

Proposal Submission to the
Norm Ehmann Urban Pest Management Award

**Pilot Project to Develop a Unified Resources Guide for Pest Control Products Used
by Urban & Public Health Protection Professionals**

Submitted by
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Description of Problem:

Pest control professionals, urban landscape managers, public health protection specialists, and consumers need easily accessible information about products they purchase and use for managing plant, disease, and insect pests. The information comprises several areas of knowledge:

- Decision making information with respect to alternatives for pest management in urban landscapes within or outside of buildings and other structures;
- Information about registered product formulations;
- Environmental and toxicological information about specific protection technologies;
- Efficacy information about various protection technologies;
- Regulatory information that may affect availability and use of chosen protection technologies.

Presented with such a list, and realizing the internet appears to provide easy access to information, one might hastily conclude that such information services are already provided. Ironically, the more information that is placed on the Internet from a wide variety of sources that may or may not have received validating scrutiny, the less the information seems to be in one coherent place that is easily accessible. In other words, to gather all of the information bulleted above, one would have to wade through numerous web pages of information after using many different search strategies.

Given the dilemma of ever more but scattered information that is “harder” to get, this proposal seeks funding for a pilot project to develop an on-line resource guide for protection technologies, many of which will be registered as pesticides. The specific focus of the resource guide information would be urban and public health protection specialists, both private and public sector. The resource guide would be developed in a style that also makes information accessible to consumers who are looking for information on their own.

Project Purpose

This project will build and make accessible one coherent resource guide for pest control professionals associated with urban, structural, and public health protection businesses and governmental agencies. The information will be available on-line in HTML format but also be accessible as a downloadable pdf file. The project is necessary owing to the disparate nature of the information, but the existence of a need for rapid access by professionals. The urban pest management industry will benefit by allowing employees to save time in seeking information and more readily answer concerns of their

clients. Furthermore, the site will be unique because it will include comparative efficacy information for the array of protection technologies on the market.

Objectives and Procedures

1. Conduct a detailed examination and cataloging of private and public sector information available to the urban and public health protection specialist.

As a preliminary exercise to developing this proposal, the Internet was searched using the key words “pest control operator” and “urban pest management”. Selecting from within relevant hits on the first three pages of a GOOGLE search, the following web sites were noted:

- International Pest Control Operators Network (<http://www.ipconetwork.org/>)
- PestWeb - The Industry's Leading Pest Control Information Center brought to you by Univar USA (<https://www.pestweb.com/>)
- Pest Control Operators of California (<http://www.pcoc.org/index.cfm>)
- Pest Control Technology Magazine (<http://www.pctonline.com/magazine/>)
- Purdue University Urban Entomology Center (<http://www.entm.purdue.edu/entomology/urban/home.html>)
- NC State Urban Pest Management (<http://ipm.ncsu.edu/getsubs2.cfm?TopicID=8>)

The first four web sites are sponsored by private sector organizations, and the last two are university-sponsored sites. All sites allowed further access to pest biology information with one (“PestWeb”) even offering an identification and Q&A service to registered users. All also had links to other sites, organized by a panoply of different topics. The academic sites made available downloadable fact sheets about pest biology and a limited listing of registered pesticide products in the subject state. Only “PestWeb” had a product training site set up as an on-screen slide show that presented active ingredient information and use recommendations. However, none of the aforementioned information was downloadable.

In fact, almost no crop and public health pest management site today explicitly recognizes that the prominently used technology is and will remain a registered pesticide. Nor do any of the sites give the potential product users the information they probably seek first—namely, information about efficacy and recommended user or application tips. Secondly, pest control professionals need information about the formulations they are using, especially the most currently available regulatory toxicology and environmental chemistry information. Consumers are often curious about this type of information (based on calls and email inquiries to the WSU Food and Environmental Quality Lab) before they make a decision about treatment options presented by a professional PCO service.

By searching current information resources more widely and determining where they lack comprehensiveness, items to include in the proposed pilot web site will be elucidated. A second source of information will come from making personal contact with several PCO businesses in the Pacific Northwest and asking the managers to express the information resources they would desire to be readily accessible in one place.

2. Choose three currently registered pesticide active ingredients and gather all available information on their formulations, target pests and efficacy, recommended application and use guidance, environmental chemistry, toxicology, EPA risk characterization, pending or current regulatory information, and controversial information raising consumer concerns about health or ecological issues.

Once the list of required types of information is fully developed and refined, all sources of information will be queried. Thus, information will be gathered by searching the primary research journals and published extension bulletins. However, useful information would also be examined from web sites of private organization. Sources will be tracked for evidence of validation (either by peer review or recognition of an institution as having internal review, for ex., university Extension Services). However, information regardless of source will be shown if it seems useful to professionals in the field.

A lot of information on efficacy of urban use pesticides must be assembled from highly disparate sources, especially the peer reviewed scientific literature. Also, it is largely unavailable on current informational web sites. Therefore, the work tasks are going to focus on three different pesticide active ingredients and their associated target pests. Target pests would be highlighted in Section One of the guide, and registered active ingredients associated with that pest would be highlighted in Section Two. For example, if imidacloprid is chosen as one active ingredient for Section Two of the resource guide (see proposed structure below), then Homopteran pests would be highlighted in Section One as a Landscape/Ornamental pest example. If an insect growth regulator such as hexaflumuron is highlighted as a termiticide, then one or two appropriate termite species will be highlighted in Section One. If carbaryl is highlighted in Section Two, then stinging bees/wasps would be the highlighted insect pests in Section One.

3. Design a template for placing the above information into a readily accessible format for on-line reading along with a downloadable file format.

One site exists that has artfully combined all of the necessary product information discussed herein into one page along with downloadable fact sheets. Cornell University's "Resource Guide for Organic Insect and Disease Management" (see URL <http://www.nysaes.cornell.edu/pp/resourceguide/index.php>), oriented to vegetable production in the Northeast, makes an excellent model for ideas on building a comprehensive unified resource guide for urban and public health pest management professionals. Moreover, the guide is assembled in a user-friendly manner so that it is also accessible to consumers.

Using the Cornell developed resource guide as a model the proposed unified resource guide for urban and public health pest management professionals would be divided into pests and pest control products that would contain the following subheadings and outline of information:

Section One: Information About Landscape/Ornamental Insect Pests (Similar constructions can be made for structural insect pests and public health pests)

- Brief biological information emphasizing life cycle and damage by picture with an active link to one or two other university sites that have more detailed downloadable fact sheets if not available through WSU Extension;
- Registered pesticide formulations for control;
- Use or application recommendations;
- Comparative ranking of registered products based on hazard to humans (via use of rodent oral and dermal LD50 and NOAEL [No Observable Adverse Effect Level]) and hazards to aquatic invertebrates (based on the most sensitive databased organism as determined from the LC50 and NOECs [No Observable Effect Concentration])
- Documented alternatives to pesticides

Section Two: Information About Registered Pest Control Products

- Efficacy (summaries of research reports, perhaps in a graphical format to qualitatively compare efficacy against individual pests)
- Mode of action (includes all aspects from dose transfer into the insect from environment to biochemical mechanism)
- Selectivity (pest vs beneficials)
- Comparative toxicology
- Environmental chemistry (fate and behavior)
- Other non-pesticidal (i.e., inert) ingredients in the formulation
- Existence of controversial information, including reports in popular media, typically about health effects
- Regulatory information
- Summaries of recently published research information to be written for a non-technical audience.

Within Section One, any mention of a product will be hot-linked to information in Section Two, and vice versa. For each pesticide product reviewed in Section Two, a downloadable factsheet in pdf file format will be available for downloading.

The actual location of the web site will be determined after discussion with the collaborators listed below. Felsot, however, will be responsible for ensuring the site is kept up to date, especially as new information becomes available.

Personnel

Carol Ramsay, Carrie Foss, and Catherine Daniels with WSU Extension Entomology will be primary collaborators on this project. Professor Art Antonelli, WSU Dept. of Entomology will be consulted to ensure correct interpretation and utility of information in Section One of the proposed resource guide.

Timeline

One year from the initiation of funding would be required to fully implement a prototype resources guide.