

# Novel On-line Courses in Field Crops and Livestock Integrated Pest Management (IPM) for New York and the Northeast US Agricultural Professionals and Producers

## Principal Investigator

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## Abstract

We developed 2 new IPM online courses within the last year that provide the Department of Environmental Conservation in NYS and many other states in the Northeast pesticide continuing educational credits for producers with pesticide licenses. Distance education is a very cost-effective means of educating the public on the use of IPM for field crops and livestock in NYS. These new courses include IPM for Insect Pests of Field Corn and IPM for Insect Pests of Alfalfa.

## Background/Justification

There is about 3.25 million acres of field corn, wheat, alfalfa, grass and soybeans grown in NYS. NYS NASS, 2018. There are about 6000 field crop producers in NY (NYS NASS, 2018). In 2018, 3,600 dairy farms were in production in New York (NYS NASS 2018). Currently (2018), there are 625,000 dairy and 100,000 beef cattle in NY (NYS NASS 2018).

NY field crop and livestock producers and certified pesticide applicators (CPA) who apply or supervise the use of restricted use pesticides are required to be certified by the NYS Department of Environmental Conservation (DEC) and maintain a certain level of continuing educational credits. Cornell Cooperative Extension (CCE) educational meetings provide an important opportunity to earn DEC recertification credits. The reduction of county level extension personnel in NY providing educational opportunities and field crop producers finding it difficult to leave the farm for meetings, has resulted in shortages of credits by individuals at license renewal time. The use of distance learning is highly cost effective, allowing producers to take training on their own computer when time allows. The Cornell Pesticide Management Education Program (PMEP) has developed many online educational modules that enable CPAs to earn DEC credits and many other states in the Northeast.

## Objectives

1. Create novel, high quality on-line courses in Integrated Pest Management (IPM) for specific pests with field crops NYS/NE Agricultural Professionals and Producers.
2. Measure pre and post-testing for each course that allows us to track and document learning.

## Procedures

We have developed six field crops on-line courses with PMEP guidance for DEC approved online courses from 2014 to 2020. We develop a script and collected images and video footage for specific pest issues or scouting procedures over the course of the summer season. The script

is narrated and recorded with current IPM information for specific pests. Along with the narration, images and videos with text are associated with information needed to manage field crop and livestock pests using an IPM approach. The courses are developed using Adobe Premier, a movie making software.

The courses were reviewed by Cornell's PMEP program, NYS DEC, and extension staff, and then revised to reflect their. The courses will be revised, as needed, based on feedback and new management practices that may become available in the future.

A comparison of pre- and post-test scores for each course module will be required to determine if viewers have gained the knowledge required. Students will need 80% correct to earn the credit. These evaluations are completed on-line before receiving DEC credits. The PMEP program will interface with the participant and NYS DEC to complete the recertification credit process. Each course will follow strict criteria of teaching "high quality" online programs. To date we have developed six online courses, with two developed in 2019: 1) IPM for Insect Pests on Alfalfa, and 2) IPM for Insect Pests on Field Corn.

## Results

The online courses developed are as follows:

### Field Crops

- IPM for Insect Pest on Alfalfa 2020 (coming soon)
- [IPM for Insect Pests on Field Corn \(1 credit\)](#) 2019
- [IPM for Foliar Diseases of Soybeans \(1 credit\)](#) 2016
- [Asian Soybean Aphid Integrated Pest Management on Soybeans \(1 Credit\)](#) 2014

### Dairy Cattle-Livestock

- [Fly Control on the Dairy: Barn Fly IPM \(1.25 credits\)](#) 2016
- [Pasture Fly Management on the Dairy \(1.25 credits\)](#) 2016

All these courses can also be viewed for free on the [NYSIPM YouTube channel](#).

Courses in progress include:

IPM for Insect Pests of Small Grains  
Stored Grain IPM

## Impacts

In 2019, 16 people completed the field crop and dairy IPM PMEP online course for credit.

With each completion, the student must pass a post-test of 80% correct or better. This is a good indication that they learned the IPM material and will put it into practice.

Asian Soybean Aphid = 4 completions  
Barn Fly IPM = 5 completions  
IPM for Field Corn Insects = 4 completions

IPM for Foliar Diseases of Soybeans = 1 completion  
Pasture Fly IPM = 2 completions

Students completed a pre and post-test on their knowledge of IPM for the subject they enrolled. Figure 1 shows the pre and post scores for the five field crop and livestock courses. In the pretest, on average students did not have an acceptable understanding of IPM. Clearly, after talking the course students learned the material and passed with an 80% or better. It is likely that many of the IPM tactics learned by the student will be implemented in their consulting, farmer education or farming operation. We plan to better promote the use of the courses in NY. The development of more and courses will continue in field crops and livestock IPM.

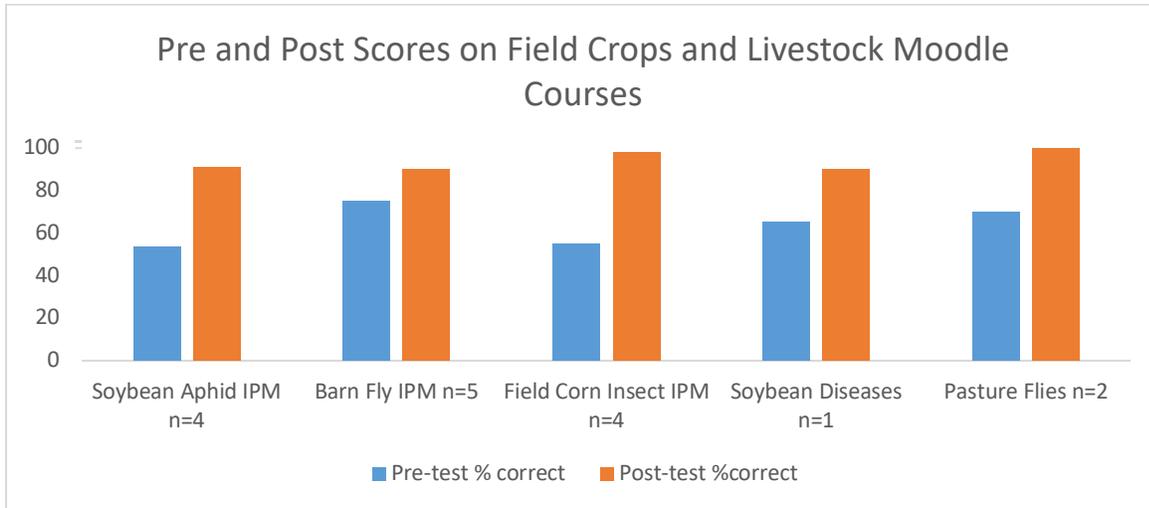


Figure 1: Pre and Post Scores on Field Crops and Livestock Moodle Courses for 2019.

## Reference

New York State National Agricultural Statistics Service-Dairy Statistics.  
[https://www.nass.usda.gov/Statistics\\_by\\_State/New\\_York/index.php](https://www.nass.usda.gov/Statistics_by_State/New_York/index.php)