

Title: **Mid-Atlantic Information Network for Pesticides and Alternative Strategies – Maryland Activity**

Contract no.: 2015-UM-USDA-9759

Participating Institution:

The University of Maryland
College Park, MD 20742

Project Director:

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Executive Summary

The Maryland Information Network for Pesticides and Alternative Strategies (MINPAS) is a self-standing cooperating subunit of the Mid-Atlantic Information Network for Pesticides and Alternative Strategies (MAINPAS), a collaborative effort between the land-grant universities of Maryland, Delaware, New Jersey, West Virginia, and New York. MINPAS aims to improve the level of knowledge, awareness, and understanding of local, state, regional, and national pest management practices. To meet this goal, MINPAS delivered pesticide regulatory and policy information to Extension educators, growers, crop consultants, and pesticide users in the state; gathered pest management data from researchers, Extension educators, growers, crop consultants, and pesticide users; analyzed these data to estimate the impacts of changes in pesticide regulations on agricultural productivity in Maryland; solicited input from other states in the mid-Atlantic region on shared commodities; and shared this information with other states in the mid-Atlantic region, the Northeast IPM Center, USDA, and the US EPA.

Narrative Report of Accomplishments

The Pesticide Education and Assessment Program at the University of Maryland in College Park served as the lead unit for MINPAS. Cooperation and contact was maintained with state universities in the mid-Atlantic region, including the University of Delaware, West Virginia University, Cornell University, and Rutgers University. The Project Directors of the Mid-Atlantic Network for Pesticides and Alternative Strategies met annually during the fall TriAgency Meeting in the Northeast region to discuss progress on state projects and areas of collaboration. In addition, the Project Directors maintained contact through e-mail communication and telephone conference calls as needed throughout the project period.

Dr. Amy E. Brown served as the Principal Investigator. Brown is an Associate Professor in the Department of Entomology at the University of Maryland, College Park, and serves as Coordinator of the Maryland Pesticide Education and Assessment Program and the Maryland Agromedicine Program.

The PEAP Assistant facilitated posting of information to the PEAP web site and production of the monthly newsletter, *Pesticide Notes*, and provided general assistance to MINPAS. The assistant took a lead role in development of the crop profiles.

A. Objective A: Improve the level of knowledge, awareness, and understanding of pest management practices

A.1. Production of crop profiles for potatoes and musk melon

Crop profiles on muskmelons and potatoes were completed and submitted to Jim VanKirk on 10 October 2002. The profiles contain the most complete information available on pesticide and non-pesticide practices used to produce the crops and manage the pests.

The muskmelon profile was edited by Mr. Al Fournier, Mr. Harry Rasmussen, Ms. Monica Marcelli, and Dr. Amy Brown, Department of Entomology, University of Maryland. Contributors included Dr. C. Edward Beste, Natural Resource Sciences & Landscape Architecture; Dr. Galen Dively, Department of Entomology; Ms. Ethel Dutky, Department of Entomology; Dr. Kathryne Everts, Natural Resource Sciences & Landscape Architecture; and Dr. James Linduska, Department of Entomology (all of the University of Maryland); and Mr. David Myers, Anne Arundel County Extension. The following individuals served as reviewers: Mr. Albert Baugus, Pest Management Consultant, Saulsbury Brothers Incorporated, Ridgely, Maryland; Ms. Betsy Gallagher, Dorchester County Cooperative Extension; Mr. James Lewis, Caroline County Cooperative Extension; Ms. Betty Marose, Department of Entomology, University of Maryland; Mr. Robert Rouse, Wye Research and Education Center, Cooperative Extension; and Mr. Steve White, Farmers and Planters Company, Salisbury, Maryland.

The potato profile was edited by Mr. Harry Rasmussen, Ms. Monica Marcelli, and Dr. Amy Brown, Department of Entomology, University of Maryland. Contributors included Dr. Edward Beste, Natural Resource Sciences & Landscape Architecture; Dr. Galen Dively, Department of Entomology; Ms. Ethel Dutky, Department of Entomology; Ms. Sandra Sardanelli, Department of Entomology; University of Maryland and Mr. Robert Mulrooney, Plant and Soil Sciences; and Ms. Joanne Whalen, Entomology and Applied Ecology; University of Delaware. The following individuals served as reviewers for the potato profile: Dr. Kathryne Everts, Natural Resource Sciences and Landscape Architecture, University of Maryland; Ms. Betsy Gallagher, Dorchester County Cooperative Extension; Mr. Ed. Kee, Plant and Soil Sciences, University of Delaware; Dr. James Linduska, Department of Entomology, University of Maryland; Mr. Luke McConnell, Pest and Nutrient Management Consultant, McConnell Agronomics Inc.; and Mr. Dave Myers, Cooperative Extension Agent, Anne Arundel County Cooperative Extension.

A2. Development of Pest Management Strategic Plans

Maryland cooperated with other states in the Mid-Atlantic Network to produce a lima bean pest management strategic plan led by Delaware. In October, 2002, Susan Whitney, Delaware PI, secured an EPA Region 3 Environmental Protection Consolidated Research grant for \$4,753 to fund a 2-day PMSP Workshop for lima beans in Delaware, Maryland, and New Jersey. On October 14, Whitney met in Georgetown, DE with the Workshop Organizing Committee. The Organizing Committee outlined the Workshop and prepared an invitation list using the check list provided by USDA/ OPMP. Maryland submitted names for consideration as invitees. A letter of invitation was sent to Workshop participants in November.

Maryland also solicited participation of growers, consultants, specialists, and other experts for the West Virginia tree fruit PMSP and the Delaware spinach PMSP.

A3. Development of information regarding the social, economic, and environmental impacts of using specific pest management practices

MINPAS cooperated with USDA and the NE PMC on requests for information throughout the grant period. Requests for information on the items indicated in Table 1. were distributed to appropriate researchers and Extension personnel. In the interest of timeliness, in each case, the individuals contacted were asked to submit information directly to the source requestor.

Table 1. MINPAS responses to requests for USDA / NE PMC requests for information, 01/01/02 - 09/30/03

REQUEST	INDIVIDUALS/AGENCIES CONTACTED FOR INFORMATION	DATE
lindane on-farm seed treatment	J. Linduska, G. Dively	02/12/02
Endosulfan	J. Linduska, G. Dively	02/13/02
diazinon information for BEAD	J. Linduska, G. Dively	04/05/02
lindane on-farm seed treatment	J. Linduska, G. Dively	04/26/02
usage & importance of endosulfan	J. Linduska, G. Dively	05/08/02
diazinon, various use issues	J. Linduska, G. Dively	06/13/02
methyl bromide CUE	D. Herzi, D. Harmon	07/19/02
methyl parathion	G. Dively	10/03/02
Carbaryl	ag & hort agents & specialists	04/22/03
permethrin	ag & hort agents & specialists	05/30/03
cypermethrin	ag & hort agents & specialists	06/02/03
ziram	Joe Fiola, Ethel Dutky	10/24/03
Experimental Use Permits workshop	Ron Ritter	01/27/04
captan	E. Dutky	06/27/04
ferbam	E. Dutky	06/27/04

B. Objective B: Encouragement of informed decision-making through partnerships

B1. Establishment of an advisory committee

The MINPAS Advisory Committee was formed in early 2002 (Table 2). The Committee met 11 September 2002 in College Park, Maryland. Documents distributed at the meeting included an agenda, explanation of MINPAS, background on the Northeastern Pest Management Center, proposed revision of the Maryland Pesticide Education and Assessment Program web site, Advisory Committee membership and contact information, a list of items distributed through MINPAS from January - August 2002, and examples of newsletters and crop profiles. The Advisory Committee approved the objectives, proposed interactive structure and plans for expansion.

Table 2. MINPAS Advisory Committee Members

NAME	AFFILIATION
Mr. Norman Bennett	NASS
Dr. John Bouwcamp	MD Vegetable Growers Assn.
Ms. Valerie Connelly	Maryland Farm Bureau
Dr. Galen Dively	Maryland Cooperative Extension (specialist)
Ms. Betsy Gallagher	Maryland Cooperative Extension (agent)
Mr. Michael Heller	Chesapeake Bay Foundation Clagett Farm
Ms. Carol Holko	Maryland Dept. of Agriculture IPM
Ms. Betty Marose	Maryland Cooperative Extension
Mr. Bruce Mertz	Future Harvest – Chesapeake Alliance for Sustainable Agriculture
Ms. Dolores Milmoie	Audubon Naturalist Society
Ms. Sandra Sardanelli	Maryland Cooperative Extension (IPM Coordinator)
Mrs. Mary Ellen Setting	Maryland Dept. of Agriculture

The Advisory Committee also made valuable suggestions for improvement, which were addressed as described below.

Recommendation: Improve coordination between the PEAP web site and Galen Dively's site (information on pest outbreaks, alerts on pest problems, etc.). Link to the IPM in Maryland web site (Sandy Sardanelli's web site). It should be a link to specific places that are part of the MINPAS.

Pertinent information from Dively's web site was provided a home on the Maryland IPM web site page, and links were established between the IPM and MINPAS sites. These changes were made over a period of time from 11/2002 - 06/2004.

Recommendation: Invite field faculty (Extension agents) to link to the MINPAS web site.

Invitation extended during the following In-Service Training on pesticides, 09/2003.

Recommendation: Use descriptive headings on the web site rather than simply listing links by their official titles. The A.C. noted that farmers are not going to look for administrative titles like MINPAS when searching; rather, they will search for specific subjects.

Organizational changes are still being made. For most of the grant period, the College of Agriculture website manager was not available to work on the web site due to administrative priorities of the College.

Recommendation: Link web site to Maryland Department of Agriculture's product registration site. At the time of the Advisory Committee meeting, the MDA site was not yet up and running, but was expected to be available by early winter 2002-2003.

Organizational changes are still being made. For most of the grant period, the College of Agriculture web site manager was not available to work on the web site due to administrative priorities of the College.

Recommendation: Include an index and a side bar. This would provide the possibility of being able to print just one section.

Redesign of navigation of the site has been completed but not yet implemented (see above).

Recommendation: Amy Brown, Galen Dively, and Sandy Sardanelli should work together to coordinate the listservs for the regular and occasional type of information that goes out.

During 2003, the listservs were better defined and expanded through the efforts of the three principals identified.

Recommendation: Develop a description of *Pesticide Notes*, Just-In-Time information, and *Pest Alerts* to send to Mary Ellen Setting for inclusion in MDA's newsletter. This should stimulate subscriptions to the three services.

The descriptions were produced and transmitted to MDA in January 2003.

Recommendation: Rather than having regular meetings, keep the Advisory Committee informed through e-mails and telephone calls. Set meetings if and only if an issue requiring full discussion, which cannot be adequately addressed through email or teleconference, should arise.

Throughout 2003 and 2004, the Advisory Committee was kept informed through e-mail and telephone calls.

B2. Coordination and communication with allied programs

Within Maryland, the Coordinators of the PEAP, PAT, IR-4, and IPM Programs all are appointed in the Department of Entomology at the University of Maryland. The Coordinators worked closely on projects and issues of significance to all programs. The programs were already strongly linked, with both formal and informal avenues of communication. Contact was maintained through electronic mail and telephone communication, regular faculty meetings, and personal contact. MINPAS contributed year-end reports to the 2001, 2002, and 2003 University of Maryland IPM Progress Report as an allied program. The state IPM Coordinator, Ms. Sandra Sardanelli, is a member of the MINPAS Advisory Committee.

On a regional basis, NJinPAS Project Leader George Hamilton agreed to coordinate the five states in the Region. To facilitate project communication, NJinPAS set up a closed listserv for the Mid-Atlantic Information Network for Pesticides & Alternative Strategies (MAinPAS) as “MAinPAS Partners” in March 2002. During the grant period, members used the MAinPAS Partners listserv to transmit meeting minutes; announce and coordinate pesticide surveys, crop profiles, and pest management strategy plans; inform members about new developments in pesticide regulation and policy; and to announce the monthly release of State newsletters including Maryland’s *Pesticide Notes*. Coordination also included establishment of a home page for MAinPAS at <http://www.pestmanagement.rutgers.edu/NJinPAS/PesticideRegistration/MAinPASHome.htm>. NJinPAS initially set up Section 18 and 24C web pages for each State with data from EPA’s online database in March of 2002. Members have since opted to limit the scope of the MAinPAS web pages to providing links to different programs available from MAinPAS partners, and posting each State’s Section 18 exemptions.

MAinPAS Project Leaders met twice in 2002 to update each other on progress and upcoming projects of their respective information networks. The first meeting was held at the NE PMC Annual Meeting in Baltimore, MD in March, 2002. At that time, members of the Mid-Atlantic Information Network discussed cooperation across state lines. The second meeting was after the TriAgency Meeting in August 2002 in Portland ME, where each state gave a brief progress report. Project Leaders discussed projections for crop profiles (Delaware, Maryland, New York, West Virginia, and New Jersey) and Pest Management Strategic Plans (New Jersey, Maryland, Delaware, and West Virginia). Arrangements have been made for the release of the crop profiles and PMSPs to all interested MAinPAS members. George Good distributed copies of the Crop Profile on Nursery Ornamentals. Whitney secured a review of the Profile by Susan Barton, UD Extension Specialist for Horticulture. NJinPAS Project Leader Dr. George Hamilton made arrangements for Rutgers Cooperative Extension Specialists Dr. James Lashomb (Specialist in Ornamental Entomology) and Dr. Ann Gould (Extension Specialist in Ornamental Plant Pathology), to review and assist in the development of the Crop Profile for Nursery Ornamentals. Finally, Project Leaders made plans to create a regional Lima Bean Pest Management Strategic Plan developed by cooperators from Delaware, Maryland, and New Jersey.

In 2003, the MAinPAS Coordinators met in August during the C&T Workshop in Honolulu, Hawaii. State updates were presented, and members discussed cooperation across state lines and sharing of resources.

Coordination and communication with in-state allied programs is an important component of MINPAS. The MINPAS Coordinator (Amy Brown) and the IPM Coordinator (Sandra Sardanelli) maintained contact on a weekly basis via meetings, e-mails and telephone calls throughout the period of the grant. In November 2003, the MINPAS Coordinator and IPM Coordinator met with Ms. Carol Holko, Maryland state agency Network Facilitator (also a member of the MINPAS Advisory Committee), to discuss strengthening ties between programs. The meeting resulted in better definition of the roles of the parties involved and a closer alliance of the three programs.

B3. Development and maintenance of links between federal partners and stakeholders

Links were established and maintained between federal partners and agricultural researchers, extension specialists, and other stakeholders so that information on pest management practices can be made available to federal partners in a timely manner in response to issues raised by FQPA or other regulatory decisions. Pesticide-related information, publications, and reports were circulated to Maryland pesticide researchers and Extension personnel.

Maryland PEAP conducted In-Service Training annually for Maryland Extension agents and specialists to provide updates on pesticide issues. Through the In-Service Training meetings, Extension personnel were kept informed of the most current information on pesticides, pest management, and alternative strategies. These individuals used the information presented during the Training meetings to plan grower meetings, plant clinics, recertification meetings, and other opportunities for interaction with producers, dealers, crop consultants, etc. With information gained from the In-Service Training meetings, Extension agents and specialists educated their clientele on new pesticides and/or new uses; new alternatives to control pests; new pest management thresholds, sampling techniques, and strategies; and new policies on pesticides and pest management.

C. Objective C: Enhancement of the productivity and global competitiveness of the US agricultural production system

C1. Development and maintenance of timely and effective methods to communicate pest management information

Pesticide issues of importance to the state were initiated and discussed at monthly meetings of the Governor's Pesticide Council (GPC). The Council includes representatives from the agricultural community, the environmental community, local government, pesticide and pest control industries, public health, education, the state legislature, the general public, and the Maryland Departments of Agriculture, Health and Mental Hygiene, Environment, and Natural Resources. Through mid-2003, the MINPAS Coordinator also served as Chair of the GPC.

MINPAS information is currently housed on the Pesticide Education and Assessment Program web site. The web site has been maintained and updated throughout the grant period. Links to other MAinPAS state programs were requested to be added by the web site administrator, and the other states in the region were asked to link to Maryland's site. A plan for revision of the PEAP web site, and, in particular, the MINPAS section of the site, was put before the Advisory Committee at the 2002 meeting. The Committee gave its strong approval of the site in general, and of the planned revisions, and offered additional suggestions for improvement.

The Maryland IPM program promotes the selection and implementation of effective pest management strategies that are economically feasible and biologically sound. Growers, pesticide applicators, and other clientele are increasingly utilizing new technologies. PestNet, a section of the Maryland IPM web site, and linked directly to the MINPAS web site, was developed in 2002 to provide timely pest information and least toxic control strategies contributed and gleaned from a variety of mid-Atlantic resources. Throughout the growing season, PestNet keeps web site users informed of pest management and alternative strategies. Components of PestNet are updated weekly, facilitating real-time transmission of data on pest populations, crop advisories, and trap counts.

The Extension Bulletin, *Pest Management Recommendations for Field Crops*, was revised annually during the grant period. The recommendations address all feasible methods of assessing and controlling pests in these crops, including pesticides and nonchemical approaches, and resistance management. During the winter of 2002-2003, Extension Bulletin 237, *Pest Management Recommendations for Field Crops*, became available as an on-line publication.

The following publications in the Pesticide Information Leaflet series were developed or revised:

- No. 36: *Pesticides: Usage and Exposure Patterns*. Aug. 2001. 6 pp.
- No. 37: *Section 25(b) Pesticides: Minimum Risk?* Sep. 2001. 7 pp.
- No. 4: *Pesticide Information Telephone Numbers*. Rev. Apr. 2002. 2 pp.
- No. 2: *Restricted Use Pesticides*. Rev. Jun. 2003. 12 pp.
- No. 40: *Pesticide Regulatory Information Resources on the Internet*. Mar. 2004. 2 pp.

Pesticide Notes, a newsletter on topics of timely interest, was issued monthly. The newsletter includes notice of proposed EPA regulatory actions such as cancellation or restriction of registrations; requests for comment on proposed regulatory actions; research findings; updates on activities conducted under the Food Quality Protection Act such as IRED's; and other timely topics. *Pesticide Notes* was posted monthly on the Maryland Pesticide Education and Assessment Program (PEAP) website at <http://www.pesticide.umd.edu>. Subscribers were notified by e-mail after each issue was posted.

In 2002, MINPAS developed a ListServ to provide "just-in-time" notice to Maryland stakeholders on pesticide issues. Many of the items currently published in the newsletter, *Pesticide Notes*, are time-sensitive, particularly requests for comment on proposed regulatory actions. Use of the ListServ has maximized the amount of time stakeholders have to review documents and prepare comments. During 2003, the MINPAS director worked with the Maryland Department of Agriculture, and the Marketing and Media Relations division of Maryland Cooperative Extension to develop and expand subscribership. Invitations to subscribe were placed in various news outlets contacted through the University of Maryland, and on the MINPAS web site. From its inception through the end of the grant period, 34 notices were sent out through this service (Table 3).

Table 3. *Just-In-Time Pesticide Info* notices mailed to subscribers, 10/01/2002 - 06/30/2004.

Subject	Issuance Date	Action Date¹
Endangered species consultation process	01/29/2003	03/03/2003
Endangered species field implementation plan	01/29/2003	03/10/2003
Asulam	01/29/2003	03/17/2003
Oxadiazon	02/27/2003	04/21/2003
Rodenticides	02/28/2003	03/31/2003
EPTC	03/20/2003	03/31/2003
Atrazine	03/20/2003	04/29/2003
Imazalil	04/01/2003	04/11/2003
Carbaryl	04/07/2003	06/02/2003
Tebuthiuron	04/10/2003	05/02/2003
Diuron	04/10/2003	06/02/2003
Carbaryl	04/21/2003	05/07/2003
Rodenticides	05/01/2003	05/30/2003
Section 18 process	05/01/2003	06/23/2003
4-chlorophenoxyacetic acid	05/07/2003	06/02/2003
Pesticide recordkeeping	05/30/2003	07/01/2003
Diazinon	06/17/2003	06/30/2003
Fenthion	07/07/2003	07/29/2003
Dimethoate	10/03/2003	10/10/2003
Dinocap	10/03/2003	10/17/2003
Atrazine	12/02/2003	02/05/2004
Creosote + CCA	12/02/2003	12/26/2003
Raid consumer alert	12/03/2003	n.a.
Creosote	12/10/2003	02/03/2004
Diazinon	12/19/2003	06/07/2004
Acifluorfen	02/04/2004	02/27/2004
Lactofen	02/04/2004	02/27/2004

¹Deadline for submission of comment, date of meeting, or other actionable date.

Subject	Issuance Date	Action Date
Thiram	02/04/2004	03/26/2004
Endangered species risk assessments process	02/16/2004	03/02/2004
Propanil	03/02/2004	04/26/2004
Benfluralin	03/08/2004	04/26/2004
Amitraz	03/30/2004	04/16/2004
Certified applicators information collection and reporting burden	04/05/2004	06/01/2004
Mosquito labeling statements	04/29/2004	07/27/2004

C2. Participation in consumer education

The general interest section of the Maryland PEAP web site was maintained and updated.