**Title:**

The Interactive Plant Manager – A Searchable Website for IPM Information for Pests of Trees and Shrubs

**Project Leaders:**

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**Cooperators:**

Karen English, Web Design and Maintenance, NYS IPM,
Spider Graphics, Inc., Ithaca, NY

**Abstract:**

The Interactive Plant Manager website is a comprehensive, searchable database of insect and disease identification, problem diagnosis, IPM, and prevention for woody ornamental plants in New York State, and much of the Northeast region. This project is a significant addition to web-based resources geared toward the ornamental horticulture industry, including landscapers, cooperative extension, and the public. It is intended to be a companion publication for the "Pest Management Guide for Commercial Production and Maintenance of Trees and Shrubs", produced by Cornell Cooperative Extension.

**Background and justification:**

To date there has been no comprehensive online diagnostic and management tool available for pests of trees and shrubs for New York State residents. In 2006 the NY State Integrated Pest Management (IPM) Program was provided with funding to develop a guide that focuses on IPM for trees and shrubs. The website is a comprehensive IPM tool for trees and shrubs that compliments the Cornell Pest Management Guide for Commercial Production and Maintenance of Trees and Shrubs. It also stands alone in the amount and type of information presented, and it includes such IPM aspects as monitoring and management. The resource also concentrates on pests occurring in New York State, but applies to the Northeast region.

This project began with 42 of the major insect pests of trees and shrubs, and has progressed to include more insects and the major diseases. On the home page a search engine leads the user to quick information about each pest with a link to a fact sheet. Each fact sheet contains a description, life cycle, and damage information, photographs, range maps, monitoring tips and tools, including growing degree day and plant-phenology indices, and pest management and prevention guidelines.

The overall impact of such a resource may be to raise awareness in the land care industry as well as New York State residents (and others) about how to best manage pests of trees

and shrubs, by first correctly identifying them and then considering non-pesticidal prevention and management strategies. Following these procedures, landscapers and home gardeners should be able to reduce the haphazard and unnecessary application of pesticides because they will have clearer knowledge of the pests that affect their plants. Increased awareness and use of non-pesticidal approaches are assumed to have positive impacts on water quality.

**Objectives:**

1. To finish the development of an online resource for pests of trees and shrubs in New York State.

2. To provide a companion publication to the Cornell Guidelines that focuses on pest prevention and non-pesticidal steps in management of woody ornamental pests.

3. To publicize the launch of the New York State IPM "Interactive Plant Manager"

**Procedures:**

Shari Romar, the technical writer, began working in October 2006. Her first task was to develop a large database housed in a spreadsheet that contained insect names, host plants, and many other details. From there a series of fact sheets were developed that combined the information available from *Insects that Feed on Trees and Shrubs* (Johnson and Lyons, 1991) and many other university and extension-based websites.

Spider Graphics, Inc., of Ithaca, NY, developed the concept into a useful and attractive website. The resulting Interactive Plant Manager now focuses on both insect and disease identification through drop down menus that allow the user to choose plant species, insect pest or disease signs, and type of damage. From there, the user is given a selection of possible causes and can compare colorful photographs to their own pest evidence. The most common insect and disease problems are accompanied by fact sheets that contain basic biological information, when to look, what to look for, growing degree day predictors, prevention steps and cultural management options. When pesticides are needed, the site refers the user to the Cornell Tree and Shrub Guidelines.

Fact sheets for the priority insects were finalized and uploaded to the site in early 2008. After review by members of the advisory committee, the website was launched in Spring 2008. Fact sheets of middle priority insects and high priority diseases have been finished and uploaded through 2008 and continue to be added in early 2009.

**Results and discussion:**

The Interactive Plant Manager team wrote a press release (with the help of Mary Woodsen) that was distributed through horticulture newsletters and online notices. We are not sure how far the press release managed to go, but the website received over

16,000 web hits from the time of launch in the Spring through December 2008. Additionally, the team, particularly aided by Karen English, developed a poster and handout cards to promote the site at meetings and trade shows.

The Interactive Plant Manager provides the horticulture industry and gardeners with a searchable database and comprehensive, yet concise, fact sheets, in order to easily implement IPM practices. The aim is to reduce pesticide use by encouraging readers to correctly identify the pest and consider alternative options first. With a better understanding of IPM practices, the audience will be less reliant on pesticides, lowering operating expenses and benefiting the environment. The horticulture industry throughout New York and the Northeast will benefit from the website because it is freely available to all, user friendly, and loaded with photographs. Feedback from users of the site has been very positive. By offering comprehensive IPM information, this website could increase professional land care industry profits by reducing pesticide expenses.

This resource adds to the body of knowledge by combining many of the professional and high-level sources of information into simple, yet complete, fact sheets with photographs and diagrams from various sources. It also adds in useful tools such as plant phenology and growing degree day accumulations to predict insect emergence and development. The project leaders will continue to monitor feedback from users, and will continue to add pest information to the website as needed. Impact may be determined by web hits, a measure of use, and by specific comments from users.

**Project location(s):**

The impact of this outreach project will apply throughout New York State and within the Northeastern United States.

**Samples of resources developed:**

Samples of the resource can be found at the following URLs:

Search page: http://nysipm.cornell.edu/aes_ornamental.asp

Bagworm online fact sheet: http://nysipm.cornell.edu/ornamentals/Bagworm.asp

Black vine weevil: http://nysipm.cornell.edu/ornamentals/black_vine_weevil.asp