

# GERANIUM BACTERIAL BLIGHT — A SIMPLE TEST

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Bacterial Blight of Geranium is the most serious disease of this crop. Caused by the bacterium Xanthomonas pelargonii it has rendered entire crops unsaleable.

The symptoms are diverse. On foliage it may be expressed initially as water-soaked, then necrotic spots which exhibit a halo viewed by holding up to a bright light. Pie-shaped segments later form on the leaves which eventually yellow and die. If the bacterium becomes established in stems, the entire shoot takes on a fuzzy gray appearance before dying. Cuttings during propagation may become necrotic at the base before succumbing to the action of the bacteria. These symptoms may be masked during the cool winter months when plants are not under stress.

There seem to be many strains of this bacterium. Some are extremely pathogenic. Others sort of live with the geranium and don't kill their amiable host until something goes wrong. If the geranium is placed under stress, the bacteria take over.

In New England greenhouses, Xanthomonas is an unwelcome guest. It presages doom. If a geranium becomes diseased, it is important to know if the disease is caused by a potentially dangerous pathogen such as Xanthomonas (or Pseudomonas cichorii a less frequently reported pathogen). This can be ascertained by a simple bioassay.

Bioassay for Xanthomas pelargonii (and related pathogens).

1. Select six terminal cuttings from an apparently healthy stock plant.
2. Place in water in test tubes or any handy individual containers.
3. With a heavy needle (a corsage pin is almost big enough) which has been cleaned in Chlorox or alcohol, stab 3 cuttings about an inch above the water line, cleaning between each stab.
4. Crush some of the diseased tissue from the diseased plant.
5. Rub the previously cleaned needle in the diseased tissue and stab cutting #4. Clean the needle. Repeat for cuttings #5 and #6.

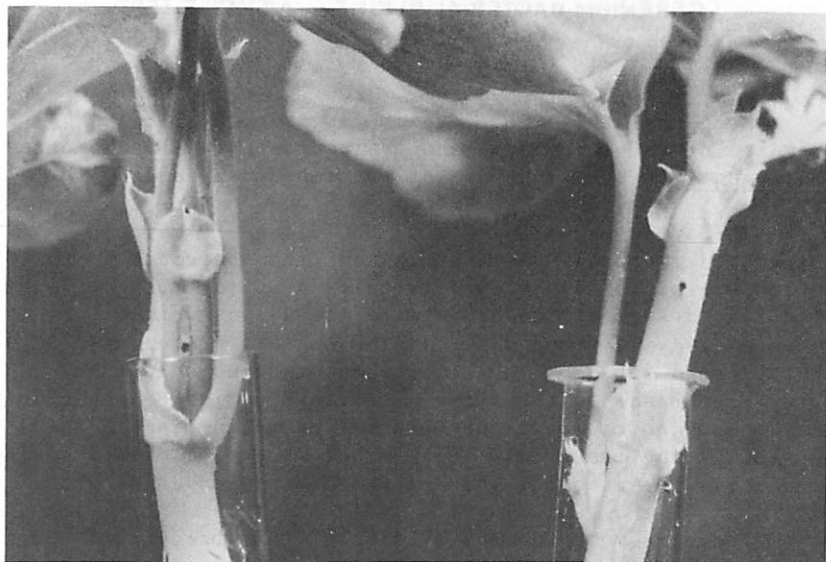


Fig. 1. Symptoms of geranium bacterial blight (on left) following a stab wound. The geranium on the right was inoculated with a non-pathogenic bacterium.

6. If more than one plant is diseased, you should repeat the procedure with another plant using cuttings #7, 8, and 9.
7. Place the cuttings in a temperature of 70-75° (65° will take longer).
8. In three days, a water-soaked area will develop above and below the stab wound if a pathogen such as *Xanthomonas* is present (Fig.1)

This is not a 100% diagnosis. It is possible that some organism may cause similar symptoms when inoculated into geranium cuttings. This is an unlikely happenstance since we have tested dozens of common laboratory bacterial cultures with no expression of the symptoms. If the water-soaked areas are found, call a plant pathologist for a definitive diagnosis.