

Peanut disease update – 09/13/2023

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Oklahoma growers experienced a wetter start to the peanut growing season in 2023. Frequent precipitation received in May, June, and the first half of July contributed to the development of leaf spot diseases in the lower canopy of the crop. However, the high temperatures and the low relative humidity experienced in Oklahoma in the second half of July, August, and the first week of September slowed down the progression of the disease, which was not observed in the upper canopy of the susceptible fields without fungicide treatment.

The weather scenario changed in the last few days, and the rains received in the state, the increase in relative humidity, and the decrease of the air temperatures (below 90° F) are now favoring the development of foliar and soilborne diseases, such as Early leaf spot and Southern blight. Growers need to evaluate the susceptibility of the peanut variety to diseases, and the maturity of the peanut crop before making decisions regarding fungicide applications to manage those diseases.

Early leaf spot: the pathogen that causes this disease, *Passalora arachidicola*, overwinters in peanut crop debris, and for this reason, the disease is more severe where peanuts are grown in the same field in consecutive years. In Oklahoma, plants showing symptoms of Early leaf spot were already observed very early in the peanut growing season, two and three weeks after planting (Figure 1A). Symptoms of this disease include brown lesions (spots) visible on the upper and lower leaf surfaces. A yellow halo is usually present around the brown/black spots, but halos are NOT used as a diagnostic key, since other diseases, such as Late leaf spot, can also have similar symptoms (Figure 1B).

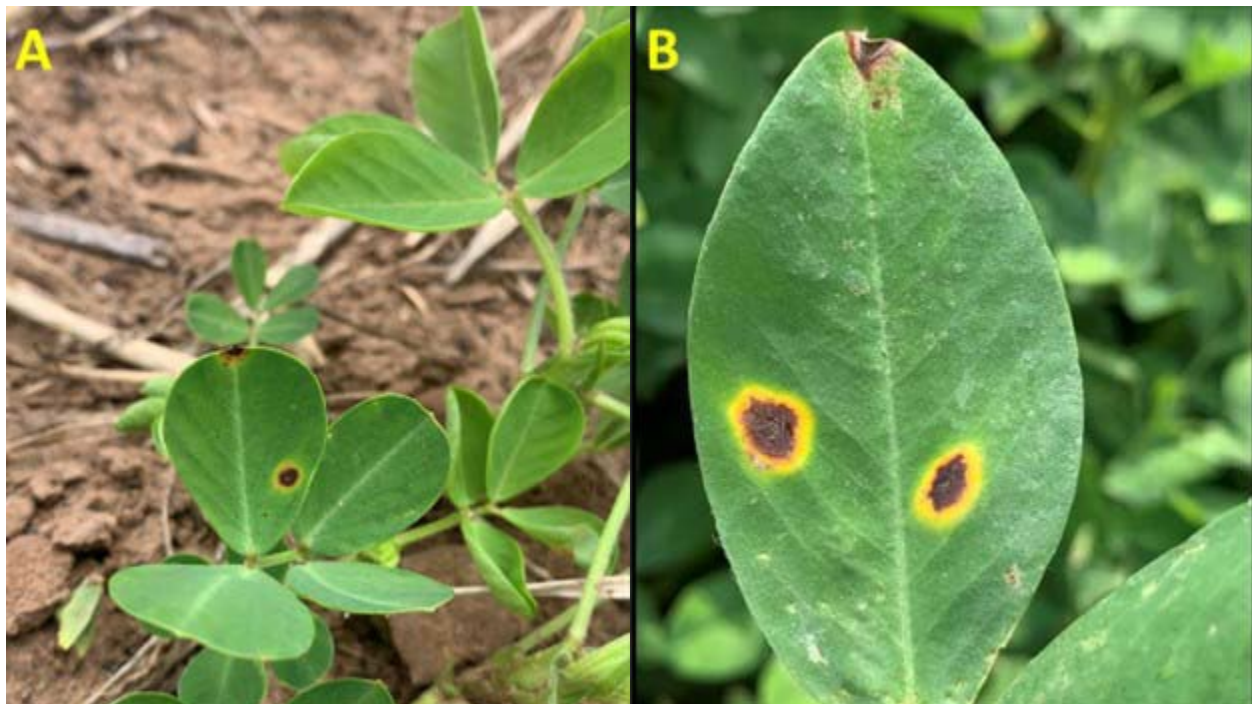


Figure 1: A) Peanut plants showing symptoms of Early leaf spot (*Passalora arachidicola*) at the beginning of the 2023 growing season. **B)** Early leaf spot causes brown to black lesions in the peanut leaves, that start circular as pinpoint-size dots and presents a distinct yellow border or halo.

Yield losses occur from the defoliation of the diseased leaflets (Figure 2A). Defoliation reduces the healthy leaf area and weakens the stems and pegs, causing pods to fall off the vine during digging and harvest. The peanut plant is resilient and can support some levels of defoliation without resulting in evident yield losses. However, yield losses become apparent when defoliation levels exceed 50%.

Management of this disease includes crop rotation with no-hosts such as cotton, wheat, corn, and so on. As peanuts are the only known host for Early leaf spot, rotation of 3 years or more with any other crop helps to reduce disease severity. It's also important to eliminate volunteer peanut plants since the pathogen can infect and increase on those plants and produce inoculum for the next growing seasons. Growers should also opt to plant peanut varieties that present some level of resistance to this disease, such as Runner-type cultivars, that present moderate levels of disease resistance. The management of irrigation should also be conducted to manage Early leaf spot. Application of an adequate amount of water, rather than frequent irrigation with small amounts, will help maintain a drier canopy and soil surface between irrigations. Several fungicides are also available in the market and can be used to manage this disease. Applying fungicides throughout the peanut growing season in years where weather conditions are favorable for the development of Early leaf spot, is essential to prevent crop defoliation and protect yields (Figure 2B). Please get in touch with your county Extension agent for more information on fungicide applications.

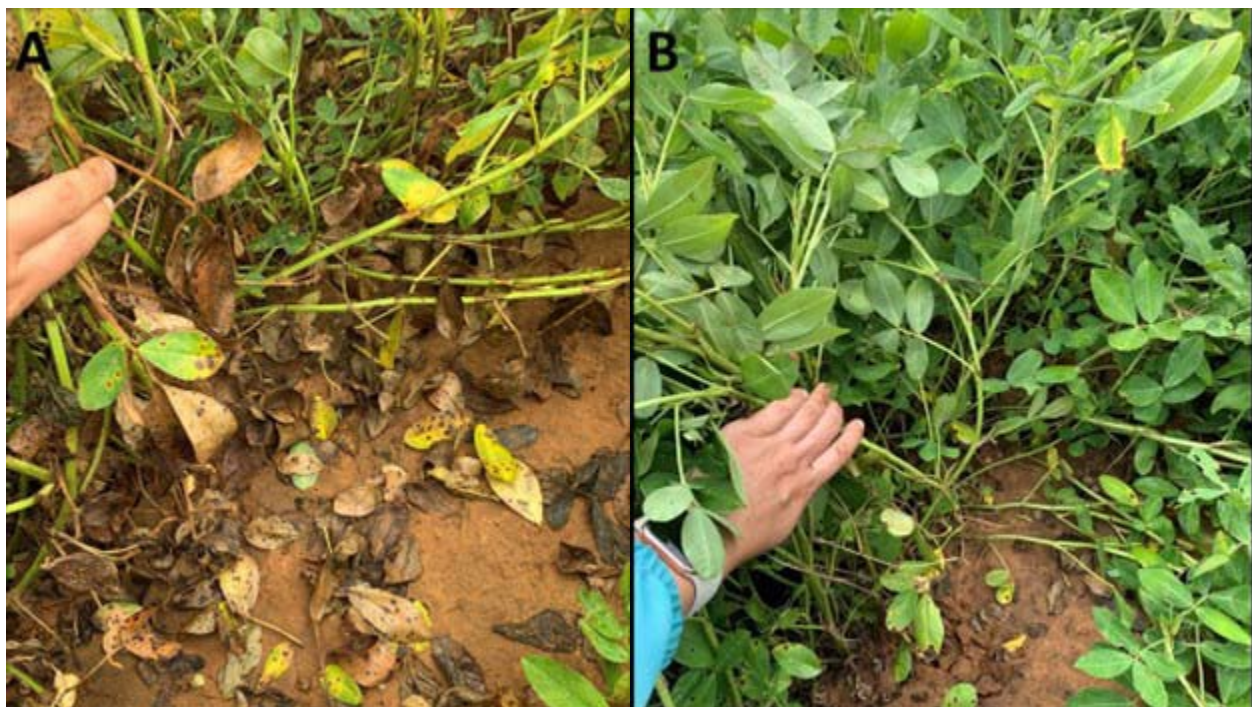


Figure 2: A) Defoliation of the peanut crop caused by Early leaf spot observed in an untreated plot, where no fungicide was applied throughout the growing season. **B)** The same peanut variety shown in picture A, but now with two fungicide applications conducted throughout the growing season. Pictures taken on 09/12/2023 at Caddo Research Station.