

Fact sheet

Bacterial blight of onion

What is Bacterial blight of onion?

Bacterial blight of onion is caused by *Xanthomonas axonopodis* pv. *allii* (Xaa). This pathogen is known to infect onion (*Allium cepa* L.), garlic (*A. sativum* L.), Welsh onion (*A. fistulosum* L.), shallot (*A. cepa* var. *ascalonicum* Backer), chive (*A. schoenoprasum* L.) and leek (*A. porrum* L.).

Yield losses from reduced bulb size and quality of up to 100% are reported. This is mainly due to loss of photosynthetic area. Plants can also be stunted.

What does it look like?

Xanthomonas leaf blight symptoms can occur at any stage of crop development on short-day onion cultivars. On long-day cultivars, disease usually develops during or after bulb-initiation. Symptoms are often on middle-aged to older leaves.

Initially, lesions are white flicks or pale spots often with water-soaked margins. Lesions enlarge, become tan to brown in colour and induce extensive water-soaking. Some cultivars may develop chlorotic streaks, extending the entire leaf length. As disease progresses, lesions coalesce, cause tip dieback and extensive blighting of outer older leaves. In severe cases, plants become completely blighted and die. Bulb rot is not known to occur.

If conditions become hot and dry, the infected tissues become brittle. The characteristic tan or brown colour of lesions will, however, be retained.

The disease is favoured by high temperatures (i.e. greater than 26°C) and overhead irrigation or humid, overcast conditions.

What should I look for?

To protect your crop you should look for the characteristic tan or brown lesions with extensive water-soaking on the middle-aged to older leaves.



Close up of infected leaf. Note the tan lesions and water-soaked appearance.



Close-up of infected onion plant. Note the extensive blighting on the older leaves typical early infection symptoms of white flicks and pale spots on younger leaves

Howard F. Schwartz, Colorado State University, Bugwood.org

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What can it be confused with?

Symptoms of Bacterial blight of onion are very similar to those of Bacterial blight of leek, caused by *Pseudomonas syringae* pv. *porri* (Psp). Psp is usually a pathogen of leek crops but was reported to affect onion in Georgia, USA in 2012 and in QLD, Australia in 2014. Psp induces similar lesions on outer leaves but less extensive than typical from a Xaa infection. Psp also produces a toxin under cool conditions which causes the newest leaf to become bright yellow. This symptom is quite distinctive to Psp and doesn't occur with Xaa infection.

How does it spread?

Xaa is spread in aerosols, splashing water or windblown rain. Wounding of foliage increases the risk of infection. This can be from wind abrasion, hail, insect feeding or farm machinery. Between production blocks and properties the bacterium can be spread in surface irrigation water, contaminated debris, equipment and people.

Xaa is seed-borne. Disease outbreaks can develop from seed contamination as low as 0.04% if environmental conditions are favourable. Long-distance spread is most likely via contaminated seed.

The bacterium can survive and multiply within or on common bean (*Phaseolus vulgaris*) and other leguminous plants, with mild or no disease symptoms. More aggressive strains of Xaa can cause more serious disease on lima bean (*Phaseolus lunatus*), soybean (*Glycine max*), winged bean (*Psophocarpus tetragonolobus*), moth bean (*Vigna aconitifolia*) and field pea (*Pisum sativum*).



Whole onion plants showing disease symptoms.

Howard F. Schwartz, Colorado State University, Bugwood.org

Where is it now?

Bacterial blight of onion was first described in 1978 from Hawaii. It is reported to occur in onion and other allium production areas in the East Caribbean, continental United States, South America, South Africa, Asia, Réunion Island and France.

How can I protect my farm from Bacterial blight of onion?

You can protect your farm from Bacterial blight of onion by checking your property frequently for the presence of new and unusual symptoms. Make sure you are familiar with the symptoms of common pathogens of onion so you can tell if you see something different.

If you see anything unusual, call the Exotic Plant Pest Hotline



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