DELAWARE INFORMATION NETWORK
FOR PESTICIDES AND ALTERNATIVE STRATEGIES
Crop Profiles
Pest Management Strategic Plans
Grant Proposal

PROJECT DESCRIPTION

A. Summary of Experience, Problem, Background and Justification

Pesticide Use Surveys

Pesticide use surveys have been conducted on seven commodities in Delaware: watermelon, wheat, soybean, melons, field corn, lima beans, and sweet corn. The surveys were conducted in cooperation with the Delaware Agricultural Statistician. Enumerators, trained by King on pest control measures for each commodity, conducted face-to-face interviews with growers in Delaware. The Delaware Statistician compiled and analyzed the data. Most of the surveys were published by USDA/ NASS as part of the national Vegetable Chemical Use Surveys at: http://usda.mannlib.cornell.edu/reports/nassr/ . Data was collected on acres planted, acres harvested, acres treated, active ingredient, formulation, quantity applied, times applied, and production.

Currently, King is completing the 2004 Pest Control Survey in Lima Bean in Delaware and Eastern Shore Maryland under an EPA Region 3 grant. This survey recorded pest infestation rates that will be correlated with the quantity of pesticides used. The survey also recorded IPM practices in lima bean production.

Crop Profiles

As shown below, Thirteen Crop Profiles have been written for Delaware commodities. Extension Specialists for insects, diseases, and weeds contributed sections to each Profile. King compiled the information, wrote introductory material, and transmitted the Profiles to the NE IPM Center for publication.

Apple http://pestdata.ncsu.edu/cropprofiles/docs/DEapples.html 10/03.
Beans (lima) http://pestdata.ncsu.edu/cropprofiles/docs/debeans-lima.html 6/99
Beans (snap) http://pestdata.ncsu.edu/cropprofiles/docs/debeans-snap.html 9/99
Corn (sweet) http://pestdata.ncsu.edu/cropprofiles/docs/DEcorn-sweet.html 8/00
Peaches http://pestdata.ncsu.edu/cropprofiles/docs/DEpeaches.html 9/00
Peas (green) http://pestdata.ncsu.edu/cropprofiles/docs/DEpeas-green.html 8/00
Peppers http://www.ipmcenters.org/cropprofiles/docs/DEgreenpeppers.html 10/04
Potatoes http://pestdata.ncsu.edu/cropprofiles/docs/DEpotatoes.html 9/00
Soybean http://www.udel.edu/pesticide/DEsoybeancropprofile.doc 8/05.
Spinach http://pestdata.ncsu.edu/cropprofiles/docs/DEspinach.html 9/99

Squash http://pestdata.ncsu.edu/cropprofiles/docs/DEsquash.html 9/00 ,
Watermelon http://pestdata.ncsu.edu/cropprofiles/docs/DEwatermelons.html '99
Wheat, http://pestdata.ncsu.edu/cropprofiles/docs/DEWheat.html 5/02

As part of the current Delaware Information Network for Pesticides and Alternative Strategies grant, King has reviewed three Crop Profiles (Lima Beans, Pepper, and Peas) for cancelled pesticides. No fungicides or herbicides were found that had been cancelled. King identified three cancelled insecticides: Penncap M (lima), Ambush 2E (green pepper) and Diazinon AG500 (green peas). These findings were confirmed by the University of Delaware IPM Coordinator, Joanne Whalen. These products will be removed from the profiles. The remaining ten profiles will also be reviewed for cancelled pesticides during the current grant period.

An objective of this grant proposal is to conduct a complete review and edit of seven of the 13 published profiles. At the November 28, 2005 meting of the Advisory Committee for the Delaware Information Network for Pesticides and Alternative Strategies, committee members advised King to coordinate this revision. The committee recommended that either the oldest profiles or the crops most "at risk" be chosen for revision.

Pest Management Strategic Plans for Delaware, Eastern Shore Maryland, and New Jersey (PMSP)

Regional PMSP workshops were held for lima bean, spinach, and pickles in Harrington, DE on 1/23/03, 1/5/04, and 1/5/05 respectively. The working groups were made up of growers, processors, and crop consultants, as well as state, regional, and federal regulatory staff and extension specialists from Delaware, New Jersey, and Maryland. The PMSP's are available at:
http://pestdata.ncsu.edu/pmsp/pdf/MidAtlLimabeans.pdf
http://pestdata.ncsu.edu/pmsp/pdf/despinach.pdf
http://www.udel.edu/pesticide/picklePMSPforDEwebsite.doc

During the current grant period, King contributed to the Pennsylvania/ Delaware mushroom PMSP (http://www.udel.edu/pesticide/mushroomclifkeryedits.doc). King participated in the North Carolina/ Virginia/ Delaware PMSP workshops in Virginia for tomatoes (http://www.udel.edu/pesticide/TOMATOPRIORITIES.doc) and snap beans (http://www.udel.edu/pesticide/SNAPBEANPRIORITIES.doc). Drafts of these 3-state PMSP's are available at the Virginia Tech web site.

An objective of this grant proposal is to conduct a workshop and write a PMSP for watermelon in January, 2007 for Delaware, Eastern Shore Maryland, New Jersey, North Carolina, and Virginia. At the November 28, 2005 meting of the Advisory Committee for the Delaware Information Network for Pesticides and Alternative Strategies, committee members advised King to conduct this workshop. According to Luke McConnell, Crop Advisor and Advisory Committee member, watermelon is the number one fresh market crop in Delaware. The value of the 2002 production in Delaware was $10,935,000 from 2,700 acres

(http://www.nass.usda.gov/de/new1603.pdf) . In 2003 Delaware ranked 11th in the United States in production by weight (78,300,000 lbs.) according to the National Watermelon Promotion Board (http://www.watermelon.org/index.asp?a=dsp&htype=about&pid=39). North Carolina ranked 9th in production with 110,000,000 lbs., Maryland ranked 12th with 63,800,000 lbs. and Virginia ranked 17th with 21,600,000 lbs.

The Project Directors for Maryland, New Jersey, and North Carolina have agreed to join Delaware in this PMSP. They will send growers and subject mater specialists to the workshop. The Project Director for North Carolina stated that he felt the Southern Region IPM Center would support North Carolina and Virginia in this PMSP.

Because of Pesticide re-registration and new registration requirements under FQPA, there continues to be a need for US/EPA to obtain information on pesticide use and needs within Delaware and the mid-Atlantic region. The Crop Profile and PMSP activities described in this proposal will facilitate information transfer and permit informed regulatory decision making ensuring that growers have the pest control products they need to maintain production.

B. Objectives and Anticipated Impacts

1. Revise seven of the 13 Delaware Crop Profiles.

   Anticipated Impacts (See attached Logic Model):
   Short Term - Profiles are produced and posted to the web.
   Medium Term - Pesticide Regulators use information from Delaware when making pesticide regulatory decisions.
   Long Term - Pest control methods will be available for Delaware commodities. An adequate and affordable food supply will be available.

   A priority of the IPM Roadmap is to develop alternative tactics for production agriculture that have major economic benefits as well as protect public health including workers and the environment. The Delaware Information Network for Pesticides and Alternative Strategies will work towards realizing this priority.

2. Write a Pest Management Strategic Plan for watermelons in Delaware, Eastern Shore Maryland, New Jersey, North Carolina, and Virginia.

   Anticipated Impacts (See attached Logic Model):
   Short Term - The PMSP is produced and posted to the web.
   Medium Term - Pesticide Regulators will use information from Delaware when making pesticide regulatory decisions.
   Long Term - Pest control methods will be available for Delaware commodities. An adequate and affordable food supply will be available.

A priority of the IPM Roadmap is to develop alternative tactics for production agriculture that have major economic benefits as well as protect public health including workers and the environment. The Delaware Information Network for Pesticides and Alternative Strategies will work towards realizing this priority.

C. Approach and Procedures

1. King will review all Delaware Crop Profiles and choose seven for revision based on original date of publication and critical needs for production. She will submit the list to the Delaware Information Network Advisory Committee for approval or suggestions for substitutions. King will transmit profile sections to the University of Delaware subject matter specialists and ask for revisions. Instructions will be given to add new pest species, new pesticides, new crop varieties and new production practices. Instructions will be given to delete cancelled pesticides, crop varieties that are no longer grown and production practices no longer used. Specialists will be asked to check pesticide use rates, acreage, efficacy, and formulations. King will compile revisions, rewrite commodity production information, cultural practices, and worker activities. Program records will be maintained on the progress of crop profile revisions.

Timetable:

Task	Start	Complete
select profiles	upon initiation of grant: 6/1/06	7/1/06
Send list of profiles to Committee for approval	7/1/06	8/1/06
Rewrite production information, cultural information, worker activities	8/1/06	10/1/06
Send insect, disease, weed sections to subject matter specialists for revision	10/1/06	3/1/07
Compile revisions	3/1/07	5/1/07
Submit completed profiles to NE IPM Center	5/1/07	6/1/07

2. King will secure a venue for the watermelon PMSP Workshop for January, 2007 and arrange food service. King will ask University of Delaware Extension agents and specialists for lists of watermelon growers in Delaware. King will ask Project Directors in Maryland and New Jersey for lists of watermelon growers, crop consultants, and subject matter specialists. King will invite growers, crop consultants, and subject matter specialists from Delaware, Maryland Eastern Shore, and New Jersey to the January 2007 workshop, as well as representatives from the NE IPM Center, US-EPA, EPA Region 3, NE IR-4, and state Departments of Agriculture. King will ask Project Directors in North Carolina and Virginia to invite watermelon growers and crop consultants from their states to the workshop, as well as subject matter specialists and representatives from the SE IPM Center, EPA Region 4, Southern IR-4, and state Departments of Agriculture.

   King will write a draft watermelon PMSP from crop profiles available from Delaware, Maryland, North Carolina, and Virginia. Guidelines for PMSP development provided by the NE IPM Center will be followed. King will transmit the draft PMSP to Extension subject matter specialists in Delaware for review of their sections. King will transmit the draft PMSP to Project Directors in the four other states with the request that the draft be transmitted to subject matter specialists in their states for review. King will compile review comments into a final draft document.

   During the watermelon workshop, the draft document will be projected and edited section by section. A representative of the NE IPM Center or the Southern IPM Center will be asked to facilitate the workshop. King will compile the draft revisions and prepare a final draft document. King will post the final draft document to the University of Delaware web and request workshop attendees to review and comment on the draft. After the review, King will submit the final PMSP to the NE IPM Center and to the Project Directors from North Carolina and Virginia. Program records will be maintained on the progress of the PMSP production.

   Timetable:

Task	Start	Complete
Secure workshop venue	upon initiation of grant: 6/1/06	8/1/06
Obtain list of invitees	6/1/06	9/1/06
Invite participants	9/1/06	10/1/06
Prepare draft PMSP	7/1/06	10/1/06
Route draft to subject matter specialists	10/1/06	11/1/06

Incorporate comments and prepare workshop draft PMSP	11/1/06	1/1/07
Conduct workshop	1/1/07	2/1/07
Incorporate edits and comments info final draft PMSP	2/1/07	2/1/07
post final draft PMSP to University of Delaware web	3/1/07	4/1/07
Announce final draft review	4/1/07	5/1/07
Incorporate edits and comments info final draft PMSP	4/1/07	5/1/07
Transmit final PMSP to NE IPM Center	5/1/07	5/30/07

D. Evaluation Plans:

Short Term:
Program records will be examined to determine if the selected crop profiles were revised according to schedule and the watermelon PMSP was produced according to schedule. The USDA web will be examined to determine if the revised crop profiles and watermelon PMSP were posted.

Medium Term.
King will ask IR-4 and US-EPA if they used information from the Delaware Crop Profiles and the watermelon PMSP when making regulatory decisions.

Long term:
King will ask University of Delaware Cooperative Extension Agents and Delaware State University Cooperative Extension Agents to list those commodities for which pest control products/ methods were lacking during the duration of this grant. King will also ask agents to list those commodities for which pest control products/ methods were adequate.

COOPERATION AND INSTITUTIONAL UNITS INVOLVED:

University of Delaware Cooperative Extension
- UD Department of Entomology and Wildlife Ecology
- UD Department of Plant and Soil Science

UD Department of Bioresource Engineering
University of Maryland
Rutgers University
North Carolina State University
Virginia Polytechnic Institute and State University

KEY PERSONNEL:

University of Delaware Extension Pesticide Coordinator, Susan King, will oversee this project and prepare reports. University of Delaware Extension Specialists Whalen, Mulrooney, VanGessel, and Everts will be involved in writing Crop Profiles and the Delaware sections of the watermelon PMSP.