

Soybean Seedling Diseases



There are several seedling diseases which can severely weaken and often kill soybeans during the early growth stages. These include Rhizoctonia, Phytophthora, and Pithium being the major three. Phytophthora and Pithium (left) are often identified as a black discoloration on the hypocotyl or lower stem below or at the soil surface. It is not possible to tell the difference between these two visually. Seed treatments give protection against these as well as there are some genetics which give resistance to some strains.

In the case of Rhizoctonia (right) it is often easily identified by a reddish lesion which occurs slightly above the soil surface. Often it is brownish in the center in more severe cases and actually may be sunken. This causes damage but also because of the open lesion can give rise to further infections of other organisms.



Zinc Deficiency in Corn



Often times cool weather followed by warm conditions can cause a temporary Zinc deficiency to occur on corn. This is first indicated by a poor green color and possible interveinal chlorosis. This often is the same symptomology which comes with a sulphur deficiency. The true symptomology is a yellow streak that starts in the whorl of the plant and moves ACROSS the veins and often exits the leaf somewhere in the last third of the leaf. This is truly a zinc deficiency. In a lot of our geography zinc is naturally deficient in our surface soil. There are supplies in our subsoil but a young corn plant does not have a deep enough root system to reach that depth.

Why do we have this so often? We are planting earlier every year due to more and more acres farmed by fewer growers. This in combination with less row starters in some areas give rise to poorer root growth and more stress during these weather episodes.

Millipedes & Wireworms



This isn't news to anyone who has been worriedly checking their fields on a daily basis since the first of May. Heavy soil textures, excessive moisture, long periods of cold weather and a hard crust all add up to erratic stands. In some fields you can add "millipedes" to the above list! These multi-legged critters can be found eating the center out of the kernels

(see photos on right). Purdue entomologists contend that the millipedes are attracted to dead material, thus, the kernels were already dead prior to their entry into the seed. This is a possibility since much of these fields have been planted for more than 3 weeks and the kernels are still just "sitting there" in the wet/cold soils. Replanting is about the only option for these fields. (Dan Childs-Diener).

I have found these in fields where an insecticide seed treatment has not held and wireworms (photo left) have bored into the seed and the millipedes have followed. (Greg W.)



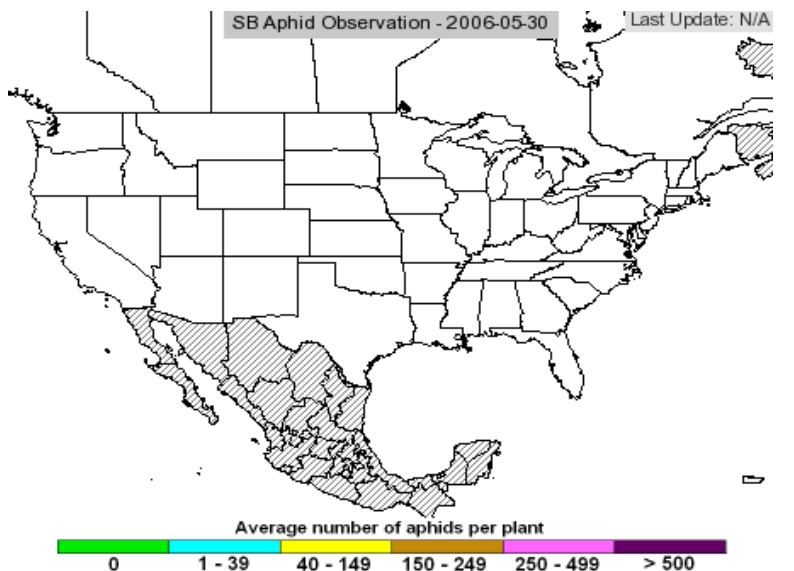
Aphid Update (Christina DiFonzo, Michigan Entomology) with Purdue and Illinois

A few weeks ago I reported that entomologists from Purdue and Illinois found only two aphid colonies in their annual buckthorn survey. Both colonies were found near Bronson, Michigan. This week I hit the jackpot and found 22 colonies on a single buckthorn shrub on the MSU campus. Although there are dozens of other buckthorn shrubs in the area, none of the others had aphid colonies. Some individuals in the colonies were winged, indicating they are about to disperse to soybean. On a positive note, there were at least 21 Asian ladybeetles on this same shrub, wiping out the colonies. Despite finding this single infested buckthorn, I still believe that aphid populations will be low this season.



Aphid Maps on the web!

For 2006, there is a new feature on the (rust) web site www.sbrusa.net— **maps for soybean aphid**. When you enter the site, simply go to the drop down menu in the top right corner, under the date and select soybean aphid. Two maps appear on the right side of the screen. The top map shows “SB Aphid Observations.” While USDA is funding the sampling some sentinel plots for aphids, additional research plots and production fields may be sampled in certain states by Extension educators, state government, university entomologists and others. Unlike the rust map, which only has two colors (green for no detection, red for detection), the color of the dots on the aphid map will reflect the number of SBA per plant with purple dots indicating fields or plots over the 250 per plant threshold. The second map has the “SB Aphid State Update,” commentary by state specialists. Note that the color of the state reflects when the commentary was last updated.



Cutworm

The university specialists have been warning us about heavy moth captures in their traps this spring. Black cutworm moths do not overwinter in Indiana or Illinois, but rather fly up from Southern States on wind currents. The female moth is attracted to green vegetation in which to lay her eggs. Many fields this spring were thick with winter annual weed growth – the perfect spot for cutworm’s to land. Once the weed growth is killed, the larvae then turn to the crop to feed. Check your fields for damage by counting 20 consecutive plants in five areas of the field. Control may be warranted if 3-5% of the plants are damaged or killed

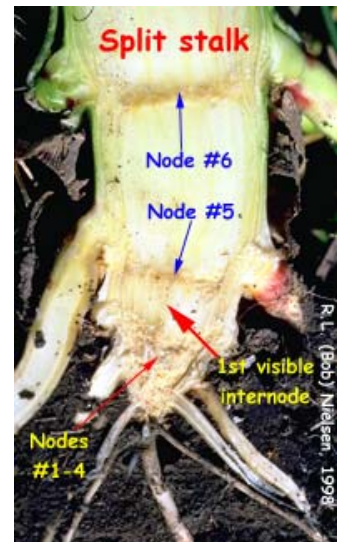
and ¾ to 1 inch long cutworms are found. The feeding symptoms include wholes in the leaves from very small cutworm to completely cut-off plants at the ground level (larger cutworms – see photo). The cutworms may be hard to find during the day. Look under the soil crust for a small worm that is black to gray in color and is generally curled up. There are several insecticide options for control of cutworms including Warrior, Lorsban, Mustang Max, Capture, Pounce, etc. The photo of black cutworm and its damage is from Dr. Marlin Rice, Iowa State University

Corn Growth Staging

With growing conditions being cool over the past few weeks we need to be mindful of corn growth stage as we start post herbicide applications on corn. Uneven emergence during early season growth and slow heat unit accumulation has led (once again) to corn where plant height and maturity do not match. Always watch herbicide labels in regards to timing restrictions and to be safe always go with maturity rather than height when given the two options.

In growth staging one needs to look for the collar region of a leaf. It is not counted unless the collar is visible. Somewhere around V3 or V4 the stalk is large enough that the first leaf becomes unidentifiable as it is split off from the stalk. At this time it is necessary to split the stalk (see Figure) to figure the exact growth stage.

First split the stalk and then find the lowest visible collar. Trace this leaf to the node where it attaches from the split stalk using the diagram at right. If you start seeing brace roots this usually is the fifth node.



Soybean Growth



One thing to watch as soybeans mature is the color change they will undergo. As a soybean plant approaches V3 the seed reserves run out and the nodulation on plant roots is not up to production. It is during this V3 time frame when soybean typically slows in growth and starts turning a pale green. This is a temporary nutritional deficiency until the root system and nodulation is up to full production. This usually also corresponds to some post herbicide application which can further stress the plant's metabolism. A small nutritional additive such as ENC® or Online® can help alleviate these stresses.

Questions & Comments

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