



2012 Soybean Update

Selecting Soybean Varieties for Disease Resistance

There are several diseases of soybeans that impact the Mid-Atlantic-Southeast area. Several can be controlled or at least the damage minimized with fungicides but some disease can only be really stopped with variety resistance. There are four notable disease that variety selection impacts:

- Stem Canker
- Cercospora Leaf Blight and Purple Stain
- Charcoal rot
- Frogeye Leaf Spot

Stem canker can infect soybeans any time from mid-season to maturity. Yield losses can be from 25% to 100% in susceptible varieties when environmental conditions are favorable for the disease. *In 2011, there were several fields in VA and NC with stem canker.*

The infection occurs during the early flowering stage. Reddish brown lesions form at the base of the petiole. These lesions enlarge and spread until the stem is girdled and the plant above the canker is damaged. Plants with leaves still attached at maturity is an indicator. At harvest, plants have a poorly set "top-crop" and the stem has a crook-type curling.

When split, infected stems show a chocolate brown pith. Stem canker usually covers large field areas when weather conditions are ideal for infection.

This disease has been found mainly on heavier soil types, in fields along rivers and/or under irrigation (needs moisture). It is usually found on soybeans planted through early June but can occur anytime. Fungicides applied at flowering will minimize the damage but variety resistance is very helpful.

Cercospora Leaf Blight (CLB) and Purple Seed Stain (CPS) is getting to be a significant problem in bean production. Unlike stem canker, this is clearly a **double-crop soybean disease**. There are two different types of damage even though caused by the same pathogen.

When a variety has "resistance" to Cercospora, it has resistance to the purple seed stain damage but there



Brown pith of stem from stem canker



Stem lesions from stem canker



Crooked stem with poor fruit set from stem canker



Uneven ripening from stem canker



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are ***no known varieties that have resistance to the leaf blight stage.***

According to one Southern pathologist, **CLB is more severe on grey pod beans than the tawny (red or brown) pod beans** as the tawny pods have thicker pod walls which somehow reduces the impact of this infection.

Infections appear in Sept/Oct. Applications of a fungicide in late Aug. /early Sept. will reduce the impact of the CLB stage but may not last long enough for the CPS stage. This is where selecting a variety with resistance comes in to play.

There is some controversy about using a strobi or triazole fungicide is best for CLB. Our recommendation is to use a mix .

Frogeye Leaf Spot (FLS) will lower yields 20%. It can be controlled with fungicides but resistance to strobi's arose in 2011 in the Mid-South. The other problem with using fungicides is that the timing is off from when we normally would be going over the field so a separate trip is usually required.

Renwood Farms screens every variety before releasing for sale. Varieties pulled in from Mid-West seed companies seem to be most susceptible to FLS.

Charcoal Rot (CR) is associated with sandy, light soils with moisture stress and high heat. There are very few soybean varieties with resistance to CR and they are all fairly new.

One key to stopping CR is to reduce seeding populations. Selecting the latest possible maturity soybean

for your area is another key step to reduce damage from CR.

For 2012, Renwood Farms Seed has two MG 4 soybeans with Charcoal Rot resistance: USG 74E88 and USG 74A79R, a RR2 variety.

Summary

Variety selection for disease resistance is a critical component of successful soybean production. Renwood Farms offers 15 USG varieties that have been carefully selected for our market area that offer solutions to soybean production problems. Call us so we can help pick the variety that best fits your farm and fields.



Cercospora Leaf Blight