

# The 2019 NYS Field Crops Weekly Pest Report and Evaluation

## Project Leaders

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## Cooperators

Cornell Cooperative Field Crop Extension Educators, Crop Consultants, Growers and Faculty

## Type of project

Public Education

## 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 (160) to this blog include: Extension Educators, crop consultants, growers, agribusiness associates, and Cornell University Faculty. We also place the blog link on the NYS IPM Facebook page (1116 followers) and NYS IPM Field Crops Twitter account (522 followers). Twenty issues of the NYS Weekly Pest Report were published in 2019. 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 that users extended articles from the report to approximately 5000 individuals by re-publication in newsletters or forwarding the report on their own listserv. Many crop consultants who responded indicated they used pest report information directly with growers.

## Background and Justification

The NYS IPM Field Crops Pest Report (WPR) is designed to inform growers, extension educators, crop consultants and 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 and faculty.

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 18th 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, faculty 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 with 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, seed corn maggot & 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 2019 NYS Field Crop Weekly Pest Report. The evaluation survey was conducted using a google forms on-line survey. An email was sent to subscribers of the blog and on the in-house Cornell Field Crops Staff listserv and the General Cornell Field Crops listserv.

## Results and Discussion

This was the 18<sup>th</sup> season of the Weekly Field Crop Pest Report. Twenty issues were released this season between May 2 – September 27, 2019. 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.

The weekly pest report helped field crop producers and others stay 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 (small grains), corn fungicide use considerations, soybean disease identification and management, 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 2019 reports contained a total of 104 individual articles which addressed different pests that included a wide variety of field crop insects, plant diseases, weeds, and vertebrate pests of concern this past season.

### 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](#). Twenty-one 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=19).

	<b>Very Useful</b>	<b>Somewhat Useful</b>	<b>Not sure</b>	<b>Not Useful</b>	<b>Not at all useful</b>
<b>The NYS 2017 Weekly Field Crops Pest Report was:</b>	59%	43%	0%	0%	0%
<b>View from the field</b>	63%	37%	0%	0%	0%
<b>Weather Outlook</b>	47%	47%	6%	0%	0%
<b>Weekly Featured article(s)</b>	63%	32%	5%	0%	0%
<b>Pest Images / Photographs</b>	68%	26%	6%	0%	0%
<b>Western Bean Cutworm Update</b>	32%	53%	15%	0%	0%
<b>Growing Degree Days</b>	42%	53%	5%	0%	0%

	<b>Very Useful</b>	<b>Somewhat Useful</b>	<b>Not sure</b>	<b>Not Useful</b>	<b>Not at all useful</b>
<b>Clipboard Checklist</b>	21%	47%	21%	5%	5%

Table 2: Responses to by participants on the impacts of the pest report. (N=19).

	<b>Yes</b>	<b>No</b>
<b>Have you used or shared articles from the NYS Weekly Field Crops Pest Report in your newsletters/email list server or social media?</b>	47%	53%

Results from the evaluation survey indicate users extended articles from the report to approximately 5000 individuals by re-publication 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 (N=19):

<b>Type of Media</b>	<b>Percent Responders</b>
Email Field Crops list-serve	95%
NYS IPM Field Crops Pest Report Blog site notice	21%
NYS IPM Field Crops Twitter	11%
NYS IPM Facebook page	5%

Table 4: Demographics on those that use the pest report (N=19):

<b>Occupation or Organization</b>	<b>Percent Responders</b>
Farmer/Producer	16%
Extension Educator	47%
Professional Crop/Farmer Consultant	42%
Government Agricultural Professional	0%
Non-Profit Agricultural Organization	0%
Other	0%

Table 5: Assessing future needs of field crop and livestock cliental: “What online resources would be useful to you?” (N=19).

	<b>Very Useful</b>	<b>Somewhat Useful</b>	<b>Not sure</b>	<b>Not Useful</b>	<b>Not at all useful</b>
Short on-line demonstration videos (You Tube) on specific pest issues	63%	26%	11%	0%	5%
Downloadable IPM brochures	38%	38%	19%	5%	0%
Downloadable IPM management pocket guides	37%	58%	5%	0%	0%
Pest images and identification information	79%	21%	0%	0%	0%
Use Twitter to disseminate IPM information	10%	21%	37%	34%	34%
Use Facebook to disseminate IPM information	11%	37%	21%	6%	26%
Downloadable IPM scouting guides	47%	47%	6%	0%	0%
Downloadable IPM fact sheets	63%	32%	5%	0%	0%

Table 6: Assessing future needs of field crop and livestock cliental (N=19):

	<b>Yes</b>	<b>No</b>	<b>Maybe</b>
Do you see value in a statewide survey for Soybean Cyst Nematode?	47%	0%	53%
Would you like to see more NY weather-based forecasting tools available for predicting pest and disease outbreaks?	100%	0%	0%
Would you see value in creating a seed treatment table similar to the Handy Bt Trait Table for corn and soybean to help guide farmers with seed treatment package decisions	63%	0%	27%

Table 7: Assessing future needs of field crop and livestock clientele: Rank each pest relative the usefulness of a weather-based pest predictive model. (N=19).

N=19	Very Useful	Somewhat Useful	Not sure	Not Useful	Not at all useful
White mold	58%	21%	21%	0%	0%
Seed corn maggot	21%	47%	21%	5%	5%
Northern corn leaf blight	58%	26%	16%	0%	0%
Gray leaf spot	37%	42%	16%	5%	0%
Black cutworm	37%	47%	26%	0%	0%
Western bean cutworm	42%	31%	27%	0%	0%
Corn rootworm	37%	37%	26%	0%	0%
Alfalfa weevil	47%	37%	11%	5%	0%

Several 2019 pest issues were particularly significant and worthy of highlighting:

**Highlight 1: Western bean cutworm (WBC)** poses risk to field corn. This insect, a native of western US high plains states, was unique to that area until the late 1990's. Since then its 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 1 million acres of corn grown in NY. We keep clientele informed weekly by having an update in each issue of the pest report.

In 2019 the NYS trapping network has shown the largest WBC trap catches in field corn than any other year. The higher WBC counts occurred in northern and western NY counties. We had a total of 35,383 moths caught in field corn trapping efforts. We had an average of 530 moths caught per trap with a range of 0 to 2812 moths/trap.

**Highlight 2: Statewide potato leafhopper (PLH)** infestations on alfalfa were moderate to high in 2019. Many 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 we developed educational information for extension educators and crop consultants on PLH. In turn educators and consultants 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 3: Black Cutworm** 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. Armyworm was less of the problem in NYS this last season. There are generally isolated fields that have armyworm infestations each year. The following this the number of moths caught in 16 traps across the state by week.

**Table 8:** The number of BCW and TAW moths caught per week in traps across the state.

County	Town	April 21-28	Apr. 30 -May 5	May 6-12	May 13-19	May 20-26	May 27-June 2	June 3-9	June 10-17
Delaware	Davenport Center	NA	0	6	16	NA	104	24	
Dutchess	Amenia	NA	5	29	45	18	5	3	33
Lewis	Martinsburg	NA	0	93	84	102	74	84	67
Livingston	Caledonia	NA	0	4	4	21	10	5	8
Livingston	Lima	3	5	10	30	15	5	4	
Oneida	Kirkland	NA	4	4	35	0	0	3	0
Oneida	Westmorland	0	8	35	28	30	13	6	
Onondaga	Memphis	0	0	0	20	0	0	0	
Seneca	Seneca Falls	12	29	64	35	26	17	45	42
Tompkins	Ulysses	NA	5	6	0	1	2	3	5
Washington	Argyle	NA	0	0	0	1	2	0	1
Washington	Easton	NA	0	4	3	5	2	0	0
Washington	Fort Edward	NA	1	3	2	6	7	0	
Washington	Stillwater	NA	3	4	3	16	10	3	
Wayne	Ontario	1	1	5	4	7	0	0	0
Wyoming	Castile	0	19	42	15	13	18	10	8
	TOTAL	16	80	309	324	261	269	73	164

**Highlight 4: Stable flies** were a problem on cattle this summer. Stable flies reproduce and develop in moist rotting organic matter. This includes moist, hay, straw, manure, feed or any rotting material in contact with the ground (soil or concrete). Because it was a wet summer, there was an increase in stable flies. Stable flies need to take blood meals to reproduce. Stable flies inflict painful bites on the legs of the animals. This biting can reduce milk production and weight gains in calves.

**Highlight 5: Soybean Cyst Nematode**

As part of our soybean commodity Cooperative Agricultural Pest Survey (CAPS), we confirmed the soybean cyst nematode (SCN) in seven fields in six counties in 2019. Previously, this pest had only been detected in one field in one county since testing initiated in 2013. This is a significant finding, and

may have major impacts on integrated management tactics for soybean in the future, especially regarding variety selection.

#### **Highlight 6: Northern Stem Canker of Soybean**

Soilborne diseases of soybean continue to expand throughout NYS, including Northern Stem Canker. This disease was found in a large number of fields in numerous counties in 2019, including two new counties. This is a challenging disease to manage, in the absence of specific resistant varieties. If incidence and severity of northern stem canker continue to expand and increase in NYS, soybean growers may need to consider foliar fungicides for management.

#### **Highlight 7: Frogeye Leaf Spot of Soybean**

The 2019 growing season revealed an expansion of Frogeye Leaf Spot (FELS) foliar disease of soybeans into four new counties. Typically considered a disease of more southern origination, FELS has been considered usually a very minor concern in NY, until now. Given the complicated race structure of this pathogen, soybean growers in NYS will need to pay attention to resistance ratings to this disease. If not managed through genetic resistance, soybean growers may need to consider foliar fungicides to manage this potentially yield-robbing disease.

#### **Highlight 8: Cercospora Leaf Blight of Soybean**

A foliar disease that is typically of minor concern to NY soybean growers was more prevalent in 2019. Cercospora Leaf Blight, which can also cause Purple Seed Stain, was widely identified in NYS, including in five new counties. NY soybean growers may need to consider planting resistant varieties in fields with a history of this disease because the pathogen can overwinter and build up local inoculum resulting in widespread epidemics. The resulting purple seed stain can result in poor grain quality, and price docking due to discoloration.

#### **Highlight 9: Powdery Mildew of Wheat**

Reports of intense powdery mildew epidemics from northern NY poured in early in 2019. Some growers had to spray fungicides to manage losses. This disease is typically well-managed with resistant varieties, and growers should pay attention to powdery mildew disease resistance ratings when selecting small grain varieties, because NY often has favorable spring time conditions for foliar disease development.

#### **Highlight 10: White Mold of Alfalfa**

We saw white mold, or Sclerotinia Crown and Stem Rot, of alfalfa for the first time in many years in 2019 in a field in Onondaga County. This is the same pathogen that causes white mold of soybeans, and has a very wide host range. Given the intensity of white mold in soybeans and other broad-leaved crops in NY, it's one we need to keep an eye out for in alfalfa now too.

#### **Highlight 11: Spring Black Stem and Leaf Spot of Alfalfa**

The spring time conditions of 2019 were conducive for many foliar diseases of many crops, and especially for Spring Black Stem and Leaf Spot of alfalfa. There were numerous reports of this disease from many counties experiencing severe epidemics. This foliar disease can reduce yields and hay quality when severe, though is rarely managed with fungicides. Early harvest can significantly reduce disease severity in subsequent harvests by opening up the canopy to drying and sunlight, which reduces the pathogen inoculum in the field.



## Appendix 1: Responses to questions in the impact survey

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

- Identification of diseases
- Reports of outbreaks of potato leafhopper
- Cutworm infestation locations
- The timeliness of the information as an early warning system of pest problems is invaluable.
- Early warning on potato leafhopper
- Yes. Was able to disseminate to farmers
- Yes. WBC
- Yes
- It is useful for pest modeling

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

- Timely notifications of pest and disease issues across the state; articles on specific pests and diseases
- It's informative to know what is going on across the state as far as pest outbreaks
- Timely topics
- View from the field, in-depth articles
- Easy to read and well organized. Consistent format. always in my email box
- Accurate and timely info
- Plenty of good information that I did not have to develop on my own
- Reports from state.
- Insect models Pest levels statewide. Gives a heads up of what to look for

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

- Soil health timing of cover crops 4R nutrient management.
- I would like to see more updates on what others are finding in the state. I am willing to also contribute to this.
- Weed species demographics.