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Corn Disease Update

Corn is normally very resistant to diseases until after pollination. After pollination, the plant is devoting increasing resources to the ear, the pathogen levels are building up and the combination of temperature and humidity favor the development and growth of disease organisms. (If you want to see a plant stay healthy, pull the ear shoot off soon after pollination.) Fungi cause most corn diseases, very few are caused by bacteria. Viruses cause mostly tropical diseases.

Northern Corn Leaf Blight is a disease that has been showing up more often in recent years all over the corn belt. The Ht genes have controlled this disease for many years, but the disease seems to have developed a strain that can infect plants with one of the Ht genes. NCLB shows up on the plant with big "boat shaped" lesions. NCLB is common on sweet corn.

Common Rust is the easiest of diseases to identify because it looks just like rust. Usually rust is just a novelty type disease that results in little to no economic yield loss. Rust spores are blown in on the wind, the lesions often occur on upper leaves. Rust is quite widespread on corn this year.

Gray Leaf Spot will show up first in continuous no-till cornfields. However, with minimum tillage being practiced everywhere there is enough corn residues from the last corn crop to provide a good source of inoculum. Since most corn has flowered and is well on its way to denting, I hope that the impact on yield will be small. On the down side, the plant can be predisposed to poor stalk quality.

GLS starts as lesions on the lower part of the plant. The lesions are small and rectangular in shape, restricted by the veins. GLS is fairly easy to identify because of the rectangular shape. The plant looks like it has the measles with many small lesions. The lesions may grow together killing the entire leaf. The lesions usually start on the lower part of the plant and move up because the source of the disease is the fungus that over-winters on infected corn residue. GLS has always been more of a problem in the humid Southern Corn Belt, but with more and more corn residue on the top of the soil the inoculum is more widespread and present if the environment favors it. Family Two hybrids are the most tolerant to GLS followed by Family Three hybrids.

Looking Forward

While the 2010 corn crop is a long way from being in the bin yet, it is never too early to begin planning for next years' crop. A suggestion we would like to make is to take along a spade and a pocket knife when you are out scouting your fields this summer so you can observe the condition of the root system and look for soil compaction. We did a lot of harm to our soils last fall by running in saturated soil conditions with the combine and grain cart and had little opportunity to address those concerns before planting. We then received very large amounts of rain during the early growing season that led to ponding in many areas which further compacted the soil. We need to have a plan in place so that once harvest is completed we can do deep tillage on those fields that need the most attention.

When deciding where to dig first, it's a good idea to dig up a healthy "normal" looking plant to have something to compare to. A healthy plant is most likely in an area of little soil compaction so you should be able to dig around the base of the plant easily. Then take your knife and pick away at the sides of the hole that is left. The soil should crumble easily and not come off in large "chunks". Now go to an area of the field where the corn is shorter in height. This may be in a low spot where water sat or in the headlands where the truck was parked last fall. Dig up the plant and check the condition of the root system. Do the roots run parallel to the row? Do they go down only a couple of inches and then turn sideways? Are they puny when compared to the healthy roots of the other plant? These are all signs of compaction. Then take your knife and pick away at the sides of the hole as you did before. Start at the top of the hole and work down. In many cases the top couple of inches will crumble easily only to reveal a compacted "chunky" layer below it. Dig down until you find the bottom of the compacted layer so you know how deep you will need to do tillage.

Having an idea ahead of time will allow you to be more efficient with your time this fall. You may wish to harvest problematic fields first to get a jump start on tillage. It will also allow you to get machinery and labor lined up to get the job done right to give next years' crop the start that it needs.

Common Rust

Northern Corn Leaf Blight

Gray Leaf Spot

Corn Insect Pest Update

The **Japanese beetle** numbers are very unimpressive so far this year. My notes from past years show that by now they were present in large numbers. They do damage many ornamental plants and trees by extensive defoliation, but their biggest threat to corn is as silk-clippers. Watch your late planted corn as it flowers because these silk-clipping insects may be attracted to it.

Western corn rootworm beetles are also silk clippers, but their numbers have been very low. In 2005 it was easy to find 50 WCRW beetles per plant! So far this year, it is hard to find 50 WCRW beetles in one day. The numbers may pick up as the adult beetles emerge from the soil after feeding on corn roots. But I suspect that the widespread use of SmartStax™, HXTR, GT3 and VT3 corn is really lowering the survival rate of this formerly devastating pest of corn. Again, for you folks with late-planted corn, scout for WCRW beetles because they will be attracted to and they will find your fresh silks.

The **Western bean cutworm** has been getting a lot of press lately because moth captures have been significant in northern Illinois. They appear to be filling the niche left by the European Corn Borer, which seems to have disappeared since the use of transgenic corn has become so widespread. We control one pest and gain another in its place. The western bean cutworm feeds on the developing ear, and since they do not eat one another, many of them may feed on and severely damage an ear. The good news is that the western bean cutworm is controlled by SmartStax™ and HXTR and HR hybrids. Hybrids with the VT3 or GT3 traits are susceptible to the western bean cutworm.

SmartStax™ refuge requirements:
5 percent in the northern Corn Belt and 20 percent in southern states where cotton is planted.

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AGRONOMY CONNECTION

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