

## Mission Statement

To provide leadership and support to agriculture and the citizens of Maryland by conducting regulatory, service, and educational activities that assure consumer confidence, protect the environment, and promote agriculture.

## Vision Statement

To achieve excellence in programs and in services that preserve and protect agricultural resources and the environment, promote profitable agriculture and consumer confidence, and enhance the quality of life for all Marylanders.

## Legal Authority

Code of Maryland Regulations (COMAR) - Title XV  
Annotated Code Of Maryland - Title 2



Robert L. Ehrlich, Jr.  
Governor



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Lt. Governor



Lewis R. Riley  
Secretary



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## *A Message from the Secretary*

Agriculture is Maryland's most important commercial industry. No other part of our economy touches the lives of all residents and visitors in so many ways everyday. Each time we make a purchase at the gas pump or the grocery store, take a horse-back ride, eat a meal, visit a farm or a farmers' market, marvel at the views and benefits of farm and forest land, landscape a yard, or enjoy catching and eating the bounty of a healthy Chesapeake Bay, we come in contact with the Maryland Department of Agriculture.

The Maryland Department of Agriculture (MDA) celebrated its 30<sup>th</sup> anniversary during 2003 by honoring two dozen 30-year employees and further reaching out to farmers, industry, elected officials, and citizens to find ways to increase the industry's strength and profitability. With development and economic pressures making farming more difficult, it is important to acknowledge the significance of agriculture to the quality of our lives.

Global trade, surveillance to protect plant and animal health, bio-security, environmental protection, and difficult financial times are just a few of the challenges and opportunities that the agency has met with ingenuity, sound science, new technology, and good old-fashioned hard work. Because of MDA's education, regulation, promotion, service and preservation activities, Marylanders can expect a safe and healthy food supply and environment, fairness in the marketplace, and that agriculture will remain a strong economic force. Through this publication, we share some of our accomplishments from 2003.

It is a privilege to serve the citizens of Maryland, the General Assembly, and the Executive Branch of Maryland State Government. Working together we are creating a very bright future for agriculture and for all Marylanders.

Sincerely,

Lewis R. Riley  
Secretary





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# Office of the Secretary

## Maryland Agricultural Commission

An advisory body to the Secretary and Deputy Secretary of Agriculture, the Commission consists of 24 members representing various industries within Maryland agriculture, and includes both a consumer and a University of Maryland representative.

The Commission conducted public outreach tours in Carroll County in the fall, and Dorchester and Wicomico counties in the spring. These annual farm visits provide the members with a better understanding of agriculture, regionally, as well as an opportunity for farmers, elected officials, and interested parties to ask questions or express their concerns regarding agriculture in their respective counties.

The Commission's other activities included:

- Increasing public awareness of the Commission and its purpose, *i.e.*, news releases of monthly meetings and agendas, better advertisement of the spring and fall farm tours, spotlight articles on the Commission members, Commission pamphlet/directory.
- Monitoring the bovine spongiform encephalitis (BSE) situation, *i.e.*, encouraging updated laboratory facilities in Maryland, monitoring any national movement of the disease, working with state officials regarding any necessary actions to be taken.
- Filling current vacancies on the Commission.
- Adding representation from three additional commodities: *agribusiness, forestry, and aquaculture.*



*Maryland Agricultural Commission members: Back row: Earl Griffith, Glenn Eaves, Garet Bunting, Jesse Burall, Hal Clagett, Donald Cole, Dr. Bruce Gardner, Roland Behnke, Mark Whelan. Front row: Candace Lohr, Hank Passi, chairman, Martha Clark. Absent: Doug Barberry, Doug Green, Robert Hutchison, Paul Crowl, John Draper, Julie Feeser, Rose Fiore, Leon Gleaves, Erroll Mattox, Keith Rinehart.*

- Monitoring the *Water Quality Improvement Act* in Maryland, through consistent updates from the Maryland Department of Agriculture.
- Coordinating presentations from the Chesapeake Bay Foundation and the Chesapeake Bay Commission.
- Continuing to improve communications with the State of Maryland sister agencies.
- Promoting more funding for the *Maryland's Best* campaign.
- Scheduling presentations with the Maryland Department of Environment (MDE) on upcoming confined animal feeding operations (CAFO) regulations and the role MDE has with CAFOs and the affect on producers.
- Monitoring farmland loss

statistics and funding levels.

- Encouraging interaction with any organization sensitive to agricultural issues.
- Utilizing the commodity representatives' expertise to identify trends, issues, and economic impacts within the various agricultural sectors.
- Continuing to expend the dialogue between the Commission, Secretary of Agriculture, and the Governor's Office.

# Maryland Agricultural Statistics Service

The Maryland Agricultural Statistics Service (MASS), USDA's statistical agency, provides the public data relating to the production of most crops grown and livestock raised in the state. In addition, annual information is provided on the general economic well-being of the state's agricultural sector. Maryland's most important industry, agriculture, generated over \$1.4 billion in cash receipts for the state's farmers in 2002; not accounting for the additional impact provided by related jobs and services.

Maryland's leading cash commodities in 2002 were broilers, greenhouse/nursery products, milk

and dairy products, vegetables, and corn. MASS estimated there were 12,200 farms in 2002 with an average size of 172 acres. The average value of farmland and buildings across Maryland increased to \$4,000 per acre in 2002.

Extreme drought during the 2002 growing season took its toll, particularly on corn and soybean yields. In contrast, late season rains delayed and in some cases prevented winter wheat plantings. Crop prices were higher on average in 2002 somewhat related to smaller supplies while livestock prices still trended lower.

Major accomplishments during the year were the every-five-year national agriculture census, the results of which will be released early in 2004. Under contract from the Maryland Horse Industry Board, MASS completed the first-ever equine survey, which reported that there are more than 87,000 horses in the state on more than 206,000 acres of land. The census also reported assets, including land, of more than \$5.2 billion.

See [www.nass.usda.gov/md](http://www.nass.usda.gov/md).

## Maryland Agricultural Land Preservation Foundation

The Maryland Agricultural Land Preservation Foundation (MALPF) was created by the Maryland General Assembly in 1977 to preserve productive agricultural land and woodland that provides for the continued production of food and fiber for the present and future citizens of the state. Preservation of agricultural land and woodland helps to curb the expansion of random urban development, protects wildlife and preserves the environmental quality of the Chesapeake Bay and its tributaries.

In order for landowners to participate in the foundation's program, they must establish an Agricultural Land Preservation District. If the property meets the minimum criteria as established by the Maryland Agricultural Land Preservation Foundation, the landowners sign a voluntary agreement that simply states that the land will be maintained in agricultural use for a

minimum of five years. The agreement further states that the land will not be subdivided for residential, commercial or industrial use while under district status.

Once land is in an agricultural land preservation district, the landowner is eligible to apply to sell an agricultural land preservation easement to the Maryland Agricultural Land Preservation Foundation. During FY 2003, the foundation approved 55 new districts, representing 5,412.704 acres belonging to landowners who voluntarily restricted their land for at least five years. As of June 30, 2003, there were 3,097 properties enrolled in the program, protecting 402,038.6559 acres.

The foundation extended 141 new

easement offers during FY 2003 to permanently protect land from development and preserve it for agricultural uses. Of the 141 offers extended, 122 were accepted covering 15,316.4889 acres. As of June 30, 2003, the foundation purchased agricultural preservation easements on a total of 1,673 properties, permanently preserving 232,767.1756 acres.

See [www.malpf.info](http://www.malpf.info).



# Information Technology Services

## Technical Support

Information Technology Services (IT) completed the largest computer migration in MDA's history during 2003. The technical support section installed nearly 500 desktop PCs at headquarters and in field offices in every county. Simultaneously, staff installed Microsoft Office XP Suite on all PC workstations. The department experienced virtually no down time associated with the transition.

Staff is preparing to conduct training sessions within the department to assure a smooth transition to the Microsoft Office XP (Word, Excel, PowerPoint, and Access). Classes will be held at our headquarters with development and instruction done solely by IT staff. Because more than 400 MDA employees will require training in some or all of these applications, this internal training program will result in cost savings to the department. In addition to these savings, training is customized to meet the specific needs of MDA employees in their day-to-day work.

The IT unit's inventory system is also being overhauled so that all the new hardware can be managed, monitored and updated with ease and efficiency. Finally, IT staff incorporated the Rural Maryland Council representatives into the MDA network family. The technical support team recorded 592 staff hours in routine "help desk" assistance calls throughout 2003.

## Programming

The programming section of IT is completing the first phase of Oracle migration to an interface capable of web access. The second phase involves a move to Oracle 9i to enable MDA to complete and process online transactions for

permits, registrations and certifications with increased efficiency, time savings and hopefully cost savings in time once the state sets standards for these types of transactions.

The new Pesticide Enforcement (PE) database was designed in Oracle to keep track of all general and routine business inspections conducted by MDA. The existing database was not originally designed to keep track of inspections. Previously, the inspectors kept data for inspections in several databases. This data could not be shared, and in most cases, the data were inconsistent with the existing Pesticide database. The new PE database will prevent data entry redundancy, and enable the inspectors to share and retrieve accurate data (including all information in the existing database).

Resource Conservation's Watershed project was taken over by IT's programming section due to the termination of an outside contract. This system provides Resource Conservation staff with an effective method of managing information about agricultural operations in Maryland, including on-farm nutrient management planning. The programming section of IT completed the transition of the Nutrient Management Access database into the new system. The Nutrient Management system is 90 percent complete with the Conservation Planning module to follow.

This constitutes a huge programming commitment with many programmer hours allocated. On the networking side of this project, all field offices (30+) have been connected to headquarters and are able to operate on the Wide Area Network.

The programming section spent approximately 672 staff hours on

maintenance, modification and troubleshooting of existing Oracle databases.

Our network environment has shown great resiliency – suffering no significant downtime – during the multitude of virus attacks which occurred this year. Use of the GroupWise mail system has grown significantly and our Guinevere network e-mail virus detection software has intercepted thousands of virus infected e-mails without causing harm to workstations or the network. The networking staff has been vigilant in keeping up with updates and patches as they are available. The network also weathered Hurricane Isabel without any downtime.

Also during the year, the IT staff installed the Veterinary Animal Disease Diagnostic System (VADDS) at all six of MDA's Animal Health offices. This system provides a major advance in the communications and diagnostic services reporting and billing capabilities of our Frederick, College Park, Centreville, Oakland, Salisbury, and Annapolis veterinarian facilities. By connecting all offices via this system, our Animal Health section has greatly increased its ability to react quickly to animal health issues.

The MDA's website is in the midst of a major reconstruction. In addition to being placed on a new Linux (open source) server, all of the site's pages are receiving a new look and feel consistent with the state's Portal concept.

The MDA's internal FMIS AdHoc Reporting System is being re-written with the assistance of an outside vendor. The new system is web-based and will be available to anyone on MDA's Wide Area Network using only a browser.

# Maryland State Tobacco Authority

Meetings of the Authority took place during the year on an as-needed basis to conduct business. Maryland Tobacco Auction Sales three year summary:

Year	Average	Pounds Sold	Value
2000	1.66	9,443,246	\$15,656,598
2001	1.69	8,081,999	\$13,676,108
2002	1.68	3,577,450	\$ 6,001,427

The following is information regarding the status of *transition or buyout programs* in the state:

## Maryland Tobacco Buyout Statistics as of February 10, 2003

Start	Grower Contracts	%	Eligible Pounds	%
2001	559	56	5,435,581	66
2002	96	10	976,442	12
2003	58	6	378,538	5
2004	72	7	444,861	5
Total	785	79	7,235,422	88
<b>Total Eligible Pool</b>		<b>999</b>	<b>8,228,286</b>	

## County Tobacco Buyout Statistics

COUNTY	N/P	GROWERS	% OF TOTAL	POUNDS	% OF TOTAL
Anne Arundel	N	34	4	216,831	3
	P	52	7	565,955	8
	<b>Total</b>	<b>86</b>	<b>11</b>	<b>782,786</b>	<b>11</b>
Calvert	N	83	11	467,181	7
	P	91	12	883,790	12
	<b>Total</b>	<b>174</b>	<b>23</b>	<b>1,350,971</b>	<b>19</b>
Charles	N	68	9	494,313	7
	P	91	12	994,754	14
	<b>Total</b>	<b>159</b>	<b>21</b>	<b>1,489,067</b>	<b>21</b>
Prince George's	N	42	5	268,367	4
	P	51	7	471,502	7
	<b>Total</b>	<b>93</b>	<b>12</b>	<b>739,869</b>	<b>11</b>
Queen Anne's	P	1	0	7,270	0
	<b>Total</b>	<b>1</b>	<b>0</b>	<b>7,270</b>	<b>0</b>
Saint Mary's	N	106	14	1,031,737	15
	P	150	20	1,695,137	24
	<b>Total</b>	<b>256</b>	<b>33</b>	<b>2,726,874</b>	<b>38</b>
		<b>769</b>		<b>7,096,837</b>	

N/P = Non Property Owners / Property Owners

# Public Information and Outreach Offices

The Public Information and Outreach offices reach out to the media, general public, government agency peers, elected officials, the agriculture industry, general public, and to MDA employees with the intent of strengthening the appreciation and understanding of the importance of agriculture and MDA activities to the everyday lives of Marylanders. News releases, events for the media and the public, awards programs, exhibits, newsletters, and website are among the many tools these offices use to communicate with its audiences.

Two of the most prominent public events produced by the offices are the

agency's Open House in March and its "exhibits" at the Maryland State Fair in August. Both of these events showcase the agency to thousands of people and require the involvement of dozens if not hundreds of employees. In addition, the office produced the prestigious Century Farm and Agriculture Hall of Fame awards programs.

Some of the biggest news stories handled by the information office in 2003 were mosquito control and West Nile virus, invasive species introductions and awareness, pet food found in Maryland that may have originated from a Bovine Spongiform encephalopathy (BSE)-positive

cow in Canada, nutrient management, and agricultural bio-security. Other high-profile media inquiries included the work of a number of task forces, extreme weather conditions and the affects on agriculture, the first-ever equine census and the every-five-year census conducted by the Maryland Agricultural Statistics Service.

During FY2003, staff distributed 115 news releases to approximately 83 news outlets which generated an estimated 175 calls from the media out of a total of 550 calls handled. Staff identified 390 agency news stories published or aired by the media.

# Administrative Services

The Office of Administrative Services manages all technical and support services for the department. It is comprised of three sections – Central Services, Fiscal Services, and the Human Resource Office.

The Human Resource Office facilitates the recruitment, training, appropriate compensation, and retention of qualified individuals. Programs and services for employees include risk management and total quality management, employee leave bank, telework, wellness, American Red Cross blood drive, employee recognition awards and other innovative ideas.

Central Services manages facilities, records, inventory, telecommunications, warehousing, motor fleet and distribution of supplies and mail. The office also over-

sees departmental procurement.

The office is responsible for the maintenance and repair of 264,410 square feet of facilities on 44.5 acres in Annapolis and 71,687 square feet of owned and leased facilities throughout the state.

The maintenance staff implements energy-saving projects wherever possible. A recycling program uses compost piles to transform organic waste into mulch, which is utilized in landscaping projects at MDA and other state agencies.

The motor pool provides quality maintenance and repairs of the department's 290 vehicles in addition to semi-annual inspections on all vehicles. The MDA fleet travels three million miles per year.

Central Services provides procurement

assistance throughout the department; continued to improve management practices and automated data concerning motor vehicle operating costs, telephone costs and billing, inventory control and minority procurement; and continued to incorporate the financial management information system to improve monitoring, ordering, and delivery of goods and services.

Fiscal Services handles all centralized accounting transactions for the department. This encompasses all phases of the budget, grants management, accounts receivable, accounts payable, payroll and leave management. In addition, the office manages the corporate credit card system at MDA.

# Office of the Assistant Attorney General

Staff of the Office of the Assistant Attorney General represents the department on behalf of the State Office of the Attorney General and provides legal representation and advice. The office routinely provides legal assistance to the boards and units within the department, reviews regulations proposed by various units within the department for legal sufficiency, and assists in producing educational programs for department staff.

The top five accomplishments for the office in 2003 were to:

- Successfully defend the State Aquaculture Advisory Committee and MDA in a three-

year dispute in the Circuit Court for Cecil County with the owner of a failed aquaculture system, who demanded \$10 million in compensatory and \$50 million in punitive damages.

- Successfully defend the Secretary of Agriculture in the Court of Special Appeals in a challenge to the Secretary's authority under the State Pesticide Applicator's Law.

- File suit, in cooperation with Howard County and on behalf of the Maryland Agricultural Land Preservation Foundation, against several landowners to enforce the deed restrictions of the program. This program has preserved more than 232,767 acres

of prime agricultural land. One case is ongoing and the other settled, with the landowner agreeing to comply with the program's regulatory requirements

- Establish a statewide network of attorneys from county law offices to discuss state and local agricultural preservation issues.

- Represent the State Board of Veterinary Medical Examiners, the Secretary of Agriculture, and the Board of Review in a contested case hearing involving a veterinarian who was charged with unprofessional conduct.



# Office of Resource Conservation

## State Soil Conservation Committee

Established in 1938, the **State Soil Conservation Committee (SSCC)** consists of 11 members representing local soil conservation districts and state and federal agricultural and natural resource agencies. The SSCC coordinates the activities of Maryland's 24 soil conservation districts and appoints district supervisors. The SSCC also develops, reviews, and refines policies on soil conservation and water quality issues, while advising the Secretary of Agriculture on these matters. Importantly, the committee serves as a forum for all agencies involved in protecting natural resources.

*In 2003, the SSCC approved or made recommendations for the following policies:*

- Expansion of the Maryland Agricultural Water Quality Cost-Share (MACS) Program to support nutrient management plan updates
- Establishment of eligibility criteria for the 2004 MACS Winter Cover Crop Program
- Maintenance of a two-year time period for approved sediment and erosion control plans on forest harvesting activities
- Recruitment of new board members for soil conservation districts
- Development of a job description for soil conservation district supervisors
- Ethics guidance for soil conservation district supervisors and employees

*The SSCC also received briefings and tracked the following initiatives:*

- A research project entitled, *Acid Sulfate Soils in Dredged Material on Pocomoke Sound*
- Research findings on rising sea levels and their effect on marshes at the Blackwater Wildlife Refuge. The SSCC reviewed a project to restore marshlands by adding dredge materials to former marsh areas in order to restore elevation
- Water conservation and characterization of drought conditions in Maryland
- Improved efficiency of irrigation systems

In other areas, the SSCC sponsored a half day training program for Soil Conservation District Boards of Supervisors. The program included an interactive feedback session on nutrient management and ethics training.

## Program Planning and Development

This section is responsible for planning, developing and coordinating policy, programs, and public information on resource conservation issues and nonpoint-source pollution. Programs and activities are coordinated among local soil conservation districts, federal and state agencies, and public and private agricultural and natural resource organizations. The section also provides staffing support to the State Soil Conservation Committee.

### Manure Transport Program

The Manure Transport Program helps poultry, dairy, beef and other livestock producers cover the costs of transporting excess manure identified by their nutrient management plans off their farms. Animal producers with high soil phosphorus levels or too little land on which to apply their manure can receive cost-share assistance of up to \$18 per ton to transport excess manure to other farms or alternative use facilities that can use the product safely. To support Maryland's goal of transporting 20 percent of the poultry litter produced on the Lower Eastern Shore to other regions, cost share rates are 20 percent higher for farms located in Dorchester, Wicomico, Worcester and Somerset counties. Established in 1999 as a four-year pilot project, the program's sunset provision was eliminated in

FY 2003, however its funding was significantly reduced.

In FY2003, the program provided farmers with \$233,444 in state grant payments to transport 28,556 tons of manure away from areas with high soil phosphorus levels. Cost-share funds to transport poultry litter—comprising the bulk of the manure transported—were matched by Delmarva poultry companies, bringing to \$463,089 the total amount of financial support provided.

A Manure Matching Service supports the Transport Program by linking farmers who have excess manure with others who can use the manure as a nutrient source in accordance with nutrient management plans. To date, farmers registered with the service have requested more than 110,000 tons of manure. Since 1999, approximately 23 matches accounting for 11,000 tons of manure have been successfully completed.

## Geographic Information Systems

A geographic information system (GIS) is a computer-assisted system for acquiring, storing, analyzing and presenting geographic data about places on the earth's surface. A GIS combines data from many sources including digitized and scanned maps, aerial photography, soil surveys, and global positioning systems to create a "smart map" of a specific location. In agriculture, this "smart map" is comprised of layers of information concerning soil types, crops, topography, and a farm's proximity to streams and roads. Because of its ability to manage large amounts of data about a specific location, GIS helps field planners to more accurately site, design and evaluate the effectiveness of best management practices installed on a farm to protect water quality.

Education and training are vital to GIS implementation. In 2003, RC staff conducted GIS training sessions for nearly 60 headquarters and field employees on the ArcView GIS system using Maryland PropertyView and other Maryland geographic data sets. Developed by the Maryland Office of Planning, this extensive data contains property maps and owner information for locations throughout Maryland. The training sessions provided conceptual overviews and hands-on experience. In addition, work on the development of a GIS Strategic Plan for MDA continued.

## Information and Education

The Information and Education Program provides creative, editorial, design, and production services to all program areas within the Office of Resource Conservation. In 2003, staff accelerated efforts to educate Maryland farmers on incentive programs and updated or developed several brochures and fact sheets on a range of programs and topics including new conservation tax credits, the Maryland Agricultural Water Quality Cost-Share Program, Maryland's Low Interest Loan Program for Agricultural Conservation, and Cost-Share Assistance for Public Drainage Associations. To educate the public at large on Maryland's agricultural conservation efforts, annual reports were developed for the Nutrient Management Program and the MACS Program.

During the year, efforts to educate homeowners on Maryland's water quality goals and initiatives continued. The RC staff developed two additional fact sheets on water conservation and composting as part of the popular *Backyard Actions for a Cleaner Chesapeake Bay* information packet and distributed them to homeowners at numerous outreach

events including the Maryland Home and Garden Show, Towson Gardens Day, county fairs, and the Maryland State Fair. The office also created a new informational poster, display and interactive web link to educate citizens about the many ways their actions on the land affect water quality.

On the education front, staff provided a presentation on soil and water conservation issues to 35 teachers attending the Maryland Ag in the Classroom Program Winter Workshop. In the spring and summer, the staff expanded the annual promotion of county and state Envirothon competitions to the international level as Maryland hosted the highly respected Canon International Environmental Education Competition for high school students from more than 41 states and six Canadian provinces. Staff worked closely with counterparts from other environmental agencies to secure news stories and feature articles in local newspapers and media outlets on the students involved in the competition and the environmental issues facing farmers and natural resource planners.

~~Did You Know~~

*There are 900 farms with some 80,000 dairy cows that produced 1.3 billion pounds of milk last year.*

# Conservation Grants

This program is responsible for managing the Maryland Agricultural Water Quality Cost-Share Program. Established in 1983, MACS provides farmers with financial assistance to install best management practices (BMPs) to protect water quality.



In Fiscal Year 2003, MACS provided Maryland farmers with \$9.2 million in grant payments to install 3,500 projects on their farms that will help prevent 19,630 tons of soil annually and 1,860 tons of manure daily from impacting Maryland waterways. These projects represent a personal investment of more than \$1 million by Maryland farmers, who will also shoulder the maintenance and upkeep expenses of the BMPs installed for years to come. Nutrient management services, cover crops, riparian forest buffers, filter strips, watering facilities, conservation cover, manure transport, stream fencing, grassed waterways and animal waste storage structures round out the top 10 best management practices installed during the year with cost-share assistance of up to 87.5 percent provided by MACS.

In other efforts, MACS:

- Processed \$3.4 million in cost-share payments and sign-up bonuses for landowners who enrolled environmentally-sensitive land in

Maryland's Conservation Reserve Enhancement Program (CREP). Landowners used the funds to install more than 6,000 best management practices on environmentally sensitive lands. During the last five years, landowners have used CREP funds to protect nearly 65,000 acres of environmentally sensitive cropland in Maryland with streamside buffers,



conservation cover, and other best management practices aimed at keeping livestock away from sensitive streambanks, protecting highly erodible land, safeguarding water quality, and enhancing wildlife habitat.

- Helped more than 500 farmers comply with the Water Quality Improvement Act (WQIA) of 1998 by providing them with \$735,000 in grants to hire private MDA-certified consultants to develop nutrient management plans for their farms. The nutrient management plans funded by MACS in 2003 were used to manage fertilizers on approximately 206,000 acres of farmland. Because Maryland law requires farmers to update their nutrient management plans at least once every three years, program eligibility has been expanded to allow cost-share for nutrient management plan updates.
- Expanded the popular Eastern Shore cover crop program to farmers statewide. Cover crops provide farmers with a one-two

punch against soil erosion and farm runoff by absorbing unused crop nutrients remaining in the soil following the fall harvest and acting as a ground cover to keep the soil from washing away during the winter months. During the year, farmers statewide received \$2.3 million in cost-share grants to plant 117,000 acres of cover crops of rye, wheat, barley and oats following the fall harvest of corn, soybeans or vegetables.



*Best management practices pictured from left: grassed waterway, manure storage and transportation, watering trough.*

*~~Did You Know~~*

*Almost half of Maryland's 2.1 million acres of farmland is planted in corn and soybeans each year, primarily to supply the poultry and livestock industries with feed.*

# — Maryland Nutrient Management Program —

The Water Quality Improvement Act of 1998 requires all Maryland farmers grossing \$2,500 or more annually or raising 8,000 pounds or more of live animal weight to run their operations using a nutrient management plan that addresses both nitrogen and phosphorus inputs. The Nutrient Management Program oversees a licensing and certification program for consultants, compliance activities, and education and training programs necessary to implement the law.

On August 5, 2003, Governor Robert L. Ehrlich, Jr. and MDA hosted a one-day summit to collect recommendations from interested stakeholders on ways to streamline the Nutrient Management Program and improve its effectiveness in meeting Maryland's water quality goals. More than 300 farmers, consultants, environmentalists, scientists and other stakeholders gathered at Chesapeake College in Wye Mills to suggest ways to make it more effective and user friendly for farmers. Stakeholders proposed more than 50 ways to improve the program. Governor Ehrlich incorporated many of the suggestions into policies and his 2004 legislative initiatives.

At the end of the fiscal year, Maryland farmers had officially submitted nutrient management information covering more than one million acres of farmland with plans for an additional 338,000 acres of farmland under development. This represents roughly 84 percent of the agricultural land that is required by law to have a nutrient management plan. Also during the year, the Nutrient Management Program:

- Initiated a certification program in partnership with Maryland Cooperative Extension for farmers interested in writing nutrient manage-

ment plans for their own operations. Following two training sessions and a series of plan writing sessions, MDA certified 27 farmers to write their own plans. Additional specialized sessions are scheduled next year for poultry, pasture, and greenhouse and nursery operations.

- Certified 38 new nutrient management consultants, bringing to 982 the total number of certified nutrient management consultants. This figure includes 147 farmers who are certified to write their own nutrient management plans.

- Conducted approximately 20 quality control checks on nutrient management plans developed by consultants working in licensed firms. Staff reviewed and evaluated an additional 600 plans required for MACS cost-share projects to ensure that they met required nutrient management standards.

- Hosted a one-day State-of-the-Science Nutrient Management Research briefing for farmers, consultants, legislators, agricultural organizations, environmental interests and other key stakeholders on the most recent research findings related to nutrient management. Approximately 100 people attended the event.

- Sponsored 24 training workshops on topics ranging from "Advanced Phosphorus Planning" to "Managing Nutrients for Pasture Operations" for more than 900 people.

- Conducted more than 40 implementation reviews for non-agricultural land managers--golf course managers, public grounds keepers, lawn care companies,

landscapers, and athletic field directors--to ensure compliance with the requirements of the Water Quality Improvement Act of 1998.

- Offered a variety of training sessions for 850 non-agricultural land managers.

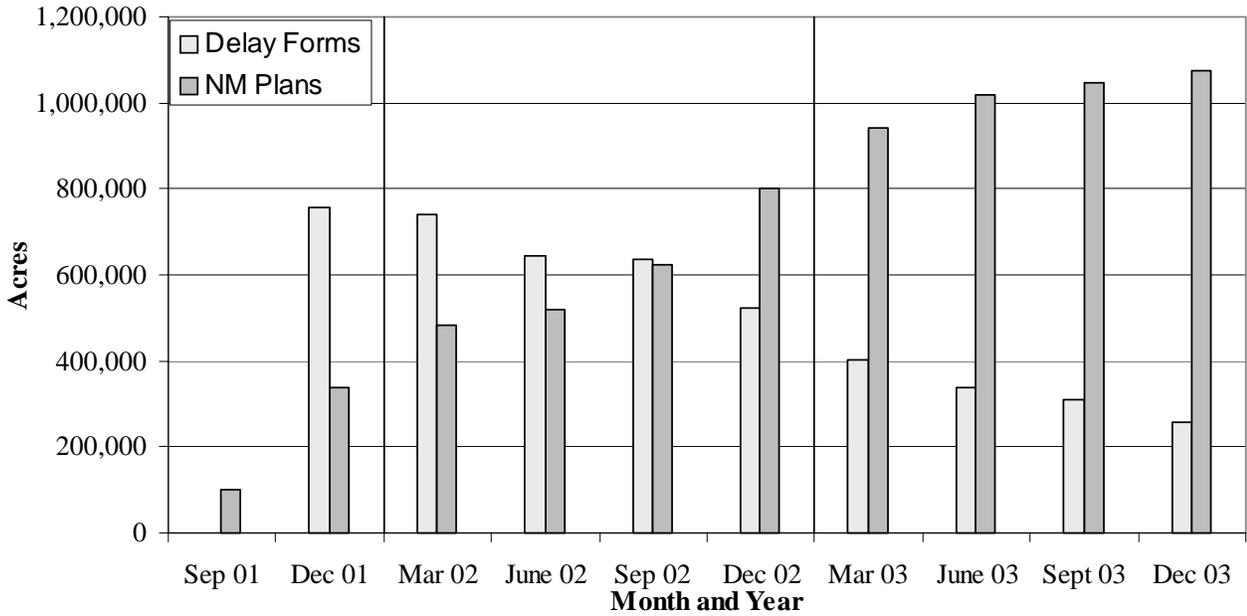
- Working with Maryland Cooperative Extension, offered 21 applicator voucher training sessions for 185 people. The applicator training courses are required for farmers who apply nutrients to 10 or more acres of cropland. To date, more than 4,000 farmers have received vouchers.

- Provided financial support to Maryland Cooperative Extension for 31 nutrient management consultants and additional staff who conduct local technical support and educational activities.

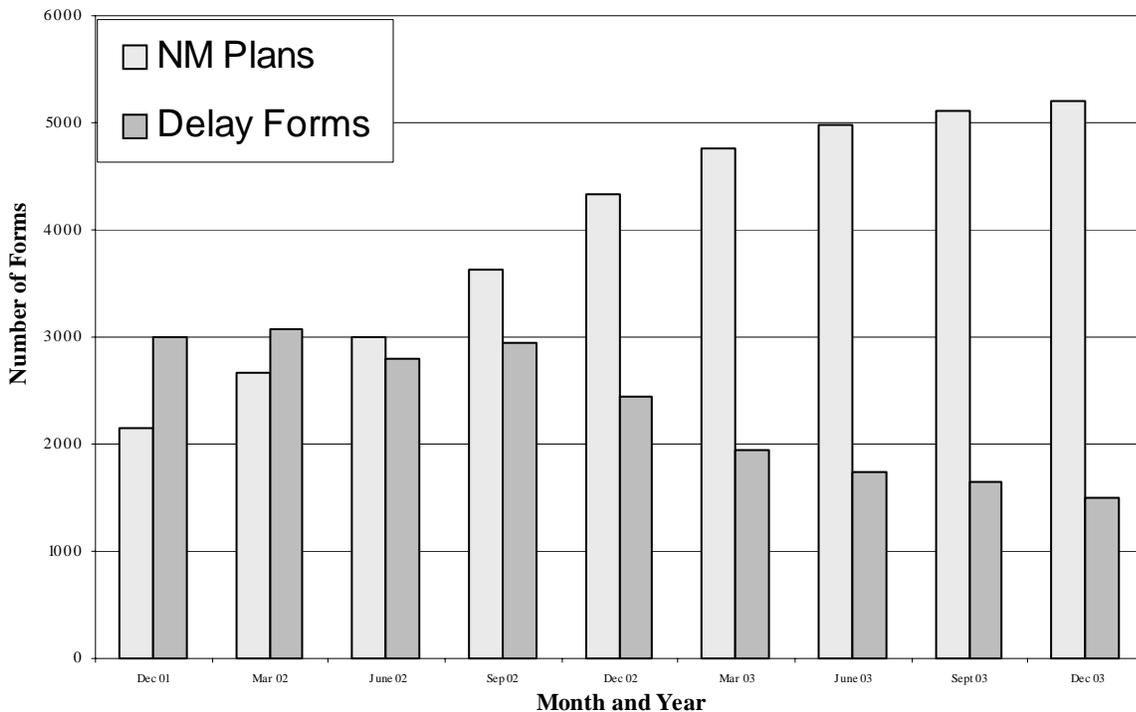
- Conducted eight regional workgroup meetings drawing participants from every county in the state to gain input from farmers, consultants, fertilizer company representatives, agricultural operations, Extension staff and others on ways to improve the nutrient management program.

- Conducted five educational sessions to help farmers understand how MDA will evaluate the implementation of their nutrient management plans.

**Cumulative Acreage of Nutrient Management Plans and Justification for  
Delays Filed with MDA  
From September 2001 to December 2003**



**Cumulative Number of Plans and Delay Forms Filed with MDA  
from December 2001 to December 2003**



# Resource Conservation Operations

This program provides operating funds and staffing support to the state's 24 soil conservation districts for promotion and delivery of soil conservation and water quality programs at the local level.

## Conservation Planning

Soil Conservation and Water Quality Plans (SCWQPs) help farmers protect natural resources on their farms. Unlike nutrient management plans, which deal specifically with fertilizer applications, SCWQPs address natural resource management issues and existing and potential pollution concerns for the entire farming operation. Developed by MDA and local and federal employees working in the soil conservation district, SCWQPs identify best management practices that can be implemented by the farmer in stages to address specific natural resource concerns. A terrace system or grassed waterway may be recommended to prevent soil from washing down a hillside. Cover crops and vegetative buffers are

often installed to prevent nutrient runoff from entering farm streams. Other more complex BMPs such as animal waste storage structures provide production and water quality benefits for livestock operations.

In 2003, soil conservation planners developed 1,100 comprehensive soil conservation and water quality plans for 103,000 acres of Maryland farmland. Another 950 plans affecting 125,000 acres were updated to ensure their continued effectiveness in protecting natural resources. Together, these plans contained more than 5,700 BMPs.

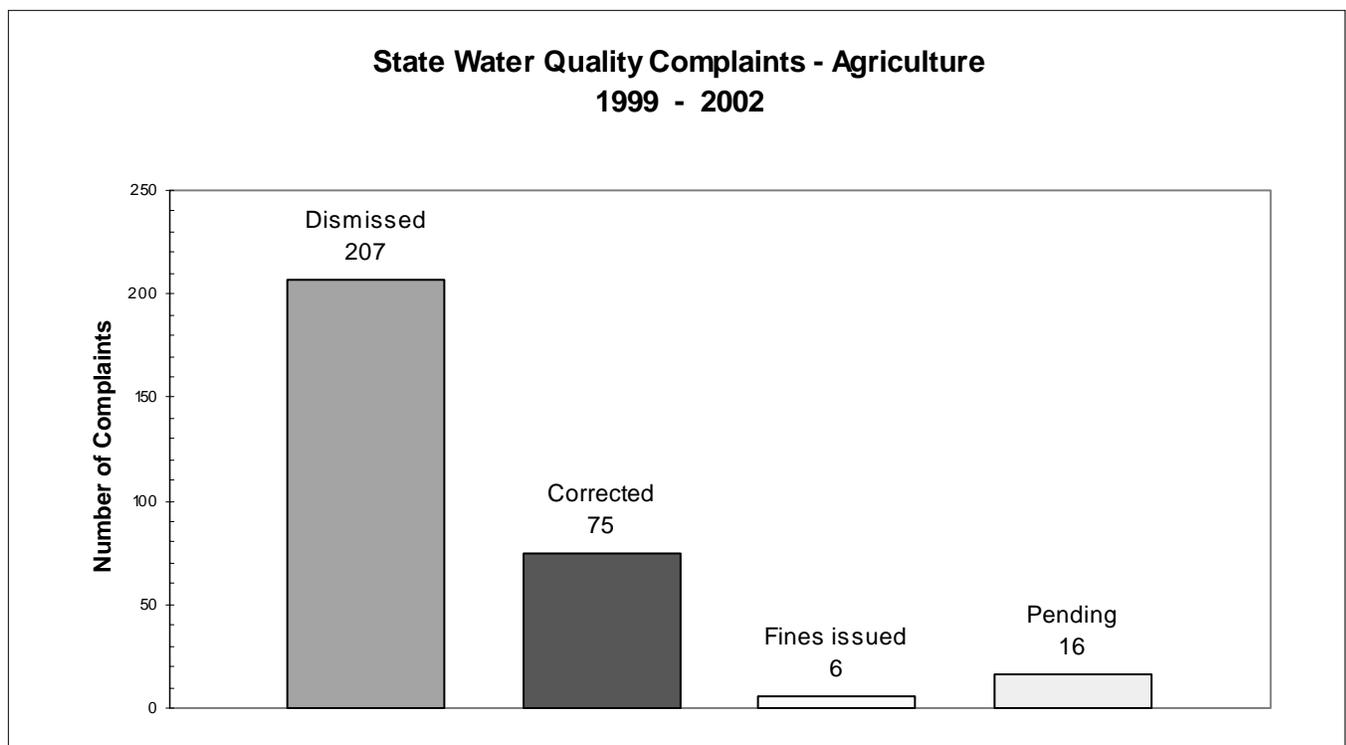
## Enforcement

In 1999, the Maryland State Soil Conservation Committee amended and updated the state's procedures for addressing cases of water pollution caused by agriculture. The revised strategy calls for a progressive approach to handling individual pollution cases based on the severity of the situation. Conditions that are likely to cause pollution or that have

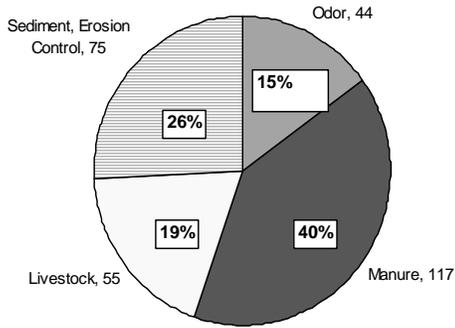
resulted in inadvertent farm pollution require timely corrective action, whereas chronic or willful mismanagement of farm resources is handled through a formal enforcement action. The Maryland departments of agriculture and environment work jointly with soil conservation districts to assess farm management practices and take action against polluters when necessary. Emphasis is placed on voluntary corrective actions by farmers or landowners with assistance provided by the local soil conservation district or Maryland Cooperative Extension.

## Agricultural Water Management

To prevent pollution and to protect water resources, the office works with public drainage associations (PDAs) to assure that plans for operation and maintenance of drainage systems are properly developed and implemented. During the year, four water quality improvement projects were implemented using a \$55,000 federal



**Types of State Agriculture Complaints  
1999 - 2002**



Clean Water Action Plan grant combined with PDA tax funds. The projects involved replacing and installing drainage pipes, water course enhancements, and water control structures across drainage ditches. Soil conservation district staff, PDA coordinators and USDA Natural Resources Conservation Service engineers all took part in the planning, design, and construction needed to complete the projects. They also provided technical assistance for the operation and maintenance of over 800 miles of drainage ditches.

## Tributary Team Activities

The Resource Conservation unit and soil conservation district staff are active supporters and participants in Maryland's Tributary Teams. These teams, which are comprised of local citizens, farmers, business leaders and government officials, meet monthly in each of Maryland's 10 major tributary basins to recommend pollution prevention measures and address local water quality problems unique to each watershed with the overall aim of improving water quality in the Chesapeake Bay.

In 2003, the Tributary Teams initiated work to revise cleanup

strategies to further reduce nitrogen and phosphorus inputs to the Bay while restoring critical wildlife and aquatic habitat. The *Chesapeake 2000* agreement signed by the leaders of the Bay jurisdictions, the Chesapeake Bay Commission, and the director of the Environmental Protection Agency calls for the implementation of new, more ambitious Bay restoration strategies by 2010.

## Maryland Envirothon

On July 26-31, Maryland hosted the 2003 Canon International

Envirothon, America's largest high school environmental education competition for teenagers interested in learning about natural resources and gaining a better understanding of today's complex environmental issues. Approximately 250 teenagers from 41 states and six Canadian provinces traveled to Mount Saint Mary's College and Seminary in Emmitsburg to compete for a share of more than \$30,000 in college scholarship money and prizes. The Canon Envirothon is the culmination of a series of environmental competitions that began this spring and involved more than 500,000 teenagers across North America. More than three years in the planning stages, RC staff worked with soil conservation districts, USDA and other state environmental agencies to produce the event without a hitch. The Maryland team from Montgomery County finished 5<sup>th</sup> out of 47 teams.

*Picture: Maryland's 2003 Envirothon team from Montgomery County.*





# Marketing, Animal Industries, & Consumer Services

## Marketing Services

The Marketing Division's principle role is to identify and develop profitable marketing opportunities for Maryland farmers and agricultural producers. The unit also serves as a conduit for federal resources and for policy information specific to the agricultural sector. These programs have direct and indirect financial impact on farmers and producers and affect the way they sell their products and develop new buyers.

### National Marketing and Agribusiness Development

The Marketing Division helps farmers and agricultural producers market their products directly to supermarkets, hotels, food service businesses and to other wholesale buyers as well as consumers. The *Shore to Store* initiative involves more than 50 farmers selling directly to Eastern Shore supermarkets. Last year, the farmers participating in this program estimated their sales to be \$1.3 million. *Maryland's Best Direct* provides similar opportunities for farmers and producers to sell their products directly to wholesale buyers in Maryland and beyond. The program was initiated in 2003, with a dozen or so farmers who sell their products directly to the 23 Weis stores in Maryland. These partnerships brought farmers tens of thousands of dollars in direct sales. We expect to expand to more major supermarket chains, such as Wal-

Mart, Safeway, Giant and Food Lion, as well as restaurants, schools, garden centers, and other wholesale buyers.

Coordination by marketing staff is pivotal to the success of these programs. Without MDA's involvement, an individual producer would find it quite difficult even to get access to the buyers and decision-makers. We negotiate with the stores, introduce sellers to buyers, and provide promotional materials and some financial input to make the initiatives workable and profitable.

The marketing office has been instrumental in the development of farmers' markets in all 23 of Maryland's counties and the city of Baltimore. In 2003, MDA was actively involved with 43 of the state's 74 farmers' markets, providing various levels of support from the initial creation and development of new markets to providing promotional materials and occasional consultation for well-established markets. These markets are an important source of direct revenue to farmers; farmers estimated their sales at \$2.1 million last year.

Many farmers' markets participate in the *Gleaning* program, aiding food recovery organizations in the distribution of food and food products from farmers directly to needy families. Marketing staff provide support services, without which the program would be more difficult and costly for all concerned.

The Farmers Market Nutrition

Program (FMNP), which is funded primarily by the U.S. Department of Agriculture's (USDA's) Food and Nutrition Service, provides fresh produce for nutritionally at-risk women, children and senior citizens while putting cash money in the pockets of farmers. In 2003, MDA leveraged general funds of \$65,000 to generate a total commitment of \$821,000. More than 330 farmers at farmers' markets across the state participated in the FMNP in 2003. This is a standing program commitment from USDA and must be administered by a state department of agriculture or similar agency and requires both staff and general fund matching resources to continue.

Last year, MDA received \$1.1 million from USDA for promotion of *Specialty Crops*. The majority of these funds were distributed to various industry groups for targeted promotional activities and research projects as a means to stimulate sales. For example, one grant of \$100,000 to promote *Maryland Grown* nursery products contributed to a reported sales increase of \$4.2 million, much of which was paid to Eastern Shore growers. This was an increase of 43.3 percent over the previous year, far exceeding the local or national industry average for a year when drought kept sales even or lower for many producers.

A small portion of the specialty crop funds was allocated for MDA activities on behalf of the state's agricultural producers, including the

development of the *Maryland's Best* quality assurance program. As part of the *Maryland's Best* program, MDA has created a searchable database and, in the near future, will launch a website allowing wholesale buyers as well as consumers to locate Maryland suppliers quickly and easily. The marketing office also was awarded a grant from USDA's Federal-State Market Improvement Program (FSMIP) to continue these



sorts of projects and to work with small and mid-size producers to develop infrastructures to enhance producers' ability to meet the demands of the increasingly large wholesale buyers. The FSMIP grants are made only to state departments of agriculture or similar agencies.

In addition to direct marketing activities, the unit administers a number of programs and grants, and provides staffing for activities which improve the policy climate and long-term profitability for farmers. Most recently, staff assisted several state-wide task forces including Governor Robert L. Ehrlich's Poultry Issues Action Team and the legislatively-created Task Force on the Marketing of Grain and other Agricultural Products. Marketing staff managed the federally funded *Crop Insurance* program which reduces farmers' economic risk from adverse conditions including weather and market fluctuations. This year's federal funding of \$330,000 contributes directly to long-term economic stability for Maryland producer-taxpayers. The office also administers various grants made to Maryland

agricultural organizations, such as the Maryland Agricultural Education and Rural Development Assistance Fund (MAERDAF) from the Rural Maryland Council (7 grants totaling \$143,680 in 2003).

The *Farm Sense* agricultural mediation program provides prompt, low-cost, confidential and collaborative options for resolving disputes related to agricultural production. The mediation program, funded mainly by USDA with matching funds from existing state resources, not only serves those who have received an adverse ruling related to a USDA program, but also provides assistance to those who are involved in developing policies specific to agriculture. In 2003,



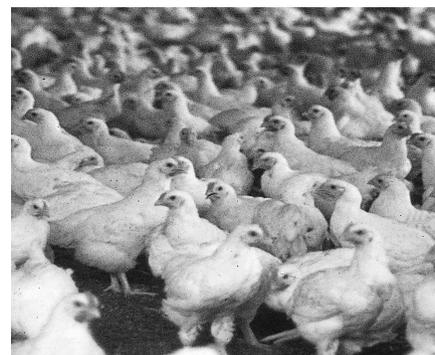
marketing staff secured a \$10,000 grant to address seasonal labor issues on Maryland farms and contributed to the process which is developing nutrient management policy for the future. Staff also is working on ways to collaborate more effectively with other state agencies on shared interests, in order to create a more business- and consumer-friendly government. Only state departments of agriculture can request certification by USDA and receive USDA funding for these programs.

## International Marketing

The MDA's International Marketing program helps Maryland's farmers and producers find interna-

tional buyers for products such as grains, value-added and processed foods, livestock (including horses), semen and embryos, and nursery products. Finding buyers overseas is complex and difficult for small- and medium-sized producers, especially when exporting agricultural products. Beyond the normal difficulties of international trade (such as language, business practices, transfer of funds and insurance), exporting live plants and animals and other agricultural products (particularly animal genetics) poses additional challenges, such as the necessity to secure phytosanitary certificates and adherence to various import restrictions and labeling requirements.

Exporting can be quite profitable if handled correctly. USDA's Foreign Agricultural Services reports that every \$1.00 of product exported generates another \$1.62 for the economy in related economic activity. The agency also reported that employees engaged in export businesses receive higher wages than their counterparts in non-export businesses. Export markets provide



a good risk management tool for producers; when business slows in the U.S. or negative currency fluctuation occurs, export markets often provide opportunities for producers. Profitable export markets also serve to keep domestic prices high. Consequently, various sources of federal funding are available to pay for nearly 100 percent of MDA's international activities on behalf of

Maryland agricultural producers and food processors. Most of these funds must be administered by a state department of agriculture.

International Marketing specialists work closely with USDA staff at embassies worldwide and with other organizations to facilitate successful exports of Maryland products to more than 35 countries. Through the Southern U.S. Trade Association (SUSTA) and the US Livestock & Genetics Export Association specifically, MDA invests \$12,500 in membership dues which resulted last year in more than \$200,000 in funding for international trade missions managed by MDA, including reverse trade missions bringing foreign buyers from several countries to visit Maryland farms. The SUSTA's *Market Access Program* (MAP) allocated an additional \$125,000 in federal funding directly to Maryland companies for their own export promotions.

This year, MDA successfully opened new markets in Cuba, Tobago, and Africa for fresh fruit, grain, livestock, and processed foods. We expanded business opportunities in twelve other countries, including shipments of horses to Korea and cattle to China. In China, where many states are still having trouble getting into the country, we secured \$40,000 from the *Emerging Market Program* to help Maryland companies sell more than \$1 million in agricultural products. In Cuba, we helped Maryland companies complete sales



well in excess of \$4 million, and were recognized by the US Cuba Trade Council in New York as the "most cost-effective" state in entering the Cuban market.

Over the past three years, Maryland producers have sold 1977 horses and related services valued at well over \$3 million, primarily to Russia, Ukraine and Korea, a volume which should increase in the years ahead. This year, through the *Special American Business Intern Training Program* (SABIT), the office secured \$342,000 to bring Russian horse breeders, veterinarians, trainers and jockeys to Maryland for extended work with their Maryland counterparts on Maryland farms. This exchange resulted in long-term, positive, international relationships and trust and that will help Maryland horse breeders sell more horses to Russian buyers in the future.

The marketing of agricultural products, both domestically and internationally, requires a strong and effective collaboration between the private and public sectors. The marketing office continually looks for industry input to develop ongoing and coordinated policy and project implementation. The direct and spin-off benefits for producers and consumers contribute to a stronger economy not only for the agricultural sector but Maryland as a whole.

Measuring the effectiveness of these sorts of development and support activities is always challenging. Direct sales figures are the most sought-after measure, but farmers are reluctant to provide these numbers. While 'sales' are often short-term, 'marketing' involves long-term investment in building trust between sellers and buyers, particularly when trade involves living plants and animals or products which will be consumed by humans or animals. Consequently, the 'results' may not be apparent for several

years and we must rely on more readily available measures - amount of funding secured, number of people participating in programs, and satisfaction expressed by funders and clients for example. This year, the marketing office expects to manage nearly \$2 million in special and federal funds, with some additional funding going directly to Maryland farmers and producers. The office received a number of awards from funding organizations and frequent compliments from the producers with whom we work because of staff's successful management of projects. A newly-developed database will enable us to more accurately track participants in various programs and to survey them about the value of past activities and direction in planning future projects.

~~Did You Know~~  
The first ever equine census found that there are more than 87,000 horses valued at over \$680 million on 206,000 acres in Maryland. Equine-related assets are valued at \$5.2 billion and expenditures amounted to nearly \$766 million.

## Maryland Agricultural Fair Board

The Maryland Agricultural Fair Board helps to promote agriculture to the state's consumers through special grant financial support of exhibitions at county fairs, community shows, animal shows, youth activities and the Maryland State Fair. During 2003, more than two million people visited the state's fairs and agricultural shows. More than 70,000 exhibitors showed 200,000 household, farm and garden and animal exhibits. The Maryland Agricultural Fair Board administers special grant funds that support the

ribbon, trophy and premium expenses for these fairs and shows. On average, 64 percent of each fair's premiums paid in 2003 were funded by these grant monies. In addition, other grant monies support awards and trips for youth involved in the state's 4-H and Future Farmers of America (FFA) programs.

This year was a particularly wet fair season that included a September hurricane. As a result, many inside exhibit numbers were down particularly in the fruits and vegetable categories. Fair staffs also observed

decreases in the baking, craft and other household exhibit categories throughout the state. Animal entry numbers continue to increase statewide. The Maryland Agricultural Fair Board funded fairs in all 23 counties plus Baltimore City and the Maryland State Fair. There were 11 community shows and 23 livestock and other Agricultural Shows funded by the Board. Additionally, the board funded eight youth groups with memberships totaling more than 33,000 children.



*Visitors to the Maryland State Fair delight in the Maryland Department of Agriculture's exhibit in the Farm and Garden Building.*

## Crop Insurance Education Project

Many of Maryland's farmers are under-insured against income losses due to crop failure and market conditions. In 2003, MDA dedicated significant resources to improving farmer acceptance and use of crop insurance to help sustain Maryland farmers' long-term financial success. With the support of \$167,000 in federal resources, MDA successfully developed and managed a Crop Insurance Education Project which contributed to a 10 percent increase in the use of crop insurance by the state's farmers compared to 2002.

In 2002, farmers purchased crop insurance that provided them with

\$128 million of protection. In 2003, the state's farmers invested in \$162 million of coverage through 5031 policies which resulted in \$5.4 million of indemnity payments by Dec. 1.

The MDA's crop insurance education program — completed cooperatively with the University of Maryland and the USDA-Risk Management Agency — included the production of two newsletters sent to 6,500 Maryland farmers; press releases sent to the rural press; radio advertising; eight workshops for 260 farmers and the creation of an advisory crop insurance council for MDA.

The 2003 Crop Insurance Education Project clearly put MDA in the forefront of promoting crop insurance as key agricultural risk management tool. The MDA also has established itself as the state's leader in efforts to make federally controlled crop insurance products a better fit for Maryland's farmers. In 2004, this program will be ramped up, with an increase in federal funding to \$379,000, more MDA staff hours and higher visibility in a campaign targeting the state's farmer organizations and local Maryland Cooperative Extension offices as partners.

# Aquaculture Development and Seafood Marketing Program

## Task Force

During the 2001 session of the General Assembly, the legislature unanimously passed House Bill 662, which established the Task Force to Study the Economic Development of the Maryland Seafood and Aquaculture Industries. This 40-member task force is being staffed by the Aquaculture Development and Seafood Marketing Program. The task force is charged with studying both industries to expand markets, improve processing techniques, and evaluate legislative, regulatory and permitting procedures. The group must report its recommendations to the House Environmental Matters and Economic Matters Committees, the Senate Education, Health and Environmental Affairs Committee, and Governor Robert L. Ehrlich, Jr. by September 30, 2004. This task force is a major undertaking of this program.

## Aquaculture Development Program

The Aquaculture Development Office supports the Maryland aquaculture industry through promotional, educational, and technical assistance programs. According to a survey conducted by the Maryland Agricultural Statistics Service, there

were 40 commercial aquafarms in production in Maryland in 2002. There were additional aquafarms with production in previous years, which plan to go back into business in the future. Maryland has eight licensed fee-fishing operations and 35 schools, nature centers, government agencies, and private organizations producing fish, shellfish, and aquatic plants for educational and restoration projects.

The study also found that in 2002, the overall farm gate value of Maryland aquaculture products was estimated at nearly \$6 million. Producers saw steady prices in live markets for Tilapia and Hybrid Striped Bass and an increase in the production and market values of clams, and oysters. Shellfish growers planned to increase production in 2003. Ornamental species continue to dominate Maryland aquaculture production and sales, accounting for over 75 percent of the total farm gate value.

Through a collaborative effort with the Maryland Agricultural Experiment Station and Maryland Sea Grant, the program organized and sponsored a two-day Aquaculture Development Conference that included speakers from Alaska, Florida, North Carolina, and Virginia. These speakers discussed how

their respective states support aquaculture development. The aquaculture office also worked with Maryland Cooperative Extension, Maryland Sea Grant, the University of Maryland Aquatic Pathobiology Center, and the Maryland Aquaculture Association to plan and conduct workshops for aquaculture. The program held two workshops on "Water Gardening and Aquatic Health Management." Future workshops are planned on the culture of Hybrid Bluegill and business plan development. The program also responded to business inquiries from 35 potential aquafarmers.

There is strong interest in expanding Maryland's shellfish aquaculture industry. Growth has been consistently hindered by existing programs that do not specifically address issues related to shellfish aquaculture. In response to this situation, the Aquaculture Development Program is working with the Maryland Seafood and Aquaculture Task Force to recommend changes to existing policies, procedures, and regulatory structure that will support development in this industry. There is a great deal of potential for Maryland aquaculture to grow in this area.

The Aquaculture Development Office provides the industry with the



opportunity to participate in regional, national, and international trade shows, conferences, fairs, and tours in order to promote and market Maryland farm-raised products. Cooperative programs with the Maryland Waterman's Association, Maryland Sea Grant, Maryland Seafood Marketing Advisory Commission, the National Aquaculture Association, and many others are essential to providing aquafarmers with these opportunities.

## Seafood Marketing Program

The Seafood Marketing Program promotes the increased sale and consumption of Maryland seafood and aquaculture products through education, promotion, and advertising. The total estimated value of the Maryland seafood industry is \$700 million. There are 74 processing plants employing 1,341 people and over 6,600 watermen who work the Chesapeake Bay. In 2002, 53.2 million pounds of seafood was landed at a dockside value of over \$49 million.

Advertising funds are generated from a \$10 surcharge fee collected from commercial fishing and seafood processing licenses. Ads are placed in newspapers, trade journals, and on the radio. The use of the \$10 surcharge is overseen by the Seafood Marketing Advisory Commission. The Commission is

comprised of 11 industry members who recommend marketing activities.

To promote the increased sale of Rockfish, the program, in conjunction with the commission, created the "Maryland Rockfish Celebration." In 2003, the celebration – a program funded by the surcharge fee – included more than 35 restaurants, grocery stores, and seafood markets throughout the state. The celebration also includes an annual recipe contest held in Ocean City.

Another major promotional program, "Make a Splash with Maryland Seafood," is held in October. This year over 50 restaurants and retail markets participated. The participating restaurants and retail markets received point of purchase materials. Ads were placed in newspapers and consumers were able to request a special recipe brochure through the mail or via a telephone request line. Other seafood promotions revolve around seasonal holidays and include "Home for the Holidays with Maryland Seafood" and "Fish on Fridays" in the spring.

In the fall, there was a surplus of large crabs at lower prices. The Seafood Marketing Program responded by promoting Maryland blue crabs and crab meat through an advertising and news release program. Consumers could receive an incentive by mail by purchasing one

dozen Maryland blue crabs or a pound of Maryland crab meat.

The office distributed six news releases to more than 300 food editors in the Mid-Atlantic

region. The topics covered seasonal species, special events and promotions. The releases included photos and recipes with an opportunity for consumers to request more information or recipe brochures by mail, phone or web site. These releases are posted on the MDA website.

Seafood marketing staff participated in a wide array of trade shows, conferences, exhibits and special seasonal events including: the National Oyster Cook-off, National Hard Crab Derby Cooking Contest, and the annual Maryland State Fair. In addition, the office participated in trade shows including the International Boston Seafood Show, the International West Coast Seafood Show, the New York Restaurant Show, the Mid-Atlantic Food Service, Lodging and Beverage Expo, and the East Coast Commercial Fisherman's and Aquaculture Trade Expo. At the events, staff typically display informational literature and often Maryland seafood samples and often share space with industry members assisting them in marketing their products.

The Seafood Marketing Program administered the Maryland Crabmeat Quality Assurance Program. This voluntary program, which the industry helps fund, provides an extra level of sanitary inspection and education through the Maryland Sea Grant Program. Almost two thirds of Maryland crabmeat processors belong to the quality assurance program. Participation in the program allows them to use the "Maryland label" on cans and plastic cups. The generic "Maryland label" is promoted and advertised nationally through trade shows and trade advertising.



# Animal Health

- This year, the Animal Health program applied for and received a grant to expand the USDA's National Johne's Disease prevention program into Maryland. The goal of the program is to eradicate Johne's Disease from cattle herds through education, herd management, and disease detection activities with farmers and veterinary professionals. Maryland's program will initially include 10 dairy herds with the intent of expanding the program as it becomes established and successful. In addition to the Johne's program, MDA will continue the Dairy Quality Assurance plan.

- This year, the College Park Laboratory successfully completed the most recent round of certification testing for Johne's disease by the National Veterinary Services Laboratory as required for all government/state laboratories doing regulatory testing.

- Aggressive outreach by MDA and the state Department of Health and Mental Hygiene to encourage vaccination of horses against West Nile virus, resulted in higher vaccination rates than ever before. Despite higher vaccination rates, not every horse was protected. Extraordinarily high rainfall through the spring and summer caused record numbers of mosquitoes and a subsequent rise in equine West Nile virus cases. In 2001, Maryland had seven cases; in 2002, there were 30 cases out of a total of 14,717 in the United States and now in 2003 there were 165 cases of a total of 4,426. Of the 165 cases reported, 50 were fatal. Also, the eastern equine encephalitis, a more deadly mosquito-borne disease, caused fatalities of three horses and one emu.

- Throughout the year, program activities included the licensing of livestock markets and dealers, issuance of permits to hatcheries and dealers of poultry and hatching eggs, investigations of antibiotic residues in meat, accreditation of practicing veterinarians for regulatory duties, and inspection of livestock exhibitions.

- The fair and show season continues to be one of the busiest times for Animal Health field staff. Each year, the size and number of fairs and shows and resulting sales seem to increase. It has been a struggle to cover these events with limited personnel. Field staff worked a total of 881.5 hours to inspect 27,634 show animals this year.

- Well before September 11, 2001, the Animal Health Program was preparing to respond to diseases and disasters that affect animals. Since the tragic events of that day, disaster preparedness has become a central programmatic element. In our efforts to serve the animal health community of Maryland, the staff boosted its capacity to respond to natural, and intentional disasters. The MDA received grant funds for foreign animal disease surveillance, Bovine Spongiform Encephalopathy (BSE or mad cow disease) surveillance, and for training animal health staff, veterinarians and producers. Funds also have assisted the department in acquiring the necessary equipment to enhance its surveillance abilities. In addition to those efforts, MDA is collaborating with the Maryland Department of Health and Mental Hygiene to enhance the State's response to an animal bioterrorism event. Those efforts will enhance the ability of the state to protect Maryland's agricultural industry and food supply.

- Maryland remains officially classified free of brucellosis, bovine tuberculosis, hog cholera, scabies, pullorum/fowl typhoid and we remain in Stage 5 of Pseudorabies.

## Maryland Horse Industry Board

The Maryland Horse Industry Board (MHIB) consists of the Secretary of Agriculture and 11 members who are appointed by the Governor to four-year terms. **The Maryland State Legislature** defined six statutory duties of the Maryland Horse Industry Board which include licensing and inspecting horse stables in the state, advising the Maryland Department of Agriculture on matters affecting the horse industry, and supporting research, education, and promotion of the Maryland horse industry.

The MHIB is at its strongest in its five-year existence. A new funding source and the addition of a full time executive director have enabled the board to achieve all of its legislatively mandated functions. The main challenges the board faces in the next year are:

- the limited budget for the promotion of the Maryland horse industry. The budget is less than \$120,000 (including staffing), of which approximately \$115,000 is brought in as special funds directly from the horse industry; and

- the loss of revenue and stallions from the breeding and racing sectors of the Maryland horse industry. These declines are of concern to the Maryland horse industry.

As the commodity board for the Maryland horse industry the board hopes to continue to develop and expand the success of the recreational horse industry and to work to re-establish the prominence of the Maryland horse racing and breeding industries. Key accomplishments of the Maryland Horse Industry Board in 2003 include:

- **Completing the first-ever Maryland equine census**

The census, which was conducted by the Maryland Agricultural

Statistics Service, reported that there are over 87,000 equine in Maryland, over 685,000 acres owned by equine-related businesses in the state, and that equine operations account for over \$5.2 billion of equine related assets. The census received national media attention and helped solidify the status of the Maryland horse industry. The census is now published in the National Agricultural Library and is available on line at [www.mdhorseindustry.org](http://www.mdhorseindustry.org).

**• Distributing more than \$52,000 in grants to the Maryland horse industry**

Projects funded by the board include 4-H youth educational programs, therapeutic riding programs, horse rescue programs, adult education through the Maryland Cooperative Extension projects, university research and teaching projects, and promotional campaigns for Maryland equestrian events such as the 2003 Pan American Games held at Fair Hill in October 2003.

**• Creating a database of Maryland's horse stables**

A privacy-sensitive version of MDA's database of licensed stables is now accessible for the general public on the Internet. The board expects that the public database will result in increased business for the licensed companies. The new database has been prominently advertised in the Maryland equine trade magazine *The Equiery*. Moreover, making the list of licensed stables widely available has increased the bio-security of the equine industry by improving communication between health officials and the public. The database also enabled the MDA to add horse stables to the MDA Global Positioning Satellite database, further increasing bio-security.

**• Beginning to collect the equine feed fund**

The board began collecting a \$1 per ton assessment on equine feed, which goes into the Commercial

Equine Feed Fund. Legislation the fund and its funding mechanism was passed into law (Agricultural Article §6-107.2) during the 2002 session of the General Assembly. To date, the board has collected \$87,929 in 2003. This money is obtained from the horse industry to fund the MHIB's activities.

**• Licensing approximately 400 horse stables so far in FY 2004**

In FY 2003 the MHIB obtained a 99 percent compliance rate with only three re-inspections deemed necessary due to failure to meet standards. Less than 20 complaints were received by the MHIB regarding licensed stables. All of these points indicate that the horse industry has raised the standard of care for horses in licensed stables

**• Developing a collection system for complaints against Maryland horse stables**

The public will now be able to access complaint procedures and forms through the internet. This will enable the Board to track the

management and health of Maryland horses.

**• Hosting meetings between industry leaders and government bodies**

Topics of meetings have included the establishment of a Maryland Horse Park, establishment of a Maryland Horse Symposium, and issues related to equine disease.

**• Completing its preliminary evaluation "Sunset Review" by the Department of Legislative Services**

In its preliminary evaluation, the DLS suggested that "Since the last evaluation, the board has consistently improved its ability to meet its multifaceted mandate" and "The Maryland Horse Industry Board continues to provide services vital to this industry and the State."

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**The Maryland Horse Industry Board Activities**

Category	Year 2001	Year 2002	Year 2003
Number of stable licenses issued	401	386	396
Number of inspections performed annually	368	400	415
Number of facilities inspected and in compliance	97%	99%	99%
Revenue collected from licensing, and inspecting horse stables and directed to General Funds.	\$30,075	\$28,950	\$29,700
Revenue collected from assessment of horse feed sold in Maryland, at \$2 a ton <sup>1</sup>	\$0	\$0	\$87,929
Dollar amount of grants distributed <sup>2</sup>	\$34,906	\$30,000	\$22,280
Percentage of total special fund revenue distributed as grants for the Maryland horse industry. <sup>2</sup>	0%	0%	64%
Money distributed as grants for promotional, educational, or research projects for the horse industry.	\$25,000	\$20,914	\$56,386
Staffed booths or presented talks at trade shows,	2	2	8

*1 Calendar year 2003 was the first year of new funding source from feed sales. Implemented in the beginning of 2003, full revenues expected in 2004.*

*2 All calendar year 2001 and 2002 grant money was obtained from general funds.*

# Weights and Measures

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The Weights and Measures Section has a mandated responsibility to inspect and test all weighing and measuring devices used in buying and selling of commodities or the exchange of goods and services. Prepackaged commodities are inspected and tested for accuracy of quantity statements and compliance with labeling requirements. The MDA conducts investigations and test purchases to prevent fraud in quantity and measurement determinations during commercial transactions and in response to consumer complaints. Routine monitoring of commercial transactions occurs to assure that proper measurement terms and methods of sale for commodities are employed. These efforts provide a level playing field thereby protecting both buyer and seller.

While the federal government has some limited responsibility for weights and measures controls, the states have historically taken the initiative in this area. Today, enforcement in the United States is recognized primarily as a state government responsibility. The federal government plays an important role by providing assistance to the states through the National Institute of Standards and Technology (NIST). The NIST is responsible for maintaining the national standards and operating a laboratory for certification of standards. The National Conference on Weights and Measures (NCWM) in cooperation with NIST develops and promotes uniformity in standards, laws and inspection methods to provide maximum public protection through an equitable marketplace. The NCWM also manages the National Type Evaluation Program (NTEP), which type-certifies weighing and measuring equipment for the marketplace.

In FY2003, the field staff conducted approximately 56,000 inspections of commercial weighing and measuring devices and inspected and tested more than 13,000 individual lots of prepackaged commodities offered for sale. Funding for the field inspection program is a challenge that needs to be addressed. The field inspection program currently operates on special fund revenue collected from device registration fees established by the Maryland legislature. The 1992 General Assembly established the registration fees to offset General Fund budget reductions. The MDA has been unsuccessful in its efforts to increase any fees. The statewide interval between inspections has now risen to approximately 18 months. We anticipate this trend will continue because of our inability to fully fund the current staff. We are attempting to maintain our frequency of inspections by directing the staff to specific areas of the state through the evaluation of data collected and reviewed from previous inspections.

Maryland's Metrology Laboratory maintains primary standards of mass, length, volume and temperature that are legally traceable to the National Institute of Standards and Technology and provides a measurement capability at the state level that is consistent with national measurement goals.

In August, the Maryland Weights and Measures Laboratory was recognized by the National Voluntary Laboratory Accreditation Program (NVLAP) for compliance with criteria set forth in The International Standard ISO/IEC 17025:1999 and relevant requirements of ISO 9002:1994.

The National Voluntary Laboratory Accreditation Program (NVLAP) is an independent agency under the National Institute of

Standards and Technology (NIST) in Gaithersburg, MD. The NVLAP accredits testing and calibration laboratories that are found competent to perform specific tests or calibrations, or types of tests or calibrations.

It is the laboratory's policy to provide the highest quality measurement services attainable, to clients and field staff, through a continuous improvement of the quality system. Following the international standards, the Maryland Weights and Measures laboratory assures consistency and accuracy in regulatory activities and test measurement services for many industries, including manufacturing, science and technology, in addition to calibration laboratories and government agencies.

Maryland's National Type Evaluation Program Laboratory is authorized as one of only four full participating laboratories in the nation. The NTEP laboratories are authorized by the National Conference on Weights and Measures. Meeting the required performance standards and formalized procedures denotes a high degree of technical and professional competence. Authorization is specific to a type of weighing or measuring device. The Maryland NTEP laboratory is authorized in 14 areas of evaluation.

**WEIGHTS AND MEASURES ACTIVITIES TABLES  
FIELD INSPECTION AND TEST EFFORT**

	2001		2002		2003	
	% in Violation	Total Tests	% in Violation	Total Tests	% in Violation	Total Tests
<b>Weighing Systems</b>						
Large Scales	27.4	1055	33.3	1513	37.2	866
Medium Scales	21.9	1031	20.3	1070	19.6	1020
Small Scales	18.8	12676	18.1	12751	16.1	12537
<b>Liquid Measuring Systems</b>						
Gasoline Dispensers	16.6	44830	17.3	38323	18.3	39764
LP Gas Meters	34.9	679	26.1	657	38.9	656
Vehicle Tank and Other Large Meters	19.2	1473	15.8	1630	19.1	1662
<b>Grain Moisture Meters</b>	13.7	131	9.1	121	11.3	149
<b>Programmed Tare Inspections</b>	9.0	3928	11.4	4445	9.2	4702
<b>Price Scanning and Method of Sale</b>	4.4	7147	3.9	8244	4.9	9109
<b>Delivery Ticket Inspections</b>	4.5	2602	2.6	2847	1.3	2430
<b>Package Lots</b>	13.8	14260	12.7	13390	11.8	13753

Inspection and testing of packages involved, not only correct weight or measure determinations, but compliance with method of sale and labeling requirements.



*~~Did You Know~~*

*Maryland has 5,000 acres on 81 farms that are certified organic (4,500 plus acres in grain, hay, and pasture to support organic livestock production and 500 acres of certified organic vegetable acreage).*

**WEIGHTS AND MEASURES ACTIVITIES TABLES  
LABORATORY EFFORT - INSPECTION AND TEST**

	2001		2002		2003	
	Number Tested	Percent Rejected	Number Tested	Percent Rejected	Number Tested	Percent Rejected
Weights	8343	9.2	7781	9.4	7005	8.1
Volumetric Measures, (Non-Glass)	144	45.1	108	46.2	100	65.0
Length Devices	0	0.0	0	0.0	3	0.0
Temperature Devices	109	35.7	110	0.0	275	1.6
Timing Devices	0	0.0	6	0.0	6	0.0
Volumetric (Glass)	6	0.0	13	0.0	111	6.3
Scales/Meters	6	0.0	2	0.0	0	0.0
Milk Samples	137	4.4	114	0.0	158	1.9
Standard Grain Samples	1044	N/A	612	N/A	702	N/A

The Laboratory involves technical support of the field effort and provides a base of measurement for Weights and Measures officials. Additionally, it provides measurement support for other State agencies and Maryland industries.

**WEIGHTS AND MEASURES ACTIVITIES TABLES  
ADMINISTRATIVE CONTROLS AND MISCELLANEOUS**

	2001 Number	2002 Number	2003 Number
Weights and Measuring Devices Registration Certificates Issued	7759	7684	7520
Type Evaluation of Devices Conducted (NTEP)	56	68	57
Samples and Testers Licenses, Issued	29	26	27
Citizen Complaints Received and Investigated	372	324	335
Disciplinary Hearings, Criminal Arrests and/or	19	10	9

Aside from day-to-day administration, coordination and support of the laboratory and field activities, the Weights and Measures Section is involved in the registration of commercial weighting and measuring devices, and the examinations and licensing of individuals for specific functions.

# Grading Services, Egg Inspection, Organic Certification and Grain Laws

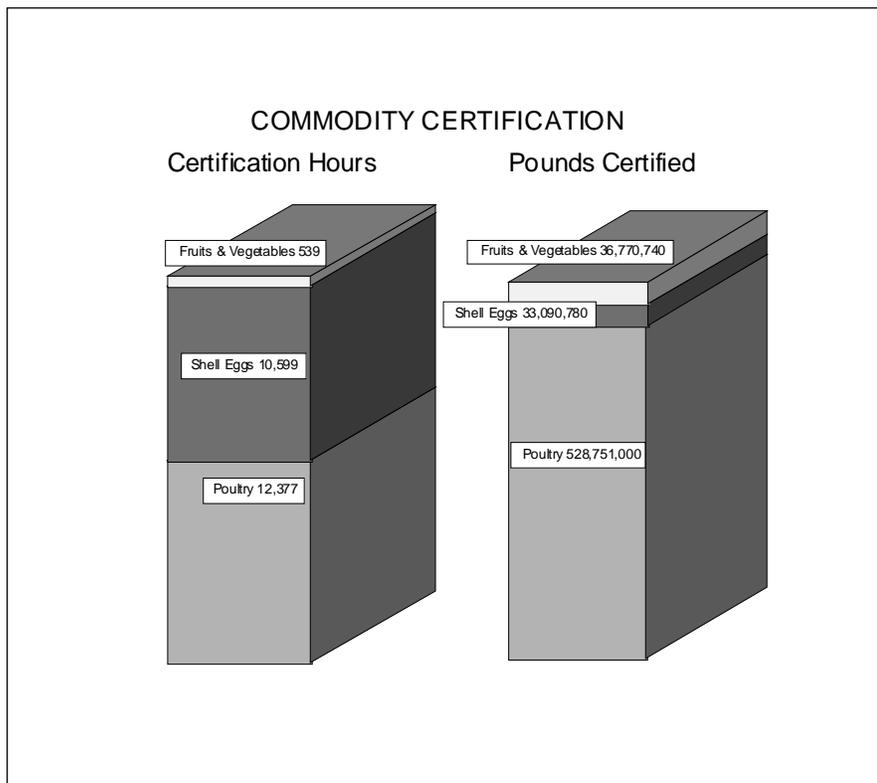
## Grading Services

The Grading Services Section offers producers and processors a voluntary certification program for agricultural commodities including poultry, eggs, fruit, vegetables and grain. The MDA graders sample commodities for comparison with standards developed by USDA and/or MDA for reduction of microbial, chemical and/or physical contamination, quality, size, labeling and packaging. Commodities meeting the criteria established by USDA and/or MDA standards are identified and certified by MDA graders.

Official certification provides a uniform basis for the marketing of agricultural commodities that enhances the marketability of Maryland commodities. Foreign countries, wholesale food suppliers, large grocery store chains, and state institutions, among others, often require official certification to ensure they are purchasing agricultural commodities that meet their specifications. The provision of a cost-effective and service-oriented grading program is crucial to Maryland producers competing in these markets.

In addition to providing certification services to the producing industry, the section focuses on assisting buyers in developing specifications to meet their needs. To better serve the needs of these buyers, employees attended training sessions to become qualified as auditors. As a result of this training, the section has begun conducting audits to verify producer compliance with standards for animal welfare and good agricultural practices.

The charts below outline the work hours and volume of commodities certified by the section this year.

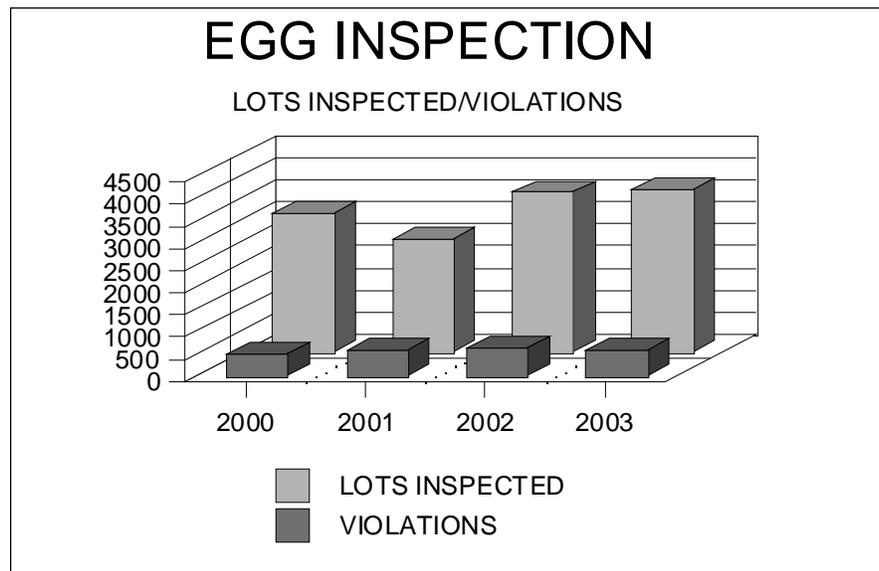


## Egg Inspection

The Egg Inspection program is responsible for enforcement of the Maryland Egg Law. Inspections are performed at the wholesale, food service and retail level to ensure eggs sold in our state meet the standards established for quality, size, refrigeration, microbial and physical contamination, labeling and record keeping. The section is also responsible for the registration of egg wholesalers and packers. Portions of the labeling, record keeping and registration requirements were developed to provide traceability in the event of a *Salmonella enteritidis* outbreak. Other sections of the law were established to reduce the risk of consumers purchasing eggs that could cause food borne illness. Eggs found to be out of compliance with the established standards are removed from sale and violation notices are issued to the responsible person. The inspection activities are funded through the collection of \$.0026 per dozen of eggs sold in Maryland.

Because the section has continued to struggle with increased salaries and operating costs without revenue increases resulting in a reduced number of inspections, staff has developed and implemented alternative strategies to improve the compliance rate. As a result, the percentage of eggs sold in Maryland that were sampled increased from 0.5 percent last year to 0.7 percent. The percentage of eggs sampled found to be in compliance with the Maryland Egg Law increased to 85 percent this year compared to 79 percent last year. The section has used an outreach program to educate producers and handlers of eggs in proper handling methods to reduce microbial and

physical contamination of eggs and works closely with the U.S. Food and Drug Administration and the USDA's Food Safety and Inspection Service to coordinate enforcement, obtain additional funding and avoid duplication of efforts. The following chart shows comparison data for the eggs inspected and violations.



## Organic Certification Program

The federally accredited Maryland Organic Certification Program (MOCP) certified approximately 5,000 acres on 81 farms along with nine handlers of organic products in Maryland in 2003. Growth in the industry is in livestock and livestock feed with 4,500 plus acres in grain, hay, and pasture. Certified organic vegetable acreage is remaining stable at close to 500 acres.

The MOCP continues to go through many changes with the implementation of the National Organic Program. Application fees to the organic producers and handlers increased to a flat rate of \$400 this year for the first time since the inception of the MOCP in 1991. The increase in fees helps pay for increasing costs related to inspection and auditing due to the new federal standards.

Among the changes under the new federal rule is the exemption from certification of producers who gross \$5000 or less and sell directly to consumers through farmers' markets or through community supported agriculture. The MOCP is offering a registration program for exempt operations to assist them with staying compliant with the federal organic standards and connected to the organic industry in Maryland. The MOCP has continued to receive new applicants for organic certification, but 10 of the smallest organic operations opted not to continue with certification and to become registered as exempt with the MOCP.

Maryland organic producers also continue to benefit from the federal Cost-Share Reimbursement Program funded by USDA, which allowed MDA to reimburse 75 percent of the inspection costs growers paid for certification. That program is expected to continue in Maryland for a number of years and has been expanded to assist organic product handlers for the first time in 2003.

There is growing interest in organic certification from the processed food sector because of increased consumer demand for organic value-added food and agricultural products. Companies who have been processing organic products without being certified or properly labeled are applying for certification. During 2003, the Chesapeake Fields Institute completed a supply and demand analysis of the organic industry. The study, which was funded by a USDA grant to MDA, provides recommendations and ideas for value-added products for the organic industry.

The MDA has kept abreast of new research funds as they become available to assist the organic industry. The University of Maryland is dedicating a total of 35 acres at seven of its eight Research and Education Centers throughout the state to conduct organic research. The university is conducting excellent pest management and cover crop research for vegetable crops and more research proposals are expected to emerge as the dedicated acreage becomes fully certified.

## Grain Laws

All persons in the business of buying, receiving, exchanging or storing grain from a grain producer are regulated by this section. Licenses are issued to businesses that meet requirements set by law for insurance and financial status. There are four categories of licenses which are issued based on the number of bushels purchased in a calendar year. Fees range from \$50.00 to \$300.00. A *Directory of Licensed Grain Dealers* is published and distributed annually. The section licensed 39 businesses with 71 business locations in 2003.



# Office of Plant Industries and Pest Management

The Office of Plant Industries and Pest Management is comprised of six sections: Forest Pest Management, Mosquito Control, Pesticide Regulation, Plant Protection and Weed Management, State Chemist, and Turf and Seed. These sections administer programs and enforce state or federal laws, regulations and quarantines related to the management of pests that affect health of crops and forests; application and disposal of pesticides; mosquito control; quality of commercial agricultural products sold in Maryland; quality of seeds and turf; and control of noxious weeds.

## Forest Pest Management

The Forest Pest Management (FPM) Section is responsible for minimizing losses due to insect pests and diseases affecting Maryland's valuable forest and landscape trees in rural and urban areas. The FPM Section advises landowners, and gives advice about forest pests. When there are serious outbreaks, as from the gypsy moth, the section will cooperate with local jurisdictions to manage the infestation. To accomplish this, monitoring, assessment, control and education actions are administered through two major programs, Cooperative Gypsy Moth Suppression Program and Cooperative Forest Health Program. Both are cooperative cost-share programs conducted with technical and financial assistance from the United States Department of Agriculture (USDA), Forest Service (USFS).

The Cooperative Gypsy Moth Suppression Program conducts an integrated pest management (IPM) program to protect forest and shade trees from the continuing threat of defoliation and damage by the gypsy moth. An effective statewide IPM program for gypsy moth requires extensive and accurate population data that must be collected annually.

When survey data indicate the potential for defoliation that could lead to death or dieback of high-value hardwood trees, aerial application of insecticide may be implemented. To assess the potential severity of infestations of gypsy moth caterpillars in the spring of 2003, more than 700,000 acres of trees were surveyed or assessed using 12,488 sample points. The survey data identified outbreak populations in central and southern Maryland and on the Eastern Shore. The Maryland Department of Agriculture treated with insecticide the trees on a total of 14,053 acres in 12 counties. In the spring of 2003, defoliation of hardwood trees decreased to only 112 acres, the lowest amount of damage in 23 years.

The Cooperative Forest Health Program monitors and evaluates insects and diseases affecting Maryland forests. In 2003, extensive surveys were conducted to determine the impact of several insects and diseases, and to monitor the health of Maryland's forest and roadside trees.

### Cooperative Forest Health Program

The Maryland Cooperative Forest Health Program (CFHP) combines two federal cost-share programs: Cooperative Forest Health and Forest Health Monitoring. The objectives of these combined programs are to conduct surveys of major forest pests in Maryland and to provide technical advice and assistance to managers of state and private forests. The CFHP also provides training on the importance, identification, and control of forest pests to various state and local agencies and forestry organizations.

### Surveys

Hemlock woolly adelgid (HWA) - The HWA-infested area now includes the metropolitan area between Baltimore and Washington and native stands of hemlock in Harford, Frederick, Washington, Allegany and Garrett counties. The MDA and DNR are co-chairing a task force created in 2003 that has brought together various groups with an interest in hemlock management. The Task Force has selected important hemlock stands and developed management plans for

HWA. As part of a Mid-Atlantic, multi-state survey, MDA continues to monitor 13 plots established in six Maryland counties to assess the impact of the adelgid on hemlock resources. Maryland is one of several states that participated in the release of a predatory beetle, *Pseudoscymnus tsugae*. Staff are evaluating its effectiveness in controlling the HWA.

Southern pine beetle - Since 1989, Maryland has participated in a multi-state Southern pine beetle survey throughout the southern United States using pheromone-baited traps. Trap data indicated that beetle numbers would continue to remain extremely low in 2003, and no active infestations were found. Populations have been below outbreak level since 1994.

Emerald ash borer (EAB) - With special funding from the U.S. Forest Service, MDA conducted a statewide survey for emerald ash borer. This exotic pest has caused the loss of millions of ash trees in Michigan. Nearly 100 sites with ash trees in the urban and rural forests were examined for EAB; no signs of the beetle were found during this survey. In 2003, Plant Protection and Weed Management Section staff found EAB infesting nursery stock in Prince George's County. The FPM staff helped with the removal of the infested trees, and with the survey to detect EAB in the surrounding area.

Pine shoot beetle - In cooperation with the Plant Protection and Weed Management Section, staff has conducted surveys for the pine shoot beetle since 1993. Garrett, Allegany and Washington counties have been infested since 1997, and are now regulated by a federal quarantine. In 2003, MDA conducted surveys conducted in Western and Central Maryland and on the Eastern Shore. [See Plant Protection Section report for pine shoot beetle survey details.]

Exotic bark beetles - Also, in cooperation with the Plant Protec-

tion and Weed Management Section, staff conducted surveys for exotic wood boring beetles during 2003. The CFHP staff provided identification of beetles collected in traps placed in and near warehouses receiving overseas shipments of tile, marble and granite that contain wood for protection and bracing. The MDA identified these warehouses as a pathway for exotic woodborers to enter Maryland and impact the state's forests.

Roadside tree health survey - A cooperative project with the USFS and Maryland Forest Service assessed the health of Maryland roadside trees. Staff conducted a pilot project in 1999 and 2000 in the Baltimore-Washington corridor and in 2001, used the methods developed in the pilot project to collect information on tree species, tree health and distribution of roadside trees statewide. In 2003, the third year of this five-year project, CFHP staff revisited selected plots to detect change in the health of urban trees. The MDA is cooperating with DNR and U.S. Forest Service staff to analyze this data and to make it available to the urban forest community.

Bacterial leaf scorch - The MDA conducted a statewide survey to define the distribution of bacterial leaf scorch in 2002. Staff found infected trees in all but four Maryland counties, in both urban and rural forests and in 2003, monitored several sites more intensively for the disease in trees and other potential plant hosts.

Miscellaneous surveys - During the year, various insects and diseases may be important in localized infestations, and MDA may conduct surveys to determine the distribution and impact of these infestations. During 2003, there were several insects and diseases directly affecting forest health. Reports were received of light to moderate infestations of

fall cankerworms, variable oak-leaf caterpillars, orange-striped oakworms, holly loopers and scale insects.

Fall cankerworms defoliated 2,487 acres of hardwood trees in Central and Western Maryland. Cankerworms caused minor defoliation in the suburban Washington and Annapolis areas of Maryland in 2000, 2001 and 2002, but was largely absent from these areas in 2003.

Variable oak leaf caterpillar caused some 6,251 acres of scattered defoliation of oak and other hardwood trees in St. Mary's County, and 366 acres of defoliation in Caroline and Queen Anne's counties. The last time the variable oak leaf caterpillar caused defoliation in Maryland was in 1973, when approximately 10,000 acres were defoliated in Frederick County. An earlier outbreak was reported in 1956 on the Eastern Shore.

The cool wet conditions resulted in a statewide buildup of leaf spot diseases, known as anthracnose, which affected sycamores, maples and oaks most severely. In addition, staff answered hundreds of homeowner and forest owner calls for assistance and guidance in identifying and controlling insects and diseases.

## **Cooperative Gypsy Moth Suppression Program**

The basis for all decision-making for the integrated pest management of gypsy moth in Maryland is timely, accurate pest population data. These data, in the form of annual population samples and other survey information and observations, are collected from State-owned land, forested residential areas, and privately managed forest tracts. Seventeen counties and Baltimore City are cost share partners in conducting the surveys and collecting the samples. In addition, forested communities, groups of citizens, or

the owners of managed forested tracts in any Maryland jurisdiction, can participate directly through cost sharing with community or neighborhood based funds, or through their local forest conservancy board, as in the case of privately managed forested tracts.

If warranted by survey data, MDA may propose spraying to suppress gypsy moth caterpillar



populations on a priority basis to protect high-value forest and shade trees, especially in those areas where death and die back of the trees would not be tolerated. For instance, in residential or recreational areas, dead and dying trees present a safety hazard requiring the removal of dead branches and trees, usually at a cost to the landowner that is many times the per acre average cost of the spraying. Spraying is conducted using one of two insecticides, diflubenzuron (Dimilin) or *Bacillus thuringiensis* (B.t.), which are chosen for their specificity and effectiveness. In other areas and situations, the gypsy moth population “cycle” is allowed to run its course and natural controls like parasites, predators and diseases may take their toll. Beginning in 1975, the Forest Pest Management Program has performed survey activities to monitor these natural enemies.

In 2003, the program treated the trees on 9,800 acres of municipal, recreation, county or private land, 4,126 acres of State owned land, and 127 acres of federal land for a total of 14,053 acres in 12 counties. The cost of the aerial application contracts with licensed aerial application firms for the 2003 suppression program was \$199,342 (inclusive of insecticide), or \$14.19 per acre.

Foliage protection (no visible defoliation) was achieved in 100 percent of the acres treated, marking the 12<sup>th</sup> time in 13 years that the program achieved at least 98 percent



foliage protection. Through the coming year, this program will assess the threat of this spreading infestation and develop a suppression project to provide needed protection to the valuable forest and shade trees in Maryland in the spring of 2004.

~~Did You Know~~

*Last year, potatoes ranked as the 5th most valuable field crop. Maryland farmers planted 4,800 acres of potatoes, which produced 117.5 million pounds of potatoes valued at \$10.9 million.*

# Mosquito Control

Mosquito control is a service program of the Maryland Department of Agriculture (MDA), providing relief from mosquito annoyance and reducing the risk of mosquito-borne diseases in 22 counties and the City of Baltimore. The program is staffed by 20 classified employees (scientists, inspectors, mechanics and administrative support), plus more than 60 seasonal contractual technicians. Regional offices in Annapolis, Hollywood, Riverdale and Salisbury provide bases for field operations. During 2003, the program operated 61 light trucks, two heavy trucks, four boats, five all-terrain vehicles, 58 ULV sprayers, four units of earth moving equipment, and three aircraft (one owned and two under contract).

Authority for the activities of the Mosquito Control Section of MDA is the Maryland Mosquito Control Law, Agriculture Article, Title 5, Subtitle 4. Participation in cooperative mosquito control projects by counties and communities is voluntary and available to all jurisdictions in Maryland, within the limit of available resources. Costs for mosquito control services are shared between MDA and local governments or participating communities.

The Mosquito Control Program follows integrated pest management principles in participating jurisdictions to (1) manage mosquito populations to reduce the risk of mosquito-borne disease in humans and domestic animals; (2) improve the quality of life by reducing the number of pestiferous mosquitoes in residential areas; and (3) protect the environmental quality of the state.

## Mosquito Population Surveillance

Surveillance programs combine a number of components to produce a forecast of mosquito annoy-

ance and impact to public health. Environmental factors monitored include the amount and distribution of rainfall, tidal conditions, location of natural wetlands that serve as habitat for mosquito larvae and land management practices. Biological information collected include mosquito population levels, sampling of mosquitoes to estimate infection rates for disease-causing pathogens, and monitoring of animal and human cases of disease.

Rainfall during the period January - September, 2003 was 15 to 18 inches greater than normal in most of Maryland and 2003 set a record for the most precipitation received. This allowed the formation of extensive areas of shallow, stagnant pools of surface water in flood plains, marshes, swamps and other poorly drained areas, most of which were prolific breeding areas for several species of mosquitoes. Adult mosquito populations across Maryland were greatly above normal. Staff recorded light trap collections of more than 10,000 mosquitoes per trap per night. The largest collection of mosquitoes in a trap in one night exceeded 26,000 and was collected in Dorchester County. In addition to mosquito breeding in natural wetlands, surveillance of CREP wetlands and stormwater wetlands during 2003 continued to document the occurrence of mosquito larvae in these created sites. The additional mosquito breeding habitat associated with CREP and stormwater wetlands is an issue that has been given little attention by the Department of the Environment, USDA and other agencies that publicly proclaim the benefits of creating additional wetlands.

## Mosquito-Borne Disease Surveillance

The cooperative effort between MDA and the Maryland Department of Health and Mental Hygiene to monitor the occurrence and distribution of mosquito-borne viruses continued during 2003. A record high number (195,135) of mosquitoes were collected and screened for viruses resulting in a record high number (72) of positive findings of virus (62 - WNV; 10 - EEE). The mosquitoes infected with West Nile virus (WNV) and/or eastern equine encephalitis (EEE) virus were recovered from 14 jurisdictions (Table 1). Those data indicate that WNV is established throughout Maryland and must be considered an endemic disease.

The number of human cases of WNV reported in Maryland during 2003 was the highest yet recorded in the state. Officially, 73 cases are listed as confirmed or probable in 13 jurisdictions as of December 15 (Table 2).

Maryland horses experienced the largest outbreak of mosquito-borne disease recorded in the state since 1945. A total of 165 horses was diagnosed as being afflicted with WNV (162) or EEE virus (3) during 2003, with almost 40 percent (61) fatality in those horses with WNV. (See Table 3.)

## Mosquito Control Operations

The fact that WNV is an established public health threat throughout Maryland has had a profound impact on how mosquito control is performed. Mosquitoes can no longer be considered as merely a seasonal pest. For the first time in five decades, mosquitoes are causing large numbers of humans and valuable domestic animals to become ill and die in Maryland.

A key component of controlling mosquito-borne disease is to minimize the population of vector mosquitoes, specifically in populated areas where interaction between mosquitoes and humans is likely. The risk of acquiring a disease agent from mosquitoes is closely linked to the number of vector mosquitoes that are present. A vector mosquito is a species known to be capable of transmitting virus from one host to another. It is extremely rare for a mosquito to be born infected with WNV or EEE virus. Mosquitoes acquire viruses from the blood of hosts (primarily birds) they have bitten previously. Female mosquitoes take a blood meal approximately once a week throughout their adult lives (1-2 months). Therefore, female mosquitoes that have blood fed one or more times, are of a species capable of transmitting virus and known to feed on people are of greatest concern to human and animal health.

The vector potential of a mosquito population in a given area will vary based on: (1) the number

of mosquitoes present, and (2) the age structure of the mosquito population. A large number of young adult (less than one week after emergence) mosquitoes will have a low vector potential. A low number of mosquitoes which are several weeks old may have a high vector potential. It is important to maintain as low a vector potential as practically possible to protect public health and this has become the primary operational objective of the Mosquito Control Section.

An ideal pest management/disease suppression program provides regular surveillance of pest and vector populations; controls larvae by source reduction, biological control and application of pesticides; educates the public on mosquito control issues; advocates personal protection from mosquito bites; and applies pesticides, as necessary, to keep the adult mosquito population below an established level. However, this type of program is a goal that few areas in Maryland can support because it is resource-intensive and costly. The estimate of

additional resources necessary to operate such a program statewide would require a budget five to six times greater than the current budget of \$2.9 million.

In order to best protect human health from mosquito-borne disease within the scope of existing resources, increased adult mosquito control was determined to be the most practical available option. The action thresholds for adult mosquito control have been reduced from the relatively high pest management levels most commonly used in the past to lower threshold disease suppression levels statewide. The disease suppression action thresholds for landing rates and mechanical traps are one (1) mosquito per minute and ten (10) mosquitoes per trap per night, respectively. Community-wide adult mosquito control spraying is cost effective and capable of significantly reducing the adult mosquito population. Repeated applications of insecticide, in coordination with on-going surveillance of mosquito populations and disease vector potential, can maintain vector

Table 1. Summary of Arbovirus Positive Mosquito Collections in Maryland, 2003\*

<u>County</u>	<u>WNV-Positive Pools</u>	<u>EEE Virus-Positive Pools</u>
Allegany	1	0
Anne Arundel	10	0
Baltimore City	3	0
Baltimore County	15	0
Caroline	1	0
Carroll	3	0
Charles	1	0
Dorchester	5	0
Frederick	3	0
Prince George's	3	0
Somerset	3	0
Talbot	1	0
Wicomico	2	3
Worcester	<u>11</u>	<u>7</u>
<b>TOTAL # of Positive Pools</b>	<b>62</b>	<b>10</b>

\*Only counties with arbovirus -positive mosquito collections in 2003 are included in this table.

mosquitoes at a significantly reduced level. In the worst infested communities, multiple sprays per week are needed to maintain the adult mosquito population at or below the action threshold.

Adult mosquito control is frequently criticized by anti-pesticide advocates and can be controversial among the general public. Criticisms include damage to non-target organisms, adverse impact to human health, ineffective mosquito control results, requirement of frequent reapplication, and that it is not cost effective. The MDA's Mosquito Control Section has examined these allegations and concluded that the best available data do not support the negative claims. Adulticiding supported by a coordinated surveil-

lance program is certainly not the best or most desirable mosquito abatement strategy, but it is the best option currently available given the resources for mosquito control in Maryland and the need to protect public health from mosquito-borne disease.

Mosquito control does play an important role in protecting public health from WNV and EEE viral illness. Of the 72 confirmed and suspected human cases of WNV in Maryland during 2003, six (eight percent) of the cases occurred in people residing in communities that participated in the full-service, season-long mosquito control program. Communities that joined the mosquito control program after the occurrence of WNV disease in

the area, or that participated only in the surveillance or larvicide program, did not receive the level of protection against WNV as those communities participating at the full-service level. Each occurrence of EEE virus in mosquito pools and EEE illness of animals was followed by rapid, aggressive adult mosquito control. No human case of EEE disease was recorded in Maryland .

Due to the high mosquito population and the statewide occurrence of mosquito-borne disease, the number of communities requesting mosquito control service increased to 2,095 in 2003, an increase of more than 20 percent compared to community participation during CY2002. The larger number of communities, the high mosquito counts and the lower action threshold for spraying resulted in a record high level of mosquito control services provided during the 2003 season. Expenditures for insecticides and contractual labor during the period of July-October nearly depleted the budget, leaving little funding for mosquito control activities during the Spring of 2004.

Hurricane Isabel had a major impact on mosquito control. Isabel's storm surge brought historically high tidal flooding to many counties bordering the Chesapeake Bay. Large areas were inundated with tidal water, which formed extensive mosquito breeding habitat. This caused a large increase in the population of pest and vector species of mosquitoes from late September through the end of October. Mosquito control efforts in the wake of Isabel were extensive. Fortunately, financial assistance was received from the Federal Emergency Management Agency to pay for 75 percent of the costs of contractual employees, equipment and insecticides used for Isabel-related mosquito control efforts.

Table 2: Human Cases of West Nile Virus Illness in Maryland, 2003\*

<u>County</u>	<u>Reported Confirmed and Probable Cases</u>
Allegany	0
Anne Arundel	7
Baltimore City	14
Baltimore County	17
Calvert	0
Caroline	1
Carroll	2
Cecil	0
Charles	1
Dorchester	0
Frederick	3
Garrett	0
Harford	2
Howard	3
Kent	0
Montgomery	10
Prince George's	4
Queen Anne's	5
St. Mary's	0
Somerset	0
Talbot	0
Washington	4
Wicomico	0
Worcester	0
<b>TOTAL Number of Cases</b>	<b>73</b>

## Program Issues

Due to unfilled vacancies (2) and the elimination of one position, the number of Mosquito Control Section classified employees in 2003 fell to 20. This is the lowest staff level in 25 years. Existing staff can not continue to support requests for additional services. The issue of adequate staff to provide the expected level of public service must be addressed very soon, if adequate and effective State mosquito control services are to continue.

The MDA's aircraft for mosquito control spraying continues to experience an unacceptable level of mechanical problems, making it unavailable for service during periods of peak need. This does not appear to be a case of lack of, or

quality of, maintenance. The aircraft is simply being called upon to do more than it is capable of providing. The aircraft's spray system will be replaced during the coming winter because it was a source of repeated problems during the 2003 season and spray system components were available from only one source that proved to be unreliable and untimely in supplying replacement parts. In June, a contractor had to be called in to provide large area aerial mosquito adulticide services. The contractor did an excellent job and provided stand-by service for the remainder of the season. However, the contract cost was unanticipated in the budget and put an additional stress on available funds. The department plans to diligently pursue the pur-

chase of a second aircraft to be available for the 2004 program.

Stormwater wetlands continue to be an issue of concern that needs to be resolved between MDA and the Maryland Department of the Environment. This issue needs to be addressed more extensively and at higher levels of administration because staff of the two agencies have failed to reach a satisfactory compromise.

Table 3. Summary of Horse Cases of Mosquito-Borne Disease in Maryland, 2003

<u>COUNTY</u>	<u>WNV-Positive Horses</u>	<u>EEE-Positive Horses</u>
Allegany	0	0
Anne Arundel	16	0
Baltimore City	0	0
Baltimore County	4	0
Calvert	3	0
Caroline	10	0
Carroll	26	0
Cecil	2	0
Charles	8	0
Dorchester	2	0
Frederick	24	0
Garrett	0	0
Harford	6	0
Howard	8	0
Kent	4	0
Montgomery	13	0
Prince George's	9	0
Queen Anne's	10	0
St. Mary's	5	0
Somerset	1	0
Talbot	7	0
Washington	3	0
Wicomico	0	0
Worcester	<u>1</u>	<u>3</u>
TOTAL	162	3

# Pesticide Regulation

The Pesticide Regulation Section is responsible for regulating the use, sale, storage and disposal of pesticides. The primary functions of the section are to enforce State and federal pesticide use laws and regulations and to ensure that pesticides are applied properly by competent individuals so that potential adverse effects to human health and the environment are prevented. The Pesticide Regulation Section contains five major programs: (1) Pesticide Applicator Certification and Training; (2) Pesticide Use Inspection and Enforcement; (3) Pesticide Technical Information Collection and Dissemination; (4) Integrated Pest Management in Schools and on School Grounds; and (5) Special Programs.

## **Pesticide Applicator Certification and Training**

Two types of pesticide applicators are certified by the Pesticide Regulation Section - private and commercial. Private applicators are farmers and other individuals applying restricted use pesticides to their own land or rented land for the purpose of producing agricultural commodities. Commercial applicators apply general use and restricted use pesticides as employees of licensed pest control businesses or public agencies.

A total of 157 private applicators were certified in 2003 for a three-year period after passing a closed book examination administered by section personnel during 30 exam sessions. One thousand eight hundred eighteen (1,818) private applicators renewed their certificates by attending recertification training. Currently, there are 3,913 certified private applicators. Section staff approved and monitored 110 private applicator recertification training sessions that the University

of Maryland Cooperative Extension, the department, or the pesticide industry conducted.

A total of 3,048 commercial pest control applicators and consultants were certified in one or more of the 12 categories of pest control by satisfying minimum experience or education requirements and by passing written certification exams. The section certified 1,040 public agency applicators in 2003, bringing the total number of certified commercial applicators to 4,088. Staff processed 431 applications for certification in 2003. A total of 18 exam sessions were held, during which 1,141 exams were administered to 540 applicants. Once certified, commercial applicators are required to participate in at least one update training session approved by the department each year in order to renew their certificates. Three hundred fifty four (354) recertification training sessions for commercial pesticide applicators were approved and monitored by this section and were conducted by the pesticide industry, the University of Maryland Cooperative Extension, or the department. Three thousand eight hundred eighty five (3,885) applicators were recertified in 2003 by attending recertification training.

During 2003, the section licensed 1,479 businesses to apply pesticides and to perform pest control services. Three hundred nine (309) public agency permits were issued to governmental agencies that apply pesticides. Forty pest control consultant licenses were issued. A total of 2,699 registered employee I.D. cards were issued during 2003. Thirty eight thousand nine hundred and forty three (38,943) employees of pesticide businesses and public agencies are currently registered by the department to apply pesticides under the supervision of certified

applicators. A total of 152 dealer permits were issued to businesses that sell restricted use pesticides.

## **Pesticide Use Inspection and Enforcement**

Besides enforcing State pesticide laws, the department enforces federal pesticide laws under a Cooperative Enforcement Agreement with the U.S. Environmental Protection Agency (EPA). Routine inspection activities are conducted throughout the year and include use observations and inspections of businesses, public agencies, dealers, market places and producer establishments. Consumer complaint and pesticide misuse investigations also are conducted by the staff.

In 2003, 1,164 routine business inspections were performed, during which 291 businesses were cited for violations of the Pesticide Applicators Law and Regulations. One hundred (100) pesticide dealer inspections were conducted to ensure that restricted use pesticides were sold only to certified applicators. Sixty nine (69) use observations were conducted, during which pest inspections and pesticide applications performed by commercial and private applicators were observed by section personnel. A total of 70 consumer complaints were investigated. Under the federal cooperative agreement, 17 producer establishment and 29 market place inspections were conducted. Other enforcement actions taken during 2003 included the assessment of six (6) civil penalties totaling \$5,985.

## **Pesticide Technical Information Collection and Dissemination**

During 2003, several newsletters, "Pesticide Information Sheets" and brochures were printed and distributed to both private and commercial

pesticide applicators that provided information on federal and State pesticide management programs and regulatory updates.

A listing of pesticide sensitive individuals was first compiled in 1989. During 2003, this section registered 157 individuals. These individuals receive advance notification of pesticide applications made to adjacent properties by commercial ornamental plant and turf pest control businesses and public agencies. Two update mailings were sent to all commercial companies and public agencies licensed or permitted in the ornamental plant and turf pest control category.

A new searchable database of registered pesticide products, licensed pesticide businesses, commercial and private applicators and pesticide dealers is posted on the department's website. This database provides information to applicators and the public about pesticides that are legal for use in Maryland and the names and addresses of licensed pesticide businesses. Pesticide dealers can check the certification status of pesticide applicators prior to selling them restricted use pesticides. This database is linked to the U.S. Environmental Protection Agency (EPA) so that information on each pesticide product queried such as the EPA registration number, pests controlled, site of application, formulation, active ingredient, and brand name can be obtained.

## Special Programs

During 2003, the recycling program for empty plastic pesticide containers was offered to growers and commercial pesticide applicators at 16 locations. Collection centers were maintained in 10 counties (Anne Arundel, Frederick, Garrett, Harford, Kent, Prince George's, St. Mary's, Talbot, Washington, and Wicomico) with the assistance of county government agencies. A total of 40 collection days were held

during June through October. In addition, five pesticide dealers and one golf course participated in inspection and collection of containers at their own facilities. An estimated 25,000 containers, weighing nearly 15 tons, were collected from 107 participants, of which 35 were first time contributors, and were processed for transporting to a plastic recycling facility.

The section staff continued to offer outreach and compliance assistance to growers and pesticide dealers under the Worker Protection Program. The Worker Protection Standard (WPS) was established to minimize occupational exposure to agricultural pesticides. The WPS requires that agricultural workers who might be exposed to pesticides receive training on pesticide safety. Brochures on the Worker Protection Standard have been produced and widely distributed to the regulated community. The section also contracted with Telamon Corporation, which is participating in an AmeriCorps Project, to provide pesticide safety training to farm workers. In 2003, AmeriCorps members gave pesticide safety training to 695 farm workers, 87 non-farm workers, eight health care providers, 12 handlers, and 264 farm worker children and provided heat stress training to 72 workers.

The section extended a contract with the Maryland Geological Survey to conduct additional ground water monitoring on its existing network of wells that were established in 1987 in conjunction with the U.S. Geological Survey. Approximately 20 wells located in the Central Maryland Piedmont region and Upper Western Shore Coastal Plain were sampled. The samples were analyzed for 61 pesticides and their degradates. Samples from nine sites had low-level detections of one or more pesticide residues, including atrazine, metolachlor, deethyl and

deisopropyl atrazine, simazine and carbofuran.

## Integrated Pest Management in Schools

The section continued to promote implementation of an Integrated Pest Management (IPM) Program in Public Schools. Regulations that require schools to develop and implement IPM plans for school grounds became effective January 2002. Staff reviewed and approved revised IPM plans that incorporated programs for managing pest problems on school grounds and provided technical assistance in the development of the plans.

A total of 40 public schools were inspected to insure compliance with the Integrated Pest Management and Notification of Pesticide Use in a Public School Building or on School Grounds Regulations. Of the 40 sites inspected, 14 schools (35 percent) were found to be in violation.

The section worked with the University of Maryland Cooperative Extension (MCE) and the Maryland Agricultural Teachers Association (MATA) under a grant from EPA to develop Agriscience teaching reference materials on IPM in greenhouses. Under the grant, MCE provided training to Agriscience teachers on the implementation of IPM in public school greenhouses. During MATA's annual meeting, teachers received an IPM kit, developed by MCE, that contained the basic tools needed for conducting an IPM program in a greenhouse situation, step by step reference materials developed as teaching references for the identification and control of specific pests in the greenhouse environment, and a CD-ROM with Power Point presentations to accompany the reference materials.

PESTICIDE REGULATION SECTION ACTIVITIES, 2001 - 2003

	<u>2001</u>	<u>2002</u>	<u>2003</u>
Pesticide Businesses Licensed	1,495	1,516	1,479
Commercial Pest Control Applicators Certified in One or More Category	2,856	2,848	3,048
Registered Personnel Employed by Licensed Businesses and Public Agencies	35,304	37,865	38,943
Public Agency Permits Issued	228	237	309
Commercial Public Agency Applicators Certified in One or More Category	1,023	1,049	1,040
Private Applicators Certified to Date	4,108	4,066	3,913
Dealer Permits Issued	150	150	152
Examination Sessions Held	18	18	18
Individuals Taking Examinations	806	871	540
Examinations Administered in All Categories	1,725	1,636	1,141
Number of Businesses Inspected	1,110	1,236	1,164
Number of Businesses with Violations	368	282	291
Unregistered Employee	11	21	24
Records Incomplete or Inaccurate	175	137	143
Vehicles Not Properly Identified	160	39	47
No Anti-siphon Device	31	44	34
No First-aid/Safety Equipment	4	11	12
No Customer Information	64	59	63
Pesticide Dealer Inspections	66	61	100
Application Records Reviewed	1,110	1,236	1,164
Hearings and Investigational Conferences	2	2	0
Consumer Complaints Investigated	104	73	70
Pesticide Use Observations	60	72	69
Pesticide Samples Collected for Analysis	74	48	58
Market Place Inspections	33	62	29
Producer Establishment Inspections	22	23	17

# Plant Protection and Weed Management

## Apiary Inspection

The primary purpose of this program is to control honey bee diseases, mites, and pests in order to maintain healthy bees for the essential pollination of Maryland crops valued at more than \$40 million dollars. Maryland growers of fruit and vegetable crops annually rent approximately 5,000 colonies to improve pollination. Beekeeper's colonies are essential to Maryland because two parasitic mites have nearly eliminated wild colonies.

**American foul brood** disease is the most serious brood disease of honey bees and can destroy a colony in one year. Colonies detected with American foul brood (42) were destroyed to control the spread of this bacterial disease to healthy colonies. The incidence of disease remains at a relatively low one percent.

**Varroa and tracheal mite** populations were very low in Maryland in 2003, and few problems were attributed to these mites. The Varroa mite often has been found to be resistant to Apistan, which has been the primary product used to control this parasite. The Maryland Department of Agriculture requested and received a Section 18 exemption from federal pesticide law for the use of the chemical API LIFE VAR to control Varroa mites.

**Africanized honey bees** arrive occasionally on cargo ships coming from South or Central America. Staff placed swarm traps for collecting and monitoring bees at 35 shipping locations resulting in only one swarm being collected in 2003. Staff determined the swarm to be local bees, not Africanized.

A major infestation of **small hive beetle** was detected in 115 colonies shipped to Maryland from New York. The infested colonies were ordered to be removed from

Maryland and the apiary was treated to eradicate the beetles. Three additional lots of imported honey bees were found to be infested with small hive beetle several months after being imported. Each apiary was treated and monitored to ensure successful eradication of the beetles. The small hive beetle is a pest mainly in stored equipment and in honey houses, although it can render unsaleable stored honey in the hive.

## Nursery Inspection and Plant Quarantine

The nursery and greenhouse industry continues to be a strong part of Maryland's agricultural economy. Based on a crop cash value in 2002 of more than \$303 million, it is the second largest agricultural commodity in the state and the leading cash crop. It is a goal of the section to facilitate the production and sale of Maryland nursery stock by inspecting all plant material intended for sale or distribution to ensure that it is disease and pest free.

By law, and by reciprocal agreements with other states, plant material at each producing nursery is required to be inspected annually for freedom from dangerously injurious plant pests prior to its movement out of Maryland. These inspections also facilitate phytosanitary certification of Maryland plants for export from the United States. The MDA inspectors issued 275 phytosanitary certificates for the movement of plants and plant products to 16 states and territories, and to 12 foreign countries, during 2003. Most of the certificates were issued to meet other states' quarantine requirements for Japanese beetle. Inspections of plants at plant dealers (garden centers, chain stores and landscape contractors) were conducted to intercept pests not known to occur in Maryland. Although the general

health of Maryland-produced nursery stock was found to be excellent, several very serious plant pests and diseases were detected and are highlighted below.

In February 2003, the USDA Animal Plant Health Inspection Service (APHIS) confirmed the presence of **Southern bacterial wilt**, caused by *Ralstonia solanacearum* race 3 biovar 2, in geraniums in four greenhouses in Illinois, Indiana, Michigan, and Wisconsin. This disease affects Solanaceous plants including potato, tomato and geranium and poses a severe risk to our agricultural biosecurity. This is the first time this pathogen has been detected in the United States since 1999. In Maryland, 23 facilities received geranium cuttings that may have been infected with the disease. All suspect plant material was placed under a Stop Sale Order. A very intensive monitoring program was established and all 'suspect geraniums' were tested in each of the 23 Maryland greenhouses growing cuttings from the infested source. The laboratory examined and tested 126 geranium samples and detected 25 plants positive for *R. solanacearum* from three establishments in Maryland. Eleven samples were forwarded to the USDA laboratory in Beltsville, Md. for confirmation of the correct race and biovar. All samples forwarded were infected with race 3, biovar 2. To eradicate the disease, all plants within one meter of an infected plant were removed and destroyed. Staff followed up this roguing operation with sterilization activities and intensive monitoring. This methodology prevented total crop destruction and saved the growers an estimated \$2 million.

On August 28, 2003, the **Emerald Ash Borer** (*Agrilus planipennis* Fairmaire) was detected in a Prince

George's County nursery in a lot of 121 ash trees shipped in April 2003 to Maryland from Michigan in violation of a Michigan quarantine. The USDA Systematic Entomology Laboratory in Beltsville, Md. confirmed the identification on August 29, 2003. The emerald ash borer (EAB) is a serious pest of quarantine significance. A federal quarantine was promulgated against this pest on October 8, 2003. To date, the emerald ash borer has only been detected in the U.S. in 13 counties in Michigan (2002) and one county in Ohio (February 2003). Maryland is now the third state with a detection.

Adult beetles emerged from the Michigan trees in Maryland during the spring of 2003 and laid eggs in these and other ash trees in the nursery. Up to 27 of the Michigan trees were used on landscape jobs at three sites in Maryland and at one site in Virginia. As of December 1, 2003, 118 of the 121 Michigan trees have been recovered and destroyed. An additional 381 'exposed' ash trees in the nursery were also destroyed. Business records indicate that 'exposed' ash trees from the nursery were sold to six landscape contractors and may have been used on as many as 200 other landscape projects. Trace forward surveys will continue in 2004 to locate and destroy all of these 'exposed' trees to reduce the possibility that any adult emerald ash borers will emerge at these landscape sites. The MDA will conduct surveys to inventory and remove all host trees within one-half mile radius of the nursery. Surveys will also be conducted to determine if the beetle has become established at any of the remote landscape sites.

Ash trees are some of the most common landscaping trees used in the U.S. and are common in Western Maryland forests. Ash accounts for between 5.5 million and 6.5 million of the trees planted in the Baltimore metro area. The USDA has esti-

mated losses could exceed \$227 million in the Baltimore area alone. Maryland has initiated an emerald ash borer eradication program and will seek federal funding to support activities during the next three fiscal years.

## **Pest Survey**

Current information on pest distribution and abundance is needed for regulatory actions by the Department and for pest control actions by Maryland farmers. Maryland's pest survey program is used as a model by other states and is constantly used by the United States Department of Agriculture as an example of how a cooperative program should function.

The Cooperative Agricultural Pest Survey (CAPS) is a joint project between MDA and USDA-APHIS-Plant Protection and Quarantine (PPQ). The USDA recommends pests of quarantine export significance as survey priorities and provides funding for these surveys. MDA develops the appropriate survey methods and conducts the actual survey. This cooperative program has provided necessary data used to certify Maryland products for export to many countries.

The CAPS surveys document the presence or absence of exotic pests in Maryland, support APHIS-PPQ exotic pest survey activities, and provide state-specific data for exotic pests in the Northeast Region. Pests are surveyed on a rotating basis to cover the exotic pests listed in the "Recommended Target Species for Exotic Pest Survey in the Northeast". If any of these species were to become established, it would pose a significant threat to our agricultural production and have a significant impact on Maryland's ability to export agricultural commodities. Early detection of exotic pests before they become established will aid in any eradication or control

efforts and protect Maryland agriculture from potentially devastating losses.

Blacklight traps have been in use in Maryland since 1973 to detect economically-important insects. In 2003, MDA operated 53 traps in 22 of Maryland's 23 counties. Trap catches were mailed daily to Annapolis for processing. The dry weather in 2002, followed by the extremely wet weather this summer, was responsible for drastic reductions in most insect pest species. During the year, staff screened 5,836 samples and identified 82,250 specimens that are pests of 25 important crops, including of corn, soybean, alfalfa, small grains, sorghum, tomatoes, peppers, potatoes, tobacco, and tree fruits. These statistics represent about a 50 percent decrease in pest activity from 2002. In addition, staff maintained and monitored 106 pheromone traps for three endemic agricultural pest species at 39 sites in seven counties. These traps contained a chemical lure to attract target insects and capture them. During 2003, 1,245 trap collections were analyzed. The information obtained from these traps was summarized twice weekly and made available to farmers, pest management consultants, and extension agents on two regional 800-number recordings. This information was also posted on the department website and was incorporated into the Mid-Atlantic regional sweet corn monitoring website maintained by the Pennsylvania State University.

## **Pest Survey Results**

As part of the national Cooperative Agricultural Pest Survey, 78 trap sites were monitored for the following exotic pests that either do not occur in the U.S. or are restricted in their distribution: Chestnut weevil (*Curculio elephas*); soybean pod borer (*Maruca vitrata*); a generalist pest *Copitarsia* sp.; and exotic wood

boring beetles *Hylurgops palliatus*, *Hylurgus ligniperda*, *Tomicus piniperda*, *Ips sexdentatus*, *Ips typographus*, *Orthotomicus erosus*, and *Pityogenes chalcographus*. All trap catches were negative for any of these pests.

Screening of 264 samples for exotic wood boring beetles did not detect European spruce bark beetle (*Ips typographus*) in Frederick County, as happened in 2002. The origin was traced to dunnage on imported marble slabs from Italy. Staff took steps to eradicate this pest and the situation is being closely monitored.

The department continues to survey for the **pine shoot beetle**, *Tomicus piniperda*, a potentially severe pest of pine trees in North America. This European beetle was inadvertently introduced into the Great Lakes Region in 1992. Since that time, this pest has been found in 13 states. Its detection has resulted in a federal domestic quarantine to regulate the movement of pine nursery stock, cut pine Christmas trees, pine wreaths and garlands, and pine logs from areas where it is established. Tree-growing sites within the regulated area must be surveyed and found free of the beetle before regulated products can be shipped to areas outside the quarantined zone.

The MDA surveys first detected pine shoot beetles in 1995. In 2003, MDA detected the insect in Montgomery County, requiring its addition to the list of quarantined counties. Garrett County experienced a three fold increase in captured beetles from last year. Infestations in Garrett, Allegany, Washington and Frederick counties continued to be monitored. Five other counties were surveyed with no beetle detection.

The MDA staff, in cooperation with federal PPQ officers, worked with the nursery, Christmas tree, and logging industries in Western Maryland to inform them of the quarantine and methods of compliance in order to minimize potential risks and

to facilitate commerce and trade. Trapping and/or visual inspections were conducted at all nurseries and tree farms that requested certification of Christmas trees and pine products. All farms passed inspection. The MDA surveys made it possible for growers to prove compliance with federal law and to continue shipping pine trees and pine products from the quarantine areas in Western Maryland.

The **red imported fire ant**, *Solenopsis invicta*, a South American stinging insect, continued to present survey challenges to MDA. This pest is occasionally shipped out of the Southern U.S., in spite of a federal domestic quarantine that prohibits the movement of a variety of commodities unless treated and/or certified free of fire ants. The insect's ability to quickly colonize in a variety of habitats, and its aggressive foraging behavior, pose additional dangers if established in Maryland. It is a serious pest, having agricultural and human health importance. Field staff have eradicated 32 isolated infestations in the state since 1989. There were six new detections in 2003, all in the Ocean City area and associated with palm trees imported from Florida.

The interstate shipment of nursery stock is the most common means of long distance spread of red imported fire ants. Monitoring activities for fire ants continued during 2003. In addition to inspections for ants during routine nursery inspections, 99 sites in 16 counties were surveyed for fire ants. These locations, often at new construction sites and commercial buildings, contained landscape plantings obtained from out-of-state vendors located in areas with fire ant infestations. A total of 1,870 baited film canisters attracted 540 ants that were submitted to the MDA taxonomist for identification.

Sharka disease, caused by **plum**

**pox virus**, was first detected in the United States in September 1999 in a peach orchard approximately 20 miles north of the Maryland border in Adams County, Pennsylvania. Plums, peaches, nectarines, and apricots may be infected by the virus that is spread via budwood, infected root stocks, and by aphids. Fruit produced on infected trees is of poor quality and may show rings on the skin. Plum pox virus is economically important because it can cause fruit to be unmarketable and can decrease the yield of infected trees. In Europe, several wild or ornamental *Prunus* species have been identified as alternate hosts, possibly putting Maryland's ornamental nursery stock at risk as well.

In 2003, over 24,000 samples were tested with ELISA (enzyme-linked immunosorbent assay) as part of the Plum Pox Virus Cooperative Agricultural Pest Survey. Because of the proximity of the detections in Pennsylvania, and potential threat this virus poses to stone fruit in Maryland, this survey program is expected to continue indefinitely. This year, the laboratory used molecular detection techniques to test 600 fruit samples. This technology is more sensitive and precise, which will allow us to detect the disease more quickly than with traditional methods.

Considerable amounts of budwood for propagation purposes have been, and continue to be, exchanged between Maryland and Pennsylvania growers. Many fruit growers in Maryland have orchards planted with trees that originated in Pennsylvania. A survey to document infected orchards has been a top priority since 2000. Because Adams County borders Maryland, MDA elected to survey all Maryland stone fruit orchards, private orchards, and known budwood producers and recipients. Maryland's survey was part of a national survey and data will be used to answer questions

from regional, national and international trade partners concerning the distribution and abundance of plum pox virus in the United States.

The survey was based on the USDA National Surveillance Protocol for Plum Pox Virus. Leaves were collected following a sampling procedure designed to test 25 percent of the trees in an orchard block. Sampling began in March and continued through July. All orchard blocks have been surveyed each year at the 25 percent level since 2000. Newly planted blocks have been surveyed at 100 percent. Sixteen thousand thirty one field samples were collected, resulting in over 24,640 samples processed in the MDA Plant Pathology Laboratory using the serological test, ELISA, following the USDA National Surveillance Protocol. No plum pox virus was detected by ELISA, or by observing symptomatic plant tissue, in Maryland orchards.

As a result of a market collection by USDA researchers in 2002, one orchard in Central Maryland had 100 percent of their nectarines intensively surveyed. Budwood sampling of 100 percent of the nectarine trees, followed by leaf sampling at the same rate, and then 25 percent of the trees had fruit sampled resulted in all negative lab results for PPV. Sampling will be more focused on homeowners' backyard trees in 2004.

Commercial cotton production in 2003 required surveys for **boll weevil** (*Anthonomus grandis grandis*). This was necessary for the harvested cotton to be allowed into Virginia for ginning and to comply with the national boll weevil eradication program. One grower planted one-half acre solely for the purpose of 'agritainment.' Thirty six traps were monitored from late July through November. No boll weevil was detected.

The **golden nematode**,

*Globodera rostochiensis*, is considered to be the most serious pest threat to the American potato industry. Present known distribution is limited to seven counties in New York. Difficult to control and capable of causing complete yield losses, it is an important quarantine pest. Countries not known to be infested have rigid regulations governing the importation of potatoes and other products that might carry golden nematode. The North American Free Trade Agreement (NAFTA) and the General Agreement on Tariffs and Trade (GATT) resulted in political pressure from trading partners to provide sanitary and phytosanitary documentation for U.S. products. As part of the Eastern Region Cooperative Agricultural Pest Survey core project, the golden nematode survey provided data to support trade negotiations for the export of U.S. potatoes. Eleven soil samples collected from potato fields in the Mid Shore counties tested negative for golden nematode.

The **exotic soybean pest survey** did not detect soybean pod borer (*Maruca vitrata*), the generalist pest *Copitarsia* sp., soybean rust or the marmorated stink bug (*Halyomorpha halys* Stal) in the 60 sample survey in 14 counties. Soybean aphid (*Aphis glycines*) was identified for the first time in 2003 in all the Eastern Shore counties and the northern tier counties east of Allegany County from 53 of the 60 sites sampled. The marmorated stink bug (*Halyomorpha halys* Stal), first detected in Allentown, PA in 2001, was detected for the first time in Maryland in late fall 2003 resting on a gasoline pump in Hagerstown. This horticultural pest severely injures various shade and fruit trees, vegetables, and leguminous crops in its native Japan. It was found injuring stone fruit in New Jersey orchards this year.

The **Euonymus leaf notcher**

(*Pryeria sinica*) was detected for the first time in the state this spring, and only the second detection in the U.S. It was first discovered in 2002 in Fairfax County, Va., where it was reported by a homeowner who noticed it damaging euonymus. Alerted by Virginia authorities, MDA entomologists were vigilant and quick to identify larvae that were submitted in May, 2003 from the Glen Burnie area. The pest was found to be abundant on euonymus planted throughout the development. In a follow-up survey, feeding damage was found to be quite dramatic in many locations over a 10-square mile area.

The adult moths emerge in November and are active during the day, with a slow, fluttering flight behavior usually about 3-15 feet above the ground. They lay eggs in clusters on the stems of host plants in November and December. Currently, a National Science Panel is debating the future actions to be directed at this pest.

Eggs hatch in March and April and the larvae readily drop on a line of silk if disturbed. The colorful larvae are a light greenish-yellow with black, lengthwise stripes. Larvae feed in large groups on the upper and lower surface of host plant leaves, sometimes leaving nothing but stems behind. Although euonymus bushes generally recover from the damage, the temporarily leafless branches are unsightly in the landscape in early to mid-summer. The larvae enter their pupal resting stage in May and the adult moths start emerging again in November, completing the annual life cycle.

## **Plant Certification Programs**

A total of 172 plants from 21 varieties of strawberries from the Foundation planting of the Maryland **Virus-Free Strawberry Certification Program** was indexed for

virus, for a total of 378 tests. No variety was found to be virus infected.

The **Virus-Free Flower Carpet Rose** program remained strong in 2003. The seven Flower Carpet varieties were propagated by tissue culture and by cuttings in 2003, producing a total of 2,578 plants in tissue culture and 693 cuttings. In addition to the seven Flower Carpet varieties, 33 other varieties are currently being evaluated and indexed at the greenhouse for possible inclusion in the virus-free program. Thirteen of these varieties were propagated by cuttings for a total of 119 plants.

The **Maryland Ginseng Management program** protects American ginseng, *Panax quinquefolius*, from over-harvest by monitoring the harvest by licensed diggers of wild ginseng, wild-simulated woods-grown ginseng and cultivated plants. The MDA conducts a management program, in cooperation with the U.S. Fish and Wildlife Service, that follows established protocols to insure the continued availability of a native resource and protect it from over-harvest. Harvested ginseng is certified to enable licensed dealers to sell this wild harvested plant product in international markets. The dried roots are highly prized, especially in China and Korea, for their putative properties in promoting good health.

During the 2002-2003 harvest and sales season, the certification program inspected and weighed 110 pounds of dry wild ginseng root, 1,145 pounds of dry wild-simulated ginseng root, and 126 pounds of green (fresh) wild-simulated ginseng root. Data were gathered and reports submitted as per U.S. Fish and Wildlife Service requirements. The amount of wild ginseng certified in 2003 was nearly twice the amount certified in 2002. Certification and export of wild-simulated ginseng was higher than last season.

These data reflect a rebounding market and an elevated price per pound offered for ginseng on the international market. The amount of wild ginseng harvested during 2003 will likely be greater than in 2002 due to a higher price and demand for high quality American ginseng. The amount of ginseng cultivated in Maryland, and certified by the department, continues to remain high relative to the amount of wild ginseng. This reflects both continuing interest in ginseng as an alternative crop, and the ability of Maryland growers to produce high quality ginseng. If this trend continues, harvest pressure on wild ginseng may be reduced and, in turn, allow wild ginseng populations to rebound. The U.S. Fish and Wildlife Service requires states with ginseng management programs to survey ginseng populations to provide a better estimate of the effects of harvest. This year, survey efforts in Maryland expanded to include several new ginseng populations.

In 2002, the department submitted a proposal to help promote the cultivation of American ginseng as an alternative crop in Maryland. The Ginseng Management Program, along with researchers at the College of Agriculture and Natural Resource Sciences at the University of Maryland, were co-awarded a grant from USDA to help fund the investigation. In 2002, the work involved making contacts with growers and parties interested in participating in the study, surveys for and collection of ginseng samples from both wild and cultivated populations, and laboratory analysis to determine the chemical and genetic makeup of wild and cultivated ginseng in Maryland. This effort continued in 2003, with additional survey and sample collection and refinement of analytical laboratory techniques. These efforts will create a germplasm collection of American ginseng from

Maryland, characterize the quality of Maryland cultivated ginseng relative to wild ginseng, and provide knowledge and support for Maryland growers regarding ginseng cultivation and marketing in Maryland and internationally. The long term effects of this study will be the niche expansion of an alternative crop, the promotion of a natural heritage for Marylanders, and the preservation of wild populations of American ginseng in the state.

## **Diagnostic Laboratories**

The diagnostic laboratories provide testing and analyses to support departmental programs and provide answers to inquiries from outside the department and from the general public. During 2003, laboratory staff received samples submitted from Plant Protection and Weed Management Section survey and inspection programs, other MDA sections, University of Maryland Extension Service, nursery and landscape businesses, and the general public.

## **Entomology Laboratory**

In 2003, a number of interesting or important specimens were submitted to the entomology lab for identification. Holly looper caterpillars (*Thysanopyga intractata*) defoliated American holly (*Ilex opaca*) at a number of sites, and several samples of artillery fungus (*Sphaerobolus* sp.) from automobiles and house siding were received. This year's wet weather greatly contributed to the mulch-dwelling fungus' proliferation.

Cheese skippers (*Piophilidae casei*) turned up in a ham-curing facility and drywood termites (*Cryptotermes* sp.) were discovered living in a private residence. A horsehair worm, Nematomorpha, emerged from a cricket brought home by a cat. This parasite of insects always causes a stir because of its large (4-5

inch) size, but is harmless to humans.

Balsam woolly adelgid (*Adelges piceae*) was detected deforming Fraser fir trees at a Western Maryland Christmas tree plantation and an uncommon scale insect (*Lecanodiaspis prosopidis*) was found on ash trees.

## **Plant Pathology Laboratory**

The plant clinic documented more than 260 samples this year, an increase of about 20 percent. This increase is attributed to the heavy rainfall amounts this growing season. Fungal diseases such as anthracnose, leaf spots and root rots were found on a number of plants, including dogwood, oak, boxwood, maple, Christmas trees, etc.

## **Greenhouse Laboratory**

Plants were grown for integrated pest management and biological control programs that require food for insect colonies and research. A collection of herbaceous perennials used for teaching and testing purposes by the Certified Professional Horticulturist Program, in conjunction with the Maryland Nurserymen's Association, was maintained.

## **Integrated Pest Management & Biological Control**

The Integrated Pest Management (IPM) Program is responsible for the administration, development, and evaluation of biological control and IPM programs. In 2003, more than three million insects of five species were reared to support direct application of inundative and classical biological agents. In addition, several studies were conducted to evaluate rearing and release methodologies for beneficial insects.

The largest rearing program was for Mexican bean beetle (MBB), *Epilachna varivestis*, to support the propagation of *Pediobius foveolatus*, an effective larval parasite that does not

overwinter in the United States. More than 17,000 parasites were sold to the public and organic growers in seven states and four Maryland counties. Additional parasites were released in the second year of a cooperative effort with the University of Maryland to evaluate organic control strategies in fresh market beans on four Maryland certified organic farms in two counties.

Rearing of the imported pupal parasite, *Ichneumon promissorius*, continued with over 6,200 released in Anne Arundel County in the final year of this project to establish this species in Maryland. *I. promissorius* burrows into the soil to attack the pupal stage of corn earworm and related caterpillar pests of grain.

Participation in the **IPM Maryland Program**, a cooperative effort between MDA and the University of Maryland, expanded. The IPM Maryland consolidates research, education, outreach, regulatory, and support aspects of IPM to mutually benefit agriculture, the environment, and the citizens of Maryland. The second annual joint *IPM Maryland Report* was published in 2003. Cooperative efforts continued with MDA, the University of Maryland, growers, Future Harvest/CASA, and the Northeast Integrated Pest Management Center (NEIPMC). The MDA now represents Maryland state regulators at the NEIPMC through a seat on the Advisory Council.

The MDA also collected information on the incidence and spread of the virus, Rose Rosette, as it occurs on cultivated roses.

**Purple loosestrife** biological control agents, *Gallerucella californiensis* and *G. pusilla* (leaf feeding beetles), were released at five locations in Prince George's County in 2003, including two new sites at Merkle Wildlife Management Area in the southern part of the county. A total

of 30,000 beetles was released. The releases were intended to establish populations of the leaf feeding beetles in field insectaries, to support biological control collections, and to allow redistribution in the future. Past years' release sites (Font Hill Park in Howard County, Baltimore-Washington Parkway in Prince George's County, and Dover Bridge in Caroline County) were evaluated for levels of plant control and were surveyed for establishment of the beetles. No detectable level of control of purple loosestrife was noted, but low numbers of beetles were recovered at two sites, indicating that establishment is still in flux. However, the apparent limited establishment is not uncommon, as establishment has taken five to seven years in some other states.

The collection of **cereal leaf beetle** parasitoids, egg (*Anaphes flavipes*) and larval (*Tetrastichus julis*), was hampered by the wet weather in 2003. Host material was difficult to find but analysis of the 2,296 samples indicate the egg parasitoid populations were at the same level as in 2002, while the larval parasitoid populations increased slightly.

## **Noxious Weed Management**

This program supports the eradication or control of designated noxious weeds in order to reduce their economic impact on farmers and landowners. Noxious weeds (Johnsongrass, shattercane, thistles, and multiflora rose) cause losses in excess of \$15 million annually to Maryland agriculture due to reduced quality and yields of crops and forages, increased control costs, and increased roadside and development property management cost. The Maryland General Assembly enacted the first Nuisance Weed Law on Johnsongrass in 1969. In 1987, the Nuisance Weed Law was rewritten and renamed the Noxious Weed Law (Title 9, Subtitle 4, Agriculture

Article, Annotated Code of Maryland). The Noxious Weed Law requires that a landowner, or a person who possesses and manages land, eradicate or control the noxious weeds on that land by using practices prescribed by the department, including mowing, cultivating, or treating with an approved herbicide. The law prohibits the importation and transportation of these weeds in the state and prohibits the presence of viable noxious weed seed and rhizomes in seed, topsoil, mulch, nursery stock, on-farm machinery, or any other article. The Noxious Weed Law also provides that the Department of Agriculture may enter into an agreement with a county or political subdivision to provide technical and financial assistance for initiating weed management and eradication programs.

The MDA's weed control program provided grant assistance to 20 counties, averaging \$4,200 per county. The grants were leveraged with similar amounts of money from the counties, and the counties generated in excess of \$400,000 from spraying services provided by the county programs. About \$570,000 flowed through the Weed Control Program for activities conducted during the year.

A weed control advisory committee with representatives from farming organizations and governmental agencies and local farmers has been established in each of the 20 participating counties. Each committee provides advice or input into planning the noxious weed control program in that county. A county weed control coordinator, who is usually employed on a part-time basis, determines the degree of noxious weed infestations within the county, locates uncontrolled infestations, provides information on currently recommended control practices, and initiates agreements with landowners to implement a

control program. In many counties, the local weed control coordinator also performs spot-spraying on roadsides, in cooperation with the State Highway Administration, to help eliminate Johnsongrass or thistles and to control noxious weeds on private or public lands for a fee. In counties where there is no weed control coordinator, MDA employees handle these duties. This program was highly successful in most areas of the state during 2003.

Under the direction of Plant Protection and Weed Management Section entomologists, staff assisted in an integrated pest management (IPM) program to provide biological control of certain thistle species. The program has helped greatly to control musk thistle along highway areas that are inaccessible to mowing and/or spraying equipment. The MDA provided technical assistance to the federal government, county governments and other state agencies with noxious weed problems on public land, including the University of Maryland, Department of Natural Resources, correctional institutions, county road departments, State Highway Administration and the U.S. Department of the Interior.

Noxious weed advisory notices mailed to 139 landowners of properties infested with a noxious weed generally were effective in obtaining compliance, resulting in a greater than 99 percent compliance rate. The weed control program responds to citizens' requests for technical assistance in controlling several other difficult-to-control, persistent weeds, such as phragmites, kudzu, mile-a-minute, *Ailanthus* (tree of heaven), purple loosestrife, Texas panicum, broadleaf signalgrass and Japanese bamboo.

Weed control staff detected **Giant hogweed** (*Heracleum mantegazzianum*) at 29 sites in Baltimore and Harford counties. The

noxious weed will be eradicated over the next few years. About 100 sites were surveyed, many at the



*Giant Hogweed found in Maryland for the first time in 2003.*

request of concerned citizens responding to MDA requests to report sightings. The Maryland Department of Agriculture requested U.S. Department of Agriculture Cooperative Agricultural Pest Survey funds to conduct a limited survey in Maryland in 2003. The project was approved for \$5,000. Giant hogweed was listed as the Maryland Invasive Species Council's "invader of the month" in April. Also, a workshop was held in May to increase awareness of the giant hogweed among landscapers, homeowners, state highway personnel and others. As a result of the survey and press coverage, the section surveyed 101 locations with 29 positive detections in two counties.

The MDA and the Maryland Department of Natural Resources provided a Phragmites Management Program for the seventh year. Upon request from landowners or managers, the Weed Control Program staff supplied technical and or spraying assistance for phragmites control.

The DNR provided 100 percent of the cost of chemical (Glypho) applied in the nine counties of the Eastern Shore for spraying phragmites. The total spray revenue for phragmites control was in excess of \$27,000 for treating approximately 160 acres in 146 locations in 13 counties.

In all counties, the noxious weed control program's spraying service was offered to landowners participating in the Conservation Reserve Program (CRP) or Conservation Reserve Enhancement Program (CREP). Due to the likelihood of weed problems occurring on land in these programs, spraying services were offered for noxious weed control.

## Other Section Activities

During 2003, MDA continued to take a leadership role in the Maryland Invasive Species Council (MISC), a forum for information exchange and consensus building among diverse interests in public and private agencies or organizations concerned with invasive species. Several Plant Protection and Weed Management staff members were directly involved with MISC and were able to assist other members or individuals with technical information on control of invasive plant species or with actual control activities. The MISC web site is located at [www.mdinvasivesp.org](http://www.mdinvasivesp.org).

The **'Cape' American beachgrass** certification program helped a nursery obtain planting stock of this strain from the USDA breeding facility in Cape May, New Jersey. Plants were transplanted and allowed to increase, maintaining trueness-to-name, until harvest and sale. 'Cape' American beachgrass (*Ammophila breviligulata*) is a strain that is considered superior for stabilizing sand dunes along parts of the east coast of the United States, including



Maryland. Many customers, including representatives of municipal, county and state governments, stipulate that 'Cape' be used in their jurisdictions. This program allows any participating Maryland nursery to offer plants for sale to these customers or their contractors.

The **vegetable transplant** certification program facilitated the sale of more than 31.3 million cabbage transplants to commercial growers throughout the Eastern and Midwestern United States. The certification program included the sampling of fields prior to planting to insure the absence of soybean cyst nematode and routine inspections throughout the growing season to identify and control any pest infestations and/or diseases of regulatory importance.

## Industrial Hemp Project

The Industrial Hemp Pilot Program was established to determine the potential of industrial hemp as an alternative crop in Maryland. During 2003, a review of the economic viability of hemp as an

alternative crop was initiated. Through the program sites were selected for field research plot variety trials; however, permit approval to conduct field trials is still pending with the U.S. Department of Justice, Drug Enforcement Administration.

~~Did You Know~~

The top four agricultural sectors in Maryland are

1. Poultry
2. Greenhouse and nursery
3. Milk and dairy products
4. Vegetables



# Turf and Seed

Seed is the single most important input to any cropping system. To be successful, the grower, whether a farmer tilling hundreds of acres or a homeowner with a hundred square foot garden, must begin with quality seed. This section conducts regulatory and service programs, including seed inspection, testing, certification and quality control services, designed to insure the continued availability of high quality seed to Maryland's seed consumers.

Today's seed industry exists in an environment of rapid change. The continued development and expansion of *genetically modified organisms* (GMOs), or genetically-modified crops, has had an enormous effect on the production, distribution and marketing of seed and, thus, upon state seed programs. That amazing little package we call a seed has become even more amazing as it becomes the means of disseminating the products of biotechnology. Seed regulatory, testing and certification programs throughout the country are being challenged to meet the demands brought about by these changes.

## Seed Laboratory

Maryland's seed testing laboratory is central to the operation of the section, supporting the regulatory, certification, supervised seed mixing and turfgrass activities, while also providing service testing for seed producers and dealers, farmers and other seed consumers. The laboratory continues to add new seed testing procedures in response to both service and regulatory demands. Turfgrass professionals look to the laboratory to provide them with extended purity and noxious weed examinations for seed destined for use on golf courses, sod production fields, public grounds and other areas demanding high quality turf. Commercial vegetable growers

utilize the laboratory for specialized vigor testing, particularly for peas, garden beans and lima beans.

The State Highway Administration relies upon the laboratory to test all grass, wildflower, shrub and other seed planted along Maryland's highways. Maryland farmers participating in the Maryland Agricultural Water Quality Cost Share (MACS) cover crop program utilize the laboratory to insure that the seed they use meets the standards required for that program. The laboratory also identifies seeds submitted by farmers, veterinarians, health officials, other governmental agencies and the general public. Round-up®Ready testing of seeds is conducted by the laboratory for authorized seed producers. The laboratory also tests seeds used on wetland mitigation and restoration projects.

Key to a successful laboratory operation is a well trained staff. The section continued its efforts to cross train seed analysts and to assist them in developing new skills. The Association of Official Seed Analysts maintains an accreditation program for seed analysts. Analysts who pass rigorous tests, which include both written and practical elements, are certified as purity and germination analysts. At the present time, our laboratory manager and six of seven analysts are certified in both purity and germination work while one analyst is certified only in purity testing. Our goal is to have all analysts certified in both purity and germination testing and special training efforts are underway to achieve this goal. The laboratory staff also participated in various seed referees. These referees develop new testing methodology and ensure uniform and accurate seed testing throughout the country. During the past year, several of our analysts attended a seed testing workshop in Harrisburg, Pennsylvania.

## Seed Regulatory

The Maryland Seed Law requires that all seed offered for sale in the state must be accurately labeled and represented. This includes agricultural seed, vegetable seed, flower seed, lawn and turf seed, and includes specialized seed, such as tree and shrub seed, seed of native species, wildflower seed and seed used in reclamation and wetlands mitigation projects. This seed is sold in quantities ranging from the small packets of vegetable and flower seed sold to home gardeners to bulk sales of several thousand pounds of crop seed sold to farmers. All seed distributed in Maryland is subject to inspection by this section.

For much of its seed requirements, Maryland relies on other areas of the country and the world where climates are more suited to seed production. Thus, it is important that Maryland maintain a strong and effective regulatory program. Seed importing states that fail to maintain good seed regulatory programs become "dumping grounds" for low quality seed that is not acceptable to be sold in many other states.

Maryland's seed inspectors visit both retail and wholesale seed dealers throughout the state. They review label claims, insure that germination test dates are current and look for seed lots that have been found to be mislabeled or otherwise illegal for sale, based on samples taken at other locations. Seed lots are sampled and submitted to the laboratory for testing. Lots found in violation of the Maryland Seed Law are placed under a stop sale order until they are brought into compliance. Corrective action may include relabeling, reconditioning, destruction of the seed lot or its removal from the State. Seed dealers who fail to comply with a stop sale order are subject to civil penalties.

The MACS cover crop program continues to result in many classified advertisements for cover crop seed in local agricultural newspapers. Special efforts were made to contact these individual suppliers to insure that the seed they were offering for sale was properly tested and labeled and eligible for use in the cover crop program. This past year the section conducted a testing program to insure the accuracy of seed count claims on soybean seed containers.

The section continued its participation in the U.S. Department of Agriculture's varietal grow-out program. This cooperative program is designed to monitor seeds moved in interstate commerce to be sure they are of the variety claimed on the label. In accordance with a cooperative agreement with USDA, the section staff assisted with enforcement of the Federal Seed Act.

## **Seed Certification**

The seed certification program is quickly adapting to changes in the seed business. As biotechnology increases in agricultural crops, movement away from traditional certification services is occurring. With large investments involved in biotech research, private companies are funding more and more variety development. The involvement of public institutions, which in the past were the source for most certified seed varieties, continues to decline.

With the increased number of crop varieties being released by private companies, the demand for "quality assurance inspections" by third parties is strong, particularly from small to medium sized seed companies that cannot afford the expense of quality control programs. Companies growing seed in Maryland look to this section for expertise in field inspections, sampling and laboratory analysis for quality control of their products. In the future, it is anticipated that quality control inspection acreage will increase as

certified acreage decreases.

Staff members worked closely with seed growers and conditioners to assist them in growing a product that meets some of the highest quality standards in the United States. Maryland seedsmen have become a net exporter of wheat, barley, and soybean seed, adding much revenue to the Maryland agricultural economy.

Staff members cooperated with the Maryland Crop Improvement Association and the Maryland Agricultural Experiment Station in the production and distribution of Maryland Foundation seed. Much effort was spent to maintain the "genetic purity" of Foundation seed of public varieties important to Maryland agriculture. This Foundation seed was distributed to Maryland seedsmen for the production of Maryland Certified seed.

## **Supervised Seed Mixing**

The supervised seed mixing system enables certification to continue when certified lots of different kinds and varieties of seeds are mixed together. It provides a level playing field by precluding the opportunity for substitution of varieties or seed lots that are not approved. All seed used on State Highway Administration projects, and that seed used for the production of Maryland certified turfgrass sod, is mixed under this program, which serves as a model for other states. Many county and local governments, school systems, golf courses, recreation departments and professional seeding contractors require that the seed they purchase be mixed under this program.

Prior to mixing, the Maryland Seed Laboratory must sample and test component seed lots. Seed lots that meet applicable standards are then mixed under the direct supervision of an MDA inspector, who insures that the mixer is free of any

contaminants and that only approved seed lots are used in the mixture. Special tags are sewn into each bag to verify that the seed was mixed under MDA supervision.

## **Turf Regulatory**

Maryland's Turf Grass Law is unique in the nation. It requires that all turf grass sod, plugs and sprigs be accurately labeled. Due to the overall high quality of sod produced by Maryland sod growers, our efforts are usually limited to responding to complaints, which are promptly investigated and resolved. In the majority of cases, the problems are caused by poor site preparation and growing conditions rather than the quality or condition of the sod. In these cases, recommendations are made on how to remedy the situation. The Maryland public continues to be able to purchase some of the highest quality sod available anywhere.

## **Turf Certification**

Maryland's turf certification program is a leader in the nation and serves as a model for certification programs in other states. The majority of the turfgrass sod acreage under production in the state is enrolled in this voluntary program. Growers must plant varieties recommended by the University of Maryland based on trials conducted in this region and all seed used in this program is tested by the MDA seed laboratory and mixed under supervision of MDA inspectors. Many sodding specifications require the use of Maryland certified turf grass as a means of assuring the use of high quality sod of varieties well adapted to this area.

TURF AND SEED ACTIVITIES 2001-2003

	<u>2001</u>	<u>2002</u>	<u>2003</u>
<b>Certification</b>			
Acres in Sod Production	5,309	4,688	4,714
Acres of Crop Seed Inspected	19,588	19,028	18,473
<b>Supervised Mixing</b>			
Pounds of Seed Mixed (thousand)	1,988	1,701	1,776
<b>Retail and Wholesale Seed Inspections</b>			
Number of Lots Sampled	1,852	1,574	1,583
Number of Regulatory Seed Tests Conducted	5,728	3,351	3,395
<b>Seed Testing</b>			
Purity Tests Conducted	2,507	2,648	2,437
Germination Tests Conducted	5,892	5,499	5,592
<b>State/Federal Cooperative Agreement</b>			
Cases Submitted	107	92	20
Federal Grow-out Samples Submitted	62	145	240

# State Chemist Section

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The State Chemist Section regulates the sale and distribution of pesticides, feeds, pet foods, fertilizers, compost, soil conditioners and agricultural liming materials in order to enhance and promote agricultural production, protect consumers and the environment from unsafe products, ensure the sale of effective products and provide the regulated industry with a competitive marketplace. Regulation is accomplished by product registration, laboratory analysis, inspection, voluntary compliance, and enforcement actions such as stop sale orders. The section is totally fee-supported.

## Registration of Products

Pesticide products, commercial feeds, fertilizers, fertilizer/pesticides, liming materials, and soil conditioners are registered for sale or distribution only after careful review of the label to determine the material's nature, proposed uses and potential adverse impacts on agriculture, the environment, the general public, and the regulated industry. During 2003, the section registered 11,648 pesticide products; 11,690 commercial feeds; 3,343 fertilizers; 637 fertilizer/pesticides; 158 liming materials; and 487 soil conditioners. (See Table 1).

## Inspection

Field inspectors routinely inspect regulated products at retail outlets, distribution centers, warehouses, and formulating facilities. These inspections enable the section to maintain efficient regulatory control that ensures the sale, distribution and use of effective products that are safe for the consumer and environment, when used in accordance with approved label instructions. The inspectors sample a representative

cross section of products for chemical analysis and to obtain reliable data on the distribution, formulation and sale of these commodities. Inspection enables the section to stop the sale or distribution of ineffective products or those that are harmful to humans, animals or the environment because of unacceptable levels of pesticides, plant nutrients, trace elements and/or toxic materials. In 2003, inspectors performed 2,500 on-site inspections.

## Laboratory Analyses/ Investigations

The MDA's state of the science laboratory is staffed with chemists who have expertise and experience in the use of highly sophisticated computer controlled instruments used for the analysis of agricultural chemicals and toxic contaminants in commercial products, crops and environmental samples (water, soil, fish), etc. Laboratory staff provide reliable scientific data that are used to assist farmers and to initiate or support regulatory actions against products or people that violate state and federal agricultural and environmental laws. The laboratory also provides support to its sister agencies, MDE and DNR, and to the federal Department of Agriculture (USDA) and the U. S. Environmental Protection Agency (US EPA). See Table 2 for summary data on the number of samples collected or analyzed for each of the types of products or environmental substrates tested and the total number of different substances (analytes) for which the products or substrates were analyzed in the laboratory.

## Enforcement

Any regulated product determined to be ineffective, misbranded or deleterious to the public, agriculture, or the environment is removed from the market place. Determination for product removal is based on inspection, laboratory analysis of official samples, information received from federal or state regulatory agencies, products offered for sale but not registered for use or distribution in Maryland, and review of labels or other materials submitted by companies to support product registration. See Table 1 for details onstop sale orders and issuance of non-registered notices for products not properly registered with the section.

## Food Safety Activities

### ***Bovine Spongiform Encephalopathy (BSE)***

The section continued a feed mill inspection program, that began in 1999, to determine if feed mill operations within Maryland comply with U.S. Food and Drug Administration (FDA) regulations pertaining to the prevention of bovine spongiform encephalopathy (BSE), also known as mad cow disease. Feed mills and /or feed distributors are issued stop sale orders for products determined to be not in compliance with FDA regulations, including the "feed ban" of 1997.

Recent terrorist activities have resulted in placing additional emphasis on section inspection activities that go beyond the protocols established by the FDA. Inspectors distributed handouts that list specific precautions that farmers, retailers, distributors and warehouses should follow to help ensure that ruminant animal feed manufactured or

distributed in Maryland does not contain ingredients that may transmit BSE. The inspectors have been instructed to personally emphasize to mill workers, distributors, etc. the need to read, understand and follow the specific precautions that appear on the warning handouts.

The economic havoc that would ensue from animal feed containing BSE transmissible ingredients inadvertently or deliberately fed to the ruminant farm animal populations could be ruinous to the beef industry and allied businesses, e.g., fast food companies, food stores, restaurants, etc. Beyond the economic considerations, public health concerns would be even greater because ingestion by humans of BSE-contaminated meat could result in incurable fatal brain cell degeneration.

In 2003, the State Chemist Section of MDA completed 35 BSE feed mill/manufacturing inspections in the state of Maryland. All facilities that were inspected during this period were found to be in compliance and void of any violations of the FDA regulations pertaining to BSE.

The section issued to a Maryland firm a Stop Sale Order on 2,000 pounds of dog food that may have been manufactured from the meat of a Canadian BSE-infected cow. The Stop Sale Order was issued as a precautionary measure to prevent introduction of mad cow disease into Maryland or the United States. BSE is fatal to cattle and has been associated with the fatal human disease known as “new variant” Creutzfeld-Jakob Disease.

## USDA - Pesticide Data Program (PDP)

Since 1997, the USDA has contracted with the section to sample various food items from principal distribution centers in the state. These samples consist of such diverse items as pineapple, potatoes, processed food, processed fruit juices, produce, milk, peanut butter, etc. More than 5,000 food samples were sampled and analyzed by federal and state laboratories for several hundred different pesticides. In 2003, the section collected 792 samples. In concert with the EPA - Food Safety program, the data will be used to establish new pesticide food tolerances with added emphasis on the diet of infants and children.

## USDA - Microbiological Data Program (MDP)

Since 2001, the section has contracted with USDA to sample various food items (fruits and produce) from principal food distribution centers to determine the presence of specific pathogens relative to a national health concern about food-borne bacteria. In 2003, 240 samples of raw agricultural food commodities were collected by section inspectors to be analyzed for *E.coli*, *Salmonella sp.* and *Listeria monocytogenes*. These analyses are being conducted by various federal and state contract microbiological laboratories.

## USDA/Industry/Triazole Sampling Program

In July, 2003, the section undertook an emergency sampling program to help the USDA and the pesticide industry generate statistically defensible data on the amount of triazole fungicide residues found in

the diet. Samples of five commodities were collected by several states over a six-month period and were analyzed by private laboratories for 12 triazoles. Maryland sampled and shipped a total of 120 samples for analyses.

## Food Safety Survey of Maryland Produce

In 2003, the staff collected from roadside vegetable/fruit stands random samples of produce grown in Maryland. Sixty (60) samples of various vegetables and fruits were collected and analyzed for more than 400 different pesticides. The laboratory staff performed over 24,000 analyses and found that only one sample contained a pesticide residue. The data will be sent to EPA and USDA for incorporation into national data banks.

## Drugs and Additives in Livestock Feed

In order to help ensure the safe and effective use of drugs in livestock feed, the section has expanded its feed analysis program. Any feed products containing drugs that do not meet the federal requirements relative to use, overformulation or deficiency are removed from the market place. Removal of products that are in violation of the regulations not only protects farm livestock but also provides protection to the public against exposure to drug resistant bacteria. In 2003, the section analyzed 171 samples of feed for seven different drugs and phytase. All feed samples tested for phytase were in compliance. Eighteen percent of the feed samples were deficient from the labeled content of drugs. Distributors and registrants of defective feed products were notified and warned of

potential regulatory action if proper measures were not initiated to prevent future problems. In 2004, the number of samples analyzed again will increase significantly.

## Commercial Compost Inspection Program

The commercial compost industry has grown significantly and sold/distributed about 103,000 tons of compost to homeowners and horticultural establishments during 2003. The section has increased its efforts to monitor this important nutrient management tool, and has also been able to include representatives of the Maryland Department of the Environment and the local county governments on complaint investigations related to composting operations. This cooperation among agencies has resulted in corrective actions that have eliminated, or significantly reduced, the adverse impacts on the environment and the public from commercial composting, without seriously impacting the efficient operations of compost producers.

**Table 1**  
**Product Registration and Enforcement Actions**

### **Product Registration**

	<b><u>2001</u></b>	<b><u>2002</u></b>	<b><u>2003</u></b>
Commercial Feeds	12,229	12,459	11,690
Fertilizers	3,114	3,247	3,343
Pesticides	11,473	11,530	11,148
Soil Conditioners	443	461	487
Liming Materials	162	149	158
Fertilizer-Pesticide	494	426	637
<b>TOTAL</b>	<b>27,915</b>	<b>28,272</b>	<b>27,463</b>

### **Enforcement Actions**

Registrants	3,942	3,856	3,371
Non-Registered Notices	1,528	1,720	893
Stop Sale Orders	797	963*	267

\*One hundred of these stop sale actions were based on the EPA's cancellation of all residential use products containing chlorpyrifos (Dursban).

**Table 2**  
**Samples Collected and Analyzed - 2003**

	<u>Samples Collected</u>	<u>Total Number of Chemical Analyses</u>
Toxic Metal Analysis of Fertilizer and Feed	141	2,093
EPA Samples (Pesticide Misuse Investigations and Market Place Product Monitoring)	86	461
Pesticide Formulation Analysis	278	725
Food Safety Survey of Maryland Produce/Fruit	60	24,000
Feeds and Pet Food (Protein, Drugs, etc.)	1,530	19,050
Fertilizers (N, P, K, Micronutrients)	658	5,234
Agricultural Lime	58	218
Service Samples for Farmers, Veterinarians, etc.	13	160
National and International Quality Assurance Samples	40	1,690
Animal Health Samples	25	68
DNR/MDE Samples of Water, Fish, Sediment	6	38
<b>TOTAL</b>	<b>2,895</b>	<b>53,737</b>

**Maryland Department of Agriculture  
Budget Allocations  
Fiscal Year 2003**

Total State Budget (Operating and Capital)	\$20,289,713,359
<b>Maryland Department of Agriculture Budget</b>	<b>\$76,600,009</b>
Maryland Department of Agriculture Budget Sources	
State General Fund	\$29,242,949
Special and Reimbursable Funds <i>(Fees, Registration &amp; Testing)</i>	\$39,350,712
Federal Funds <i>(Grants &amp; Cooperative Agreements)</i>	\$2,404,348
General Obligation Bonds <i>(Maryland Agricultural Water Quality Cost Share)</i>	\$5,600,000

*Source: Fiscal Digest of the State of Maryland, FY2003  
C-11, C-23, H-1*



# Staff Directory

## EXECUTIVE DIRECTION - SECRETARY'S OFFICE

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Salisbury Office - (410) 543-6630

**Organic Certification** - Valerie Frances - (410) 841-2719

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## RESOURCE CONSERVATION

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**ASSISTANT SECRETARY** - Royden N. Powell, III -  
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**Conservation Reserve Enhancement** - (410) 841-5864

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## PLANT INDUSTRIES & PEST MANAGEMENT

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Riverdale - Jeannine M. Dorothy - (301) 927-8357

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Southern Maryland - Sarah A. Hughes - (301) 782-7155

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**Pesticide Regulation** - Acting Chief, Dennis W. Howard  
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**Enforcement** - Dennis W. Howard - (410) 841-5710

**Certification/Training** - Edward A. Crow - (410) 841-5710

**Plant Protection & Weed Management**

Dr. William F. Gimpel, Jr. - (410) 841-5920

Fax - (410) 841-5835

**Nursery Inspection** - Matt Travis, 410-841-5920

Salisbury - Mark Rothschild

Riverdale - Robert Trumbule

Annapolis - Steve Malan, Matt Travis

**Apiary Inspection** - Jerry Fischer - (410) 841-5920

Pest Survey - Dick Bean - (410) 841-2743  
Laboratory Services - Carol Holko - (410) 841-5920  
Noxious Weed Control - Mark Smith - (410) 841-5920  
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Seed Laboratory - (410) 841-5960  
Turfgrass Activities - Vernon W. Cooper - (410) 841-5960  
Seed Certification - Dale A. Morris - (410) 841-5960

## **BOARDS AND COMMISSIONS**

### **Board of Review**

Chairman - Roger L. Richardson - (410) 841-5880

### **Maryland Agricultural Commission**

Chairman - Hank Passi

Executive Director - Buddy O. Bowling - (410) 841-5882

### **Maryland Agricultural Fair Board**

Chairperson - Harold Clark

Executive Secretary - Katrina B. Bradshaw - (410) 841-5770

### **Maryland Agricultural Land Preservation Foundation**

Chairman - Lloyd C. Jones

Executive Director - James Conrad - (410) 841-5860

### **Maryland State Tobacco Authority**

Chairman - Earl F. Hance

Executive Secretary - Ray E. Hutchins - (410) 841-5770

### **Maryland Horse Industry Board**

Acting Chairman - Gregory Gingery

Executive Director - J. Robert Burk - (410) 841-5822

### **State Board of Veterinary Medical Examiners**

President - John O'Mara, D.V.M.

Administrative Spec. - Carol Reynolds - (410) 841-5862

### **State Soil Conservation Committee**

Chairman - J. Bruce Yerkes

Executive Secretary - Louise Lawrence - (410) 841-5863

### **Aquaculture Advisory Committee**

Chairman - Aaron Morgan

Aquaculture Coordinator - Noreen Eberly - (410) 841-5724

### **Maryland Winery and Grape Growers Advisory Board**

Chairman - Vacant

Agricultural Coordinator - Jane Storrs - (410) 841-5770

### **Seafood Marketing Advisory Committee**

Chairman - William Woodfield

Agricultural Coordinator - Noreen Eberly - (410) 841-5820

### **Maryland Organic Certification Advisory Committee**

Chairman - Erroll Mattox

Agricultural Coordinator - Valerie Frances - (410) 841-5770

*~~Did You Know~~  
Approximately 400 MDA  
employees provide a full  
range of services to  
Maryland residents from  
field locations in 22 counties  
and Baltimore City  
as well as the  
Annapolis headquarters  
office.*