

Phoma Leaf Spot and Root Rot of Table Beet

Fungal Pathogen: *Phoma betae*

Hosts: Table beet, sugar beet, Swiss chard, spinach, lambsquarters

Signs and Symptoms: Foliar symptoms include tan-brown leaf spots with dark concentric rings (Fig. 1). Signs of *P. betae* are pycnidia, asexual fruiting bodies, produced in dark concentric rings within the lesion (Fig. 2). Root symptoms include dark brown and dry lesions associated with shrinking (Fig. 1). Phoma root rot typically begins in the center of the crown and spreads downward into the taproot.

Disease Cycle: *P. betae* is commonly introduced into fields through seed (Fig. 3). The pathogen can be spread within a field through water-splashed conidia, surviving in the soil on infested plant debris, and on alternative weed hosts. The pathogen can be spread farther distances between fields through windblown ascospores.

Significance: *P. betae* can infect table beet at all stages of growth. Phoma leaf spot lesions can cause rejection in fresh market sales. Seedling infection can result in damping-off and can reduce stands. Phoma root rot can cause abnormal root shape development and can reduce quality. Currently, research is evaluating the importance and management of diseases caused by *P. betae* in New York table beet production.

Management Strategies:

- Use treated and certified seed
- Practice crop rotation (3 years)
- Maintain optimal plant nutrition
- Dispose of plant residues after harvest



Fig. 1. Symptoms of Phoma leaf spot (left) and Phoma root rot (right).

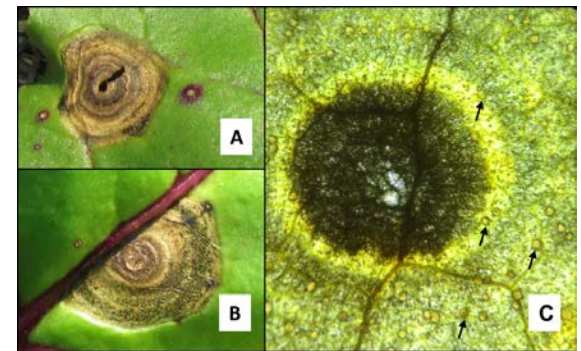


Fig. 2. A/B) Phoma leaf spot lesions with dark concentric rings; C) Close-up of lesion at 63X magnification with pycnidia (arrows).

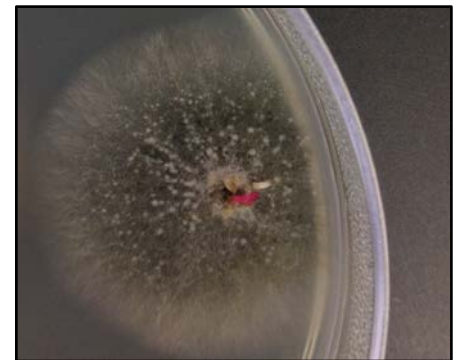


Fig. 3. Table beet seed infested with *Phoma betae*.

