**Soybean caterpillar complex (SCC)**

Many caterpillars may be found feeding on soybean foliage. The corn earworm, aka pod worm (Figure 1), and the green cloverworm (Figure 2) are probably the most frequently encountered foliage-feeding caterpillars. The corn earworm has a spikey punk hairdo and five pairs of prolegs. The corn earworm is considered by many to be the most damaging insect that feeds on soybeans. Although it is a notorious foliage feeder, it can be even more damaging to flowers and pods. The green cloverworm is light green and imitates a washing machine during the spin cycle (i.e., shakes vigorously) when disturbed. It has four pairs of prolegs that make this critter easily distinguishable from other soybean caterpillar pests. Though the small green cloverworm larvae walks in a looping motion, it hates being mistaken for a looper. Other members of the SCC that may be found feeding on soybeans include the soybean looper, beet armyworm, salt marsh caterpillar, yellowstriped armyworm, and a few other caterpillar species including my all time favorite the silver-spotted skipper. These latter mentioned caterpillars very seldom cause economic damage by themselves but add to the damage being inflicted by other foliar feeders.

**Soybean – one tough cookie**

Most IPM specialists recommend using leaf defoliation for making management decisions, especially in fields with multiple insect species feasting on the leaves. Unlike several other wimpy crops, soybean isn’t a cry baby that concedes to the mere site of defoliators. This brave plant has the remarkable ability to withstand lots of insect injury without significant yield loss. It accomplishes this by both tolerating and compensating for injury. Yield losses are prevented because soybean plants typically produce excess leaves. Further, if leaf loss becomes too great, these brave plants are intelligent enough to retain older leaves and maintain high levels of photosynthesis. Soybean also can compensate for early stand losses. Usually, gaps in soybean stands are filled by additional growth and branching of the remaining plants. In this way, soybean yields are maintained despite substantial amount of defoliation or reductions in plant population. So I guess you can say soybean is one tough cookie.

**Scouting**

Scouting for foliage feeding insects involves estimating the percentage of total leaf area that has been removed by the insect. One method involves looking up and down a soybean row and estimating the percentage of defoliation (whole plant estimate). Be warned, it’s easy to overestimate the extent of insect caused defoliation without adequate practice. One method
that has been known to improve a scout’s overall skills is to estimate the amount of defoliation from individual leaves. This is done by 1) pulling individual leaves from the plant, 2) estimating the percentage of missing area from each individual leaf, 3) adding the individual defoliation estimates, 4) dividing by the number of leaves examined (individual leaf estimate) and 5) Walla! You have just conducted an accurate assessment of insect defoliation in a soybean field. Practice this until the whole plant method matches or closely matches estimates obtained from the individual leaf method. Once both methods give similar estimates, pat yourself lightly on the back as your eyes have now been calibrated to do whole plant defoliation estimates.

Defoliation estimate example:
2 leaves with 20% defoliation (2 x 20) = 40
3 leaves with 25% defoliation (3 x 25) = 75
4 leaves with 10% defoliation (4 x 10) = 40
7 leaves with 15% defoliation (7 x 15) = 105
Average defoliation = (40 + 75 + 40 + 105)/16 leaves = ~ 16%

Sample each field a minimum of four times at representative sites. For larger fields (25 acres or more) it is recommended that at least 10 randomly chosen sites are sampled and if casual observation between sampling sites confirm your results, continuous sampling is not necessary.

**Action threshold**
Reductions in yield from insect feeding can occur during any crop stage and there are different thresholds assigned according to the soybean stage of development. The pod-forming and pod-filling stages are the most sensitive. In general, consider treatment of soybean only if leaf-feeding insects are present and defoliation reaches 15-20 percent in the pod-forming and seed-filling stages. The economic threshold during the vegetative stage is much higher, generally 30-35%.

**Weather and caterpillars**
Caterpillar pest populations may vary greatly from year to year. Weather may contribute to these population changes. Higher populations are likely to occur in a season of early warm, dry weather and lower populations under cooler, moist conditions. For example, a dense cloverworm population that is accompanied by moist conditions which help encourage an epidemic of a fungal pathogen that attacks the cloverworm, can eliminate even threatening, threshold level populations in a few days, without chemical intervention.

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**Chicken litter has advantages over conventional fertilizers**

*Don Comis, USDA - ARS*

Chicken litter is much more valuable as a fertilizer than previously thought, according to an Agricultural Research Service (ARS) study showing its newfound advantages over conventional fertilizers.

Litter is a mixture of chicken manure and sawdust or other bedding material. Some cotton farmers in the Mississippi area are switching to chicken litter and away from standard inorganic, synthetic fertilizers. Many other farmers are interested in the possible economic benefits of using chicken litter, but are reluctant to switch without the numbers to back up their decision.

Now a study by ARS agronomist Haile Tewolde at the agency's Genetics and Precision Agriculture Research Unit (GPARU) at Mississippi State, Miss., and cooperators has provided those numbers. Tewolde did the research with GPARU soil scientist Ardeshr Adeli, two Mississippi State University colleagues, and Karamat Sistani, research leader at the ARS Animal Waste Management Research Unit in Bowling Green, Ky.

Previous studies only considered the economic value of the nitrogen, phosphorus and potassium in chicken litter, compared to that in synthetic...
fertilizers. Farmers know that chicken litter, an organic fertilizer, is a better soil conditioner than synthetic fertilizers, but have never had a way to assign a number to the value of that benefit.

In their study, Tewolde and colleagues figured the litter's value as a soil conditioner as an extra $17 per ton of litter. They calculated this by balancing the price tag of the nutrients in litter with its resulting higher yields, a reflection of its soil conditioning benefits.

They found that cotton yields peaked 12 percent higher with organic fertilizers, compared to peak yields with synthetic fertilizers. With all benefits factored in, they found that chicken litter has a value of about $78 a ton, compared to $61 a ton when figured by the traditional method.

The economic analyses also showed that farmers could further increase their profits by using less of either fertilizer than currently used for maximum yields—which is also good news for the environment.

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### Crop Reports

#### Western
Cooler weather and a few rain showers have improved the look of pastures and hay fields in the past couple of weeks. Corn appears to be maturing earlier, a consequence of the hotter than normal summer. Soybeans are progressing well with the beans within the pods filling. Tailgate markets are full of an abundance and wide variety of fruits and vegetables.

#### North East
Dry weather continues in the area. Corn is drying down, silage harvest has begun. Soybeans need rain to finish making the crop. Pastures are fair but need rain and hay is light.

#### Southern
Most of the region has returned to dry conditions again. Corn harvest is continuing. Yields are highly variable across fields with reports of 40-60 bushel/acre average. Soybeans are showing drought stress in most areas. Growers have been scouting for pod worm and many fields have required spraying with some fields sprayed twice. There has been a lot of hay cut in the last 2 weeks.

#### Upper Eastern Shore
The entire region is getting dry again. Corn is being harvested in the southern part with yields between 30 and 200 dryland and over 200 irrigated. Soybeans are showing drought symptoms again and most are in the critical pod fill stage. Soybeans are still being sprayed for podworms. Aerial cover crop seeding is beginning. Processing sweet corn harvest is finishing up. With the dry conditions, excellent quality hay is being made as pastures are suffering.

#### Lower Eastern Shore
Drying conditions have improved and corn harvest has resumed. Overall, yields are poor, a consequence of the drought. Heavy corn earworm pressure can be found in some pockets of soybeans. Pasture and hay conditions have improved with cuttings having been made in some areas. Many producers are trying to harvest ahead of the possible tropical weather systems that have been forecast.

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### Upcoming Events

#### 2010 WREC Pumpkin & Sweet Corn Twilight Meeting on September 21
The 2010 Pumpkin and Sweet Corn Twilight Meeting will be held Tuesday, September 21st, at the Wye Research and Education Center, 211 Farm Lane in Queenstown from 4:30pm -7:00pm.

This year there will be 20 pumpkin varieties, Bt sweet corn variety trials, and sampling of Aronia products. Our speakers will be University of Maryland experts Jerry Brust, Kate Everts, Galen Dively, Andrew Ristvey, Mike Newell, and Sudeep Mathew.

A light dinner will be available and although there is no cost for this program, please register by September 17 with Debby Dant at 410-827-8056 X115, or ddant@umd.edu.
WMREC Fruit & Vegetable Twilight Meeting on September 23

The 2010 Fruit and Vegetable Twilight Meeting will be held Thursday, September 23, 4.30 pm to 7.00 pm at the Western Maryland Research and Education Center, 18330 Keedysville Road, Keedysville, MD 21756.

This educational meeting is intended to provide producers the opportunity to get a firsthand look at several of the ongoing projects at the University of Maryland’s Agricultural Experiment Station located near Keedysville.

This year’s highlights include: Maryland pumpkin trials with 20 varieties, apple seedling evaluations, Bt sweet corn varieties, mobile high tunnel production of strawberry, tomato, and raspberry.

Sandwiches and refreshments will be provided. Registration is not required, but will help us to plan for handouts and refreshments. Please RSVP to 301-432-2767 x350 or cmason@umd.edu.

Poultry Farm Management Workshop on September 29th

The University of Maryland Extension is conducting a one-day workshop for new and existing poultry farmers on Delmarva. A variety of topics will be addressed including, site management and maintenance, mortality, manure handling, litter management, windbreaks/vegetative environmental buffers, concentrated animal feeding operation regulations, nutrient management, comprehensive nutrient management plans, EPA inspections and emergency preparedness. The workshop will be held at Chesapeake College, Economic Development Center, Room EDC 27, Route 50 & 213, Wye Mills, MD 21679 from 8:00 am to 3:30 pm. Registration cost is $30 which includes refreshments, lunch and materials. Register by September 20th by contacting Jeri Cook at 410-742-1178 or jcook2@umd.edu.

Western Maryland Goat Field Day, Sale, & Skillathon to be held Oct. 2, 2010.

The 3rd Annual Western Maryland Goat Field Day and Sale will be held Saturday, October 2, 2010, 9 AM to 2 PM at the Washington County Agricultural Education Center near Boonsboro, Maryland. Bucks from the Western Maryland Pasture-Based Meat Goat Performance Test will be offered for sale by public auction. These bucks will all meet Gold, Silver, and Bronze standards for growth, parasite resistance, and parasite resilience. In addition, they all will meet minimum standards for reproductive and structural soundness. The sale will also include an invitational doe sale.

All of the goats will be sold via silent auction. The bidding period will be from 10 a.m. to 2 p.m. The field day will be held from 9 a.m. to 12 noon. Dr. Paul Kuber, a research animal scientist from Ohio State University, will be the featured speaker. Dr. Kuber will demonstrate cuts from a goat carcass, talk about potential grading standards, and prepare products for tasting.

Running concurrent to the field day will be a skillathon for youth ages 8 to 18. In the skillathon, youth will be tested on their knowledge of meat, dairy, and fiber goats. Pre-registration for the skillathon is requested by September 24. For additional information, contact Susan Schoenian at (301)432-2767 ext. 343 or sschoen@umd.edu or visit the web site at http://mdgoattest.blogspot.com.
Did You Know

24 million jobs are supported by American farmers.

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