Blueberry twig blight survey

Erica Pate, Fruit Crop Specialist, OMAFA & Katie Goldenhar, Pathologist-Horticulture, OMAFA

Published May 2024

Blueberry growers are familiar with twig blight, finding dead shoot tips, blighted flower clusters, and dark lesions on twigs during the growing season. While twig blight has often been associated with Phomopsis blight caused by *Phomopsis vaccinii (*syn. *Diaporthe vaccinii)*, there can be other pathogenic culprits, which can be difficult to distinguish from one another.

There have been increased reports of Botryosphaeria stem blight, caused by *Botryosphaeria dothidea*, which is typically thought to be a southern disease and has only recently been reported as an issue in northeastern states. Identifying the pathogens responsible for causing twig blight is needed to inform research priorities and management practices.

During the 2023 season we visited 10 blueberry farms across the province and collected 50 symptomatic twig samples. The samples were sent to a diagnostic lab to identify the causal organism(s) (Fig. 1). *Phomopsis vaccinii* was found in 31% of the samples, followed by *Pestalotiopsis/Neopestalotiopsis* spp. (27%), then *Colletotrichum fioriniae* (14%). In 28% of samples where pathogens were detected, more than one pathogen was present (data not shown). This makes it challenging to determine which of the pathogens was the primary disease causal agent and requires more research to determine the main cause. In 22% of the symptomatic twig blight samples did not have any pathogen present.

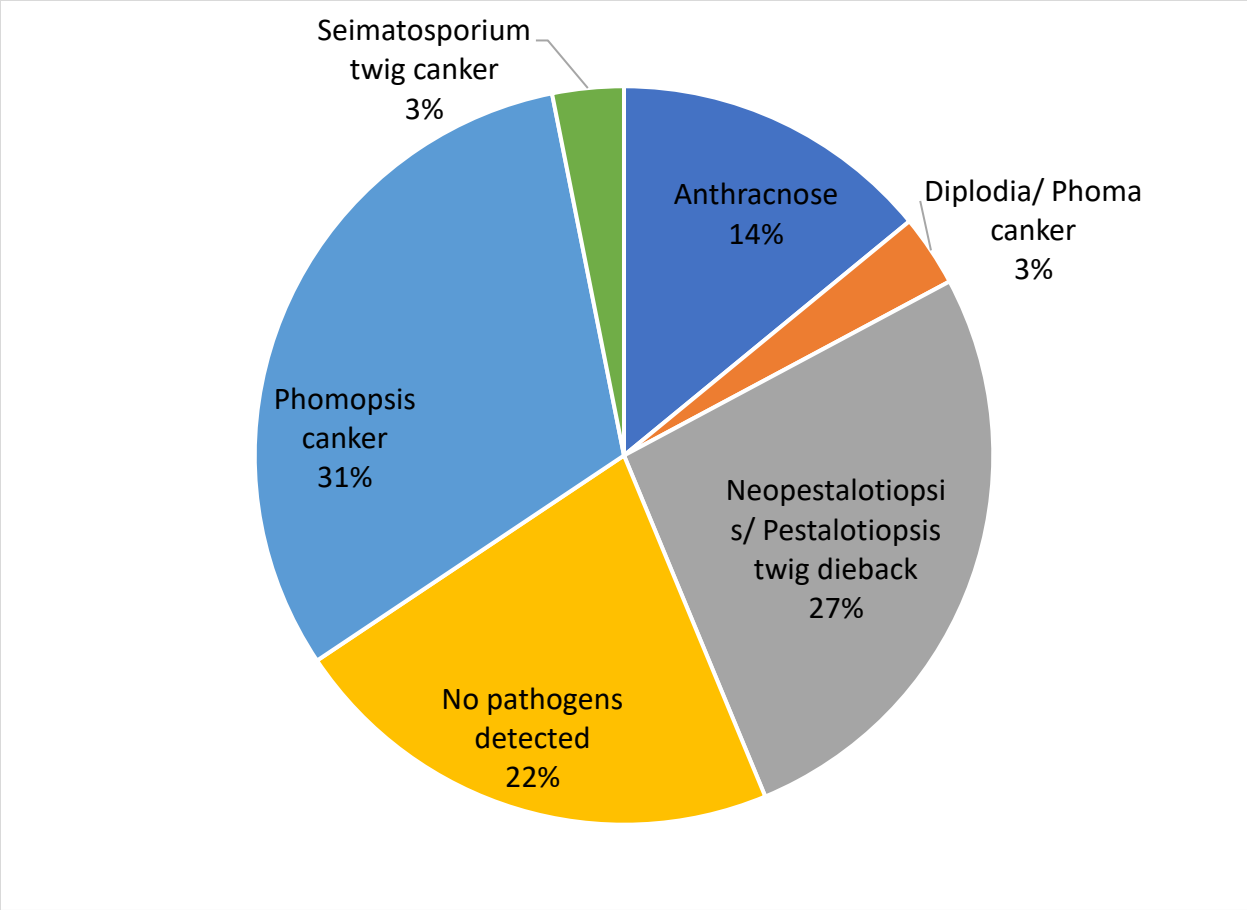

Figure 1. Results from the 2023 blueberry twig blight survey.

Figure 2 Phomopsis twig blight

Figure 3 Pestalotiopsis

Botryosphaeria stem blight was not detected in this survey, nor was the aggressive *Neopestalotiopsis* species that has been identified on strawberries.

The fungal pathogens identified in this survey have been associated with blueberry twig blight previously, although some have only recently been reported on blueberry, and information is limited on these pathogens.

Phomopsis twig blight (*Phomopsis vaccinii* syn. *Diaporthe vaccinii)* occurs in most fields at low levels, but Phomopsis can be severe in some years, likely due to regular rains during bloom. Spores are dispersed by rain in the spring, most often from bud break through bloom, and young tissue is the most susceptible to infection. Wounds from mechanical injury and winter injury can also lead to infection. Susceptible cultivars include Duke, Jersey, and Bluecrop; Elliot and Bluetta are resistant cultivars. Fungicides registered for phomopsis on blueberry are listed on the Ontario Crop Protection Hub.

We have no guidelines on management for Pestalotiopsis/Nesopestalotiospsis twig blights, however, strategies similar to Phomopsis and anthracnose would reduce incidence of these pathogens. Fungi within the *Pestalotiopsis* genus are often secondary, infecting injured tissue from other diseases or insects, or winter injury.

Anthracnose shoot blight (*Colletotrichum fioriniae)* favours warm, wet weather. Optimal temperatures are 25°C with 8 hours of leaf wetness. Susceptible cultivars include Bluecrop and Coville. Anthracnose shoot blight can serve as the overwintering site for spores that can cause anthracnose fruit rot. To protect against anthracnose fruit rot, fungicides may be needed at bloom and post-bloom. Fungicides registered for anthracnose on blueberry are listed on the Ontario Crop Protection Hub. Choose products that will control anthracnose and Phomopsis.

Seimatosporium lichenicola often occurs on wounded wood from mechanical injury or winter injury, and has not been associated with causing economically important disease in blueberries. There have also not been any reports of Phoma or Diplodia causing issues on blueberry.

Generally, wet and rainy springs are conducive to severe twig blight infections. When any twig blight is identified growers should:

- Prune out and destroy diseases twigs and canes. Cut canes well below the lesion and close to the ground. Prune during dry weather.
- Avoid wounding plants. Stress (drought, frost, mechanical injury, other pests) can contribute to worse infections.
- Do not fertilize late in the season- this may lead to winter injury.
- Protective fungicides for anthracnose and Phomopsis should begin at budbreak.

Thank you to the participating growers for their support with this project. This project was funded through the Sustainable Canadian Agriculture Partnership Plant Health Project.