

# Wisconsin Crop Manager

Volume 19 Number 18 --- University of Wisconsin Crop Manager --- July 19, 2012

## What's New

New Soil and Water Management Extension Specialist Joins UW..... 64

## Crops

Corn Pollination: How to Determine Success under Stress (Video)..... 64

Vegetable Crop Update..... 65

Will we have enough corn?..... 65

## Insects and Mites

Dry Weather Increases Risk of Twospotted Spidermite..... 64

Wisconsin Pest Bulletin 7/12/12 and 7/19/12 ..... 64

Corn rootworm and root node injury scoring (Video).... 65

Western bean cutworm, field and sweet corn..... 66

## Plant Disease

Plant Disease Diagnostic Clinic (PDDC)..... 65

while helping farmers remain economically competitive and sustainable. If you have any questions, comments, or suggestions for Francisco, he can be contacted by Email at [farriaga@wisc.edu](mailto:farriaga@wisc.edu) or telephone at 608-263-3913.

## Corn Pollination: How to determine Success under Stress (Video)

Dr. Joe Lauer, University of Wisconsin Corn Agronomist, takes you into the field to show you how to determine if pollination has occurred using the ear shake test. By knowing if pollination has been successful or not, a grower can better choose when to harvest for maximum forage yield during a drought or otherwise stressful season.

Typical management options and uses are available for corn that has successfully pollinated. If pollination is unsuccessful, we are usually left trying to make the best of a bad situation. For corn growing in Wisconsin, Dr. Lauer discusses pollination typically occurring before August 1 and why that is key during this dry season.

[Click here or on the image below to watch this video](#)



## New Soil and Water Management Extension Specialist Joins UW

The Wisconsin Crop Manager contributors would like to introduce you to our newest colleague. Francisco Arriaga joined the Department of Soil Science and UW-Extension as a Soil and Water Management Specialist on July 2. He started his career as a soil scientist in his native Puerto Rico, where he conducted his undergraduate studies and interned with the Soil Conservation Service (now NRCS). He received an MS from Auburn University in Agronomy and Soils, and a PhD in Soil Science (applied soil physics) from UW-Madison. Francisco spent the past 9 years working for the USDA-Agricultural Research Service (ARS) conducting research on conservation agriculture systems. His research focused on the development of conservation tillage practices that enhanced soil quality, soil hydraulic properties, and plant water use through the adoption of cover crops and non-inversion tillage for traditional cropping systems of the Southeast. Francisco's overall goals are to promote soil and water conservation and protection in Wisconsin,

## Dry Weather Increases Risk of Twospotted Spidermite

Eileen Cullen (Extension Entomologist)

Drought conditions in Wisconsin continue to favor twospotted spider mite development and potential for field

infestation and outbreaks. Our previous article has been updated with more detailed information on calculating economic injury levels for twospotted spider mites in corn. [Click here to view the updated article.](#)

## Wisconsin Pest Bulletin 7/12/12 and 7/19/12

Two new issues of the Wisconsin Pest Bulletin from the Wisconsin Department of Agriculture, Trade and Consumer Protection is now available. The Wisconsin Pest Bulletin provides up-to-date pest population estimates, pest distribution and development data, pest survey and inspection results, alerts to new pest finds in the state, and forecasts for Wisconsin's most damaging plant pests.

Issue No. 13 of the Wisconsin Pest Bulletin is now available at:

<http://datcpservices.wisconsin.gov/pb/pdf/07-12-12.pdf>

Issue No. 14 of the Wisconsin Pest Bulletin is now available at:

<http://datcpservices.wisconsin.gov/pb/index.jsp>

<http://datcpservices.wisconsin.gov/pb/pdf/07-19-12.pdf>

## Corn rootworm damage and root node injury scoring (Video)

Bryan Jensen, University of Wisconsin Integrated Pest Management Program, takes you into the field to show you how to use root node injury scoring with corn root worm damage to corn.

Crop rotation is an excellent method of controlling corn rootworms. Larvae perish soon after hatching if a crop other than corn is planted in the field they inhabit. Refer to UWEX publication A3646 Pest Management in Wisconsin Field Crops for management practices.

[Click here or on the image below to watch this video](#)



## Plant Disease Diagnostic Clinic (PDDC)

Brian Hudelson, Ann Joy, Amanda Zimmerman, Adam Greene, Andrew Pape, Plant Disease Diagnostics Clinic

PLANT/SAMPLE TYPE	DISEASE/DISORDER	PATHOGEN	COUNTY
<b>FIELD CROPS</b>			
Corn	Anthraxnose	<i>Colletotrichum graminicola</i>	Rusk
	Heat Stress	None	Rusk
	Northern Corn Leaf Spot	<i>Bipolaris zeicola</i>	Rusk
Soybean	Amino Acid Synthesis Inhibitor Herbicide Injury	None	Dodge
<b>FRUITS</b>			
Apple	<a href="#">Cedar-Apple Rust</a>	<i>Gymnosporangium juniperi-virginianae</i>	Dane
Strawberry	<a href="#">Root/Crown Rot</a>	<i>Phytophthora</i> sp., <i>Rhizoctonia</i> sp., <i>Fusarium</i> sp., <i>Cylindrocarpus</i> sp.	Oneida, Waupaca
<b>VEGETABLES</b>			
Pea	<a href="#">Powdery Mildew</a>	<i>Oidium</i> sp.	Jackson
Tomato	Leaf Mold	<i>Fulvea fulva</i>	Dane
	<a href="#">White Mold</a>	<i>Sclerotinia sclerotiorum</i>	Dane

The PDDC receives samples of many plant samples from around the state. The following diseases/disorders have been identified at the PDDC from July 6 through July 12, 2012:

For additional information on plant diseases and their control, visit the PDDC website at [pddc.wisc.edu](http://pddc.wisc.edu).

## Vegetable Crop Update 7/18/12

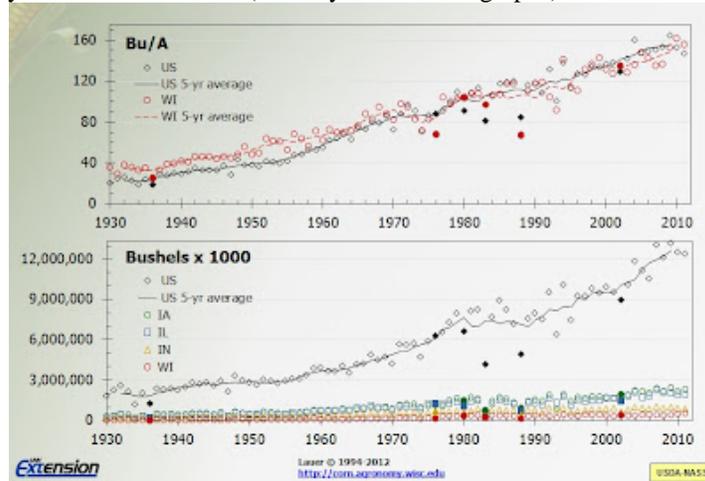
The 17<sup>th</sup> issue of the Vegetable Crop Update is now available. This issue contains information on crop and disease updates. [Click here to view this update.](#)

## Will we have enough corn?

Joe Lauer, University of Wisconsin Corn Agronomist

I have been getting questions about the impact of the drought on corn production from this year's crop. It is still too early to predict the success of pollination and the drought's impact on yield and production, although it is not looking good. Once we are through pollination we can better estimate and at least get a feel for what to expect during this fall's harvest.

Another indicator may be to look back at other years that were considered to be drought years in Wisconsin and the U.S. (Figure 1). In Figure 1 the rolling average mean is + two years on either side of a central year. For example, the rolling average for 1988 is the mean yield or production of 1986 through 1990. There were numerous 'dry spells' during the 1950s, however, six growing seasons, 1936, 1976, 1980, 1983, 1988 and 2002 have been identified as significant 'drought' years in the Corn Belt (filled symbols in the graphs).



*Corn grain yield (Bu/A) and production (Bushels x 1000) in Wisconsin and the United States. Filled symbols indicate drought years. Data source: USDA-NASS.*

Most of these 'drought' years had yields lower than the 5-yr average. Wisconsin yields were better than U.S. yields during 4 of 6 drought years. In 1976, Wisconsin grain yields were 80% of the 5-yr average, in 1988 yields were 63% of the 5-yr average.

Corn production in Wisconsin is relatively small compared to overall U.S. production. Nationally the most significant years impacting production were the droughts of 1983 and 1988 where production was 56% and 69% of the 5-yr average. Corn production influences price, so the more important statistic for the consumer of corn is production. Consumers include livestock feeders such as beef, dairy, pork and poultry; ethanol; export markets; other food, seed and industrial uses; and additionally a surplus is carried over to the next year. In 2011, corn growers produced 12.4 billion bushels of field corn (USDA, 2012). The total corn supply, including the corn carried over from 2010, was 13.5 billion bushels. About 34% was used for livestock, 37% for ethanol production, 12% for export, 11% for other uses and 6% for carryover to the next year. In addition about 33% of the corn used to produce ethanol is fed by the livestock industry as dried distiller grains and gluten feed.

The additional acres planted to corn during 2012, a 5% increase compared to 2011, will become important for the overall production of corn. These will be needed along with the carry over to supply consumers during 2013.

#### Literature cited

USDA-NASS. 2012. Quick Stats. [http://www.nass.usda.gov/Quick\\_Stats/](http://www.nass.usda.gov/Quick_Stats/).

#### Further reading

Anonymous. 2012. A tale of two corns. National Corn Growers Association Fast Facts. Website [http://www.ncga.com/uploads/useruploads/tale\\_of\\_two\\_corns\\_2012.pdf](http://www.ncga.com/uploads/useruploads/tale_of_two_corns_2012.pdf)

---

## Western Bean Cutworm, Field and Sweet Corn

Eileen Cullen, Extension Entomologist

As reported in the WDATCP [Wisconsin Pest Bulletin updates](#), also featured weekly here on the Wisconsin Crop Manager Newsletter blog site, the western bean cutworm degree-day model indicates that 75% or more of the adult population has emerged as far north as Stevens Point in Portage County. Moth counts have begun to decline across the southern half of the state. By contrast, emergence is about 50% complete (peak emergence) in the north-central and northeastern counties. High counts for the period of July 12-18 were 135 moths in the black light trap near Sparta in Monroe County and 96 moths in the pheromone trap near Wautoma in Waushara County.

While scouting field corn and processing sweet corn fields for western bean cutworm eggs and small larvae, keep in mind the following economic thresholds:

For field corn, use an economic threshold of 5% field infestation with egg masses and/or small larvae.

Processing sweet corn threshold is 4% field infestation with egg masses and/or small larvae.

Female western bean cutworm moths prefer to lay eggs in pre-tassel fields. Most field corn fields have tasseled and are in the critical pollination stage. Drought stress has led to a more varied landscape among fields in terms of tassel and silk development and pollination stress or success. Talking with Joe Lauer, UW Madison Corn Agronomist, today there are unfortunately drought-affected fields that have tasseled and pollination was disrupted by the drought resulting in barren ears.

Keep in mind that as tassels in cornfields emerge and dry, female moths seek later-developing cornfields (field and sweet corn) or dry beans for oviposition. It's important to scout fields now that have tasseled and have silk development, as well as any later planted field corn or sweet corn planting dates that may still be a pre-tassel or tasseling. In a couple of calls over the last week, growers have been in the field scouting for twospotted spider mite and that is when they have noticed [western corn rootworm adults](#). Remember to scout for western bean cutworm egg masses and/or small larvae at this time before larvae enter the ear.

This article features pictures of early instar larvae, which look quite different than later instar larvae found in ears.



*Western bean cutworm egg mass near/at hatch. Egg mass turns from cream colored to purple 24-48 hours before hatch. Newly hatched larvae consume the egg shell, so egg masses are most evident before or immediately after hatch.*

*(Photo: E. Cullen, Univ. of Wisconsin-Madison)*



*In addition to egg masses, look for early instar larvae on plant surfaces (leaves, tassels, leaf axils, silks) before larvae enter the ear.*  
(Photo: E. Cullen, Univ. of Wisconsin-Madison).

Scout cornfields for eggs and larvae by examining the upper surfaces of the leaves at the top of the plant, and leaves above and below the ear zone. Examine 20 consecutive plants at five locations in the field. Fields with uneven growth stages, different planting dates, or planted to different hybrids should be inspected thoroughly because oviposition occurs over several weeks and female moths prefer to lay eggs in pretassel corn – so planting date and tassel development sequence will give you a guide to which fields to scout first. In addition to eggs, look for small larvae on leaf axils, at the intersection of the leaf and stalk, and on silks and husks.

If eggs have hatched, insecticide should be applied after 90-95% tassel emergence.

Larvae must encounter insecticide or residue before entering the ear – once they enter the ear insecticide will not contact larvae, making control ineffective. If eggs have not yet hatched, time insecticide application as close to expected hatch as possible when egg masses have reached the dark purple stage.

Many Bt Corn hybrids include western bean cutworm in the spectrum of control, but a few do not. Refer to the following publication for a quick reference of Bt traits and above-ground insects control spectrum. [Handy Bt Trait Table](#) (Difonzo and Cullen, 2012).

#### **References:**

Michel A.P., C.H. Krupke, T.S. Baute, and C. D. Difonzo. 2010. Ecology and management of western bean cutworm (Lepidoptera:Noctuidae) in corn and dry beans. *Journal of Integrated Pest Management* 1(1): A1-A10. [PDF](#)

Cullen, E., V. Davis, P. Esker, B. Jensen, and M. Renz. 2012. Pest management in Wisconsin field crops. Publication A3646. University of Wisconsin-Extension Cooperative Extension Publishing, Madison, WI. [PDF](#)