

Hamilton

Project Summary

The New Jersey Information Network for Pesticides and Alternative Strategies (NJinPAS) has been involved in the development of surveys, crop profiles and pest management strategy plans since the inception of the Northeast IPM Center. During the previous granting periods NJinPAS conducted, tabulated and reported on joint statewide survey of all New Jersey growers in 2000 and 2003. NJinPAS has also developed or revised 18 crop profiles and either solely or jointly developed with other states five pest management strategy plans.

New Jersey currently produces over 70 vegetables. Many of these crops are grown by numerous growers in fields that are typically less than one acre in size. As a result, statewide acreage for crops such as arrugula (baby and other), basil, Brussels sprouts, leaf lettuces, leeks, parsley, and radishes tend to be less than 1,000 acres each year. This small acreage; however, masks the importance of these crops. Growing ethnic populations and resultant markets in Baltimore, Philadelphia, New York City, Washington DC and New Jersey have made these small acreage crops valuable commodities. As a result, more attention is being paid to their production by growers.

Unfortunately, small acreage means little attention by researchers, state governments and pesticide manufacturers. In New Jersey, surveys conducted jointly by NJDEP and NJinPAS have historically lumped small acreage crops into larger categories making it difficult to determine usage patterns and access pest management needs. Because of the small acreages involved statewide and nationally, chemical manufacturers spend little or no development effort on new materials for these crops and as a result, few pest management options exist when product cancellations or problems such as resistance occur. Finally, few, if any, crop profiles exist for arrugula (FL), basil, Brussels sprouts (AZ, CA, MI), leaf lettuce (CA), leeks, parsley (AZ, CA, OH) and radishes (OH) crops and no pest management strategy plans exist for these crops (20). All of these issues point to the need for pest management tactic surveys, crop profiles and pest management strategies plans for these crops. This project proposes to develop these items for arrugula, Brussel sprouts, leaf lettuce, leeks, parsley and radishes.

Objectives

This project proposes to facilitate informed decision-making on pest management practices by

1. conduct statewide surveys of pest management and production practices for arrugula (baby and other), basil, Brussels sprouts, leaf lettuces, leeks, parsley, and radishes,
2. develop crop profiles for arrugula (baby and other), basil, Brussels sprouts, leaf lettuces, leeks, parsley, and radishes, and
3. develop pest management strategy plans for Brussels leeks and parsley.

Development of Surveys, profiles and strategy plans for New Jersey vegetables - 2006

Project Description

Literature Review, Previous Work, and Related Experience

New Jersey Information Network for Pesticides & Alternative Strategies (NJinPAS) gathers pest management data and input from researchers, growers, crop consultants, pesticide users, regulators, and Extension faculty and staff in New Jersey. Hamilton (NJinPAS) and Roy Meyer of the New Jersey Department of Environmental Protection Pesticide Control Program (NJDEP) have conducted pesticide use surveys of private applicators for 1985, 1988, 1991, 1994, and 1997. Hamilton has also participated in the survey of growers participating in New Jersey's Peach, Sweet Corn, and Field Crop IPM programs.

NJinPAS developed a web page to provide web access to these previously published reports of surveys and analyses of agricultural and commercial pest management practices in New Jersey, including pesticide use. The most currently available pesticide use survey reports can be viewed at www.pestmanagement.rutgers.edu/NJinPAS/pesticidesurveys.htm. The 25 surveys posted were either singly or jointly published by the NJDEP and/or Rutgers Cooperative Research and Extension (RCRE) as indicated. WebTrends page analysis report shows that approximately 5,000 pesticide use report downloads have been since posting.

Additionally, NJinPAS compiled and analyzed pesticide user survey data for the New Jersey pesticide survey in 2000. This data was used in the preparation of crop profiles and PMSPs that will be utilized by government agencies making regulatory decisions. The most recent survey conducted in 2003 is currently being analyzed.

NJinPAS assesses impacts of changes in pesticide regulations on agricultural productivity in New Jersey. Crop Profiles are one of the key ways this information is shared with New Jersey stakeholders, other mid-Atlantic states, the NE IPMC, the EPA, and the United States Department of Agriculture (USDA). NJinPAS has demonstrated significant expertise in the preparation of crop profiles. Under other funding vehicles, Extension staff wrote crop profiles for the following seven New Jersey commodities: alfalfa (5), asparagus (7), high bush blueberry (9), cranberry (11), peaches (14), spinach (16) and squash (18). These profiles were based upon either NJDEP pesticide use data for 1997 or IPM data from 1998. They are published online at www.pestmanagement.rutgers.edu/NJinPAS/CropProfiles.htm.

NJinPAS has reviewed and revised six of seven previously published crop profiles with 2000 or 2003 data (since pesticide usage data for 2000 became available from the New Jersey NJDEP in mid-2002). The six profiles are asparagus (8), cranberry (12), forage alfalfa (6), peaches (15), spinach (17), and squash (19). The revision of a seventh profile (blueberry) is currently scheduled for submission by January 2006.

Although not a New Jersey profile, RCRE Specialists reviewed and assisted in the development of New York's 'Crop Profile for Nursery Ornamentals' in 2004. Specifically, Dr. James Lashomb (Specialist in Ornamental Entomology) and Dr. Ann Gould (Extension Specialist in Ornamental Plant Pathology) have reviewed the document and submitted comments.

During the course of the NJinPAS project, 11 new crop profiles based on the 2000 NJDEP data or Fruit IPM pesticide use data were proposed for submittal. New crop profiles have been submitted for apples (4), carrot (10), field corn (13), eggplant, tomato and honey bees. Two crop profiles, green

pepper and kale, based upon 2003 NJDEP pesticide use data are scheduled for completion by the current contract no cost extension to June 2006.

Since 2001, New Jersey has either directly produced or participated in Work Groups for five PMSPs. Descriptions of NJinPAS PMSP contributions for peaches, lima bean, spinach, apple, and carrot follow.

Pest Management Strategic Plan for Peaches in New Jersey - An NJinPAS Work Group was assembled on April 11, 2002 to draft a Pest Management Strategic Plan for Peaches in New Jersey. The participants in the Work Group included sixteen commodity and technical specialists: growers, IR-4, researchers, County Agricultural Agents, and specialists in farm management, wildlife, and tree fruit entomology and diseases, weeds, and pest management. The Work Group was led by Dr. Peter Shearer, an RCRE Specialist in Tree Fruit Entomology. Project Director George Hamilton and Work Group Leader Peter Shearer jointly conducted the Work Group proceedings, providing the Work Group with the Eastern PMSP for Peaches and USDA checklist materials and template for PMSPs. The 'Pest Management Strategic Plan for Peaches in New Jersey' was posted on the NJinPAS PMSP webpage in February 2003 for stakeholder review. There have been 450 downloads of this document since its posting online at the PMSP webpage. The plan was concurrently submitted to the mid-Atlantic State Network Project Directors, the NEIPMC, and the USDA. Additionally, availability of the plan was posted to the entire membership of the NJinPAS Network listserv.

Pest Management Strategic Plan for Lima Bean for Delaware, New Jersey, and the Maryland Eastern Shore - Collaborators from Maryland, Delaware, and New Jersey participated in the preparation of a regional PMSP for lima bean. Led by Dr. Susan Whitney of University of Delaware, the workgroup for the Lima Bean PMSP first met in January 2003. Subsequent to review and comment on a draft Plan, the Work Group finalized the 'Lima Bean Pest Management Strategic Plan for Delaware, New Jersey, and the Maryland Eastern Shore'. It was released in April 2003. The document is posted at www.udel.edu/pesticide/finallimabeanPMSP.pdf. Significant involvement by lima bean growers and processors from New Jersey and RCRE staff, specifically Gerald Ghidui, Vegetable Entomology Specialist; Kris Holmstrom, IPM Program Associate; Joseph Ingerson-Mahar, Vegetable IPM Coordinator; Pete Probasco, Salem County Agricultural Agent; and Stephen Johnston, Vegetable Pathology Specialist was facilitated by NJinPAS.

Pest Management Strategic Plan for Apple Pest for the Mid-Atlantic - Collaborators from West Virginia, Virginia, Pennsylvania and New Jersey participated in the preparation of a regional Pest Management Strategic Plan (PMSP) for apple. Led by Dr. John F. Baniecki of the University of West Virginia, the workgroup for the Apple PMSP met on June 24-25, 2003 in Kearneysville, West Virginia. Subsequent to review and comment on a draft Plan, the workgroup finalized the Apple Pest Management Strategic Plan for the Mid-Atlantic in February 2004. New Jersey Workgroup members for this PMSP included Dean Polk, IPM Agent-Fruit of the Rutgers Ornamental and Fruit Research and Extension Center, as well as apple grower John Hauser.

Pest Management Strategic Plan for Spinach for Delaware, New Jersey, and the Maryland Eastern Shore - Led by Dr. Susan Whitney of University of Delaware, the workgroup for the Spinach PMSP was held in January 2004. The final Pest Management Strategic Plan for Spinach for Delaware, New Jersey, and Maryland's Eastern Shore was issued on May 4, 2004. New Jersey participants in the Work Group that contributed to this Plan included growers, processors, and Extension staff. Specifically, growers that participated were Jimmy Catalano of Catalano Farms, and Byron DuBois and Steven DuBois of H&S DuBois. Processors that participated included: Andrew Carpenter, Tom Godfrey, and Frank Kern, of Seabrook Brothers & Sons. RCRE participants included: Jerry Ghidui,

Vegetable Entomologist, Kris Holmstrom, Vegetable IPM Program Associate, and Brad Majek, Weed Scientist.

PMSP for Carrot for New Jersey - Due to a continuing severe pest problem in carrot that first occurred in 2001, RCRE IPM scouts have continued to work with local carrot growers in monitoring pest activity during the growing season. This issue was brought to the attention of the Advisory Committee and it was unanimously agreed that carrot should be the next crop. A Crop Profile for Carrots for New Jersey was completed as a precursor to the PMSP; it was posted to the Crop Profile webpage @ www.pestmanagement.rutgers.edu/NJinPAS/CropProfiles.htm in February 2003. There was a Carrot PMSP Work Group Meeting at the Rutgers Agricultural Research and Extension Center in Bridgeton, New Jersey on Tuesday March 16, 2004. The Work Group was led by Joseph Ingerson-Mahar, RCRE Vegetable IPM Coordinator. The participants in the Work Group included sixteen commodity and technical specialists: scouts, growers, a leading processor (Campbell), IR-4, and researchers and specialists in entomology, diseases, weeds, and pest management. The final PMSP for Carrots for New Jersey was released in 2005.

New Jersey currently produces over 70 vegetables. Many of these crops are grown by numerous growers in fields that are typically less than one acre in size. As a result, statewide acreage for crops such as arrugula (baby and other), basil, Brussels sprouts, leaf lettuces, leeks, parsley, and radishes tend to be less than 1,000 acres each year. This small acreage; however, masks the importance of these crops. Growing ethnic populations and resultant markets in Baltimore, Philadelphia, New York City, Washington DC and New Jersey have made these small acreage crops valuable commodities. For instance, per acre values for arrugula, basil, leeks and radishes is estimated at \$6,000 (21), \$4,200 (22), \$4,200 (23) and \$3,100, respectively. As a result, more attention is being paid to their production by growers.

Unfortunately, small acreage means little attention by researchers, state governments and pesticide manufacturers. In New Jersey, surveys conducted jointly by NJDEP and NJinPAS have historically lumped small acreage crops into larger categories making it difficult to determine usage patterns and access pest management needs. Because of the small acreages involved statewide and nationally, chemical manufacturers spend little or no develop effort on new materials for these crops and as a result, few pest management options exist when product cancellations or problems such as resistance occur. Finally, few, if any, crop profiles exist for arrugula (FL), basil, Brussels sprouts (AZ, CA, MI), leaf lettuce (CA), leeks, parsley (AZ, CA, OH) and radishes (OH) crops and none have been done for the Northeastern region of the US. In addition, no pest management strategy plans exist for these crops (20). All of these issues point to the need for pest management tactic surveys, crop profiles and pest management strategies plans for these crops. This project proposes to develop these items for arrugula, basil, Brussel sprouts, leaf lettuce, leeks, parsley and radishes.

Objectives and Anticipated Impacts

This project proposes to facilitate informed decision-making on pest management practices by

conduct statewide surveys of pest management and production practices for arrugula (baby and other), basil, Brussels sprouts, leaf lettuces, leeks, parsley, and radishes,
develop crop profiles for arrugula (baby and other), basil, Brussels sprouts, leaf lettuces, leeks, parsley, and radishes, and
develop pest management strategy plans for leeks and parsley.

Anticipated impacts for the project include obtaining accurate production information, describing current pest management trends and identifying industry needs. The results of this project will be

used to justify research designed to meet the needs identified. Meeting these needs will help farmers remain economically viable while protecting human health and the environment.

Approach and Procedures

Objective 1 - Conduct statewide surveys of pest management and production practices for arrugula (baby and other), basil, Brussels sprouts, leaf lettuces, leeks, parsley, and radishes: NJinPAS will facilitate the collection and analysis of data pertaining to the use and usage of specific pest management tactics in New Jersey, including pesticides. NJinPAS will assist the RCRE Vegetable IPM Program in the compilation of crop production information and pest management tactic information collected from participating growers using personal interviews with producers. Statewide extrapolations will be made based on the data collected.

The information collected will be used directly in the creation of crop profiles for arrugula (baby and other), basil, Brussels sprouts, leaf lettuces, leeks, parsley, and radishes, and PMSPs for Brussels sprouts and radishes. This data and/or corresponding analysis will be published on the NJinPAS web page for Pesticide Use Surveys.

Objective 2 – Develop crop profiles for arrugula (baby and other), basil, Brussels sprouts, leaf lettuces, leeks, parsley, and radishes: Crop profiles for seven New Jersey commodities will be researched and written using data collected under Objective 1 using national crop profile guidelines as published by Burr; see <http://www.ipmcenters.org/CropProfiles/> for information to be collected and discussed. Each profile will address major insect pests and plant pathogens and weeds issues.

Each crop profiles proposed for completion under NJinPAS in 2006 will be reviewed by recognized New Jersey experts, including Extension specialists and growers, to insure that the insect, disease, weed, and nematode pest components of the crop profiles are technically accurate. Reviewers will be provided the key required components of crop profiles (www.pestmanagement.rutgers.edu/NJinPAS/CropProfiles.htm). Technical Reviews will be documented in project files. After review, profiles will be revised and transmitted to the Northeastern Integrated Pest Management Center for review and approval. Once approved, final crop profiles will be published by the NJinPAS Project Coordinator on the NJinPAS website on the Crop Profile web page @ www.pestmanagement.rutgers.edu/NJinPAS/CropProfiles.htm. Availability of new profiles will be announced to New Jersey stakeholders via the NJinPAS Network listserv and to other states in the mid-Atlantic via the MAINPAS listserv.

Objective 3 - Develop pest management strategy plans for leeks and parsley: Transition strategies to new pest management systems for certain commodities in the mid-Atlantic region may be needed as pesticides registered for these uses do not exist and those that do may no longer be available. Two Pest Management Strategic Plans (PMSPs) will be developed within the proposed NJinPAS project duration of one year. Representatives from DE, MD and NY will be asked to participate in the development and evaluation of regional PMSPs.

The principal investigator will assemble Work Groups representative of stakeholder interests for each commodity. The participants in the Work Group will include commodity and technical specialists, IR-4, researchers, County Agricultural Agents, and other specialists in pest management. Representatives from DE and MD will also be asked to participate in the development and evaluation of these PMSPs in order to make them more regional in nature. Each PMSP Work Group will draft an outline for the PMSP. Under NJinPAS, information will be collected for the target commodity; it will include key pests; current pest management practices; reasons why existing alternative practices, including currently registered pesticides, are not being used; and possible new alternative practices or safer pesticides. The impact of these new practices on current IPM programs

will also be addressed. A realistic estimate of the time it will take to transition to new practices without greatly affecting the crop production for the commodity will be determined.

Pat Hastings and IPM will finalize the Plan and submit it to the NEIPMC for approval. Once approved, it will be published on the NJinPAS web site on the PMSP web page at www.pestmanagement.rutgers.edu/NJinPAS/PMSP.htm. The Plan will be announced on the NJinPAS Network and MAINPAS listservs so that it is available to local and regional stakeholders.

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Probable Duration

The probably duration for this project is one year (1/1/2005 to 12/31/2005). Additional requests for funding will be made if further RFA's are distributed. See attachment 1 for details.

Evaluation Plans

All deliverables (crop surveys, crop profiles, PMSPs and website) will continue to be technically peer reviewed. Technical review of Crop Profiles and PMSPs will be documented on our 'Technical Review Form'. Reviewers include: Extension Specialists and Agents, members of the Advisory Committee, and stakeholders.

The NJinPAS Project Coordinator will monitor and update the NJinPAS Project Director of progress of the project; both will continually evaluate success. Factors to be considered in determining success of the project will be completion of crop profiles and Pest Management Strategic Plans, transmission of completed information to stakeholders by listservs and posting to the website.