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Checking the Back Forty

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NYS IPM Field Corn Pheromone Trapping Network for 2020 Caught Moths in Mid-April!

Ken Wise and Jaime Cummings – NYS IPM Program
blogs.cornell.edu/whatscroppingup/2020/04/17/nys-ipm-field-corn-pheromone-trapping-network-for-2020- caught-moths-in-mid-april/

Kevin's Note: I reached back a month for this article because it is great information and with moth flights of both True Armyworm and Black Cutworm continuing in the state it is time to start watching fields for these pests.

The NYS IPM Field Corn Pheromone Trapping Network has started trapping black cutworm (BCW) *Agrotis ipsilon* and true armyworm (TAW) *Mythimna unipuncta* moth flights in NYS. While it seems like it might be early, we have caught BCW and TAW moths this week in Western, NY in pheromone bucket traps. These moths migrate north on weather fronts from the southern US every year. Both BCW and TAW prefer feeding on grasses, such as grassy weeds, hay fields, small grains and corn.

Even though the number of moths caught this week were low, it indicates that they have arrived. From this point forward, we can set the "Biofix Date". The biofix date is the point where we start to calculate the number of BCW and TAM degree-days. We can predict when the eggs that were laid by moths will hatch. Degree-days are calculated by taking the high and low temperature each day and averaging them from the biofix date. Next, subtract the base temperature of 50 degrees Fahrenheit, and this will give you the daily degree-days.

Each day, add the number of BCW degree days and this will give you a total. When this reaches 90 BCW degree-days and 113 TAW degree-days, the eggs will start to hatch.

High Temperature + Low Temperature/2 – 500 F = daily BCW degree days

The easy way to calculate this is to use the NEWA Degree Day Calculator. This will calculate the degree-days from a weather station near your farm. Below is the information on degree- days for the lifecycle of BCW and TAW.

Table 1: True Armyworm Degree Days (Base 50° F)

Degree Days	Stage	Feeding/Activity
0	Moth Capture	Egg Laying
113	Eggs Hatch	
612	Larval stages	Leaf Feeding
909	Pupa	No feeding

Source https:/kentuckypestnews.wordpress.com/2017/04/25/scouting-for-true-armyworms-is-highly-recommended-in-small-grains-and-early-corn

A large number of moths in a trap does not necessarily mean there is going to be damage in your corn. It will depends on where the moths lay eggs. If a trap near your farm has a large number of moths, it would suggest it is time to scout for larvae and signs of feeding damage.

A good time to start scouting is when you take plant population counts. BCW damage is easy to identify. The larvae will cut the plant near the base at the soil surface, while TAW will feed from the edge of the leaf to the mid rib.

Table 2: Black Cutworm Degree Days (Base 50° F)

Degree Days	Stage	FeedingActivity
0	Moth Capture	Egg Laying
90	Eggs Hatch	
91-311	1st to 3rd Instar	Leaf Feeding
312-364	4th Instar	Cutting Begins
365-430	5th Instar	Cutting Begins
431-640	6th Instar	Cutting Slows
641-989	Pupa	No feeding

Source: https://swroc.cfans.umn.edu/sites/swroc.cfans.umn.edu/files/black_cutworm_facts_0.pdf

Black Cutworm	Threshold	Damage	Control
	5% or more plants have been cut		-Warrior II (Lamda-cyhlothrin) * -Lorsbane 4E (chlorpyrifos) * -Pounce (permethrin) *
Armyworm	**Threshold**	**Damage**	**Control**
	50% of plants show damage. 3 larvae/plant at whorl stage or younger		-Warrior II (Lamda-cyhlothrin) * -Lorsbane 4E (chlorpyrifos) * -Pounce (permethrin) *

*Restricted Use Pesticide

BCW and TAW larvae are primarily nocturnal or night feeders. Normally, you will not see them during the day. BCW larvae are ½ inch to 2 inches. They appear as greasy gray with darker raised spots on each segment. They normally hide in the soil near the base of the corn or under residue that might be on the surface.

TAW larvae range from ½ to 1.5 inches long. They have orange and white strips running along the side. They also have a white strip running down the back. TAW will hide under surface residue, in the whorl of the plant or in cracks in the soil.

True Armyworm
Photo by Keith Waldron, NYS IPM

If you are at threshold, and the larvae are still small, try to treat only the infected corn and a 20 to 40 foot border around the area. When the larvae are large (1.25 inches +) they are harder to kill with an insecticide, and they will pupate soon. When pupating, they will stop feeding.

One of the issues with BCW and TAW is that there can be multiple flights on different weather fronts throughout the spring. This can cause multiple infestations with different sizes of larvae in a field. Still follow the economic threshold, and manage if needed.

Our pheromone-trapping network has 25 traps of each BCW and TAW placed in 19 counties across the state. The counts and degree-days for many locations across NY will be published weekly starting later in April in the NYS IPM Field Crops Pest Report:
http://blogs.cornell.edu/ipmwpr/2020/05

This work is funded by the NYS Corn and Soybean Growers Association.

References:

University of Missouri-True Armyworm
https://ipm.missouri.edu/pestmonitoring/taw/taw.pdf

University of Minnesota Insect Pest of Corn-Stand Reducers Black Cutworm Cornell University Field Crop-Armyworm
https://swroc.cfans.umn.edu/sites/swroc.cfans.umn.edu/files/black_cutworm_facts_0.pdf

Purdue University-Armyworm Purdue University-Black Cutworm
https://extension.entm.purdue.edu/fieldcropsipm/insects/black-cutworms.php

Cornell University Guide for Integrated Field Crop Management
http://blogs.cornell.edu/ccefieldcropnews/2019/12/13/2020-cornell-guide-for-integrated-field-crop-management-now-available

Scouting for True Armyworms Is Highly Recommended in Small Grains and Early Corn- University of Kentucky
https://kentuckypestnews.wordpress.com/2017/04/25/scouting-for-true-armyworms-is-highly-recommended-in-small-grains-and-early-corn/

Also watch for slugs

Another possible spring pest in corn and soybeans is slugs. Slugs appear to be a snail without a shell. While it seems easy to see the big orange/brown slugs we find around gardens it can be much more difficult to find the grey field slugs that cause damage in field crops. During the day when we are looking for them they are likely in the soil and depending on when in the lifecycle you are looking may be very small and hard to find

Slugs are found in moist conditions very typically under residue in a field. Often damage to corn and soybeans are to plants growing through residue and a plant away not in residue will have little or no feeding. Slugs scour corn leaving leaves with streaks are silver or grey and may end up tattered. Corn plants typically grow out of this; the growing point is still in the ground unaffected. Soybeans seedlings are usually worse off as slug feeding may remove cotyledons and all growing points leaving a dead plant.

Slugs like the seed furrow left in notill crops and find it easy to move in it as seen in Figure 1. What was surprising was the seeds that had the new shoot and root radicle eaten back into the seed so it was hollowed out and done (Figure 2). This happens rarely but is a reminder of where slugs like to be and given the colder soil temperatures this spring corn wasn't jumping out of the ground so slugs took advantage of the situation. There was also a small grain cover crop that had been burned down so the slugs had that residue they like to stay under. Again slugs typically feed on the emerged corn seedling but went for the closest plant part they could find in this case.

Figure 1. Slug top and corn seed below in the seed furrow

Figure 2. Corn seed hollowed out from slugs

Not likely enough damage to replant in this case but a reminder to keep checking field for issues this spring.

References:
Biology and Life Cycle of the Gray Field Slug, Oregon State University, College of Agricultural Sciences Slug Portal
https://agsci.oregonstate.edu/slug-portal/life-slug/biology-and-life-cycle-gray-field-slug

Slug Management in Illinois Field Crops, April 19, 2018 by Nick Seiter, University of Illinois Extension
http://bulletin.ipm.illinois.edu/?p=4103

Fusarium head blight commentary on winter barley and wheat: May 22, 2020

Dr. Gary Bergstrom, Extension Plant Pathologist, Cornell University

Figure 3. Awns and heads emerging from the boot in malting barley

Winter malting barley in much of New York is emerging from the boot and this is a critical time to consider a fungicide application. The Fusarium Risk Assessment Map (http://www.wheatscab.psu.edu/) today indicates a moderate to high risk of Fusarium head blight (FHB) for some areas of New York. Rain showers and thunderstorms are in local forecasts over the next week; duration of leaf/head wetness is more important for FHB development than is the amount of precipitation. Maximal suppression of FHB and grain contamination by deoxynivalenol (DON) mycotoxin results when fully emerged heads of winter malting barley are sprayed with DMI (FRAC Group 3) containing fungicides Caramba, Prosaro, or Miravis Ace (latter includes FRAC Group 7 fungicide). A heads-emerged spray with these fungicides also protects upper leaves against fungal leaf blotches, powdery mildew, and rust. Scald has already been observed on susceptible varieties. Foliar sprays of any of these three products up to seven days after head emergence may still result in significant FHB and DON suppression. Fungicide products containing QoI (FRAC Group 11) fungicides should not be applied to headed wheat or barley as they may result in increased levels of DON in grain.

Winter wheat is generally a week or more behind in development from winter barley planted on the same fall date. Winter wheat in New York varies from stem elongation to flag leaf visible stages. We should reach the critical fungicide application window for winter wheat over the next two weeks. The DMI (FRAC Group 3) containing fungicides Caramba, Prosaro, or Miravis Ace (latter includes a FRAC Group 7 fungicide) are the most effective fungicides for suppression of FHB and DON contamination when applied at flowering (emergence of yellow anthers on heads). A flowering application of these fungicide products should be based on Fusarium head blight (FHB) risk as well as the risks of powdery mildew, rusts, and fungal leaf blotches in the upper canopy based on scouting of individual fields. Stagonospora nodorum blotch and powdery mildew have already been observed. There is an application window of approximately 7 days from the beginning of flowering in which reasonable FHB and DON suppression can be expected. Check the Fusarium Risk Assessment Tool (http://www.wheatscab.psu.edu/) and your local weather forecast frequently as your winter wheat crop approaches heading and flowering.