

Pest&Crop newsletter

Purdue Cooperative Extension Service and USDA-NIFA Extension IPM Grant

This work is supported in part by Extension Implementation Grant 2017-70006-27140/ IND011460G4-1013877 from the USDA National Institute of Food and Agriculture

In This Issue

- [Western Bean Cutworm Moth Season Begins](#)
- [What is That and are They Harmful?](#)

- [Irrigation Scheduling Tools](#)
- [Total Precipitation June 14-20, 2018](#)
- [Average Temperature Departure from Mean June 13-19, 2018](#)

It is the policy of the Purdue University that all persons have equal opportunity and access to its educational programs, services, activities, and facilities without regard to race, religion, color, sex, age, national origin or ancestry, marital status, parental status, sexual orientation, disability or status as a veteran. Purdue is an Affirmative Action Institution. This material may be available in alternative formats. 1-888-EXT-INFO Disclaimer: Reference to products in this publication is not intended to be an endorsement to the exclusion of others which may have similar uses. Any person using products listed in this publication assumes full responsibility for their use in accordance with current directions of the manufacturer.

Pest&Crop newsletter © Purdue University - extension.entm.purdue.edu/newsletters/pestandcrop
Editor: Tammy Luck | Department of Entomology, Purdue University, 901 W. State St., West Lafayette, IN 47907

Western Bean Cutworm Moth Season Begins

Authors: Christian Krupke and John Obermeyer

Pheromone trapping began for western bean cutworm moths this week. Within just one day several cooperators were reporting catches. This is just the beginning of an extended moth emergence and flight, with their peak activity expected 2-3 weeks from now. Those in high-risk areas, i.e., sandy soils, high moth flight and WBC history, should be gearing up for field scouting of corn, even those with Bt-traits.

Scouting of **pre-tassel** corn should begin once multiple moths are being captured regularly. In five different areas of a field, inspect 20 consecutive plants for egg masses which are laid on the upper surface of the top leaves of corn and/or larvae that may have hatched and crawled to the whorl and begun to feed. Usually the newest, vertical leaf is the best place to look for egg masses. Young larvae need pollen to survive, and female moths are most attracted to cornfields that are just about to pollinate. However, moths will lay eggs on whorl stage corn when pre-tassel/pollinating corn is not available. After hatching, larvae immediately crawl down into the whorl for protection, and begin to feed on leaf tissue. Later damage from larvae, as they feed deep in the whorl (attacking the tassel to get at pollen), will resemble corn borer or fall armyworm damage. Initially the damage will be subtle and not economically important (or even noticeable). Later stage larvae enter the ear and feed on corn kernels and can cause economic damage, and also can exacerbate ear rots, including Gibberella ear rot.



It is the policy of the Purdue University that all persons have equal opportunity and access to its educational programs, services, activities, and facilities without regard to race, religion, color, sex, age, national origin or ancestry, marital status, parental status, sexual orientation, disability or status as a veteran. Purdue is an Affirmative Action Institution. This material may be available in alternative formats. 1-888-EXT-INFO Disclaimer: Reference to products in this publication is not intended to be an endorsement to the exclusion of others which may have similar uses. Any person using products listed in this publication assumes full responsibility for their use in accordance with current directions of the manufacturer.

Western bean cutworm moth waiting in the whorl during the heat of the day.

Remember that WBC larvae are no longer susceptible to most of the Bt traits in our corn hybrids (including those in SmartStax hybrids) and therefore scouting, followed by timely insecticide sprays are really the only reliable control option for the vast majority of producers that are in the zone where this insect is common, principally the northern tier of counties in Indiana, extending into Michigan and parts of Ohio. Only Bt hybrids expressing the Vip3a toxin will offer reliable control of this pest, so be sure to know what you have in your field and scout as needed. See this handy [Bt Trait Table](#) to check where your hybrids fit in terms of the pests managed.

Beginning next week, we will publish our trapping cooperator's moth catches, that are scattered throughout the state. There is still time to order materials and begin trapping for your operation. We order our supplies from [Great Lakes IPM](#). Stay tuned for further developments of this pest.



Trapping materials for western bean cutworm...you can do this at home!

Pest&Crop newsletter © Purdue University - extension.entm.purdue.edu/newsletters/pestandcrop
Editor: Tammy Luck | Department of Entomology, Purdue University, 901 W. State St., West Lafayette, IN 47907

What is That and are They Harmful?

Author: John Obermeyer

Several have asked about orange/yellow beetles that seem to be everywhere, especially on flowering plants. They are likely soldier beetles, also known as leatherwings. These beetles are about ½" long, with yellow wings and splashes of black. They resemble, and sometimes are confused with, fireflies. Both the adults and larvae, that spend their time in the soil, are predators of soft-bodied insects, e.g., eggs, caterpillars, etc. If the adults cannot find an abundance of prey, they will feed and gather on the pollen of flowering plants – a protein source for many insects. They do not cause harm to plants, they are good guys...do not smash, squish or spray them!



Soldier beetles feeding on dandelion pollen.

Irrigation Scheduling Tools

Authors: Lyndon Kelley, Extension Irrigation Education, MSU Extension/Purdue Extension and Steve Miller, Irrigation Specialist, Biosystem and Agricultural Engineering

Irrigation scheduling by accounting for changes in available soil moisture provides information on the timing and amount of water to apply to meet crop needs. "Checkbook" irrigation scheduling confirmed with soil moisture monitoring can improve irrigation scheduling decisions. Checkbook scheduling is discussed below.

Checkbook method of irrigation scheduling follows the concept that the soil in your field is like a bank checking account. Rainfall and irrigation applications are deposits into the checking account. Rainfall and irrigation may need to be reduced to reflect the effective amount added to soil moisture. Daily water removal from evaporation and transpiration (evapotranspiration or ET) from the field and crop would be considered withdrawals from the account. Soil has a maximum amount of water that can be held (called Field Capacity), so water added beyond the soils water holding capacity is lost to the account. Irrigation applied at a rate exceeding the infiltration capacity will cause surface runoff and be lost to the soil water balance account.

Four different checkbook irrigation scheduling tools are available through Purdue or MSU Extension as described in the following

paragraphs:

Enviro-weather computes daily estimate of potential ET and projects ET demands for 7 days at each of the 58 strategically located weather stations in Michigan calculating crop ET using wind, relative humidity, and net solar radiation in addition to temperature to estimate crop ET demands. Estimates are available from:

<http://www.enviroweather.msu.edu>. Pick the station nearest to you, then click on one of the categories listed near the top of the screen (e.g. *Field crops, Fruit*, etc.), and then click on "Potential Evapotranspiration." For corn and soybeans, clicking the "Crop ET Estimate" button, then entering the crop emergence date will allow tracking the crop's ET as the crop develops. A free service of Enviro-weather Network sends daily reports of ET from the previous four days and projected values for the next week by text or email to producers that sign up at: <http://www.enviroweather.msu.edu/homeMap.php>.

The MSU Soil Water Balance Sheet is a paper version of a checkbook scheduler where producers can use Reference Evapotranspiration (ET) Data from their own ET gauge station or Reference ET data from the Purdue Agricultural Center weather stations (<http://www.iclimate.org/>). For Michigan, producers can use the Enviro-weather data listed above. The Soil Water Balance Sheet helps producers convert the Reference ET into an estimate of water removal for either corn or soybeans in their field. The Soil Water Balance Sheet is available at <http://msue.anr.msu.edu/program/info/irrigation>; scroll down to "Irrigation Resources Developed by Lyndon Kelley" and click on "Soil Water Balance Sheet".

MSU Excel Version of Scheduler allows greater flexibility and adaptability to irrigators who are comfortable using Excel. This method will provide results for all of Michigan and the upper tier of counties in Indiana. Reference crop ET can be taken from each of the Enviro-weather stations where the program will use the crop-specific coefficient to adjust for your crop stage of growth. The MSU Excel version of Scheduler is available from: <http://www.agweather.geo.msu.edu/mawn/irrigation/>.

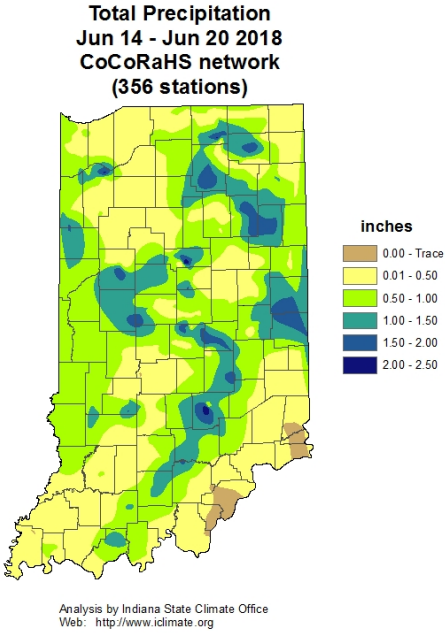
Irrigation Scheduler is a simple computerized irrigation scheduling checkbook model from the Agronomy Department of Purdue University. This method can be used throughout Michigan and Indiana. Crop specific ET values are estimated using the daily high and low temperatures and rainfall provided by the producer or weather data can be imported from the internet. **Irrigation Scheduler** is available from: www.purdue.edu/agsoftware/irrigation.

In Michigan, use of irrigation scheduling is required to be in compliance with Generally Accepted Agricultural Management Practices: <http://www.michigan.gov/mdard/0,1607,7-125-156715991605—,00.html>.

All of the above mentioned irrigation scheduling tools, plus other irrigation management information is available from: <http://msue.anr.msu.edu/county/info/st.joseph>; on the right side of the screen under "St. Joseph County Programs" click the drop down arrow and select "Irrigation".

It is the policy of the Purdue University that all persons have equal opportunity and access to its educational programs, services, activities, and facilities without regard to race, religion, color, sex, age, national origin or ancestry, marital status, parental status, sexual orientation, disability or status as a veteran. Purdue is an Affirmative Action Institution. This material may be available in alternative formats. 1-888-EXT-INFO Disclaimer: Reference to products in this publication is not intended to be an endorsement to the exclusion of others which may have similar uses. Any person using products listed in this publication assumes full responsibility for their use in accordance with current directions of the manufacturer.

Total Precipitation June 14-20, 2018

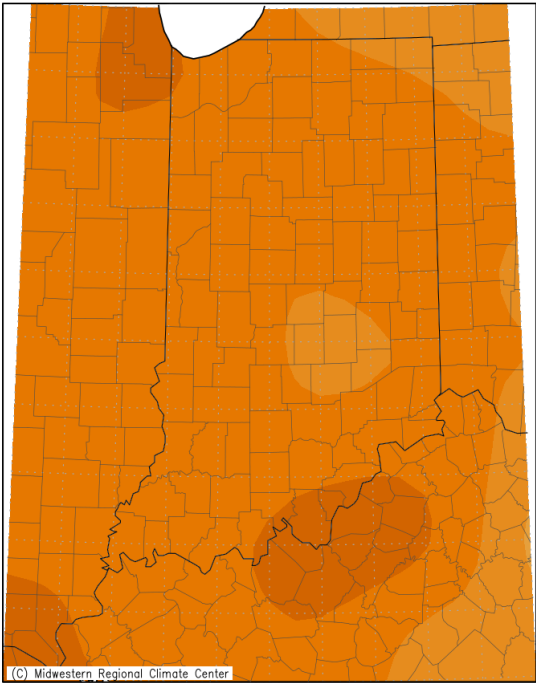


It is the policy of the Purdue University that all persons have equal opportunity and access to its educational programs, services, activities, and facilities without regard to race, religion, color, sex, age, national origin or ancestry, marital status, parental status, sexual orientation, disability or status as a veteran. Purdue is an Affirmative Action Institution. This material may be available in alternative formats. 1-888-EXT-INFO Disclaimer: Reference to products in this publication is not intended to be an endorsement to the exclusion of others which may have similar uses. Any person using products listed in this publication assumes full responsibility for their use in accordance with current directions of the manufacturer.

Pest&Crop newsletter © Purdue University - extension.entm.purdue.edu/newsletters/pestandcrop
Editor: Tammy Luck | Department of Entomology, Purdue University, 901 W. State St., West Lafayette, IN 47907

Average Temperature Departure from Mean June 13-19, 2018

Average Temperature (°F): Departure from Mean
June 13, 2018 to June 19, 2018



Mean period is 1981–2010.



Indiana State Climate Office www.iclimate.org
Purdue University, West Lafayette, Indiana
email: iclimate@purdue.edu