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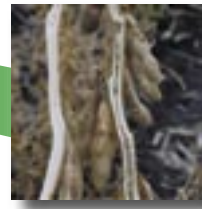
## Know Your Problem Diseases Before You Buy



**Figure 1: Soybean leaves showing symptoms of brown stem rot.**



**Figure 2: Soybean leaves showing symptoms of sudden death syndrome.**



**Figure 3: Stem discoloration caused by brown stem rot (right). A healthy stem is shown at left.**

**A**s soybean producers walk through disease-stricken areas they typically ask themselves, “Is it SCN or sudden death syndrome (SDS)?” In reality, it may be neither.

Brown stem rot (BSR), a lesser-known disease is making a dramatic comeback. It is easy to miss if you don’t look closely. Many producers and crop professionals misdiagnosed it this year because its symptomology is similar to that of SDS.

Brown tissue between yellow to green veins is a typical but sporadic leaf symptom of BSR. These symptoms are easily confused with those of SDS if the field does not have a history of BSR or if you are not looking for it. The only sure way to differentiate the two is the split the stem longitudinally. Stems with a brown center are likely infected with BSR. Leaf symptoms are also often confused with early crop maturity or the effect of dry soils.

Yield losses to BSR of 10 to 30 percent are common and losses of 44 percent have been recorded. Weather conditions this year were ideal for this pathogen. Cool temperatures of 64 to 75F in early August are ideal for the disease and results in higher levels of yield loss. The fungus invades the vascular system of soybean plant and impedes the movement of water and mineral nutrients needed for growth. Greater yield loss occurs when soils dry during the later part of the growing season putting additional stress on the plant.

BSR is frequently associated with fields that do not respond to management practices and have difficulty achieving yields of 50 bushels/acre. The fungus lives in the

soil and soybean residue and infection occurs over a wide range of soil conditions. Soybean is the only host for the brown stem rot fungus, thus, crop rotation helps reduce the effect of the pathogen but does not eliminate it.

BSR is somewhat of an elusive disease. Of the two known genotypes of the fungus, one does not produce leaf symptoms. The other does not always produce leaf symptoms. Leaf symptoms are also suppressed by above normal air temperatures similar to those experienced during the 2003 and 2002 cropping seasons.

Even though the brown stem discoloration is a good sign of infection it is not a good indicator of potential yield loss. Checkoff-funded research has shown that the brown stem rot fungus can be present higher in the plant’s stem than is suggested by the height of the brown discoloration.

What does this mean? Producers may experience unacceptable levels of yield loss even if they think they don’t have a severe problem. Research has shown an 8 percent yield loss to the fungus even when leaf symptoms were absent. Add this unseen yield loss with that from SCN and you may have just lost your profit.

Because BSR is managed by crop rotation and host resistance, it is important for soybean producers to know what disease(s) they are trying to control. Buying a variety with a high level of resistance to sudden death syndrome alone does nothing to control brown stem rot. So, the next time you are wondering if you are losing yield to SDS, split the stem, you may find the answer.