



Foliar Diseases of Peanut

John P. Damicone
Extension Plant Pathologist

Hassan A. Melouk
Plant Pathologist, USDA/ARS

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Early leaf spot (*Cercospora arachidicola*)

Late leaf spot (*Cercosporidium personatum*)

Leaf spot diseases are caused by two distinct, but closely related, fungal plant pathogens. Early leaf spot is the most common foliar disease of peanuts in Oklahoma, while late leaf spot occurs infrequently. The disease cycles of early and late leaf spots and the type of damage caused by the two diseases are similar. Late leaf spot often, but not always, occurs later in the growing season and is generally more aggressive and difficult to control than early leaf spot. Leaf spot diseases are most severe where peanuts are grown in the same field in consecutive years, and when periods of wet weather from rain, dew or high humidity are frequent. Yield loss occurs from the shedding or defoliation of diseased leaflets. Defoliation reduces healthy leaf area and weakens the stems and pegs causing pods to fall off the vine during digging and harvest. Yield loss becomes apparent when defoliation levels exceed 50 percent. Yield losses of 50 percent or more are possible when leaf spot is not controlled and nearly complete defoliation occurs. Therefore, adequate control of leaf spot is essential in the production of a high-yielding peanut crop.

Symptoms

The fungal pathogens attack any above-ground portion of the plant, but leaf spots are the most conspicuous symptom. Depending upon weather conditions and cropping history, leaf symptoms usually appear between 30 to 50 days after planting. Symptoms of both early and late leaf spot first appear as brown or black, pinpoint-size dots on the upper leaf surface. Early leaf spot lesions enlarge to become brown to dark brown, circular spots with a distinct yellow border or halo (Figure 1). Late leaf spots typically appear as black, circular spots lacking or with a less pronounced yellow halo (Figure 2). Both early and late leaf spots reach a size of about one-fourth of an inch in diameter. The presence or intensity of a yellow halo on the upper leaf surface is not always a reliable characteristic for identifying early and late leaf spots. Unlike leaf spots caused by pesticide injury, both early and late leaf spots are clearly defined on the lower leaf surface. Early leaf spots are usually brown (Figure 3), while late leaf spots are dark brown to black (Figure 4) on the lower leaf surface. The color of the spots is also a variable characteristic, depending on the variety and the age of the spots, and is generally only useful

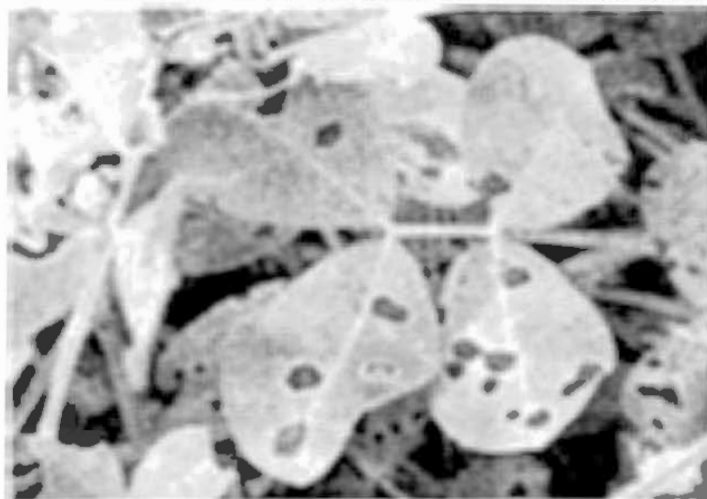


Figure 1. Symptoms of early leaf spot on the upper leaf

surface are circular, dark brown spots typically surrounded by a halo.



Figure 2. Symptoms of late leaf spot on the upper leaf surface are circular, dark brown to black spots surrounded by a faint yellow halo or without a halo.

when leaves are affected by both diseases. The most reliable method of distinguishing between the two leaf spot diseases is to closely examine spots for development of reproductive structures (sporulation). When spots are actively sporulating, the grey-colored tufts of mold are visible with a 10X hand lens on the upper leaf surface for early leaf spot and on the

Disease Cycle

The pepper spot fungus survives between peanut crops on infested crop residue in the soil. Spores of the fungus are released into the air during the end of dew periods and the beginning of rainy periods. Conditions favoring leaf infection are not well defined.

Control

Cultural practices, such as residue management and crop rotation that are recommended for leaf spot control, should also be effective in reducing pepper spot. Spanish varieties are most susceptible to pepper spot. Fungicide programs for leaf spot have not been very effective against pepper spot.

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