

Title: The 2017 NYS Field Crops Weekly Pest Report and Evaluation

Project Leaders:

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Cooperators: Cornell Cooperative Field Crop Extension Educators and Faculty

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Project location: New York State

Abstract

The NYS Field Crop Weekly Pest Report provides timely pest information to field crop extension educators and agricultural professionals. The report compiles weekly pest and crop observations collected by field crop extension personnel across NYS. In addition, the weekly report provides a vehicle to disseminate other relevant IPM information such as pest identification, scouting techniques and a calendar with suggestions for pest management activities. The pest report is distributed as a Cornell Cooperative Extension Blog <http://blogs.cornell.edu/ipmwpr/>. Subscribers (148) to this blog include: Extension Educators, crop consultants, growers, agribusiness, and Cornell University Faculty. We also place the blog link on the NYS IPM facebook page (697 followers) and NYS IPM Field Crops Twitter account (433 followers). Twenty one issues of the NYS Weekly Pest Report were published in 2017. Extension Educators and crop consultants utilize the Weekly Report as an overview of timely pest information, and have found the report useful in alerting their local clientele regarding pest management issues. Results from an evaluation survey indicate users extended articles from the report to approximately 5000 plus individuals by republication in newsletters or forwarding the report on their own list server. Many crop consultants who responded indicated they used pest report information directly with growers.

Background and Justification

The NYS IPM Field Crops Pest Report is designed to inform growers, Extension Educators, crop consultants, agricultural professionals on items of immediate pest management concern and provide a convenient news summary that can also be used in an outreach multiplier capacity with their clientele. The report is a compilation of recent pest observations, potential geographic areas or cropping scenarios affected and the amount and potential significance of observed or anticipated pest infestations. The pest report is short, concise and contains links to pest identification photographs and additional management information. Much of the pest alert information is obtained through a weekly conference call with field crop extension educators.

Extension Educators and crop consultants are responsible for providing their clientele with timely information to help enhance crop and pest management decisions. The report provides educational information that can be used in programming, newsletters, list-serves and outreach efforts. Readers can select the pest information that best fits their county situation and clientele's needs.

The report, now in its 16th year of publication, was developed by the NYS Livestock and Field Crop IPM Program Team with the involvement of field crop extension educators and faculty across NYS. The pest report is distributed electronically through a Cornell Cooperative Extension Blog

<http://blogs.cornell.edu/ipmwpr/>.

Objectives:

1. Provide current pest information to field crop extension educators, crop consultants, growers, agribusiness, and Cornell Faculty on a weekly basis
2. Evaluate the impacts of the weekly pest report

Procedures:

The NYS IPM Program Livestock and Field Crop (LFC) team worked with extension educators to identify timely pest and crop management issues. The LFC team collaborated with Extension Educators and crop consultants from across NYS who shared their local pest and crop observations. The LFC Team prepared the report based on anticipated pest occurrence and feedback on timely field observations. Many of these field observations were communicated by extension educators via a weekly field crop IPM conference call. The report used a concise newsletter format and targeted educational articles. The LFC Team was responsible for developing, compiling and publishing the Weekly Pest Report. Regular features of the weekly report included a view from the field, weather outlook, timely updates on current pest issues such as fusarium head blight, western bean cutworm, growing degree days and alfalfa weevil & black cutworm life stage predictions, livestock pest updates, articles highlighting critical, timely or emerging pest issues and a clipboard checklist highlighting suggested activities for the following week. Photographs and internet links to identification pictures and in-depth management practices were provided within articles when possible.

The information was formatted into the weekly report and shared with clientele via the NYS IPM Weekly Field Crops Pest Report Blog Site <http://blogs.cornell.edu/ipmwpr/>. The weekly report blog link was also posted on our facebook (<https://www.facebook.com/NYSIPM>) and twitter pages (<https://twitter.com/NYSFieldCropIPM>).

At the completion of the growing season, subscribers to the WPR blog were invited to complete a survey to evaluate usefulness and the potential impact of the 2017 NYS Field Crop Weekly Pest Report. The evaluation survey was conducted using google forms on-line survey. An email was sent to subscribers of the blog and on the In-house Cornell Field Crops Staff list-serve and the General Cornell Field Crops list-serve. We did not send notice by twitter or Facebook because many of the followers are not from NY.

Results and Discussion:

This was the 16th season of the Weekly Field Crop Pest Report (WPR). The report moved from a list serve email newsletter to a blog format which allowed an easier, more time-efficient means to post the newsletter, an automated self-subscription feature, automatic archiving and easy article retrieval (<http://blogs.cornell.edu/ipmwpr/#>). One hundred and eighteen individuals including extension educators, private consultants, agribusiness and growers currently subscribe to the WPR. Twenty issues were released this season between May 4 – September 28, 2017. The WPR newsletter template contains several standard sections: a view from the field summarizing pest observations made and shared for that week, a weather forecast for the next week's weather (contributed by the Northeast Climate Center at Cornell), 1 or more timely articles on pests of importance and a weekly checklist of suggested IPM activities for the following week.

Trends In 2017

- Potato Leafhopper was widespread across the state and caused some economic losses on alfalfa this last summer with the combination of drought.

- There was an increase in western bean cutworm populations in pheromone traps in NY damage to corn in northern and western NY increased.
- Black cutworm and true armyworm caused damage to many corn fields in Western NY
- There were a lot of issues with small grain diseases on malting barley, winter wheat, triticale and some spring grains. These were net blotch and scald on malting barley, leaf rust and stripe rust on winter wheat, leaf rust on triticale, powdery mildew and stagonospora nodorum blotch on all small grains.

The weekly pest report helped field crop producers and others keep informed on current status of statewide pest issues and provided a forum for detailed discussions on a variety of topics including: updates on the Fusarium Head Blight prediction model and fungicide use decision making (wheat), corn fungicide use considerations, western bean cutworm updates on risk to field corn and dry bean, weed management recommendations and decision making, vertebrate damage to field crops, sharing of timely resources and field monitoring reminders.

The 2017 report contained a total of 130 individual articles addressed different pests that include a wide variety of field crop insects, plant diseases, weeds, and vertebrate pests of concern this past season.

An index of the insect, disease, weed and “other” pest topics that were presented in the 2017 weekly pest report is provided in Appendix 1.

Weekly Report Evaluation:

To obtain feedback on the effectiveness of the weekly pest report our users were invited to respond to an online survey questionnaire. Evaluation questions ranged from “How useful was the pest report?” to “What did you like the most about it?” The survey questionnaire can be viewed at: [NYS IPM Weekly Field Crops Pest Report Impact Survey](#). Thirty-nine individuals completed the online survey. Survey responses were very positive indicating satisfaction with the Report’s content, format, timeliness, and usefulness as a source of valuable subject matter information for use in additional outreach situations. The following tables and figures summarize responses to survey questions:

Table 1: Responses to “We are interested in your assessment of the usefulness of the following topic items that regularly appeared in the Field Crops IPM Weekly Pest Report.”

N=37	Very Useful	Somewhat Useful	Not sure	Not Useful	Not at all useful
The NYS 2017 Weekly Field Crops Pest Report was:	67%	30%	3%	0%	0%
View from the field	78%	19%	3%	0%	0%
Weather Outlook	30%	43%	14%	16%	0%
Weekly Featured article(s)	54%	43%	3%	0%	0%
Pest Images / Photographs	86%	14%	0%	0%	0%
Western Bean Cutworm Update	40%	43%	17%	0%	0%
Growing Degree Days	37%	49%	14%	0%	0%
Clipboard Checklist	30%	49%	7%	14%	0%

Table 2: Responses to by participants on the impacts of the pest report.

	Yes	No
Have you used or shared articles from the NYS Weekly Field Crops Pest Report in your newsletters/email list server or social media?	38%	62%

Results from the evaluation survey indicate users extended articles from the report to approximately 5000 individuals by republication in newsletters or emails. Many extension educators and crop consultants who responded indicated they used pest report information directly with growers. These included: field meetings with growers, one on one contact with growers, as forwarded emails to growers and agribusiness personnel, enhanced personal knowledge of what pest problems are occurring in NYS, and providing a direct internet link from to pest report article topics to related website resources.

Table 3: How do you access or receive the NYS IPM weekly field crops pest report:

Email Field Crops list-serve	97%
NYS IPM Field Crops Pest Report Blog site notice	18%
NYS IPM Field Crops Twitter	8%
NYS IPM Facebook page	0%

Table 4: Demographics on those that use the pest report

Farmer/Producer	16%
Extension Educator	35%
Professional Crop/Farmer Consultant	37%
Government Agricultural Professional	0%
Non-Profit Agricultural Organization	3%
Other	10%

Table 5: Assessing future needs of field crop and livestock cliental: “What online resources would be useful to you?”

	Very Useful	Somewhat Useful	Not sure	Not Useful	Not at all useful
N=37					
Short on-line demonstration videos (You Tube) on specific pest issues	57%	32%	11%	0%	0%
Downloadable IPM brochures	38%	38%	22%	2%	0%
Downloadable IPM management pocket guides	38%	49%	11%	2%	0%
Pest images and identification information	92%	6%	2%	0%	0%
IPM Phone Apps	30%	22%	24%	11%	13%
Use Twitter to disseminate IPM information	8%	10%	25%	25%	32%
Use Facebook to disseminate IPM information	11%	14%	30%	11%	35%

Several 2017 pest issues were particularly significant and worthy highlighting:

Highlight 1: Western bean cutworm (WBC) poses risk to corn (field, sweet) and dry bean production. This insect, a native of western US high plains states, was unique to that area until the late 1990's. Since then it's range has expanded eastward and was first detected in NY, PA and Quebec in 2009, CT in 2010 and MA, ME and VT in 2011. The NYS trapping network has revealed western bean cutworms are widely distributed across the state and populations are increasing, posing a potential risk to dry beans and the over 3.5 million acres of corn grown in NY, PA, and VT. We keep clientele informed weekly by having an update in each issue of the pest report.

In 2017 the NYS trapping network has shown the largest WBC trap catches than any other year. The higher WBC counts occurred in northern and western NY counties. But trap counts in other parts of the state increased dramatically in 2017. We had a total of 29,573 moths caught in field crop trapping efforts. We had an average of 569 moths were caught per trap with a range of 2 to 2464 moths/trap. As compared to 2016 we caught an average of 193/WBC trap. The total catch per trap ranged from 0 to 1662 moths per trap.

In northern NY many fields were over the economic threshold for WBC and were sprayed with an insecticide. In addition to potential yield losses, WBC injury to corn may pre-dispose ears to infection by fungi including those that can produce mycotoxins.

Highlight II: Statewide potato leafhopper (PLH) infestations on alfalfa were very high. Most alfalfa fields were over threshold for PLH over the course of the summer. In some cases PLH populations were 5 times the normal economic threshold. In response to these populations were developed educational information for extension educators and crop consultants on PLH. In turn educators and consultant firms took the information and educated growers how to correctly identify the pests and monitor fields to determine if infestation levels were at an economic threshold.

Highlight III: Black Cutworm and True Armyworm (AKA Common Armyworm) was found at moderate to high levels around NYS in forage grasses, small grains and corn this growing season in several areas of NY. This is a migratory insect pest that travels on weather fronts from the South and Midwest. We developed a pheromone trapping network to better understand when they arrived and at what levels they might have been at. We were able to alert farmers, extension field staff and crop consultants about the potential of the infestation. Many extension educators and crop consultants were able to educate the growers on correct identification and how to access a population in the field and when a control might be needed.

Highlight IV: White mold of soybeans occurred at very high levels this year in western NY. Excess moisture this growing season at flowering time was favorable to the proliferation of the disease. The indeterminate growth habit of soybeans presents a challenge for disease control since the plant continues to flower—producing susceptible infection sites over a period of time. Many growers sprayed a fungicide to suppress the disease; however, many fields still experienced severe infections and issues with white mold control.

Highlight V: There were a lot of small grain foliar diseases this year including those affecting wheat, triticale, rye and malting barley. This season weather conditions were favorable for a number of small

grain diseases including: Powdery mildew, Stagonospora nodorum blotch, Fusarium head blight, Net Blotch, Leaf Rust, Strip Rust and Scald. Fusarium head blight (FHB) is one of the main limiting factors in producing malting barley, wheat and rye in NY. This disease can produce (Deoxynivalenol) DON a mycotoxin that people and other livestock cannot ingest without getting sick. Small grains like wheat, rye and malting barley to be used for malting and flour for bread cannot have more than one part per million of DON. Small grains for malting, like barley, have little resistance to FHB at the moment. There are many faculty and extension educators researching resistant cultivars and other possible management strategies to better manage this disease. Currently, our only good defense for FHB is spraying a fungicide at anthesis (flowering).

The weekly pest report (WPR) is distributed on a Cornell Cooperative Extension Blog site <http://blogs.cornell.edu/ipmwpr/>. Subscribers to this blog include: Extension Educators, crop consultants, growers, agribusiness, agricultural professionals and Cornell University Faculty. We also place the blog link on the NYS IPM facebook page (<https://www.facebook.com/NYSIPM>) (697 followers) and NYS IPM Field Crops Twitter account (<https://twitter.com/NYSFieldCropIPM>) (433 followers). Many articles from the report were additionally used in extension newsletters that reached about 5000 people. We are reaching many growers with critical pest information and alerts weekly in NYS both through extension educators and crop consultants. Many crop consultants are using the pest report information directly with growers. A small percent of growers are starting to use the report directly for in-season pest information. We anticipate an increase in producer use of the WPR as it is being introduced and actively promoted at grower meetings. It is clear that this publication is having an impact with field crop and livestock producers in NYS. The weekly report has been an effective means to share timely Livestock and Field Crop IPM information with clientele including extension personnel, consultants, growers, and others in the agriculture community. We have been pleased with the positive feedback from clientele responding to our end of season survey. For respondent comments see appendix 2.

Samples of materials:

A link to archived NYS IPM Field Crops Pest Reports is available on-line at: 2013 to present: <http://blogs.cornell.edu/ipmwpr/>

Key Words: alfalfa, field corn, small grains, soybeans, wheat, insect pests, leaf diseases, pod diseases, root diseases, stalk diseases, stem diseases, weeds, biological control, chemical control, cultural control, demonstration/implementation (TAg), economic analysis, monitoring, research & education, IPM, integrated pest management,

Appendix 1: 2017 Field Crops Weekly Pest Report-Index of Articles

<i>Insects, Mites/Beneficial Organisms/Natural Enemies/Biological Control</i>	Articles By Dates
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Alfalfa Weevil	
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View from the Field	May 11 , May 19
Alfalfa Weevil and Growing Degree Days	Weekly

<i>How to Monitor Alfalfa Weevil</i>	May 11
Black Cutworm	
View from the Field	May 11 , May 19 , June 3 , June 9 , June 15 , June 22 , July 7 , July 14
<i>Black Cutworm in Field Corn</i>	May 4
<i>Growing Degree Days</i>	Every Week
Cereal Leaf Beetle	
View from the Field	May 19 , June 3 , June 15
Cereal Leaf Beetle in Small Grains	May 19
Corn Leaf Aphids	
View from the Field	Aug 18
Corn Rootworm	
View from the Field	Aug 4
Know or Rootworms	July 27
Corn rootworm & European Corn Borer and Conventional Corn-Potential Risk?	July 7
Scouting for Corn Rootworm	July 27
European Corn Borer	
Corn rootworm & European Corn Borer and Conventional Corn-Potential Risk?	July 7
Fall Armyworm	
View From the Field	Aug 18
Grass sawfly (Pachynematus sp)	
View from the Field	
Hessian Fly	
Planting Winter Wheat? What are the Pest Concerns?	Aug 18
House Flies	
2016 Updated IPM Guide for Organic Dairies	
Barn Flies? – Early Season Efforts Will Pay Off!	May 27
Lady Beetles	
View from the Field	May 19 ,

	June 15
Pea Aphids	
View From the Field	
Potato leafhopper	
View From the Field	June 9 , June 15 , June 22 , June 29 , July 7 , July 14 , July 24 , July 27 , Aug 4
<i>Time to Scout for Potato Leafhopper in Alfalfa!</i>	June 15
<i>Partial Alfalfa Field Harvest Increases PLH risks</i>	July 7
<i>Be Ready for Potato Leafhopper before the damage occurs!</i>	June 22
Sawfly	
View From the Field	May 27
Seed Corn Maggot	
<i>Seed Corn Maggot: Organic and Conventional IPM in Field Corn</i>	May 4 , June 3
<i>Quantifying Row Crop Plant Populations</i>	June 3
Soybean Aphids	
View from the Field	July 27 , Aug 11 ,
Scouting Soybean Aphid	Aug 11
Stored Grain Pests	
Storing grain? Not too early to think about protection from post-harvest insect pests	June 29
Syrphid Fly	
<i>Beneficial of the Week-Syrphid Fly</i>	
True Armyworm	
View from the field	May 11 , May 19 , May 27 , June 3 , June 9 , June 22
<i>True Armyworm (AKA Common</i>	May 4

<i>Armyworm)</i>	
Western Bean Cutworm	
View from the Field	July 24 , Aug 11 , Sept 28
<i>Western Bean Update</i>	July 14 , July 24 , July 27 , Aug 4 , Aug 11 , Aug 18 , Sept 5 , Sept 11 , Sept 21
Wireworm	
<i>Quantifying Row Crop Plant Populations:</i>	June 3
<i>Wireworm in Field Corn</i>	
White Grub	
<i>Quantifying Row Crop Plant Populations:</i>	June 3
<i>Plant Diseases</i>	
<i>Alfalfa and Clover Diseases</i>	
Root Diseases	
View from the Field	May 4
Root Diseases of Alfalfa and Clover	May 4
Making Fall Alfalfa Field Decisions	Sept 28
<i>Corn-Plant Diseases</i>	
General	
2017 Corn Diseases and Plant Health in a Wet Growing Season	July 27
Anthracnose stalk rot	
Stalk Rots in your Corn?	Sept 21
Cladosporium Ear and Kernel Rot	
What's in your Ears?	Sept 21
Common Rust	
View from the Field	Aug 11
Damping Off	
<i>Quantifying Row Crop Plant Populations</i>	June 3
Diplodia ear rot	
What's in your Ears?	Sept 21

Diplodia stalk rot	
Stalk Rots in your Corn?	Sept 21
Fusarium Ear Rot	
What's in your Ears?	Sept 21
Fusarium stalk rot	
Stalk Rots in your Corn?	Sept 21
Gibberella ear rot	
What's in your Ears?	Sept 21
Gibberella stalk rot	
Stalk Rots in your Corn?	Sept 21
Gray Leaf Spot	
What's in your Ears?	Sept 21
View from the Field	July 27 , Sept 21
2017 Corn Diseases and Plant Health in a Wet Growing Season	July 27
Northern Corn Leaf Blight	
2017 Corn Diseases and Plant Health in a Wet Growing Season	July 27
View from the Field	Sept 11
Pythium stalk rot	
Stalk Rots in your Corn?	Sept 21
Seed Decay	
<i>Quantifying Row Crop Plant Populations</i>	June 3
Soybean-Plant Diseases	
Downy Mildew	
View from the Field	Aug 11 , Aug 8 , Sept 5
Frost Damage	
View From the Field	
White Mold Sclerotinia Stem Rot	
White Mold Sclerotinia Stem Rot in Soybeans	Aug 4
View from the Field	Sept 5 , Sept 11 , Sept 21
Wheat and Small Grains-Plant Diseases	
Barely Yellow Dwarf	
Planting Winter Wheat? What are the Pest Concerns?	Aug 18
Fusarium head blight	
View from the Field	June 15
Fusarium Head Blight Assessment Tool	May 19 , June 22

Fusarium Head Blight Commentary	May 27 , June 3 , June 9
How to Identify Fusarium head blight in Wheat	June 9
Fusarium Head Blight on Winter Small Grain	June 29
Leaf, stem and strip rust	
Early Season Foliar Diseases of Small Grains	May 27
View From the Field	June 15 , July 7
Net Blotch	
View From the Field	June 15
Powdery mildew	
Early Season Foliar Diseases of Small Grains	May 27
Root Rot	
Planting Winter Wheat? What are the Pest Concerns?	Aug 18
Scald	
View From the Field	June 15
Seed Rot/Damping off	
Planting Winter Wheat? What are the Pest Concerns?	Aug 18
Stagonospora nodorum blotch	
View from the Field	June 15
Early Season Foliar Diseases of	May 27

Small Grains	
Planting Winter Wheat? What are the Pest Concerns?	Aug 18
Stored Grain Pests	
Storing grain? Not too early to think about protection from post-harvest insect pests	June 29
Weeds	
Weed Issues	
IPM for weeds in unplanted fields	Aug 4
Why do Weeds get into the Alfalfa or Clover Fields?	May 19
Livestock pests	
Barn Flies	
Barn Flies? – Early Season Efforts Will Pay Off!	May 27
House Flies	
Barn Flies? – Early Season Efforts Will Pay Off!	May 27
Stable Flies	
Barn Flies? – Early Season Efforts Will Pay Off!	May 27
Vertebrate and Other	
<i>Quantifying Row Crop Plant Populations:</i>	June 3
Pest Records Help with the Future	Sept 28
Weather Outlook	Weekly
Clipboard Checklist	Weekly
NYS Degree Days	Weekly

Appendix 2: Responses to questions in the impact survey

Did the NYS IPM Weekly Field Crop Pest Report help with an issue you needed help with?

- PLH and WBCW numbers were higher this year across the state and it was very useful to learn that quickly so that growers could be informed and take action when necessary
- I use it in our newsletter so any issue pertinent to our region is useful and/or what we should be looking/scouting
- geographic scope of various pest problems
- yes
- Yes- armyworm
- slugs in the spring, leafhopper in the summer
- pest reports
- Always
- What is popping up around the region

What did you like most about the NYS IPM Weekly Field Crops Pest Report?

- current situations (2)
- Definitely like the view from the field, images of pests and in depth articles on current topics
- Confirms what I'm seeing in the field
- That is was weekly/timely
- What pest issues are occurring across the state. Short articles.
- Timeliness of alerts of issue to be on the lookout for.
- Reports of current, on-going pest problems
- keeps me up to date
- View from the field- what should I be looking for?
- Specific information for New York
- It's timely.
- up to date pest information that's going on
- keeps me thinking
- articles
- view from the field
- Access to campus and state experts on any pest or pathogen
- Keeping up to date on what's happening around the state.
- pictures
- It was very useful and informative. it was all good
- Weather Outlook, View from the field

What else would you like to see in the NYS IPM Weekly Field Crops Pest Report?

- Nothing (2)
- Stages of development tied to planting dates of crops across ny. Continued inclusion of hay sampling and alfalfa height info for timing of 1st cut. Info on DON levels of samples from NY
- Maybe more agronomy - such as nitrogen decisions...
- Good as is for me
- More pictures