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Extension FactSheet

Plant Pathology, 2021 Coffey Road, Columbus, OH 43210-1087

Alfalfa Anthracnose

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Anthracnose is a serious stem and crown rot disease of alfalfa which can kill individual plants and cause rapid stand decline. Anthracnose is caused by *Colletotrichum trifolii*, a fungus which produces masses of tiny spores on infected stems and crowns. During periods of hot, rainy weather, spores are splashed from infected to healthy plants. Lesions develop on stems, causing stems to wilt and eventually die. The pathogen grows from stem tissue into the plant crown, and causes a crown rot which ultimately kills the plant.

Symptoms

The most characteristic symptom of alfalfa anthracnose is a diamond-shaped stem lesion, which usually occurs near the base of the stem (Figure 1). Lesions have a straw-colored center with a dark brown border. Black specks can often be seen within the center portion of the lesion. These are the fungal fruiting bodies (acervuli). Stem infection results in wilting and death of the upper portion of the stem, giving rise to the characteristic "shepherd's crook" symptom (Figure 2). Plants with such symptoms are usually found scattered within a field (Figure 3), although they may occur in clusters. Anthracnose stem symptoms are relatively easy to differentiate from those caused by Verticillium and Fusarium wilts. With anthracnose, the upper leaves are full-sized and the upper stem is wilted and often has a bleached-out appearance. With Verticillium and Fusarium wilts, the upper stem usually remains erect. Internodes are shortened and upper leaves are smaller than normal and are frequently curled or twisted. Figure 4 shows a comparison of anthracnose and Fusarium wilt symptoms from plants in the same field.

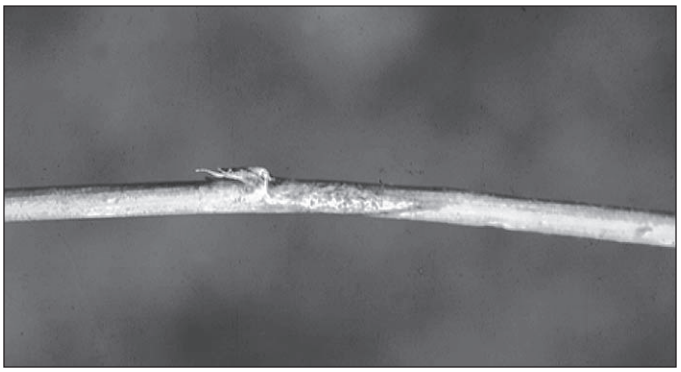

Figure 1. Diamond-shaped lesion on alfalfa stem.

Figure 2. "Shepherd's crook" symptom. The upper portion of the stem is straw-colored and wilted.

Eventually, the anthracnose fungus grows into the plant crown and the plant is killed (Figure 5). When anthracnose infection is heavy, stands may be severely thinned (Figure 6).

Figure 3. Plants with anthracnose scattered among healthy plants.

Figure 4. Comparison of stem symptoms: Anthracnose (2 stems on right); Fusarium wilt (2 stems on left). Healthy stem in center.

Figure 5. Plant with anthracnose crown rot on left. Healthy plant on right.

Figure 6. An alfalfa stand severely thinned by anthracnose.

Disease Development and Spread

In Ohio, anthracnose is rarely observed until after the first cutting is removed. Second, third, and fourth cutting alfalfa may be affected, depending on weather conditions. Hot weather and frequent rains favor anthracnose development. Although plants of any age may be affected, most damage is seen during the second and third production years.

Spores of the anthracnose fungus are spread from one plant to another primarily by splashing rain. The fungus may also be spread within a field, or from one field to another, by harvesting equipment. Spores from an infected plant are picked up on cutter bars or flails and deposited in wounds made as the mower moves through the field.

Control

The key to anthracnose control is the use of resistant varieties. Most newer alfalfa varieties developed for the midwest will have adequate resistance to anthracnose. Varieties planted in Ohio should have at least moderate resistance (MR) to anthracnose. For fields with a history of anthracnose, varieties should be resistant (R) or highly resistant (HR). Anthracnose will rarely cause severe yield reduction or stand loss in resistant varieties.

If anthracnose is known to be present in a field, then caution should be used during harvesting to prevent spreading the disease to uninfested fields on the same farm. If possible, harvest the infested field last. After harvesting, disinfest cutter bars with a solution of 10% chlorine bleach (e.g., 'Clorox').

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