UNIVERSITY OF ILLINOIS EXTENSION
College of Agricultural, Consumer and Environmental Sciences

report on
PLANT DISEASE

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DEPARTMENT OF CROP SCIENCES
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BEET CERCOSPORA LEAF SPOT

Cercospora leaf spot, caused by the fungus *Cercospora beticola*, is one of the most important diseases of table and sugar beets. It also infects Swiss chard. The disease occurs wherever these crops are grown. In the Unites States, the disease is most prevalent from Ohio to Colorado.

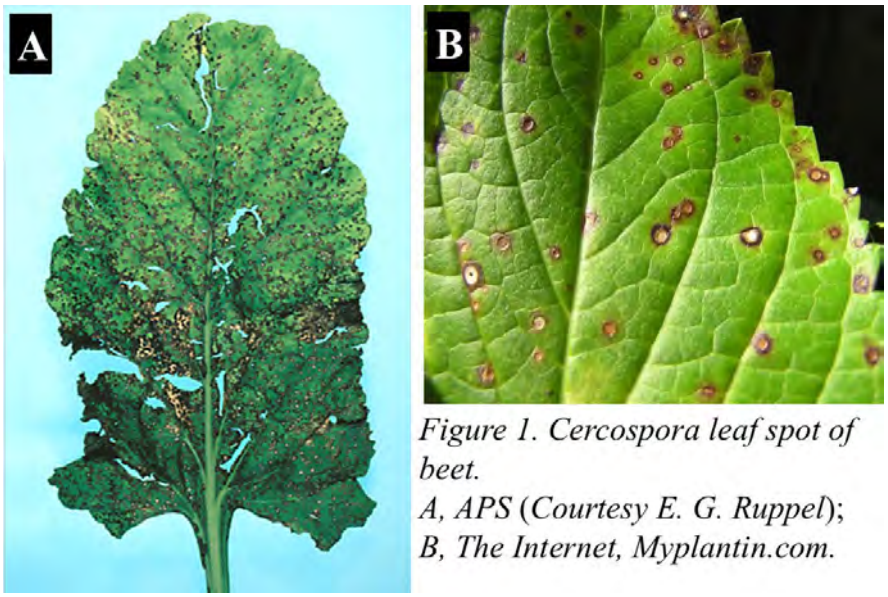

Figure 1. Cercospora leaf spot of beet.
A, APS (Courtesy E. G. Ruppel);
B, The Internet, Myplantin.com.

Symptoms

Numerous lesions may develop on affected leaves. Individual leaf spots are circular, measuring 3-5 mm in diameter (Figure 1). The lesions are tan to light brown with dark brown to reddish purple borders. As the disease development progresses, individual spots coalesce, and heavily infected tissues becomes first yellow and then brown and necrotic. During periods of high relative humidity or heavy dew, the necrotic spots become gray and velvety from the production of reproduction bodies (conidiophores and conidia). Blighted leaves collapse and fall to the ground but remain attached to the crown (Figure 2).

Figure 2. Blighted foliage of beet, caused by Cercospora beticola (APS, Courtesy E. G. Ruppel)

Disease Cycle

Cercospora beticola overwinters on the infected crop residues as spores (conidia) and stromata. Stroma (plural stromata) is a dense, cushion-like mass of hardened fungal hyphae. Stromata are more important source of primary inoculum for subsequent infection of crops. Under humid conditions, new conidia are formed and are carrie by wind and splashing rain to host leaes, where germinate

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and infect leaf tissues. Conidia and stomata can also be carried on seed produced where the disease is severe.

Cercospora leaf spot is favored by high temperature and and high humiditey or free moisture on the leaves. Otimum conditions for sporulation, germination and penetration of conidia are temperuate of (77-94ºF) with night temperature above (60ºF), and relative humidity of 90-95%. Little or no infection occurs below 59ºF. Beside tble beet, sugr beet, Swiss cgard, *C. beticola* infects spinach and several weed speies.

Disease Management

- Plant resistant cultivars, wherever is available.
- Plant certified, fungicide treated seed.
- Consider 3 year of crop rotation with nonhosts.
- Plow down crop residues after harvesting crops.
- Control weeds effectively.
- New fields should be at least 300 ft from those of previous season with beet.
- Consider wider row spacing and orientation of rows should be for better wind-flow.
- Minimize leaf wetness period by avoiding overhead irrigation.
- Fungicide application may be necessary if the disease is becoming severe, and the conditions are conducive for an epidemic. Resistance of *C. beticola* isolates has been reported to some fungicides with single-site mode of action. Fungicides Double Nickel, Luna Tranquility, Merivon, Miravis Prime, and Tilt have been reported effective for managing Cercospora leaf spot of beets.