

**Title:** Communication for Continuing Impact: Creating an ornamental IPM web-based resource for growers and CCE educators

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**Abstract:**

Implementing Integrated Pest Management (IPM) on farms can be a complicated and very information-dense process. Many growers use web-based information but it can be difficult to find what you need when you need it. While the New York State IPM Program had an ornamentals IPM webpage, it was not oriented toward ease of use by growers. Ornamentals covers greenhouse, nursery, Christmas tree, and sod growers, and while some information might be relevant to all, much is more commodity specific. Adding commodity orientation to the web presence makes the information more easily searched for growers and for Cornell Cooperative Extension (CCE) educators working with producers.

Progress to date includes the creation of the webpages that will serve as the central organizing point for the information hub.

**Background and justification:**

Integrated pest management for ornamental crops is an information dense activity and we continue to find gaps in the essential two-way communication of new information on pest management between growers, Cornell Cooperative Extension (CCE) educators, Integrated Pest Management (IPM) personnel, and research faculty. There are at least 1000 ornamental producers in the state, growing greenhouse and nursery crops, Christmas trees and sod. And pest management is one of the top 3 limitations to production as identified by growers. Most Extension educators are required to cover ornamental production questions in addition to their specialty areas. While we are trying to address the issue through listservs for pest updates, mobile applications for scouting and biological control, and overall changes to the IPM website, there is still a need for an easily accessible and clearly formatted webpage that serves as a central information hub for pest management updates, events, research highlights, new and exotic pest reports, and newsletters that is designed for grower and educator needs. There is currently a Cornell Greenhouse webpage, but no equivalent pages for nursery, Christmas tree, or sod producers. The intent of this project is to coordinate, and add to, existing resources in a similar fashion to the Cornell Fruit webpage. Pages will be created for general ornamental information and for resources specific to greenhouse, Christmas tree, nursery and sod production.

**Objectives:**

The objective of this project is to create a webpage based information hub for ornamental IPM to encourage communication between growers, CCE educators, faculty, and IPM personnel.

1. Design a webpage/website as an information hub for integrated pest management for ornamental production

- a. Survey growers on their needs for information and how they can best access it through the web
- b. Survey CCE educators on their needs for information and how they can best access it through the web
- c. Design a draft template for the webpages with appropriate information flow

- d. Create and collect resources to populate the webpages
  - e. Link webpages to existing ornamental IPM newsletters, blogs, listservs,
2. Evaluate the webpages with growers and CCE Educators
- a. Beta-test directly with a subset of growers and CCE educators
  - b. Survey growers at annual educational meetings
  - c. Survey users directly at the website with a pop-up survey
  - d. Edit webpages based on grower and educator comments

### **Procedures:**

In order to have an example to describe to growers and Extension educators, we created a draft set of webpages. Initial surveys were put on hold until this draft was completed. Sixteen pages were created for this draft (see links under Communications):

- The “Who we are’ section was updated to be more grower oriented
- A base webpage for “IPM for Nursery, Greenhouse & Christmas Trees” was created on the NYS IPM website, including:
  - buttons for Greenhouse, Christmas Tree, Nursery, Sod Production Pest Alerts and Search the Publications Database.
- Base pages were created for each topic area; Greenhouse, Christmas tree, Nursery, and Sod Production, including:
  - Events window for each topic area
  - Blog posts in window – for each appropriate blog (for example, TreeIPM is linked to both Christmas trees and Nursery
  - Twitter feed from @ornamentalipm
  - Publications list page for each topic area
  - Resources page for each topic area
- Created factsheets to populate the Pest Alerts page:
  - Chrysanthemum white rust,
  - Sudden Oak Death,
  - Poinsettia Downy Mildew
  - Southern Bacterial Wilt
- Search the Publications Database button allows choice of pest, setting and management technique
- Associated support for the webpages
  - Twitterfeed @ornamentalipm
  - Blogs:
    - Greenhouse IPM Update
    - Christmas Tree IPM Update
    - IPM for Sod Production
    - IPM for Ornamental Nurseries
    - Tree IPM

### **Results and discussion**

After the new pages were created in 2014 and went live in early 2015, NYS IPM started a discussion about how the website as a whole could be updated. In order to fit into the overall

webpage, our evaluation of the new pages was put on hold in case they would have to substantially change.

The new webpage will be live in early 2016. A mockup of the overall ornamentals page has been created. It has similarities to the webpages created for this project:

- Twitter feed
- Blog posts
- Event listing
- About the Ornamentals IPM Program button
- Buttons for each topic area that lead to Publications and Resources pages
- Pest Alerts page

The advantages of the update are: Responsive web design, a cleaner look, and a new searching function.

Cornell changes in how blogs are managed and the cost of blogs means we will combine the 4 blog posts created as part of this project into one blog.

#### Continuation of project:

We are meeting with web designer in February to finalize plans for new website pages and blogs. As part of this meeting, we will determine how the information will be easily found by the different types of growers and how archived information will be moved into the new blog.

As soon as the new NYS IPM Ornamentals webpages are live, we will survey growers, CCE educators, and other NE ornamental Extension educators on if the format is easy to use, what information they would like to see added, and suggestions for additional resources. Based on the results of these surveys, we will update the webpages and associated blogs.

#### Expected and Observed Impact/Outcome:

Expected impacts were increased traffic on NYS IPM Ornamentals webpages and increased use of resources on the NYS IPM website by NYS and regional ornamentals growers, and Cornell Cooperative Extension and other state Extension educators. Because of the long delayed update of the NYS IPM website, we haven't done the evaluation necessary to determine acceptance and use by these audiences. Although the grant period is ending, we will continue to improve the website with Extension and growers help and then survey the broader population on use of the webpages.

As a quick comparison, Google Analytics shows:

2012 (before the new webpages were created):

- For July: Number of Unique Pageviews = 376
- For entire year: Number of Unique Pageviews = 3935

2015 (new webpages went live early 2015):

- For July: Number of Unique Pageviews = 491
- For entire year: Number of Unique Pageviews = 6551

#### **Samples of resources developed:**

The draft webpages created for evaluation have been live since early 2015:

Overall Ornamental IPM page [http://www.nysipm.cornell.edu/nursery\\_ghouse/default.asp](http://www.nysipm.cornell.edu/nursery_ghouse/default.asp)  
Who we are [http://www.nysipm.cornell.edu/nursery\\_ghouse/who\\_we\\_are.asp](http://www.nysipm.cornell.edu/nursery_ghouse/who_we_are.asp)

Greenhouse [http://www.nysipm.cornell.edu/nursery\\_ghouse/greenhouse.asp](http://www.nysipm.cornell.edu/nursery_ghouse/greenhouse.asp)  
    Publications [http://www.nysipm.cornell.edu/nursery\\_ghouse/greenhouse\\_pub.asp](http://www.nysipm.cornell.edu/nursery_ghouse/greenhouse_pub.asp)  
    Resources [http://www.nysipm.cornell.edu/nursery\\_ghouse/greenhouse\\_res.asp](http://www.nysipm.cornell.edu/nursery_ghouse/greenhouse_res.asp)

Christmas Tree [http://www.nysipm.cornell.edu/nursery\\_ghouse/christmas\\_tree.asp](http://www.nysipm.cornell.edu/nursery_ghouse/christmas_tree.asp)  
    Publications [http://www.nysipm.cornell.edu/nursery\\_ghouse/xmas\\_tree\\_pub.asp](http://www.nysipm.cornell.edu/nursery_ghouse/xmas_tree_pub.asp)  
    Resources [http://www.nysipm.cornell.edu/nursery\\_ghouse/xmas\\_tree\\_res.asp](http://www.nysipm.cornell.edu/nursery_ghouse/xmas_tree_res.asp)

Nursery [http://www.nysipm.cornell.edu/nursery\\_ghouse/nursery.asp](http://www.nysipm.cornell.edu/nursery_ghouse/nursery.asp)  
    Publications [http://www.nysipm.cornell.edu/nursery\\_ghouse/nursery\\_pub.asp](http://www.nysipm.cornell.edu/nursery_ghouse/nursery_pub.asp)  
    Resources [http://www.nysipm.cornell.edu/nursery\\_ghouse/nursery\\_res.asp](http://www.nysipm.cornell.edu/nursery_ghouse/nursery_res.asp)

Sod Production [http://www.nysipm.cornell.edu/nursery\\_ghouse/sod\\_production.asp](http://www.nysipm.cornell.edu/nursery_ghouse/sod_production.asp)  
    Publications [http://www.nysipm.cornell.edu/nursery\\_ghouse/sod\\_prod\\_pub.asp](http://www.nysipm.cornell.edu/nursery_ghouse/sod_prod_pub.asp)  
    Resources [http://www.nysipm.cornell.edu/nursery\\_ghouse/sod\\_prod\\_res.asp](http://www.nysipm.cornell.edu/nursery_ghouse/sod_prod_res.asp)

Pest Alerts [http://www.nysipm.cornell.edu/nursery\\_ghouse/pest\\_alert/default.asp](http://www.nysipm.cornell.edu/nursery_ghouse/pest_alert/default.asp)  
Search page [http://www.nysipm.cornell.edu/nursery\\_ghouse/default\\_query.asp](http://www.nysipm.cornell.edu/nursery_ghouse/default_query.asp)

There are associated blogs for each topic area:

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

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

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

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