

## *Stem Canker of Soybean*

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Stem canker has been divided into two groups (Northern and Southern Stem Canker). Southern stem canker was first reported in 1973 in the south and by 1984, had been detected in all southern states. Stem canker can be one of the most destructive soybean diseases. Yield losses in susceptible cultivars can approach 90% under the right environmental conditions. The frequency and severity of stem canker outbreaks in Arkansas have been erratic and unpredictable from year to year, but stem canker is found somewhere in the state just about every year.

Leaf symptoms are characterized by yellowing and browning of the tissue between the main veins (Fig. 1) that occur during the reproductive stages of development. Although leaf symptoms are somewhat diagnostic, they may resemble symptoms of sudden death syndrome or stem boring insects, so diagnosis is based on both leaf symptoms and the presence of the characteristic stem cankers. Stem cankers are tan-brown lesions (cankers) with dark red-purple margins on the lower stem. Cankers first appear as small reddish-brown lesions on the main stem at a lower node. As the disease develops, the cankers enlarge and may extend for several inches along the main stem or up lateral branches (Fig. 2). The lesions rapidly become definite, but the slightly sunken cankers rarely girdle the stem completely. The cankers generally run along one side of the stem with adjacent stem tissue remaining green. Lengthwise sections cut through stems of symptomatic plants will show internal brown discoloration of the pith in the canker area.



Figure 1. Leaf symptom of southern stem canker showing yellowing and browning between the main leaf veins.



Figure 2. Stem canker on main stem and lateral branches

The fungus *Diaporthe phaseolorum* var. *meridionalis* overwinters mainly in infested stem debris and may survive up to 14 months in soil. Susceptible plants can be infected at any stage of development, although infection generally occurs during the vegetative stages. Severe disease strongly correlates with prolonged rainy periods and temperatures from 70°F to 85°F during early vegetative stages. Infection occurs when spores are splashed onto wet foliage during rainy weather. Stem canker can be extremely severe in susceptible cultivars and yield loss can be extensive. High levels of resistance to this disease are available and resistant cultivars are the primary means of control.

Stem canker is more severe with continuous soybean production and in no-till planting regimes. Soybean fields should be scouted each year during the reproductive stage to determine if stem canker is present. Small areas of stem canker in a field in one year may result in widespread disease the following year unless a resistant cultivar is selected.