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# Little "Cigars" On Soybean Leaves? That's Weird

(John Obermeyer) & (Christian Krupke)

A couple of weeks ago, we ran a story on an inordinate number of green cloverworm moth sightings around fields and farmsteads, "Black Moths Fluttering About Everywhere!" At that time, we suggested that natural controls, e.g., parasites and pathogens, weren't as effective this year in limiting populations of this vulnerable caterpillar. Well, a visit to soybean fields this week revealed that we spoke a bit too soon, and "mother nature" has indeed caught up with this soybean foliage feeder.

Parasitized larvae, small, mottled brown, and cigar-shaped, were quite evident on the upper surface of soybean leaves. A very small, braconid wasp had laid an egg inside the caterpillar, now serving as the host. The egg hatches, the maggot emerges and begins feeding upon the caterpillar from the inside, avoiding critical internal organs like the stomach, while consuming fat deposits inside the caterpillar body cavity. It is in the parasite's best interest to keep the caterpillar host alive and feeding until their development is complete, but eventually the caterpillar cannot keep up with the demands of this growing internal parasite and it dies, after which the outside of the caterpillar hardens, discolors, and tapers at the ends, leaving a cigar-shaped cadaver. The wasp larva pupates within this carcass and then chews an opening for emergence as a winged adult. This type of life cycle has served as an inspiration for many horror movies, including "Alien."

Of course, soybean foliar feeding this late in the season is likely to be of only minor consequence, so the green cloverworm feeding isn't of economic importance. But it's always nice to see natural enemies pop in and do their thing!

See the following pictures.



Green cloverworm feeding.



Green cloverworm becoming a cocoon for the internal parasite.



Mummy or "cigar" parasitized green cloverworm.



One of many parasitic wasps that "sting" caterpillars, scale in millimeters.



Dissected mummy reveals developing wasp.

## Field Crop Update For Indiana

(Darcy Telenko)

#### **Soybeans**

We are starting to see a few diseases in soybean across Indiana. This week in our plots in northern, central, and southern Indiana initial foliar symptoms of sudden death syndrome are making an appearance. In addition, if we look hard we can find a few frogeye leaf spots and Septoria brown spot in the lower canopy – the levels of both of these diseases are very low and our soybeans are at R5 (beginning seed).

#### <u>Corn</u>

**Tar Spot** - We have confirmed 13 counties with active tar spot as of August 27 in the 2020 season (figure 1). We are starting to find multiple fields, some moderately infested with tar spot, in northern Indiana. I have scouted fields that have 100% of the plants infected with stroma (black spots) ranging from a few on a leaf to 15% severity (figure 2).



Emergence hole used by an escaped wasp.



Figure 1. Map of counties confirmed for tar spot as of August 27, 2020. Orange counties have confirmed activity, gray counties where tar spot has been found in previous years.



Figure 2. Tar spot symptoms on leaves both on the lower and the upper canopy. (Photo Credit: Darcy Telenko)

Unfortunately, the sites where we are seeing the highest severity were those that were planted early and have had good moisture/irrigation all season. Luckily, at least the sites I have been in thus far, the corn has reached R5 and we hope it has minimal effect on yield. That being said, please keep a close eye on your late plantings. We have seen variable



Figure 3. Map of counties confirmed for southern corn rust in Indiana and United States as of August 27, 2020.

**Southern Rust** - We have added a few new counties to the **southern rust** map in Indiana since my last report, 24 in total with confirmed southern rust (Figure 3). Keep scouting and if you suspect it, please send a sample to the Purdue Plant Pest Diagnostic Lab (PPDL). Southern rust can cause significant yield loss if it builds up to high levels during silking and corn fill. If you're your corn has reached R4 (milk) or beyond and you've just found it in a field it is unlikely southern rust will build up enough to cause yield loss. For those late planted fields, it is important to keep a close eye out for this in case a timely fungicide decision needs to be made.

We again are requesting if you have any suspect locations to please update us and send a sample. I am especially interested in those counties we have yet to scout or receive a sample. Even if your county is yellow, I am also interested in learning if you have tar spot on your farm again this and what you might be seeing – feel free to send me an email/photo at dtelenko@purdue.edu or call 765- 496-5168.

### Overgrazing During Dry Weather Has Long Term Consequences

(Keith Johnson) & (Ron Lemenager, Extension Beef Specialist)

This past week was a return to high summer temperature and lack of moisture. My observations the past several days in the West Lafayette area as a travel about are that cool-season grass pastures are in a dormant state and that overgrazed pastures are easily found. A few more days of grazing may happen when the last blades of grass and legumes remain, but the long term consequences are not good for the wellbeing of the forages in the pasture. Meristems are where cell initiation, continued division, and elongation occurs. When close grazing happens, meristems cannot produce what would be the next growth to graze. In time, less productive plants that can take close grazing because the meristems are at or slightly below the soil surface and, therefore, remain ungrazed will increase and troublesome weeds may begin to appear and become dominant, too.



If plants could cry out, they would yell "Stop" when overgrazing begins to occur. Note the visible manure in the upper center and the crushed aluminum can in the lower center of the photograph. If the pasture was properly grazed, the manure and aluminum can would not have been visible at the distance that the photograph was taken.

(Picture Credit: Keith Johnson)

Here are some considerations to help stretch the forage supply that remains in a pasture, protect future plant productivity, and improve the wellbeing and productivity of livestock, too.

- Employ rotational stocking.
- Provide clean, cool water to reduce heat stress and maintain herd and flock health.
- Monitor the body condition of livestock as an indicator of nutritional status.
- Creep feed calves for near normal weaning weights.
- Early wean late winter- and spring-born calves to take pressure off both cows and pastures.
- Pregnancy check and market cull cows earlier than normal to reduce feed needs.
- Determine if poisonous plants are in overgrazed pastures and hay fields, and determine best control options.
- Inventory hay and other feed resources and determine whether future purchases will be needed.
- Analyze hay and silage for nutrient profiles to help determine what supplemental feeds will provide a balanced ration.
- Use alternative high fiber byproducts feeds such as soybean hulls and corn gluten feed to supplement and stretch forage supplies.
- $\circ~$  Limit hay access time to stretch forage supplies.
- $\circ\;$  Limit feed a nutrient dense diet to stretch forage supplies.
- Graze corn residues and stockpiled forages to reduce harvested feed needs.
- If drought-stressed corn has poor grain set, consider using it as silage or green chop. Check for nitrate level before feeding happens. Contact your insurance agent before a harvest occurs.

Listen carefully. Your forages may be crying out "Don't overgraze if you want to see us next year!".

## Cooler, Wetter Conditions Expected Over Next Several Weeks

After the last several weeks of predominantly dry conditions, the national climate outlooks are finally showing confidence that temperatures should start shifting to cooler than normal and precipitation will be wetter than normal (Figure 1). Hurricane Laura will definitely help the precipitation side of that prediction with current tracks having the strongest rainfall amounts in the southern counties. Expect the rest of this week to stay on the warmer side, but by next week, temperatures should seem much more pleasant. From August 30<sup>th</sup> through September 7<sup>th</sup> (the period when the national Climate Prediction Center is showing confidence for these conditions), the normal amount of precipitation is between 1.25 and 1.50 inches. Average high temperatures are normally between 75°F (northern counties) and 85°F (southern counties). Therefore, keep these climatologically normal conditions in mind when interpreting the climate outlooks for below-normal temperatures and above-normal precipitation.



Figure 1. The national Climate Prediction Center's 8-14-day climate outlook for September 3 – September 9, 2020 where shading indicates probability of above- or below-normal temperature (left) and precipitation (right).

The probability of a La Niña developing has been increasing for the fall with moderate confidence it will continue through the winter. La Niñas can be a major driving factor for seasonal outlooks for various parts of the U.S., but not so much for the Midwest. Here, those correlations are weaker. This tends to confuse the various computer models that are run to predict the climate outlook for fall and winter in Indiana, leaving little-to-no guidance on temperature or precipitation for the next month (September) or 3-month period (September through November). Even the date of the first hard frost (*i.e.*, minimum temperature at or below 28°F) does not seem to be impacted by the strength of a La Niña, El Niño, or Neutral phase.





Figure 2. Modified accumulated growing degree-day units for April 1 – August 26, 2020.



Figure 3. Comparison of accumulated modified growing degree days for April 1 through August 26 for 2016 through 2020.

Accumulated modified growing degree days (GDDs) continue trying to catch up with previous years (Figures 2 and 3). It will be interesting to see if the warmer temperature for the rest of August will push this year's GDDs ahead of the pack. It is a race I am sure all of us are on the edges of our seats in anticipation of the outcome.

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