens, the crops that symptoms tend to be most widely reported on include begonias, peppers and tomatoes. In most summers when weather across much of North America heats up and the inevitable rain fronts move through, there's a particular pathogen group that seems to occur … you guessed it—bacterial leaf spot (BLS).

Members of the *Xanthomonas* genus are largely responsible for BLS on the aforementioned crops, but *Pseudomonas spp*. is another significant bacterium that can become problematic under similar conditions. Basil is often subject to BLS pressure under similar conditions and *Pseudomonas chicorii* is the culprit, but symptoms are quite different in appearance compared to *Xanthomonas* on other crops. Check out this NC State Extension link for some great photos and a quick description of *Pseudomonas* on basil.

Early symptoms of *Xanthomonas* leaf spot often present as small yellowish spots on leaves or stems. Initially, spots will be circular in shape but develop into irregularly shaped lesions as disease severity increases. Color of bacterial lesions will change from yellow to tan or reddish-brown (depending on the crop) and have a shiny or water-soaked appearance.

Infected plants cannot be treated curatively for BLS. This means exclusion is the best first line of defense. Frequent scouting and rapid response to early symptoms is critical to contain an outbreak if *Xanthomonas* does enter your operation. **Here are some general best-practices and management suggestions to follow to prevent and contain an outbreak:**

- For vegetatively propagated crops (like begonias), always purchase liners from trusted suppliers. Scout incoming material rigorously and quarantine liners from different suppliers and/or breeding companies for observation before planting. Shipping stress can be the catalyst for infection and symptom expression, so enacting a brief holding period before planting and finished production can help catch a latent infestation.
- Splashing water is the primary mode of transmission between plants, so avoid overhead watering of *Xantho*-prone crops.
- Drip irrigation for larger containers and hanging baskets is a great strategy.
- If all watering is done by hand with a hose and breaker, water as close to the base of plants as possible.
- Good sanitation is critical to reduce spread. Throw away infected plants and leaves or plant debris—do not compost them. Apply a sanitizing agent to the growing area ASAP after disposal; products with quaternary ammonia as the active ingredient are highly effective.
- After watering, dry the crop canopy down as quickly as possible. Reduce relative humidity in the greenhouse by venting more frequently, increase air flow with HAF fans, and space plants as wide as possible to increase air flow and reduce canopy drying time.

Copper-based products, mancozeb, and some biological/biorational products can help to prevent the spread of *Xanthomonas*. However, bactericides must be applied before infection and disease occurs. Reactive applications to infected plants may slow disease progression but will not work curatively. Also, be aware of label restrictions when applying bactericidal products to "edible" crops. Here's a link to a great resource managed by Purdue University that can help you find products that are labeled for use on edible and food-bearing crops.