Scouting soybean pests: What's bugging you?

BY JORDYN SATTLER

FIELD FODDER
ANALYSIS

THIS TIME OF year, chances are more than gnats and mosquitoes are bothering you. A vast assortment of insects may have chosen to make your soybean fields their summer home. So, what's a farmer to do? The answer is scouting.

Early, frequent and thorough scouting throughout the growing season is critical to understanding what insects are in your fields and the impact they're having on the crops, or even each other. Many types of insects have the ability to explode seemingly overnight and make bad conditions even worse. Being informed is the first step to knowing what action you need to take next.

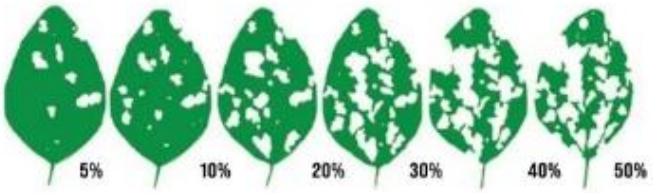
The good. Not all insects are bad. Many beneficial insects found in fields help control the populations of insect pests. They do this either as predators that eat other insects or as parasitoids that use problem insects as terminal hosts for their eggs and larvae.

Be familiar with beneficial insects, and make note when you see them in your fields. Some examples include lady beetles, assassin bugs, lacewings, minute pirate bugs and parasitoid wasps.

The bad. Bean leaf beetles, grasshoppers, green cloverworms and Japanese beetles top the list of bad bugs. These are, of course, the ones farmers are most familiar with. Their damage is easy to find as chewed-up leaves stand out at the top of the crop canopy. Defoliation is initially alarming, especially when found in heavy pockets and along field edges, but often it's not as bad as it looks.

The ugly. Soybean aphids and two-spotted spider mites earn themselves a place in the "ugly" category for their ability to reproduce rapidly and become a severe problem overnight. Both cause injury to plants in similar ways by piercing and sucking sap from soybean leaves, removing valuable sugar and moisture from the plant. Drought conditions favor their development and exacerbate the damage.

BAD BUGS: Bean leaf beetles, grasshoppers, green cloverworms and Japanese beetles, like the one pictured here, top the list of bad bugs in soybeans. MIRCEA/GETTY IMAGES



DEFOLIATION WORKSHEET: This illustration show levels of soybean defoliation, according to the University of Nebraska-Lincoln. Search for "soybean defoliation worksheet" at *cropwatch.unl.edu*.

RESILIENT PLANTS: Soybeans can tolerate a considerable amount of feeding without suffering significant yield loss, but do take stress conditions and plant height into consideration. GEORGE/GETTY IMAGES

Spider mites are also one of the most challenging soybean pests to control due to their location on the underside of leaves, limiting direct contact with miticides being sprayed. The lack of chemical control options for the egg stage of their life cycle allows for potential repopulating after eggs hatch.

Fortunately, in most years, spider mites and aphids are well controlled by predators and fungal pathogens.

OBSERVING FOLIAR DAMAGE

Evaluating defoliation in soybean fields is a matter of understanding the injury threshold and calibrating your eye to fairly judge the damage. There are many example images to help with this, but if you don't have one with you in the field, imagine a checkerboard. What percent of the board is red? (The answer is 50%.) Now you can use that visual to help you gauge the levels of defoliation on leaflets.

For those who are more tech-savvy, cellphone apps have been developed for this and can be useful, too.

The first sight of heavy defoliation can send people into a panic, but proper analysis of the whole field can give a realistic scope of the impact. It is important to consider the entire crop canopy, not just the top portion where the most injury is found. Take sample leaflets from the top, middle and lower third of random plants throughout the entire field and average their percent defoliation values.

Thresholds change from one stage of plant growth to another. When soybeans are flowering and starting to form pods, the threshold at which treatment may be warranted is 20% defoliation. Prior to that, the economic threshold is 30%.

Soybeans can tolerate a considerable amount of feeding without suffering significant yield loss, but do take stress conditions and plant height into consideration. Large, healthy plants will compensate for the injury better than small, stressed plants. As the season progresses, pay special attention to injury on soybean pods.

You'll know if beneficial insects are doing their job if you see them in the field and the population of pests and related crop injury remain below the economic threshold over time. This is why frequent scouting is so important, and why chemical control measures should only be implemented when economically necessary. Be diligent and refer to UW Pest Management Fast Facts for more information. Go to *ipcm.wisc.edu* and search for "pest fast facts."

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