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Cool, wet spring favors alfalfa foliar diseases

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Abstract

Below normal temperatures and wet conditions, such as Iowa is experiencing this spring, provide ideal conditions for the occurrence of major alfalfa foliar diseases. While producers are waiting for temperatures to warm up and the soil to dry, they should not forget to check their alfalfa fields as the season progresses into May. High levels of foliar diseases in May can cause early defoliation for the first cutting. In a cool, wet spring, spring black stem, *Leptosphaerulina* leaf spot, and downy mildew are most common in first-year alfalfa crops in Iowa.

Keywords

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Disciplines

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Cool, wet spring favors alfalfa foliar diseases

by X. B. Yang, *Department of Plant Pathology*

Below normal temperatures and wet conditions, such as Iowa is experiencing this spring, provide ideal conditions for the occurrence of major alfalfa foliar diseases. While producers are waiting for temperatures to warm up and the soil to dry, they should not forget to check their alfalfa fields as the season progresses into May. High levels of foliar diseases in May can cause early defoliation for the first cutting. In a cool, wet spring, spring black stem, *Leptosphaerulina* leaf spot, and downy mildew are most common in first-year alfalfa crops in Iowa.

Spring black stem is most common and likely to be found this season. This disease can cause defoliation, which leads to reduced yield and forage quality. The disease also produces numerous small, dark brown to black spots that first occur on the lower leaves and petioles; later lesions appear on stems, which is where the name comes from. Irregularly shaped lesions on leaves increase in size and coalesce. Lesions on stems and petioles enlarge and may blacken large areas near the base of the plant. This disease mainly attacks leaves, petioles, and stems starting from the portion near the soil and tends to progress upward in the plant.

***Leptosphaerulina* leaf spot** is also common during a cool spring. This disease mainly attacks the leaves and does not cause black spots on the stem. Both young and old leaves are susceptible to infection. Lesions often start as small black spots and remain as "pepper spots" or enlarge into "eyespot." The lesions have light brown to tan centers with darker brown borders and are often surrounded by a chlorotic area.

Downy mildew is another disease to watch for this spring. The disease is caused by the fungus *Peronospora trifoliorum* and infects alfalfa during the spring if the temperature is low and moisture is high. Weather conditions in some areas of Iowa this spring are ideal for downy mildew. Symptoms of this disease are chlorotic blotches on the upper leaf surface and a white to gray mold on the lower leaf surface. Sometimes, the color may be pale. The fungus survives in shoots over the summer and spreads in the fall. If the disease is a problem in your field, consider planting a resistant variety in the next planting.

What to do? These diseases can be carried over from winter and build up in spring. Because pathogens of the three diseases survive in plant residue during the summer and winter, second- or third-year alfalfa fields will have a higher risk for disease than first-year alfalfa fields. Normally, first-year alfalfa would have more seedling disease problems.

If you find some level of foliar diseases in your fields, chemical control is not an option due to economic concerns. Labels generally request that application is done 30 days before harvest, which also rules out its application. However, cutting the alfalfa before the occurrence of severe infection is a feasible measure to prevent loss from defoliation by a foliar disease. This means that you need to monitor the disease and cut the stands before the optimal harvest date based on growth stage of the alfalfa if the disease becomes severe and weather continues to be favorable for these diseases.

Also, if the disease has been a concern in your fields, you should select alfalfa cultivars with certain levels of resistance to spring black stem for your next crop. Although there are no high yield, resistant varieties available, some new varieties are more tolerant to the damage from these foliar diseases--especially spring black stem.

X. B. Yang is a professor of plant pathology with research and extension responsibilities in soybean diseases.

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