

ASPARAGUS PURPLE SPOT

Purple spot, caused by the fungus *Pleospora herbarium* (anamorph: *Stemphylium vesicarium*), is economically an important disease of asparagus. The disease was first diagnosed in the United States (US) in 1981. Now, purple spot occurs in all major asparagus growing areas in the US, including the Midwestern states. This disease can significantly reduce marketable yield of asparagus. During the optimum conditions for disease development up to 100% of fresh market spears in a given harvest may be unmarketable. *S. vesicarium* has also been reported on some other herbaceous plants, including onion.

Symptoms

Infection occurs on the above-ground plant parts, including spears and ferns. It appears as small (1-2 mm), elliptical, slightly sunken, purplish spots that blemished the spears (Figure 1). Larger lesions are brown in the center with purple margins. The lesions are often more prevalent on one side of the spear. On the fern, the fungus causes spots, which are light brown center and purple margins (Figure 2). The lesions reported to be 4 to 15 mm long. In cases of severe leaf infection, defoliation and dieback of plants occur.



Figure 1. Purple spots on asparagus spears (photo by Mary Hausbeck, Michigan State University).

Disease Cycle

The pathogen overwinters as pseudothecia on fern residue. Primary infection occur in early spring during cool, wet weather, at which time the ascospores are forcibly discharged and land on the wind-ward side of the emerging spears. The infection takes place through stomatal openings or wounds. Wounds on spears caused by blowing sand are important sites of infection. After penetration the pathogen in tissues, the surrounding epidermal cells collapse to produce a

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sunken lesion. Once established in the spear, the pathogen produces spores (conidia) throughout the summer and new infections occur. Infection by this pathogen is favored by wet, cool weather.

Disease Management

Purple spot of asparagus can be managed by the following practices.

- Sanitation: removing or burying crop residue helps to reduce primary infection. No-till asparagus culture may contribute to the increase in purple spot by allowing colonized residues to remain in the field.
- Cover crop: rye or other suitable cover crops may reduce the potential for injury from blowing sand. The cover crop should be seeded in the fall, then killed in the following spring with herbicide.
- The following fungicides have been recommended for management of purple spot of asparagus in the Midwestern states: azoxystrobin products (AZteroid FC 3.3, Quadris, Acadia LFC, Aframe, Quadris flowable); chlorothalonil products (Bravo, Echo, Equus, Initiate); Dexter Max; and Flint Extra. The labels should be checked for the up-to-date information.



Figure 2. Asparagus ferns showing purple spot lesions (photo by Mary Hausbeck, Michigan State University).