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Bacterial Leaf Spot and Blight on Begonia

Growing Begonias? You should always be on the lookout for bacterial leaf spot and blight, caused by *Xanthomonas axonopodis* pv. *begonia*.

This disease only affects begonias – *Begonia boliviensis*, Hiemalis or Reiger, Rex, and tuberous begonias as well as other popular hybrids of these types are most severely affected. While all begonias can be susceptible to some degree, this disease is not known to typically trouble wax-leaf begonias or the *Begonia benariensis*-types (e.g., 'Whopper', 'Big') in production.



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Symptoms can vary depending on the species and cultivar of begonia, but most commonly you see dark, wedge-shaped leaf lesions near the edge of the leaf. Scattered leaf spots with a water-soaked appearance may be visible as well. Often a yellow halo can be observed surrounding the lesions or spots. As lesions advance they appear necrotic and dehydrated. Occasionally, symptoms can be mistaken for *Botrytis* leaf spot or marginal leaf burn. A lesion with a diffuse, non-discrete edge along with speckles around the outer edge of the lesion are symptoms that should make you suspicious that bacterial leaf spot is to blame. Infection can become systemic, moving into the leaf petioles and stems, causing leaf collapse, wilt, and plant collapse. This disease can spread quickly and is difficult to manage, so be sure to enlist help of a diagnostic lab or extension specialist if you need assistance with identification.

Prevention and sanitation are key to management. Start with clean plant material and a clean greenhouse. Scout begonia crops often (no less than weekly) and thoroughly. If infected plants are seen, rogue out the diseased plants as soon as possible – handle carefully so you don't introduce the disease to healthy plants. Avoid working with healthy plants after infected plants, make sure hands and tools are clean and regularly sanitized, consider using gloves when rogueing infected plants and discard promptly after, and stay on top of all of your general sanitation practices. The bacteria can survive in plant debris, so be sure to remove all debris as well and remember to disinfect growing areas where infected plants were. Always be mindful that infected plants in hanging baskets may introduce the disease to healthy begonia crops below.



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Speckling around wedge-shaped leaf lesion (Photo: Nora Catlin)



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Expanded wedge-shaped lesions and leaf spots (Photo: W. Garrett Owen)



Advanced symptoms of bacterial leaf blight (Photo: W. Garrett Owen)



Leaf spot and lesion symptoms of bacterial leaf spot on begonia (Photo: Nora Catlin)

Warm and moist conditions favor disease development. Warm growing temperatures (80F+) will encourage bacterial development and symptom expression. Some growers increase growing temperatures (~80F day, 70-75F night) to encourage rapid symptom development to assist with identifying and roguing infected plants.

You can reduce the spread of the disease by limiting splashing: choose drip irrigation over overhead irrigation when possible and avoid unnecessary spray applications. Be aware that it is possible that this pathogen can spread through sub-irrigation, though this has not been reported to be a significant means of disease spread. Keeping the foliage as dry as possible will also help limit disease spread. Careful timing of irrigation, promoting good air movement, and using good plant spacing will help. Treating healthy plants with a product labeled for bacterial diseases will help protect them from infection, but existing infections will not be cured. Copper-based products and/or *Bacillus* products (e.g., Cease) are typically used. As always, carefully read pesticide labels and follow all instructions, recommendations, and warnings.



Symptoms of bacterial leaf spot and blight on begonia (Photo: W. Garrett Owen)

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