Crop Solutions that Work

September 4, 2009

Sudden death syndrome (SDS) is appearing in many fields.

Soybean disease pressure has been pretty high this season and SDS is starting to show up in soybeans. This is not surprising given the extended cool, wet conditions experienced during planting this year and the current weather pattern. This disease will look very similar to Brown Stem Rot (BSR), but with SDS the pith will be white, compared to brown with BSR. The leaves will look similar with chlorotic and necrotic tissue first between the leaf veins. The leaves eventually fall away leaving the petiole attached to the soybean stem. Some of the recent weather patterns (moisture with heat and humidity) provide an ideal environment for foliar diseases to appear.

Firing of the lower leaves of corn plants indicate plant roots cannot supply enough nitrogen for grain fill, whether it is from an inadequate supply of available nitrogen or from a restricted root system caused by compaction, and/or root damage from insect feeding. There are several fields across the area showing these symptoms. Continued movement of nitrogen out of the lower leaves results in lower-stalk death and deterioration of stalk quality. Nitrogen deficiency will appear as a “V” shaped yellowing along the midrib of the lower leaves, with the widest part of the “V” toward the leaf tip and becoming narrow along the midrib to the stalk.

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The stage of kernel development is easy to determine. This plays a critical role in yield determination. Most of the corn is in the dough and dent stages. However, in parts of the area where planting was delayed, some fields may be in the late milk stage.

- **Milk (R3)** – Kernels are mostly yellow and contain a milky-white fluid. This is the "roasting ear" stage. Severe stress can abort kernels, as well as reduce kernel weight.
- **Dough (R4)** – Continued starch accumulation is giving the kernel's inner fluid a pasty consistency. Kernel abortion in not likely, but severe stress can have a dramatic impact on test weight.
- **Dent (R5)** – Nearly all kernels are dented. The milk line slowly progresses to the kernel tip over the next three weeks. Kernel moisture at the beginning of the R5 stage is approximately 55 percent. When the kernel reaches the ½-milk line, it will be roughly 40 percent moisture, 14 days from black layer, and have attained 95 percent of its maximum yield. Stress at this stage can still reduce kernel weight but not kernel number.
- **Maturity (R6)** – The black layer has formed and kernels have attained their maximum dry weight. Kernel moisture is roughly 30 to 35 percent. Stress at this point will not hurt final yield.

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Hybrids will differ in the time it takes to reach harvestable moisture from the black layer. A rule of thumb is that 30 GDDs are needed to lower the grain moisture each point from 30 to 25 percent, and 45 GDDs per moisture point to dry from 25 to 20 percent.

Scout for stalk rots. Plants that cannot take up enough available nitrogen to meet the needs of the filling ear will cannibalize the nutrient from the lower leaves and stalk. Translocation of nutrients, such as nitrogen, weakens the living tissue in the lower stalk, leaving an opportunity for stalk rot pathogens to do their work and feed on dead or dying plant tissue. Simply scouting the fields and knowing the absence or presence of stalk rots can help you plan your harvest schedule. If stalk rot is present, the stalk will easily compress when pinched.

Check for stalk rots by inspecting 20 plants in five different locations of a field. Pinch the lower two internodes, or push the stalk over at least five inches. Count the number of soft and broken stalks in relation to the total number of plants checked. If you find more than 10 to 15 percent of the stalks indicating weakness, schedule the field for an early harvest. Below is a description of several stalk rots and what they will look like.

Anthracnose: This appears as a shiny black discoloration that may be on the rind of the stalk that cannot be scraped off. This black discoloration usually extends up the stalk for several internodes.

Diplodia: Lower internodes are straw-colored, spongy, and easily crushed. Black specks are embedded in the stalks just below the nodes. These specks cannot be scraped off.

Gibberella: Stalks show an internal pink to reddish discoloration with internal shredding of the pith. The outside of the node may have small black bodies that can be scraped off with a fingernail.

Taking note of lodged corn. There are spots in area fields where corn is laying flat due to a windstorm, hail damage, insect damage, and so on. These fields should be noted and observed. Depending on the stage of the corn when it went down, this could become an issue next year when making crop production plans. If the corn field was planted with a glyphosate-resistant hybrid, then next year's soybean crop should utilize a herbicide program that will control any glyphosate-resistant volunteer corn plants.

What could you expect to see in the fields now? The plot tours have started, and everyone is talking about their new corn hybrids and soybean varieties. This year had a lengthy cold and wet spell in May and very little hot and dry weather during the growing season. There are some interesting things to see in the fields, such as kernel set, pollination issues, plant height, and plant color. The best way to identify what is the best hybrid or variety for your farm is to visit your fields, talk with your local FS Crop Specialist, and attend a field day or two. Here are some things to look for when you venture out into that field:

- Environment: Is this indicative to my farm? Are the soil conditions and weather pattern similar to that at my operation? Visiting a couple of different field days will explain or show some of the variability that exists. Don't succumb to a "one-hit wonder."
- Overall Appearance: How does it look to you? Make note of the ear height, plant height, and color. These are things that show how the plant made it through the summer.
- Yield Potential: Examine the corn ear for things that can indicate yield, such as kernel size, kernel length, row number, etc. Look at the soybean pods for the number of pods per node on the plant, aborted pods on the ground, etc. These are very important factors when determining yield potential. Again, looking at a couple of different locations will help identify the best corn hybrid or soybean variety for your field.
- Communicate: There are several sources of information available to select the best hybrid and variety for your farm. Talk with your FS Crop Specialist, who has been to many field days and knows your fields too.

Fall plans are important. The unpredictable nature of the fertilizer markets increases the need to be placing the correct rates of fertilizers where they are needed within each of your fields. The hectic fall scramble to complete harvest, collect soil samples, apply fertilizer and limestone, and complete tillage makes it even more important to plan for your needs now. Precision farming continues to play a vital role in economically managing your agronomic inputs. The **volume** of information from season-long technology data gathered from each field is a challenge that your FS Crop Specialist can manage.

Time is one of your most precious commodities, so it is vital to the success of your precision farming program to make time to review and fine-tune your fall plans. Do you have fields that need to be scheduled for soil sampling this fall? This is also a great time to make preliminary fertilizer and limestone application plans with your FS Crop Specialist. Then as you finish a field, you can call from your combine to execute your plan rather than just starting the planning process. I refer to plans made now as preliminary, so that you can fine tune their execution based on actual crop yields and economic conditions at harvest time.

Recording data from FS Green Plan Solutions On-Farm Discovery℠ trials is vital for evaluating the results of any treatments or experiments that you conducted this year. It is easy to get caught up in the rush of harvest and forget about all of the time and hard work you may have invested in designing a trial and applying different treatments in anticipation of learning what works and what doesn't work on your farm. Be sure to communicate with all of your harvest help the location(s) of any trials and explain the importance of collecting yield data from these sites. Your FS Crop Specialist can help you gather the information and assist you with the data analysis for your trial.

Fall tillage plans need to be carefully evaluated before investing time and expense. Wet field conditions this spring resulted in soil compaction issues in many fields. Aggressive tillage, where soil conservation plans allow, may help reduce soil compaction. Fall tillage is most effective when the soil is dry. In fact, fall tillage in wet soils will often result in more problems rather than eliminating the compaction. Even though you may have experienced crop growth problems due to soil compaction this season, it is very important that the soil be dry enough for your fall tillage to be effective.

Be safe out there. Fall is an exciting time of year with many chores to be completed as the daylight hours become shorter. The late planting season will probably result in some grain dryers being fired-up again this fall. Take your time, prepare for your next move, and plan to take scheduled breaks during the day. Be sure your SMV placards are in place, clean and visible. Part of the fun of harvest is being able to share it with your children and grandchildren. Set a good example for them by operating your equipment safely and not taking any unnecessary risks.

Have a safe and profitable harvest season.

Crop Solutions that Work

In this edition...

New seed technologies offer promising advances in insect protection, weed control options, and perhaps even increased yields. Keep in mind that with these new technologies, the first year is typically launched with limited quantities of seed. Genuity™ SmartStax™ corn is an exciting new technology that is being launched this fall that not only provides broad-based above and below ground insect protection, these hybrids are also tolerant to both glyphosate and Ignite® herbicides. Because of the multiple genetic resistance to European corn borer and corn rootworm in Genuity™ SmartStax™ corn, the US EPA only requires that 5% refuge be planted. The availability of Genuity™ Roundup Ready 2 Yield® soybean varieties will increase this fall. Don't be lulled in delaying your seed order in anticipation of booking only the newest technologies for your farm. Your FS Crop Specialist can update you on the availability of these new products and work out a plan to exchange some of your early booked seed if these technologies are released. Plan for the majority, if not all, of your acres to be planted to top of the line existing genetics in 2010, then be ready to adopt the newest technologies on several acres in 2011.

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