

# Maryland Agriculture

*Fresh to you every day.*



Maryland Department of Agriculture 2008 Annual Report



### **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.



*Governor Martin O'Malley*



*Lt. Governor Anthony G. Brown*



*Secretary Roger L. Richardson*



*Deputy Secretary Earl F. Hance*



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Cover photo: Students from the Takoma Park Middle School enjoy fresh local apples from Montgomery County's Lewis Orchard.

# Maryland Highlights for 2008

Numbers of Farms	12,000
Average Size Farm -Acres	170
Land in Farms -Acres	2,035,000
Gross Farm Income	\$2,385,150,000
Farm Production Expenses	\$1,200,161,000
Total Net Farm Income	\$724,903,000
Gross Farm Income Per Farm	\$198,762
Net Farm Income Per Farm	\$60,408

## Poultry, Livestock and Products

Commodity	Marketing Production	Unit	Cash Receipts <sup>1</sup>
Broilers	1,304,600,000	lbs.	\$732,013,000
Milk	1,038,000	lbs.	207,600,000
Cattle & Calves	90,840,000	lbs.	81,002,000
Hogs	16,841,000	lbs.	7,303,000
Eggs	702,000	eggs	49,107,000
Sheep and Lamb	1,203,000	lbs.	1,126,000
<b>Total Poultry, Livestock &amp; Products</b>			<b>\$1,144,377,000</b>

## Crops

Commodity	Acres Harvested	Production	Unit	Cash Receipts <sup>1</sup>
Corn for Grain	455,000	46,865,000	bu.	\$137,856,000
Soybeans	380,000	10,260,000	bu.	94,029,000
Corn for Silage	75,000	900,000	tons	---
Wheat	170,000	11,560,000	bu.	60,670,000
Hay, All	215,000	462,000	tons	27,182,000
Barley	34,000	2,856,000	bu.	5,748,000
Potatoes	3,000	960,000	cwt.	9,617,000
Vegetables <sup>3</sup>	---	---	---	68,388,000
Greenhouse/Nursery	---	---	---	396,127,000
Apples	---	33,000,000	lbs.	6,642,000
Peaches	---	3,300	tons	3,744,000
<b>Total All Crops<sup>2</sup></b>				<b>\$827,872,000</b>
<b>Total All Commodities<sup>2</sup></b>				<b>\$1,972,249,000</b>

1. Preliminary estimates by the Economic Research Service, USDA. 2. Total includes other commodities not published separately. 3. Excludes potatoes

## Counties Ranked by Production

Commodity	1	2	3	4	5
Corn, Grain	Queen Anne's	Kent	Dorchester	Worcester	Caroline
Soybeans	Dorchester	Queen Anne's	Caroline	Worcester	Talbot
Barley	Caroline	Kent	Frederick	Carroll	Queen Anne's
Wheat	Queen Anne's	Caroline	Kent	Frederick	Dorchester
All Hay	Cecil	Montgomery	Allegany	Howard	Kent
Milk	Frederick	Washington	Carroll	Kent	Cecil

## Dear Friends,

Since coming to office in 2007, Lt. Governor Anthony Brown and I have had the privilege to visit with and learn from hundreds of farmers and others who are invested, as we are, in sustaining our State's agricultural industry. Even in these short two years, we've seen both challenges and opportunities for our farmers and residents. Together with Secretary Roger Richardson and Deputy Secretary Buddy Hance we are making progress toward expanding opportunities for profitability, restoring the Chesapeake Bay and making Maryland a smarter, greener and growing State.

From our first day in office, part of our mission has been to strengthen and grow Maryland's family-owned businesses and farms. We remain as committed as ever to protecting farmland and to ensuring that family farming remains prosperous. To that end, we are encouraging more Marylanders to "buy local" through our Maryland's Best branding initiative, which is designed to kindle a greater awareness that food that is farmed, fished, and raised locally not only tastes better, but is healthier for both our plates and our planet. We've expanded this "buy local" effort into school systems and raised awareness about the many places our residents can find local products.

Because we understand the fundamental importance of farm business grants and loans and because we believe in its mission of helping new farmers purchase agricultural land, we are committed to funding the Maryland Agricultural & Resource-Based Industry Development Corporation. We are moving forward on the first project in our State's history to receive certification for State production credit payments to produce ethanol in a biomass cogeneration plant from Maryland barley. We are also fighting to help lower energy bills through our EmPOWER Maryland Farm Energy Audit Program, which we hope to expand in the near future.

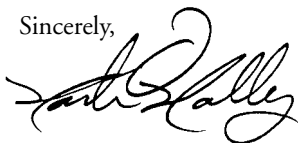
On the environmental front, we know that agricultural best management practices are just one part of a comprehensive, statewide effort targeting all sources of pollution such as: stormwater runoff, wastewater treatment plants, septic systems, industrial toxins, and air emissions – and we are committed to moving forward on a number of fronts together as One Maryland. We are providing record funding for cover crops, the use of which represents the most cost efficient way for agricultural operations to protect soil and water quality.

Through our partnerships with the Maryland Congressional delegation, we've secured \$23 million additional dollars in the Farm Bill to support our farmers' conservation efforts for the Chesapeake Bay. Also with help from our Congressional delegation, we received a drought designation last year to help Maryland farmers and have requested another designation for Eastern Shore farmers hit hard in 2008.

In order to track our progress we are now measuring and publicly sharing our results through the online programs StateStat, BayStat, and GreenPrint. These programs gather information that helps us understand our paths to progress, our achievement thus far, and our benchmarks for the future. Together, we will refine these efforts and make them even more valuable policy and programming tools. I encourage you to explore these efforts and all our initiatives online at [www.gov.state.md.us](http://www.gov.state.md.us)

Thank you for allowing me to serve you. I thank you for joining me and Lt. Governor Brown in protecting our shared priorities as we seek, together as One Maryland, a stronger, smarter, and more sustainable future.

Sincerely,



*Governor*



Maryland cattlemen Steve Isaacson, Sassafras River Beef (left) and Ned Sayre, Deer Creek Beef (right) visit with Governor Martin O'Malley who enjoys a Maryland-raised beef hamburger at the Governor's Buy Local Challenge Week kick-off picnic at the Governor's Mansion.

**Dear Friends,**

Buy Local. Those two words were the buzz of 2008 in much of Maryland agriculture. We saw a great expansion of consumer demand for locally-grown, -made, and -harvested products. Much of that demand was driven by a strong interest among consumers to know the source of their food in the face of food scares around the world. In addition, we had the great support of Governor Martin O'Malley who raised the visibility of the fine products that Maryland farmers grow, their benefits, and the environmentally sound practices that farmers use to produce them. It's all part of the state's smart, green and growing initiatives to strengthen our family farms and businesses and protect the health of our citizens and our environment for all to enjoy.

Intertwined with the buy-local movement is the role of our department in seeing that these products are processed and delivered to consumers in a way that meets national and state standards and laws. We are pleased that because of the department'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. Our staff in the Food Quality Assurance, Animal Health, Weights and Measures, Plant Industries and Pest Management, State Chemist, Turf and Seed, Land Preservation, and Resource Conservation offices among others are the unsung heroes on the front lines of these efforts.

We have a big job to do and are proud to do it to the very best of our ability hand in hand with farmers and our government, non-profit, and public sector partners. Some of the department's many accomplishments in 2008 were:

- Preserving almost 10,000 additional acres of farmland
- Promoting the 2007 Census of Agriculture.
- Working with Governor O'Malley and our Congressional delegation on the 2008 Farm Bill.
- Protecting our forests from the ravages of the gypsy moth thanks to extra funding provided by the Administration.
- Helping farmers achieve the largest planting of winter cover crops to protect soil and water.
- Working with farmers and environmental agencies to develop a workable new animal feeding operation permit.
- Providing a mechanism for animal shelters to safely and humanely sedate and euthanize animals.
- Helping farmers through a drought.
- Identifying melamine as the contaminating agent in pet food.

There is a great deal for agriculture to celebrate as we move from 2008 into 2009. It is a privilege to serve the citizens of Maryland, the Executive Branch, and the General Assembly of Maryland State Government. Working together we are helping to create a very bright future for agriculture and for all Marylanders.

Sincerely,

*Roger Richardson*

*Secretary*





## The Maryland Agricultural Commission

The Maryland Agricultural Commission is the key advisory group to the Maryland Secretary of Agriculture. There are 30 members on the commission with representation from each of the state's major commodity groups: poultry, dairy, equine, nursery, etc. as well as representatives from the University of Maryland, consumer interests, food processing and various other agricultural business segments.

The commission holds monthly meetings and discusses issues of agricultural consequence. This year the commission had notable speakers and subsequent in-depth discussion on the subjects of: water availability and water permitting in Maryland; land preservation policy and practice; the Farm Bill; the Beltsville Agricultural Research Center; the Cover Crop Program; Animal Feeding Operation pending regulations; the Chesapeake Bay 2010 Trust Fund; the Environmental Protection Agency's Chesapeake Bay Model; the LEAD Maryland Foundation, Inc; the Maryland Technology Development Corporation (TEDCO); and aerial imaging and remote sensing for precision agriculture. These topics along with reports from each of the commodity and business groups represented on the commission keep the group proactive with agricultural issues and assure the fulfillment of the commission's statutory mission. In addition, the commission held its bi-annual farm tours in Washington and Frederick counties in the spring and Kent and Queen Anne's counties in the fall.

The commission continues to work actively on the implementation of the Statewide Plan for Agriculture and Resource Management. This document was developed through a year-long grassroots process led by the commission to guide agricultural policy into the future. One hundred of the 109 recommendations are either completed or underway. The commission hosted a symposium on the progress of the plan in July. Almost 100 people attended. An "implementation committee" continues to move the recommendations forward with guidance from the commission.



The Maryland Agricultural Commission during a visit to Northview Stallion Station in Cecil County

## Office of the Assistant Attorney General

Staff of the Office of the Attorney General (OAG) represent the department on behalf 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.

In 2008, the office:

- Assisted the department in drafting quarantines to protect against the spread of the emerald ash borer in Prince George's and Charles counties.
- Provided legal services to the Maryland Agricultural Land Preservation Foundation. With nearly 2,000 land preservation easements (covering 265,000 acres) held statewide, this important program faces an ever growing number of problems that call for legal services, including issues over the termination of easements, easement enforcement and easement arbitration appeals before local Property Tax Assessment Appeals Boards.
- Assisted the State Board of Veterinary Medical Examiners in licensing and disciplinary matters.
- Assisted the Nutrient Management Program in its effort to bring farmers into compliance with the program. This program regulates farmers who are required by state law to have nutrient management plans for their farms or be subject to civil penalties that the department collects. The office handles any appeal hearings before the Office of Administrative Hearings, or further appeals to a court.
- Provided staff support in litigation over the National Tobacco Grower Settlement Trust.
- Provided legal support to the Tri-County Council for Southern Maryland in the tobacco buyout program.
- Provided legal advice to soil conservation districts.

## The 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 and forested land that provides for the continued production of food and fiber for the present and future citizens of the State. Preservation of agricultural and forested land helps to curb the expansion of random urban development, protects wildlife and preserves the environmental quality of the Chesapeake Bay and its tributaries.

During FY 2008, the foundation approved 74 new agricultural districts representing 8,841 acres. Agricultural districts represent landowners voluntarily restricting their land for at least five years by a recorded agreement that restricts the land to agricultural use. As of July 30, 2008, 434,844 acres were enrolled in the agricultural district program. Establishing a district is no longer an eligibility requirement for landowners selling easements to MALPF because of legislation that became effective July 1, 2007. On June 30, 2012, all MALPF district agreements will be terminated by statute.

If a landowner's property meets the minimum eligibility criteria for soils, size, and location as established in statute, the landowner may apply to sell an agricultural land preservation easement to MALPF. An easement restricts the land to agricultural use in perpetuity, limits in perpetuity the ability of the land to be subdivided or developed for residential, commercial, or industrial use, and requires good stewardship practices.

During FY 2008, 77 easement offers were accepted by landowners, covering 9,686 acres. As of June 30, 2008, MALPF had purchased or had pending offers to purchase easements on a cumulative total of 2,005 properties, permanently preserving 274,950 acres. MALPF committed record funding of approximately \$65

million to purchase easements during FY 2008. Because the real estate transfer tax revenue is a source of MALPF funding, the high volume of real estate transfers and high real estate values seen in recent years boosted funding levels available to purchase farmland preservation easements. As real estate values flatten or diminish and the number of real estate transactions decline in the foreseeable future, transfer tax revenues are expected to decline, resulting in less funding available to purchase easements.

The General Assembly did not adopt any major legislation affecting MALPF during the 2008 legislative session. MALPF has implemented its Installment Purchase Agreement program. The IPA allows for an easement payment alternative that provides a stream of tax-exempt income over the period of the agreement (usually 15-30 years) and payment of the principal at the end of the agreement to help landowners minimize the impact of capital gains taxes associated with the preservation of a farm.

MALPF has now reviewed and clarified its policies on acceptable uses of agricultural preservation properties to include agriculture-related and agriculture-supporting uses as approved by the MALPF Board of Trustees. Both equine and winery uses of preserved properties have now been clarified, with the expanded use of properties for these purposes requiring the review and approval of the board. MALPF continues to work on the establishment of the Critical Farms Program authorized by the General Assembly in the 2005 legislative session.

MALPF also partners with other state agencies and local governments to meet a legislative goal (SJ 10, 2002) of preserving 1,030,000 acres of agricultural land by 2022. As of June 30, 2007, Maryland has preserved more than 507,000 acres of agricultural land under MALPF, Rural Legacy, GreenPrint, and through local land preservation and transfer of development rights programs.



Governor Martin O'Malley visits the Langenfelder family farm in Kent County which was permanently preserved in 2008 through a MALPF easement so that future generations of the family will have the option to farm.



## Office of 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 department has approximately 460 permanent and seasonal employees and 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, teleworking, wellness, blood drives, training and employee recognition.

Central Services manages facilities, records, inventory, telecommunications, warehousing, the agency motor fleet and the distribution of supplies and mail. The office also oversees departmental procurement and is responsible for the maintenance and repair of 340,000 square feet of facilities on 44.5 acres of owned and leased facilities throughout the state. The maintenance staff implements energy-saving projects wherever possible. A composting program transforms organic waste into mulch, which is utilized in landscaping projects at MDA. The motor pool provides quality maintenance and repairs of the department's 285 vehicles in addition to semi-annual inspections on all vehicles.

The MDA fleet traveled more than 2.7 million miles last year.

Central Services provides procurement assistance throughout the department; continues to improve management practices and automate data concerning motor vehicle operating costs, telephone costs and billing, inventory control and minority procurement. The office also incorporates the financial management information system to improve monitoring, ordering, and delivery of goods and services.

In FY09, MDA will initiate an energy efficiency performance contract that will save more than \$4.36 million over 14 years. All project costs will be funded through guaranteed energy-related savings as MDA's headquarters building implements the O'Malley Administration's goal to reduce power consumption by 15 percent by the year 2015.

Fiscal Services handles all centralized accounting transactions for the department. This encompasses all phases of the budget, grants management, accounts receivable, accounts payable and leave management. The office has continued its fine record of paying 99 percent of MDA bills on time as defined by state "on-time" guidelines.

## 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, 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 and to support policy initiatives. A Schaefer Center Survey states that the public has an increasingly positive view of many of the agency's priority activities – farmland preservation, purchase of local products and environmental stewardship by farmers – an indicator that public relations efforts at MDA may be having an impact over the long term.

Two of the most prominent public events produced by the Public Information and Outreach 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 recognition program. The offices represented MDA at a number of events such as the Delmarva Chicken Festival, and the Maryland Municipal League, Maryland Association of Counties, and the Maryland Farm Bureau conventions.

During FY2008, staff distributed 257 news releases to approximately 278 news outlets, which generated approximately 960 logged calls from the media. The office uses a media monitoring system to track and research media contacts, to distribute news releases, maintain media lists for targeted stories, and to find news clippings of interest to the agency and its constituencies. Each day, news stories are clipped, linked to the agency's website and distributed to all staff and other interested parties.

During the year, the Public Information Office increased the agency's presence on the Internet, making it the first point of agency contact for more and more people. There were approximately 351,000 visits of which 68 percent were new visitors during the year. The visitors viewed nearly 900,000 pages. The activity increased steadily through the year. The leading page views after the homepage were Maryland products, jobs, licenses, permits and agritourism. Without a designated agency web master, a team representing the Information Technology and Public Information offices and the Plant Protection and Weed

Management Section keeps the site up-to-date and determines ways to improve it.

Some of the biggest news stories handled by the information office in 2008 were a neurologic equine herpesvirus outbreak, local impact of national food safety issues relating to spinach and peppers, veterinary hospital regulation, a pet food recall, regulatory action taken at a Carroll County livestock operation, and the promotion of Maryland made, grown, and harvested products.

Other high-profile media inquiries included the new Maryland and federal animal feeding operation permit being required of poultry and livestock producers; and the environmental accomplishments or impacts of agriculture, funding for the gypsy moth suppression program and consumer complaints related to the high price of gas and the amount of fuel dispensed.

Exciting new initiatives that the public information staff led in collaboration with other MDA offices, the University of Maryland, state and local agencies and related non-profit organizations, were the *Take it from Maryland Farmers – Backyard Actions for a Cleaner Chesapeake Bay* public relations campaign, the media and public awareness aspects of the new statewide farm-to-school initiative and a Buy Local Week campaign and event hosted by Governor O'Malley, and MDA's involvement in the O'Malley/Brown Administration's Capital for a Day community relations events.

Planning for emergency communications in the event of plant and animal disease outbreaks is an important component of the program. The Public Information Office was actively involved in multi-agency efforts (Delmarva Poultry Industries – Health Departments Joint Task Force) to refine response and communications plans in the event of avian influenza outbreak on the Delmarva Peninsula.

More Info: [www.IWantMarylandsBest.com](http://www.IWantMarylandsBest.com),  
[www.marylandfarmtoschool.org](http://www.marylandfarmtoschool.org)

## USDA/National Agricultural Statistics Service

The Maryland Field Office of the U.S. Department of Agriculture's (USDA) statistical agency, the National Agricultural Statistics Service (NASS), provides the public with data relating to the production of most crops grown and livestock raised in the state. Annual information is provided on the general economic well being of the state's agricultural sector. NASS statistics are used to administer and support USDA farm programs that benefit Maryland farmers, to determine the feasibility of new ventures affecting our state's farmers, and to direct program research and development.

In 2007 – the most recent year that statistics are available for this report – agriculture generated nearly \$1.97 billion in cash receipts for the state's farmers, not accounting for the additional impact provided by related jobs and services. Maryland's leading cash commodities were broiler chickens, greenhouse/nursery products, milk and dairy products, corn, and soybeans. The Maryland Field Office of USDA-NASS estimated there were 12,000 farms in 2007 with an average size of 170 acres. Total land in farms in Maryland was 2.04 million acres, one-third of the state's entire land area.

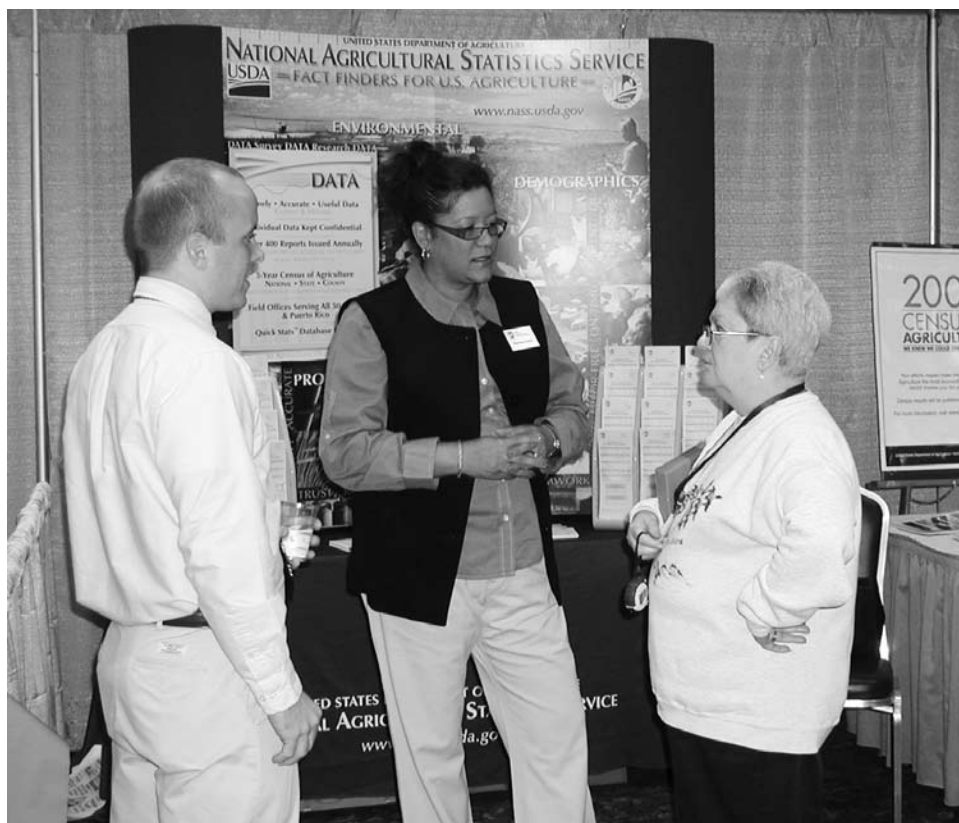
Maryland farmers planted more corn and fewer soybeans in 2007 in response to higher prices and increased demand. Drought

conditions during most of the growing season resulted in below-average corn and soybean crop yields. Despite increased hay acreage in 2007, Maryland had the lowest hay production since 1936. The small grain crop was mostly mature by the time the drought set in, and as a result small grain production was good. Winter wheat producers had the highest total production since 2000. Livestock production declined while prices remained strong.

In 2008, NASS conducted its largest and most comprehensive data collection effort, the 2007 Census of Agriculture. The Census, taken every five years, is a complete count of Maryland farms and the people who operate them. The Census looks at land use and ownership, operator characteristics, production practices, income and expenditures and many other areas. It is the only source of uniform, comprehensive agricultural data for every county in the state. Maryland producers helped make the 2007 Census of Agriculture the most successful count in history. The results of the Census will be available on February 4, 2009.

To obtain a copy of the complete Agriculture in Maryland 2007 Summary call 410-841-5740 or log on to [www.nass.usda.gov/md](http://www.nass.usda.gov/md). The results of the Census will be available online at [www.nass.usda.gov](http://www.nass.usda.gov) or [www.agcensus.usda.gov](http://www.agcensus.usda.gov).

Other reports available through NASS include state-level studies on the Maryland turf, nursery and landscape, and equine industries.



NASS staff discuss the agency's work with a Maryland Farm Bureau Convention attendee.

## Information Technology Services

Information Technology Services (IT Services) is responsible for the creation, maintenance and upgrading of the data processing systems at the Maryland Department of Agriculture. During the past year, the network, programming and technical support sections all made significant progress toward the goal of providing both effective and efficient service to the department and ultimately the public that the agency serves.

The migration to rack mounted servers that was initiated last year as part of the network migration has been completed. In addition, the Novell Netware server in the Frederick Animal Health Laboratory was replaced and a new external tape drive was installed.

Two temperature sensors were installed in the computer room that will notify key IT personnel by phone if there are any sudden, dramatic changes in the room temperature. This will help to minimize the effects of high temperatures by early detection of problems such as failure of the air handling unit in the computer room. The computer room environment was enhanced with the replacement of the water sprinkler system with a chemical-based (Novec™ 1230) fire suppression system. The system will quickly extinguish any type of fire without water damage to other equipment in the room. The system is tied in to the main fire control system in the building. Additional computer room hardware purchases included a Network Access Control (NAC) system. With the installation and configuration of this system, it will be possible for equipment (e.g. laptops) to connect safely to the network. Devices new to the network would be checked for the status of Windows O/S patches, the presence of a running, approved anti-virus software package, current anti-virus signature updates, and an effective firewall. If the computer does not meet these criteria, it will only have limited access to the Internet through our network. All of the switches in the headquarters IDF closets have been replaced as part of the NAC installation process.

A Secure ID token system was also purchased in anticipation of providing employee access to MDA's network services over the Internet via Virtual Private Network (VPN) services. The tokens are assigned to specific users and generate random numbers at regular intervals that must be entered along with a user ID and password. This two factor authentication – “Something you know” (user ID and password), plus “Something you have” – (the number generated by the token) will greatly enhance the security of VPN connections. The system will also use NAC to

verify the integrity of the device that is attempting to login to the system

IT Services also completed the switchover of MDA's Internet access from a private ISP to networkMaryland. The move also resulted in a greater than six-fold increase in bandwidth, significantly improving user access to the Internet.

MDA was forced to reduce the size of its Wide Area Network (WAN) in 2006 due to a loss of funding. A need for better intra-agency communication and data access has resulted in an interest in reestablishing the WAN. New funding, plus the use of networkMaryland's Ethernet Everywhere for the “last mile” instead of more costly frame-relay circuits will enable this project to move forward. Completion of the WAN expansion is expected sometime in the third quarter of FY2009. Both existing and additional sites will have new routers and switches.

Significant staff time has been devoted to preparing for and executing the PC hardware migration. Our existing PC/Laptop inventory is six years old and in need of replacement. One of the first issues to resolve was the Operating System to use with this new hardware. IT Staff evaluated the Windows Vista O/S as a possible replacement for the Windows XP environment that we currently work in. Significant compatibility and performance issues plus the fact that no other state agency had migrated to the Vista O/S, it was decided that we would retain the current O/S (Windows XP).

IT services settled on the appropriate hardware for this migration with the assistance provided by user input. IT's Technical Support staff worked with an outside consultant to configure the equipment to minimize the introduction of viruses and spyware as well as limit the installation of unwanted programs. Once the configurations were finalized, images of the configured systems were taken and sent to the manufacturer for installation during assembly of the new equipment. The migration is expected to be complete by the end of FY09. A complete physical inventory of all IT assets was conducted by IT staff this spring and summer as part of the preparation for this hardware migration.

All of MDA's Oracle RDBMS applications were upgraded as part of the server migration mentioned earlier. These databases now reside in Oracle 10g Release 2 on the RedHat Linux platform. Some of these databases represented the last part of the Novell

Netware network migration from version 4.2, as well as from earlier versions of RedHat Linux.

The Animal Health Vetstar Animal Disease Diagnostic System (VADDS), was part of this upgrade process. The Oracle database was upgraded as well as the proprietary front end of the application.

Several new Oracle applications were developed in the past year. The Maryland Agricultural Land Preservation Foundation's database was completely re-written to improve performance, data storage efficiency and to add additional features. The Pesticide Sensitive Agricultural Land database was created as a repository for information that could be used by pesticide applicators concerned about sensitive crops located near planned pesticide applications. The data will eventually be put on line as part of the MDA website as a public resource. The Poultry Flock Registration database was created to assist in the identification of poultry flocks, their size and location. This information will be invaluable in the event of an outbreak of any avian diseases of regulatory significance such as avian influenza.

Geographic Information Systems (GIS) are currently playing an increased role in data definition and access. Association of specific point data (latitude and longitude) with database items such as livestock herds, agricultural land, business addresses, and conservation practices is necessary to locate items for graphical display and emergency management. The three database applications described above (Aglan Preservation, Pesticide

Sensitive Agland and Poultry Flock Registration) all were designed to include georeferencing data, to provide the user with the tools necessary to get this information and to display it on a map for verification. In addition, the Maryland's Best database and the Weights & Measures Device Registration database were modified by adding this geocoding capability.

Oracle's Business Intelligence Publisher (BI Publisher) was purchased to provide a web-based platform for Oracle database reports. The software is currently being tested by IT Staff for initial deployment internally via our intranet.

This year, MDA has engaged a service to assist in the development and distribution of an HTML-based e-mail monthly newsletter. The Public Information office is responsible for the development and distribution of the newsletter throughout the Internet. IT services is assisting in the efficient distribution of the newsletter to MDA employees as well posting the newsletter on MDA's website for public access.

IT staff have dedicated significant time in the maintenance and enhancement of the various MDA sponsored websites including the MDA website ([www.mda.state.md.us](http://www.mda.state.md.us)), the Maryland Seafood website ([www.marylandseafood.org](http://www.marylandseafood.org)), and the Maryland's Best website ([www.marylandsbest.net](http://www.marylandsbest.net)). In addition, significant staff time has been dedicated to Help Desk user support (hardware and software), network administration/management and database application management and support.

## Office of Resource Conservation

The Maryland Department of Agriculture's Office of Resource Conservation (RC) works closely with Maryland farmers to plan and implement conservation practices and programs that balance crop and livestock production with the need to protect natural resources. The office provides a range of educational, financial, technical assistance and regulatory programs to improve agricultural management in Maryland and protect natural resources for future generations. Staff works with a number of local, state and federal agencies, while implementing policies established by the State Soil Conservation Committee. Four key areas—Program Planning and Development, Conservation Grants, the Nutrient Management Program and Conservation Operations comprise the 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 (SCDs) and state and federal agricultural and natural resource agencies. The SSCC coordinates the activities of Maryland's 24 soil conservation districts and appoints SCD supervisors. 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 2008, the SSCC approved or recommended policy to MDA concerning:

- Wetland delineation as defined by soil conservation districts preparing erosion and sediment control plans for forest harvesting projects.
- Interagency workload priorities aimed at improving program effectiveness and accountability and establishing measurable results.
- Involvement by soil conservation districts in local development of jurisdictions' water element in their comprehensive plans to assure that agricultural use is adequately accounted for and protected.
- Agricultural activities that relate to Notice of Intent requirements for stormwater management and the role of soil conservation districts in assisting with this initiative.
- The establishment of administrative guidelines for the 2008-2009 Winter Cover Crop Program, which received the most robust funding in the program's history.

In 2008, the SSCC received the following briefings and tracked these initiatives:

- New permit requirements for concentrated animal feeding operations.
- Water quality issues related to agriculture as determined by the Governor's Water Advisory Committee.
- New University of Maryland findings on agricultural water use for irrigated cropland.
- The use of BayStat to report on state agency activities and evaluate outcomes and efficiencies in the Bay cleanup effort.
- A new survey on stormwater management that was distributed to all soil conservation districts.
- Governor Martin O'Malley's Smart Growth Inter-Agency Coordinating Committee.
- The Chesapeake Bay 2010 Trust Fund and a proposed allocation plan for this new funding initiative.

### Program Planning and Development

The Program Planning and Development 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 provides staffing support to the State Soil Conservation Committee, BayStat and the Conservation Reserve Enhancement Program (CREP) Advisory Committee.

### Manure Transport Program

Maryland's Manure Transport Program—the first of its kind in the nation—provides poultry and livestock farmers with cost-share funds to remove from their farms excess manure that cannot be utilized in accordance with a nutrient management plan. Poultry, dairy, beef and other animal producers with high soil phosphorus levels or inadequate acreage to properly utilize their manure may apply for cost-share grants of up to \$20 per ton to transport excess manure to other locations that can use the product in an environmentally safe manner. Cost-share rates are 25 percent higher for farms located in Dorchester, Somerset, Wicomico and Worcester counties.

In Fiscal Year 2008, 132 farmers received \$520,357 in state grant payments to transport 99,817 tons of manure to approved farms and businesses. Delmarva poultry companies provided matching funds to transport poultry litter, bringing the total amount of financial support provided to \$891,342.



A Manure Matching Service supports the Transport Program by linking farmers who have excess manure with others who can use the manure safely as a nutrient source.

### Geographic Information Systems

A geographic information system (GIS) is a powerful software technology that allows a vast amount of information to be linked to a geographic location. GIS technology is capable of acquiring, storing, analyzing and displaying geographically referenced information. Data from many sources, including digitized and scanned maps, aerial photography, soil surveys, and global positioning systems are integrated by the GIS in order to create a “smart map” of a specific location. In agriculture, GIS technology is used to collect, collate, manage, and disseminate data to soil conservation district field offices and other agencies. GIS is also used to verify regulatory compliance and track best management practices (BMPs) installed on Maryland farms. Because of its ability to manage large amounts of data about a specific location, GIS helps soil conservation district staff to more accurately site, design and evaluate the effectiveness of BMPs in protecting water quality.

In 2008, office staff provided a two-day training course, *Introduction to ArcGIS* for the staff of the Maryland Agricultural Land Preservation Foundation (MALPF). Regional training sessions on the use of *MD PropertyView FINDER Online* were conducted for soil conservation district staff. Maps of counties within Maryland’s priority watersheds were produced and provided to soil conservation districts to help target areas for participation in the 2008-2009 Winter Cover Crop Program. In addition, data sets for the Manure Transport Program were spatially enabled and provided to Governor O’Malley’s BayStat office. Staff also served on the technical committee charged with developing Maryland’s *GreenPrint* map, the first in a series of maps that showcases the progress of state programs in conserving and protecting ecologically valuable lands.

### 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 addition, the program provides educational displays, brochures and other collateral materials to soil conservation districts to assist with their outreach efforts.

In 2008, efforts to educate Maryland’s farmers on Maryland’s nutrient management regulations continued. The office produced the spring and winter editions of the newsletter, *Maryland Nutrient Management News*, which were mailed to approximately 7,000 farmers and certified nutrient management consultants.

A number of farmer publications, direct mailers, annual reports and informational displays were developed or updated over the course of the year to reflect program enhancements and educate farmers and the public on Maryland’s agricultural conservation efforts. *Conservation Choices*, a descriptive 26-page brochure on best management practices for farms in the Chesapeake Bay watershed was updated and distributed to farmers statewide. In addition, fact sheets on Maryland’s new requirements for animal feeding operations were prepared for poultry farmers and livestock producers.



In order to promote Maryland’s 2008-2009 Cover Crop Program, which received significant additional funding from the new Chesapeake Bay 2010 Trust, a comprehensive communications program was initiated. Communications elements included news releases, print ads, radio ads featuring Governor Martin O’Malley, direct mail, and posters. Following the outreach campaign, farmers signed up a record 387,000 acres of cover crops in the fall of 2008.

In other areas, the office worked with MDA’s agricultural partners to promote and expand the popular homeowner series, Backyard Actions for a Cleaner Chesapeake Bay. Public service announcements appeared on television while radio ads were broadcast on stations throughout the state to encourage homeowners to practice backyard conservation.

## Conservation Grants

Since 1984, the Maryland Agricultural Water Quality Cost-Share (MACS) Program has been helping farmers protect natural resources on their farms, adopt sustainable agricultural practices and comply with a growing list of federal, state and local environmental requirements. MACS provides farmers with grants to cover up to 87.5 percent of the cost to install conservation measures known as best management practices (BMPs) on their farms to prevent soil erosion, manage nutrients and safeguard water quality in streams, rivers and the Chesapeake Bay.

In Fiscal Year 2008, Maryland farmers received \$11.3 million in grants from MACS to install more than 2,000 capital and special projects on their farms to protect water quality. Farmers who received cost-share grants from MACS in 2008 invested more than \$1.6 million of their own money into projects that will collectively prevent an estimated 2.4 million pounds of nitrogen and 138,300 pounds of phosphorus from entering Maryland waterways each year. Cover crops were responsible for the bulk of the nitrogen savings (1.7 million pounds) and nearly 30 percent of the phosphorus savings (41,000 pounds). The projects will also help manage an estimated 15,284 tons of soil annually and 1,569 tons of manure daily in order to prevent impacts to local streams. Cover crops, heavy use areas, nutrient management services, manure transport, streamside protection projects, grassed waterways, animal waste storage structures, grade stabilization structures, roof runoff structures and dead bird composting facilities were among the most popular BMPs installed during the year with MACS assistance.

Low Interest Loans for Agricultural Conservation (LILAC) are available to help farmers supplement federal and state cost-share payments for structural BMPs such as animal waste management systems or stream protection measures. They may also be used to purchase certain types of equipment to reduce soil erosion and manage nutrients. Guaranteed by the State Revolving Loan Fund, LILAC loans are typically offered at three to four percent below market rates and are available at lending institutions statewide. In Fiscal Year 2008, MACS worked with the Maryland Department of the Environment and soil conservation districts to provide farmers with approximately \$300,000 in LILAC loans. The funds were used to help pay for agricultural waste systems and manure handling equipment.



### Special Projects / Highlights and Accomplishments:

- **Cover Crop Program**  
Granted more than \$6.7 million in MACS funds (during the 2007-2008 planting season) to Maryland farmers, who planted 187,480 acres of cover crops to recover unused plant nutrients, protect against wind and water erosion and help improve the soil for next year's summer crops.
- **Nutrient Management Cost-Share**  
Issued \$227,409 in cost-share grants to 185 farmers who hired private consultants to develop nutrient management plans covering 120,501 acres of farmland. Due to funding limitations, the program exhausted its budget within the first three months of the fiscal year and, in the short term, stopped accepting new cost-share applications.
- **Conservation Reserve Enhancement Program (CREP)**  
Provided 120 landowners throughout the state with \$305,668 in cost-share funds to install streamside buffers, conservation cover, stream crossings, animal fencing and other BMPs on farmland enrolled in the Conservation Reserve Enhancement Program (CREP), a voluntary federal-state initiative that pays landowners to take environmentally sensitive cropland out of production and plant vegetative buffers or install other conservation practices.

### Maryland Nutrient Management Program

The Water Quality Improvement Act of 1998 requires all farmers grossing \$2,500 a year or more or livestock producers with 8,000 pounds or more of live animal weight to run their operations using a nutrient management plan. These science-based documents help farmers manage fertilizers, animal waste and other nutrient sources

more efficiently in order to meet crop needs while protecting water quality in streams, rivers and the Chesapeake Bay. Plans that address both nitrogen and phosphorus inputs are required for all agricultural land used to produce plants, food, feed, fiber, animals or other agricultural products.

Farmers are required to keep their nutrient management plans current, take new soil samples a minimum of once every three years and file annual reports with MDA describing how they implemented their nutrient management plans during the previous year. Farmers who own or manage 10 or more acres of agricultural land and apply their own nutrients are required to attend a two-hour MDA-sponsored education program on nutrient application once every three years. Professionals and farmers certified to prepare nutrient management plans are required to take continuing education courses in order to keep abreast of the latest nutrient management technologies and regulations.

Non-agricultural nutrient applicators, including commercial lawn care companies, landscapers, golf course managers and public groundskeepers, are required by law to follow Maryland Cooperative Extension guidelines when applying nutrients to lawns, athletic fields or other landscapes.

The Nutrient Management Program oversees enforcement activities, a certification and licensing program for consultants and farmers, training and education programs and an urban nutrient management program.

#### **Agricultural Enforcement**

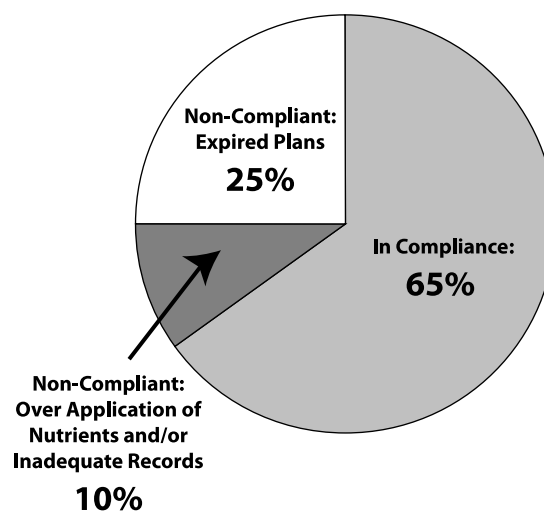
- Farmers are required to submit a Nutrient Management Plan to MDA that has been developed by a consultant or a farm operator who is certified to develop a plan solely for his or her operation. Last year, MDA ramped up enforcement efforts to bring approximately 300 farmers who did not have nutrient management plans into compliance with the law. As a result of these efforts, most farmers submitted their plans to MDA and progressive enforcement actions are being pursued against the 133 farmers who remain out of compliance with the program. As of December 2008, nutrient management plans have been submitted for 99 percent of Maryland's farmland, or 1.2 million acres.
- Farmers are required to keep their nutrient management plans current and submit an Annual Implementation Report (AIR) to MDA by March 1 of each year describing

how they implemented their plans. In 2008, MDA issued 1,700 warning letters to farmers who failed to file their AIRs, followed by 680 notifications of pending fines. Fines have been levied against 114 farmers who remain out of compliance. As of December 2008, AIRs have been submitted for 99 percent of Maryland's farmland or 1.2 million acres.

- In 2008, MDA conducted 450 on-farm plan implementation reviews and inspections to verify that nutrient management plans are current and being implemented properly. These inspections target farmers who submitted their AIRs late or have not yet submitted their AIRs, operations with a history of compliance problems and certain high risk animal operations and farms that use manure, imported organic wastes or sludge. Of the 450 farms inspected, 65 percent were in compliance. Approximately 25 percent were found to be out of compliance due to expired plans and 10 percent failed their inspections due to over application of nutrients and/or inadequate records. MDA has initiated actions to bring these farmers into compliance with program requirements.

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### **On-Farm Implementation Reviews and Inspections Compliance Summary**



**Certification and Licensing**

- Nutrient management staff conducted 200 field inspections while evaluating approximately 232 plans for MDA cost-share projects to make certain that they met regulatory standards. Overall, approximately 89 percent of the consultants inspected passed their reviews, a two percent increase over last year. MDA continues to work with consultants to improve their performance.
- MDA certified 15 new consultants who passed the Nutrient Management Certification Exam, bringing to 1,105 the number of consultants who have successfully been trained by the program. The figure includes 192 consultants who operate under licenses and are actively writing plans and an additional 28 Maryland Cooperative Extension consultants who are funded by MDA.
- MDA, working with the University of Maryland Cooperative Extension, trained and certified 59 farmers to write their own nutrient management plans. Since the Farmer Training and Certification Program began in 2005, MDA has certified 293 farmers to write nutrient management plans for their own operations. This figure represents five percent of farmers required to have a nutrient management plan.

**Training and Education**

- MDA provided a two-day training course attended by 28 individuals interested in taking the Nutrient Management Certification Exam.
- In partnership with the University of Maryland Cooperative Extension, MDA offered 31 comprehensive continuing education workshops for approximately 800 participants.

Additionally, the program reviewed and approved 44 workshops and training programs sponsored by recognized organizations and neighboring universities to help consultants fulfill their continuing education requirements. These were attended by 855 participants.

- Individuals who apply nutrients to 10 or more acres of cropland that they own or rent are required to attend an applicator training course once every three years. In 2008, MDA and the University of Maryland Cooperative Extension conducted 48 voucher training sessions attended by 971 participants. As of December 31, 2008, MDA has issued 5,078 nutrient applicator vouchers.

**Urban Nutrient Management Program Enforcement**

MDA regulates individuals and companies that apply fertilizer to 10 or more acres of non-agricultural land, including lawn care companies, golf courses, public parks, airports, athletic fields and state-owned land such as recreation areas and highway right-of-ways. These urban land managers are required to take soil tests, follow the fertilizer recommendations of the University of Maryland Cooperative Extension and keep certain records of fertilizer applications.

Approximately 700 operations—including 200 golf courses and 400 lawn care service providers—are regulated by the urban nutrient management program. In 2008, MDA reviewed the fertilizer records of 52 individuals/firms to determine program compliance. Following these inspections, MDA issued warnings to six firms/individuals. No fines have been issued to date. Failure to take soil tests was the most common compliance issue. Twenty-one follow-up reviews involving companies with previous



(LEFT) MDA Inspector Dwight Dotterer (center) consults with farmers regarding farm practices.

(RIGHT) Lee Richardson (center) discusses his poultry operation with Royden Powell, Asst. Secretary for Resource Conservation, Agriculture Secretary Roger Richardson, Environment Secretary Shari T. Wilson, and Nutrient Management Program Administrator Fred Samadani in advance of the new animal feeding operation permit being established.

compliance issues were also conducted during the year resulting in six additional warnings.

**Training**

This year, the Nutrient Management Program offered its first training class held entirely in Spanish for employees of lawn care companies. Approximately 50 participants attended the sold out class to learn how to take a soil sample, understand a fertilizer label, measure a lawn, interpret soil test results and calibrate a fertilizer spreader.

**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.

**Soil Conservation and Water Quality Plans**

Soil Conservation and Water Quality Plans (SCWQP), also known as farm plans, help farmers identify natural resource issues or problems on their farms and chart a course for environmental management and enhancement projects. Developed by conservation planners working in the SCD, each plan is as unique as the farm for which it is developed and may include dozens of best management practices (BMPs) that are implemented over several years to protect water quality and enhance wildlife habitat.

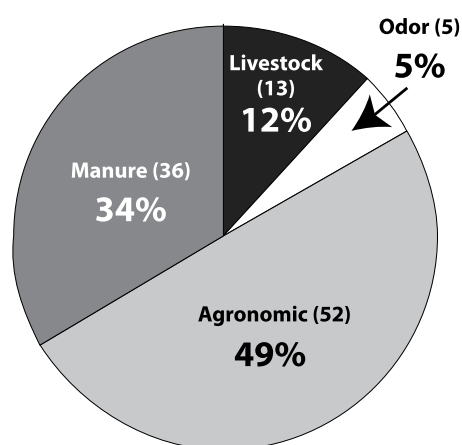
Because of their importance in protecting natural resources, SCWQPs are required by the Federal Food Security Act on all highly erodible lands. At the state level, active SCWQPs must be implemented on all farmland enrolled in the Maryland Agricultural Land Preservation Program as well as on farmland located in the Chesapeake and Atlantic Coastal Bays Critical Areas—the 1,000 foot strip of land along the Bay’s shorelines. In addition, the Maryland Department of the Environment now requires certain livestock and poultry farmers to implement SCWQPs as a condition for obtaining its proposed new Maryland Animal Feeding Operation (MAFO) permit.

In 2008, soil conservation planners throughout the state collectively developed 922 new SCWQPs for 72,300 acres of Maryland farmland. Another 1,034 plans affecting 112,900 acres of farmland were updated to ensure their continued effectiveness in protecting natural resources. Together, these plans included more than 7,590 BMPs.

**Enforcement**

Maryland has a procedure in place for addressing cases of water pollution caused by agriculture. The strategy uses 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 Department of Agriculture and the Maryland Department of the Environment work jointly with soil conservation districts to assess farm management complaints 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 the University of Maryland Cooperative Extension. In 2008, 106 agricultural complaints were received concerning sediment and erosion control issues, odors, manure and livestock concerns. Of this figure, 96 complaints were corrected or closed, six complaints are pending/ongoing and four enforcement actions have been initiated.

**Types of Agricultural Complaints 2008**



### **Agricultural Water Management**

To prevent pollution and protect water resources, the office works with local public drainage associations (PDAs) to assure that operation and maintenance plans for public drainage systems are technically adequate and properly implemented. In Fiscal Year 2008, technical assistance was provided for the operation and maintenance of more than 820 miles of drainage ditches.

### **Tributary Strategy Team Activities**

Resource Conservation staff and soil conservation districts are active supporters and participants in Maryland's Tributary Strategy Teams. These teams—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 2008, Maryland's tributary teams provided valuable data used by the Governor's office to prioritize cleanup efforts in priority watersheds. The teams also provided statistics used in the ongoing development of BayStat, an innovative computer program that provides citizens with access to information on the health of Chesapeake Bay and its tributaries and the effectiveness of related government programs and funding. Citizens may view Bay cleanup progress by visiting [www.baystat.maryland.gov](http://www.baystat.maryland.gov).

### **Maryland Envirothon**

The office supports soil conservation districts that sponsor the *Maryland Envirothon*, an outdoor natural resources competition for high school students interested in learning about natural resources and gaining a better understanding of today's complex environmental issues. Now in its 18<sup>th</sup> year, the Envirothon gets

teenagers out of the classroom, away from the computer screen and into the countryside to experience nature in ways that cannot be learned from a book. Students involved in the program are asked to identify and categorize living resources, perform soil surveys and solve other complex natural resource issues unique to Maryland and North America. Teams compete at the county, state and international levels. A five-member team of students from Harford Christian School in Harford County won the 2008 Maryland Envirothon and later placed 20<sup>th</sup> out of 54 teams at the Canon International Envirothon held in Arizona.

The Maryland Envirothon is sponsored by the Maryland Association of Soil Conservation Districts and the State Soil Conservation Committee. In addition to MDA, contributors and supporters include USDA's Natural Resources Conservation Service, the Maryland Department of the Environment and the Maryland Department of Natural Resources.

### **Special Projects and Grants**

The Office of Resource Conservation actively manages 24 ongoing research and technical assistance grants totaling \$4.9 million for special programs and demonstration projects designed to help dairy farmers, small sized equine operations, poultry producers and other landowners improve pasture and manure management, control soil erosion, manage nutrients, reduce runoff and safeguard water quality in streams, rivers and the Chesapeake Bay.

In 2008, the program was awarded a \$188,000 grant by the National Fish and Wildlife Foundation to demonstrate new ways to reduce nutrients entering natural waterways from agricultural drainage systems in watersheds that receive poultry manure applications.



(LEFT) Clay Batchelder, a member of the Kent County Envirothon team, and Governor Martin O'Malley measure the diameter of a tree during the governor's visit to Chestertown. (ABOVE) Students participating in the 2008 state Envirothon finals at Harford Glen Environmental Center in Harford County.



## Marketing Services

The Marketing Services Division's principle role is to identify and develop profitable marketing opportunities for Maryland farmers and agricultural producers. The division 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 the way they sell their products and develop new buyers. In 2008, Marketing Services continued to focus resources on initiatives designed to create demand among Marylanders for locally-produced agricultural products and open marketing channels for Maryland farmers. The University of Baltimore Schaefer Center for Public Policy's annual public opinion survey showed continued strengthening of consumer support for the purchase of local agricultural products vs. those from elsewhere. More than 77 percent said they would prefer to buy Maryland-grown fruits and vegetables.



### National Marketing and Agribusiness Development

The Marketing Services staff works with farmers and agricultural producers to assist them in marketing their products directly to supermarkets, schools, chefs, hotels, food service businesses and to other wholesale buyers as well as directly to consumers at farmers' markets and other venues. The Maryland's Best™ program enables producers to capitalize on the consumer's preference for local agricultural products. The 2008 Maryland's Best campaign promoted Maryland farmers on six radio stations during the prime growing season as well as through press releases statewide during the year. The campaign was designed to direct consumers to the revamped and searchable Maryland's Best website where additional information was available.

Governor Martin O'Malley supported Maryland's Best by recording radio spots in 2008. He also hosted buyers of local food, farmers and media at the Governor's Mansion during a Buy Local Challenge Week picnic. This initiative was launched statewide this year to encourage Marylanders to eat locally-grown food during a week at the height of the state's growing season.

The Jane Lawton Farm to School Program was launched by MDA and its partners this year. Created in honor of the late Maryland House of Delegates member Jane Lawton of District 18, Montgomery County, by the General Assembly in 2008, this program led to county and state initiatives to incorporate some locally-produced food in nearly every county in the state. More than 30 different Maryland farms participated in the Maryland Home Grown School Lunch Week held September 22-26, 2008. This effort was coordinated by the Maryland Department of Agriculture and the Maryland State Department of Education with the Maryland Department of Health and Mental Hygiene, the Maryland Agricultural Education Foundation and the University of Maryland Cooperative Extension 4-H and public school systems around the state.

The division worked with a professional photographer to bring the story of Maryland's farmers to the consumer through five "sound books." A sound book is a photographic slideshow with narration by the farmer. Watermelon, strawberry, apple, dairy and turkey producers were profiled in the sound books this year. Marketing provides opportunities for farmers and producers to sell their products directly to wholesale buyers in Maryland and beyond. In 2008, the division held two buyer-grower meetings, introducing more than 70 Maryland farmers to buyers from major chains including Whole Foods, Weis, Wal-Mart, Safeway, and Giant as well as chefs and buyers from area institutions.

The division continues to cultivate relationships with more major supermarket chains as well as restaurants, schools, prisons, garden centers, state agencies, and other wholesale buyers, and to work to minimize obstacles to direct-to-wholesaler sales. Through work with the Mar-Del Watermelon Association, staff coordinated a statewide promotional initiative to boost marketing opportunities for Maryland watermelons. This included events at the City Dock in Annapolis with watermelon queens from Maryland and other major watermelon growing areas of the nation.

The marketing office supports the growth of 74 of the state's 92 farmers' markets in all 23 of Maryland's counties and the City of Baltimore. In 2008, MDA provided various levels of support from the initial creation and development of new markets to promotional materials and occasional consultation for well-established markets. Maryland farmers estimated their sales (for insurance purposes) at more than \$3 million in 2008.

At farmers' markets across the state, 265 farmers participated in the Farmers' Market Nutrition Programs (FMNP) for Women, Infants, and Children (WIC) clients and for seniors. Funded primarily by USDA's Food and Nutrition Service, the FMNP provides fresh produce for nutritionally at-risk women, infants, children and income-eligible senior citizens while increasing sales for farmers. MDA with the Department of Health and Mental Hygiene leveraged general funds of \$149,000 to generate a total program commitment of more than \$480,000, including funds from the U.S. Department of Agriculture. The FMNP is a standing program commitment from USDA and must be administered by a state department of agriculture, which requires that MDA provide both staff and general fund resources.

Marketing staff administers and/or provides support for various grant programs, task forces and other activities that improve the

policy climate and long-term profitability for farmers. These include the Maryland Dairy Industry Oversight and Advisory Council, the Renewable Fuels Incentive Board, and the Governor's Advisory Commission on Maryland Wine and Grape-Growing. In 2008, staff secured and/or administered grants under the Specialty Crop Block Grant Program, the Federal-State Market Improvement Program, the Maryland Agricultural Education and Rural Development Assistance Fund (MAERDAF), and the USDA Risk Management Agency's Targeted States Program.

On-going staff assistance and support is provided to other agricultural groups throughout Maryland, including the Maryland Soybean Board, Maryland Grain Producers Association, Maryland Nursery and Landscape Association, Maryland Food Center Authority, Maryland Greenhouse Growers Association, Maryland Agriculture Council, Maryland-Delaware Forage Council, Maryland Organic Certification Advisory Committee, Maryland Organic Food and Fiber Association, and others.

The Maryland Agricultural Conflict Resolution Service (ACReS) provides prompt, low-cost, confidential and collaborative mediation and other services for resolving disputes related to agricultural production. The mediation program, funded mainly by USDA with matching funds from existing state resources, not



At left, Robert Black of Catocin Mountain Orchards delivers apples to the Frederick County Public Schools with MDA Deputy Secretary Buddy Hance looking on at right.

only serves those who have received an adverse ruling related to a USDA program or other regulatory matter, but also provides assistance for a broad range of issues including those involved in loan servicing, farmer-neighbor disputes, family farm and estate conflicts, for example.

The program staff works closely with other government agencies and organizations on policy development and implementation in order to create a more business- and consumer-friendly face of government. Only state departments of agriculture can request certification by USDA and receive USDA funding for this program; if MDA did not provide the service, it would not be available to Maryland citizens.

Marketing staff manage a federally-funded program to inform Maryland farmers of crop insurance.

2008 Maryland Homegrown School Lunch Week was marked by a variety of events/activities.

This program, financed with \$370,000 from the USDA-Risk Management Agency (RMA), combines the resources of MDA, the University of Maryland, RMA and the National Agricultural Statistics Service to target producers for promotional and educational activities. From 2003 to 2008, participation among Maryland farmers increased by 14 percent – one of the greatest increases in the Northeast. Farmer investment in crop insurance helps stabilize Maryland’s agricultural economy. Following the drought of 2002, for example, producers received \$23.4 million in indemnity payments from crop insurance designed to help them survive bad weather, insects, disease, and market fluctuations. The payments translate to more than \$7 for every \$1 spent by producers to purchase crop insurance.



## International Marketing and Trade Development

The International Marketing and Trade Development office's mission is to increase export sales by Maryland agricultural producers and agribusinesses in order to enhance their economic well being. The two person staff accomplishes this by conducting outreach and educational programs, organizing and conducting trade promotion activities and facilitating participation by Maryland companies in international trade promotion events.

International marketing activities focus on two areas: market access and international policy and trade relationships. The priority areas for market access activities are livestock, value-added foods and seafood. Activities ranged from researching new and developing markets, to designing and implementing missions and trade shows, hosting reverse trade missions, arranging one-on-one meetings with buyers and Maryland agribusinesses, conducting seminars, and assisting companies with developing international market strategies. The staff worked with more than 250 agribusinesses in more than 40 countries.

Through international policy and export activities, staff participates in the development of export phytosanitary protocols for agricultural products going into new markets and prepares Certificates of Free Sale for Maryland businesses.

Beyond the normal difficulties of international trade, such as differences in language and business practices, exporting food products, livestock and nursery products pose additional challenges because such products require phytosanitary certificates and adherence to labeling standards. Program staff helps prepare Maryland's agricultural processors, manufacturers, and farmers to be export ready, to develop niche markets that are competitive in the global market place and to pursue a results-oriented export marketing management program.

Exporting agricultural products provides additional income to farm families and is increasingly important for small- and medium-sized farmers and agribusinesses. The USDA Foreign Agricultural Service reports that every \$1 of product exported generates another \$1.62 for the economy in related economic activity, such as transportation or packaging. It also reported that employees engaged in export businesses receive higher wages than their counterparts in non-export businesses.

Diversification into profitable export markets can serve as a good risk management tool for U.S. farmers and can help keep domestic prices high. Exporting has become an increasingly important part of the maintenance of a profitable family-farm. The USDA offers a number of incentive programs to encourage farmers and



A Filipino delegation attending the Preakness during a visit to buy horses at the Fasig-Tipton sale in May is greeted by Agricultural Secretary Roger Richardson (rear left) and Governor Martin O'Malley.

processors to enter the global marketplace. The Department's International Marketing unit garners federal funds to underwrite nearly all of its trade missions, trade shows and reverse buyers' missions. Given the complexities of exporting agricultural products, most USDA funds are awarded to state departments of agriculture where they are administered for the benefit of the state's farmers and processors. The Economic Research Service of USDA estimates that Maryland agricultural exports totaled \$357.5 million in 2007, the most recent data available. The top three agricultural exports were: poultry, wheat and soybean products.

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 United States Livestock & Genetics Export Association (USLGE) specifically, MDA invested \$12,500 in membership dues which resulted last year in more than \$200,000 in funding for international trade missions managed by MDA. These activities included reverse trade missions bringing foreign buyers from several countries to visit Maryland farms.

***Export Activities Implemented by International Marketing in 2008 included:***

**Cuba**

Secretary Roger Richardson led a delegation of Maryland agribusinesses to Havana, Cuba in November. Two companies shared space with MDA at the Havana International Trade Fair. One company signed a contract for soybean meal valued at \$12.3 million. The second company had strong interest shown in its products and continues to discuss sales with Cuban officials. Much of the success of this mission was due to the strong relationship Secretary Richardson and Deputy Secretary Hance have created with Ambassador Jorge Bolaños, the Head of the Cuban Interests Section in Washington, DC.

**South Korea**

Korea is Maryland's third largest market for agricultural products. The International Marketing office is active in the promotion of food and seafood products to Korea. In 2008, staff organized the participation of three Maryland food companies at the Seoul Food & Hotel Show and arranged a reverse trade mission to Maryland. The Korean buyers met one-on-one with 12 Maryland producers and had an opportunity to tour McCormick and Company's



Korean Food Buyers tour the Tulkoff Food Products facility in Baltimore

facility in Hunt Valley as well as Boordy Vineyards in Hydes. Sales from these two activities are projected to be more than \$1.3 million. International marketing staff has also worked closely with the Southern U.S. Trade Association in exporting croaker (fish) to Korea.

**Philippines**

In 2008, a delegation of Philippine horse breeders traveled to Maryland to attend the Fasig-Tipton Midlantic Preferred Two-Year-Olds in Training auction. The delegation visited private farms and purchased three horses for export to the Philippines. MDA is working with the horse industry to develop a marketing plan for Thoroughbreds.

### Russia

MDA manages an on-going and successful Russian Federation food promotion for the Southern U.S. Trade Association. Sales from this event are expected to total over \$100,000. At this year's show, a major Maryland seafood processor participated in World Food Moscow 2008 and met with several large retailers in the Moscow region. The company plans to participate in this event again and finalize sales.

In 2009, MDA is focusing activities in Cuba, South Korea, Russia, and the European Union. MDA will be organizing the participation of six companies from the southern region of the United States at the European Seafood Exposition in Brussels, Belgium. Two Maryland companies will exhibit at this event. This is the largest seafood trade show and attracts buyers from throughout the world. Maryland is well-known for its seafood sector and this is an excellent opportunity to showcase Maryland products.



Chef John Maxwell at World Food Moscow preparing Maryland soft-shell crabs and scallops.

## Maryland Agricultural Fair Board

Maryland's fairs and shows provide entertainment for the entire family and they showcase Maryland's rich agricultural heritage. The Maryland Agricultural Fair Board was created by the state legislature in 1937 to foster agriculture by promoting and assisting agricultural fairs and exhibits. It gives financial aid to qualifying organizations for premium awards to exhibitors of agricultural displays. Annually, the board issues a schedule of fairs and shows to help publicize the events. The board consists of nine members who represent various regions of the state and are appointed by the Governor. The daily affairs of the Board are handled by a part-time executive secretary. Headquarters for the Board has been the Maryland Department of Agriculture since the agency's creation and prior to that headquarters were at the Maryland State Fairgrounds.

The board administers grant funds for fairs, livestock shows, community shows, and 4-H and FFA youth activities through an application process. The board funded fairs in 22 counties and Baltimore City in addition to seven community shows, 24 livestock and other agricultural events, and the Maryland State Fair in 2008. Additional funding for 4-H and FFA enabled more than 35,000 youth to be recognized for their achievements and provided helped youth attend judging contests and other competitive events on the regional and national levels.

Youth participation continues to increase in all activities funded by the board while adult participation in livestock events at fairs decreases. This can be attributed to the tight agricultural climate, labor, and weather. Indoor participation at fairs and shows is increasing for adults especially in the hand arts while fruit and vegetable exhibition is dependent on local weather patterns.



## Seafood Marketing and Aquaculture Development

### Aquaculture Development Program

The Aquaculture Development Program supports the Maryland aquaculture industry through promotional, educational, and technical assistance programs. In 2008, there were 38 commercial aquafarms in production in Maryland. Maryland has eight licensed fee-fishing operations and more than 50 schools, nature centers, government agencies, and private organizations producing fish, shellfish, and aquatic plants for educational and restoration projects. Shellfish aquaculture production is gaining attention in Maryland as a way to help to rebuild depleted wild stocks of important bivalve shellfish while generating economic growth and improving water quality in the Chesapeake and Atlantic Coastal Bays.

The Maryland Aquaculture Review Board, which is chaired by the MDA aquaculture coordinator, provides monthly interagency review of permits and issues across departmental lines. In 2008, the Board reviewed 19 applications for aquaculture projects in Maryland. These included operations proposing to raise shellfish seed, market clams, oysters, and fish. As a result of this effort, nine new aquaculture businesses have been established in Maryland, with five others currently under review.

The Maryland Aquaculture Coordinating Council is made up of 11 designated representatives from academic, regulatory, and political organizations as well as six members from industry appointed by the Governor. The Aquaculture Coordinator serves as a member of the coordinating council and provides administrative support.

In August 2008, Governor O'Malley requested that the department develop a plan of action to streamline the permit process for shellfish leasing in the Chesapeake and Atlantic Coastal Bays, provide incentives to catalyze private investment in leasing operations and encourage commercial fishermen to transition to aquaculture.

The Maryland Shellfish Aquaculture Plan was presented to the Governor in September 2008 and is the result of collaboration among a number of state agencies and the Maryland Aquaculture Coordinating Council to support the continued development of sustainable shellfish aquaculture in the State of Maryland. The following nine recommendations, which are identified in the plan, will create the opportunity for prospective shellfish growers to establish their businesses in Maryland waters.

- Restructure current leasing laws to provide for increased access to bottom statewide by repealing Natural Resources Article 4-11A and developing a leasing program that encourages shellfish aquaculture.
- Grant departments the authority to promulgate regulations for compliance with the National Shellfish Sanitation Program (NSSP) and permit conditions established through the departments.
- Streamline the process for obtaining permits necessary to engage in shellfish production.
- Establish Aquaculture Enterprise Zones providing designated areas that are pre-permitted for shellfish aquaculture where applicants can obtain bottom and off-bottom sites for production and avoid user group conflicts while minimizing delays.
- Request the U.S. Army Corps of Engineers, Baltimore District, to develop a General Permit for shellfish aquaculture that allows structures to be used on bottom and in the water column.
- Provide funding to the Maryland Natural Resources Police in order to increase resources needed for patrol and enforcement activities that will be required by the growing industry.
- Provide funding to the University of Maryland to develop educational programs for the transfer of technology leading to the development of private hatcheries, remote setting sites, and nurseries that produce native, triploid, and/or disease resistant oyster seed.
- Develop training and cost-share programs to help transition watermen into the industry and provide incentive to those willing to invest in production.
- Provide legislative authority for the Potomac River Fisheries Commission to develop a bottom leasing program for the river.

The program also worked with the council to develop its 2008 Legislative Report which includes recommendations supporting the development of a Shellfish Aquaculture Cost-Share Program,

a Coastal Bays Harvester Transition Opportunity, an Annual Aquaculture Conference and strengthened Natural Resources Police Enforcement activities.

The Aquaculture Development Program continues to provide 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 Watermen’s Association, Maryland Sea Grant, Maryland Seafood Marketing Advisory Commission, the National Aquaculture Association, and many other organizations are essential to providing aquafarmers with these opportunities.

### Seafood Marketing Program

The Seafood Marketing Program promotes increased sales and consumption of Maryland seafood and aquaculture products through consumer education, promotion, public relations, and advertising. The total estimated value of the Maryland seafood industry is more than \$700 million. There are 70 processing plants employing 1,653 people and more than 6,000 watermen who work the Chesapeake Bay. In 2007, watermen landed 51.2 million pounds of seafood at a dockside value of more than \$53.5 million. The harvest is comparable in size to that of 2006.

Advertising funds are generated from a \$10 surcharge fee collected from commercial fishing and seafood processing licenses. In 2008, the fee garnered \$65,000. Funds were used to place advertisements in newspapers and trade journals and for special promotions. The use of the \$10 surcharge is overseen by the Seafood Marketing Advisory Commission and the Tidal Fisheries Advisory Commission. The Seafood Marketing Advisory Commission is composed of 11 industry members who recommend marketing activities.

The program’s website, [www.marylandseafood.org](http://www.marylandseafood.org), features information for consumers as well as wholesale and retail dealers of seafood. It

includes a searchable database, seafood handling and nutrition information, recipes, cookbook order forms, an annual seafood festival list and information on starting aquaculture ventures. In 2008, the site had more than 55,863 hits. This is an increase from 52,548 hits in 2007. In addition, the public received more than 291,000 pieces of information through the Internet and mailings.

In July, the program initiated a “Buy Local Maryland Seafood” campaign. The campaign included advertising in newspapers and on radio. In addition, point of sale materials were produced and a news release issued.

In order to promote sales of Maryland seafood in the fall, the Seafood Marketing Program developed an October promotional campaign, entitled “Make a Splash with Maryland Seafood.” Newspaper ads were placed throughout the state and radio ads were aired in Baltimore. The program provided retail markets with point of sale materials. News releases were distributed to the press with Governor O’Malley’s proclamation of “October is Maryland Seafood Month.” Consumer recipe brochures were distributed and information was placed on the web site.

Other seafood promotions, including newspaper, radio, and Internet advertising and recipe distribution, revolved around seasonal availability and holidays. Advertising campaigns



Point of purchase material for the Local Seafood Promotion



The Seafood & Aquaculture Identification Game at the State Fair

included: “Celebrate the Holidays with Maryland Seafood,” “Fish on Fridays,” “Maryland Rockfish Celebration” and crab and oyster seasons. The program placed ads on the Baltimore Orioles radio station during baseball games.

Magazine ads, depicting Maryland seafood (oysters, crab and rockfish) as “fresh accessories,” were placed in Seafood Business, Urbanite, Baltimore Magazine and several small local trade magazines. The program distributed 12 news releases to more than 300 food editors in the mid-Atlantic region. The topics covered seasonal species, special events and promotions. Consumer education included in these news releases discussed safety, handling, and nutrition information. The releases included photos and recipes with an opportunity for consumers to request more information or recipe brochures by mail, phone or website. These releases are posted on the Maryland seafood website as well as MDA’s main website.

Program staff participated in a wide array of trade shows, conferences, exhibits and special seasonal events including: International Boston Seafood Show, International Restaurant Show, the Mid-Atlantic Food Service, Lodging and Beverage Expo, East Coast Commercial Fishermen’s and Aquaculture Trade Expo, Maryland Dietetic Association Annual Meeting and Exhibit, MDA’s Open House and the Maryland State Fair. At the events, informational literature, point of sale information and Maryland seafood samples were offered.

At the International Boston Seafood Show, space is shared with industry members, assisting them in marketing their products. In 2008, six companies participated in the state booth and another 13 companies were represented in the largest seafood show in the United States. The program sponsored and administered several seafood cooking contests including: National Oyster Cook-off, Mid-Atlantic Chesapeake Seafood Chef Contest and National Hard Crab Derby & Fair Cooking Contest. Chef Tafari Campbell, who represented Maryland in the Great American Seafood Cook-off in New Orleans, won third place.

The Seafood Marketing Program is involved in seafood education through various programs including the sponsorship of the Maryland Watermen’s Association’s “Waterman in the Classroom” project. This program enables watermen to visit schools to educate students on the life of a waterman and includes lessons on ecology.

The Seafood Marketing Program administers the Maryland Crab Meat 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. Product and environmental surfaces are microbiologically tested and evaluated for *Listeria*, *E. coli* and bacteria plate counts. More than two-thirds of Maryland crabmeat processors belong to the quality assurance program. Staff promotes the participating quality assurance program companies through the website, literature and advertising. In 2008, there were no cases of *Listeria* found in any of the crab meat from participating companies. Maryland is the only state where such a program exists. Future plans for this program will include elimination of shell in product for an extra quality assurance.

The program continues to distribute Maryland seafood information on safety, handling, nutrition and recipes. These are distributed through travel centers, seafood markets, grocery stores, direct consumer requests, trade shows and the website. The program also produces and distributes a variety of point

of sale materials including: decorations, pins, table tents, menu inserts, and posters. The program sells the famous Maryland Seafood Cookbooks and uses the funds to offset the cost of printed materials.

The program participated in meetings that were held to discuss the federal H2B guest worker program. The Maryland seafood industry processors depend heavily upon this program to provide seasonal employees. Many plants may close due to the lack of workers if the cap is not lifted for the 2009 season. The legislation has not passed in the House. New federal legislation is needed to revise the H2B program to eliminate the shortage of workers for the future. Due to the high demand for seasonal workers, the current cap is met in early January, before seafood processors need workers.

The program has increased its responsibility for the marketing of Maryland seafood internationally. While there is no increased funding for such activities, the staff was able to work on a few projects. These included SUSTA (Southern United States Trade Association) activities such as distributing invitations for Maryland seafood companies that export to participate in various trade shows in Korea, Canada, China, and Belgium.

The program assisted in a reverse trade mission with a group of seafood buyers from Korea at the International Boston Seafood Show and hosted the group for a two-day tour of the Maryland seafood industry and partnered with the state of Virginia on a SUSTA sponsored cow nose ray promotion in Korea.



(LEFT) Tafari Campbell, representing Maryland, receives 3rd place in the Great American Seafood Cook-off in New Orleans, La. (RIGHT) Governor Martin O'Malley visits Luke Breza's Great Eastern Oyster Company in Snow Hill to better understand the oyster aquaculture industry.

## The Maryland State Board of Veterinary Medical Examiners

The State Board of Veterinary Medical Examiners (SBVME) is responsible for setting standards to which veterinarians, registered veterinary technicians, and veterinary hospital owners must comply through statutory and regulatory adoptions and amendments. The SBVME also licenses and registers veterinarians; licenses and inspects veterinary hospitals; licenses animal control facilities; registers veterinary technicians; provides disciplinary information to other state veterinary boards and the public; and submits licensure verification to other state licensing boards upon request. Additionally, the SBVME investigates consumer complaints, initiates its own investigations, and determines whether disciplinary action shall be taken against licensees or registrants. Requests for approval of continuing education credits are reviewed by the SBVME.

The SBVME consists of seven members appointed by the Governor to serve five-year terms. Five of the members are veterinarians; of these five members, two must be primarily large animal practitioners. The remaining two members are consumers. The SBVME staff consists of an executive director, administrative specialist, office secretary, administrative officer/ investigator, and two agricultural inspectors, both of whom split their time between the SBVME and the Maryland Horse Industry Board. The SBVME also funds the work of a part-time assistant attorney general, whose time is devoted exclusively to the SBVME.

During the 2008 session of the General Assembly, the SBVME submitted two bills, the first of which was the result of a collaborative effort by the SBVME, MDA's Office of the Attorney General, the Department of Health & Mental Hygiene's Division of Drug Control (DDC), and key leaders in Maryland's animal control industry. HB 1481 was drafted to address concerns expressed by animal control facility employees that, due to changes in the scheduling of controlled substances, such facilities no longer had access to sedatives for the purpose of sedating or sedating and euthanizing animals. The inability to obtain the controlled substances also presented a safety risk to animal control employees who frequently work with wildlife and feral animals. HB 1481, signed by Governor Martin O'Malley as emergency legislation in May 2008, granted the SBVME the authority to issue a license to owners of animal control facilities, certifying that certain employees have received training on properly administering controlled substances to animals. The bill also amended language in the Criminal Law Article to enable eligible facility owners to secure a state controlled substance certificate. The U.S. Drug

Enforcement Administration is performing a final review of the statutory and regulatory language before it begins issuing federal controlled substance certificates to eligible applicants.

In addition to granting the SBVME the authority to issue animal control facility licenses, the bill repealed the SBVME's authority to issue permits for the use of sodium pentobarbital by humane societies and animal control facilities. Although the SBVME has traditionally regulated the use of sodium pentobarbital in these facilities, the DDC will now manage and monitor the use of these substances in animal control facilities.

Upon the passage of HB 1481, the SBVME again worked with the DDC and Maryland animal control industry leaders in developing regulations to establish criteria that animal control facilities would need to meet to obtain a facility license. The SBVME also teamed up with the Professional Animal Workers of Maryland and the Humane Society of the United States to provide training for those animal control employees who needed it based on the new requirements.

In the Fall, the SBVME's proposed regulations were approved for emergency status. Nearly 20 licenses have been issued to animal control facilities, and the SBVME's staff is currently working with MDA's IT office to create a database to capture information provided on the application for this license.

The second bill submitted by the SBVME altered the requirement that every veterinary hospital in the state be inspected annually.



L-R back row: Laura Downes, executive director; Dr. John Heizer, board member; Lawrence Blickman, board investigator; Tonya Jones, office secretary; Dr. Chris Runde, board chairman; Dr. Reggie Cox, board member; Kimberly Cutchins, board member. L-R front row: Bernadette Morrissey Wood, board member; Beverly Raymond, inspector; Dr. David Handel, board member; Pegeen Morgan, inspector. Not pictured: Dr. Steven Kurtz, board member and Carol Reynolds, administrative specialist.

This bill passed with an October 1 effective date, and the SBVME is now mandated to perform a sanitation inspection of each veterinary hospital every two years. This amendment will provide the SBVME’s inspectors extra time to focus their efforts on bringing hospitals into compliance, to follow-up routinely on recommendations they have made to hospital owners, and to furnish more detailed reports to the SBVME’s attorney, should charges need to be filed. This change will permit the inspectors to be more proactive in addressing matters needing correction.

Recently, the SBVME approved of a revised form that its inspectors may utilize during their sanitation inspections of veterinary hospitals. The form’s new layout facilitates readability and will provide specific references to the SBVME’s regulations as a means of helping to educate its licensees on the SBVME’s requirements for achieving acceptable standards.

In June, a lawsuit was filed in circuit court against the SBVME and the Maryland Chiropractic and Massage Therapy Board by a Maryland citizen performing massage on equine animals. The lawsuit alleged that both boards restricted her ability to massage animals and therefore, they were unconstitutionally barring her from making a living. The SBVME’s attorney filed a Motion to Dismiss, which was granted in November. The judge presiding over this matter dismissed the plaintiff’s case against the SBVME

for her failure to exhaust all administrative remedies before initiating action in the circuit court. The plaintiff did not file an appeal of the judge’s order.

From June to October, the Department of Legislative Services (DLS) conducted a preliminary evaluation of the SBVME to establish whether the SBVME is fulfilling its mission effectively, and to assist the Legislative Policy Committee (LPC) in determining whether to waive the SBVME from a full evaluation in 2009. In December, the LPC voted in support of DLS’ recommendation that the SBVME be waived from further evaluation at this time, have its termination date extended for another 10 years, and submit a follow-up report on specific recommendations made by DLS.

The SBVME still desires to offer on-line registration renewal to its licensees. However, the unanticipated introduction and passage of HB1481 and the creation of a new set of licensees, coupled with a four-month long evaluation essentially precluded the SBVME staff from researching the feasibility of offering on-line registration. This is a project that the SBVME wishes to research with the assistance of MDA’s IT staff.

***Listed below are key statistics from the past three fiscal years:***

<b>Category:</b>	<b>Year 2006</b>	<b>Year 2007</b>	<b>Year 2008</b>
Licenses issued to new veterinarians	123*	145**	140
Registrations issued to veterinarians	2,385	2,412	2,475
Registrations issued to registered veterinary technicians	75	80	47
Licenses issued to veterinary hospitals	492	508	512
Percentage of veterinary hospitals inspected and in compliance	98	99	100
Number of new complaints received	91	77	97
Number of complaints pending from previous year	24	61	60
Number of complaints closed	54	78	82

*\* This number was previously reported at 127 and was calculated based on the amount of revenue the SBVME had received. The number reflected in this report was derived by the number of actual licenses issued by the end of the fiscal year. Approximately four applications had been received by the SBVME’s office, but were not processed as of June 30, 2006.*

*\*\*This number was previously reported at 170 and was calculated based on the amount of revenue the SBVME had received. The number reflected in this report was derived by the number of actual licenses issued by the end of the fiscal year. Approximately 25 applications had been received by the SBVME’s office, but were not processed as of June 30, 2007.*

## Animal Health Section

The Animal Health Program is responsible for preventing and controlling infectious and contagious diseases in Maryland livestock and poultry. Headquarters and regional staff members work closely with counterparts in local, state and federal government, neighboring states and related animal industries to ensure an efficient team effort for disease prevention, detection and control. A key component of the program is the Animal Health Diagnostic Laboratory System which is discussed in detail elsewhere in this report.

The program also has responsibility for responding to all animal emergencies under the state emergency management system. Animal emergencies are categorized as 1) animal health emergencies, such as a disease outbreak and 2) animals in emergencies, such as a natural disaster. Experience with Hurricane Katrina and subsequent storms made clear that effective evacuation of people cannot occur in the absence of effective animal evacuation and sheltering operations. To this end, the program, with other state, local and private partners published the Animals in Emergencies Plan in November 2008. Animal health staff submitted the report to the Maryland Emergency Management Agency (MEMA) to become part of the Maryland State Emergency Operations Plan, Emergency Support Function 16.

### Program Operations

As part of an ongoing internal evaluation, program staff reviewed policies, practices and procedures to determine where improvements were needed. Revised livestock exhibition regulations were formally adopted in August of 2008. These regulations provide increased protection against the spread of contagious and infectious disease by more directly involving exhibitors in ensuring the health of animals at exhibition, empowering exhibitions to exclude unhealthy animals, requiring rabies vaccinations for animals in petting zoos, and expanding regulation at exhibitions to equine and rabbit species.

MDA policies pertaining to animal welfare at livestock auction markets were revised in 2008 and related regulations were drafted for review and adoption in 2009. Other regulations are scheduled for review in 2009. On October 1, 2008, legislation allowing the assessment of administrative penalties for all Animal Health Subtitles of the Agriculture Article became effective. This provision allows the program to implement more effective and expeditious enforcement of Animal Health laws and regulation.

In 2008, MDA entered into an agreement with a commercial entity which manages a system for electronic animal health documents. This voluntary system allows private veterinarians issuing interstate health documents to switch from the traditional paper system to a fully electronic system. While paper documents will continue in common use for some time to come, this is an important step toward maximizing the use of computer technology.

Multiple pending staff retirements and shrinking general, special and federal revenues have resulted in a restructuring of the program in the western part of the state and evaluation of how diagnostic laboratories might best conserve resources through an economy of scale. In addition to general fund cuts, program revenues from laboratory and other fees and federal revenues are down by 30 percent from 2007 levels. The program continues to look for efficiencies in the use of scarce resources.

### Emergency Response Readiness

The emergency response capacity of the program was augmented in 2008 by the formation of a department-wide Agriculture Responders unit, consisting of MDA personnel assigned and trained to respond to all agricultural emergencies, including animal emergencies. All Animal Health field and laboratory technical staff, along with these agriculture responders, were trained, medically evaluated, and fit-tested for respirator use for emergency response, and received basic incident command training under the departmental Emergency Operations and Incident Command System/Unified Command Plan. Program staff participated in two state-wide emergency response exercises in 2008, including the Pandemic Flu Statewide Exercise in June and the Hotwire Federal Emergency Management Agency (FEMA) Exercise in October. Animal Health personnel also participated in MEMA activations for emergency preparedness during the hurricane season.

Despite substantial reductions, the program continues to use federal funding to augment surveillance operations for avian influenza and other high consequence diseases of poultry. To that end, staff has participated in numerous multistate industry emergency readiness planning activities and supported those activities in numerous local jurisdictions. The program is a national leader with other Delmarva partners in developing improved technologies and tactics for detecting and responding to emergency poultry diseases, including protecting the health of workers responding to such outbreaks. Work continued with the

Mid-Atlantic Agriculture and Animal Disaster Response Alliance (MAADRA, formerly known as MAAPA) instituted in 2007. The collaboration is intended to facilitate mutually beneficial interactions between member states involving agriculture readiness.

Animal Health Program personnel continue to collaborate with the Department of Health and Mental Hygiene, MEMA, the State Board of Veterinary Medical Examiners and the Maryland veterinary community to recruit, train and organize the State Voluntary Veterinary Corps, a group of approximately 100 veterinarians and technicians willing to support emergency operations when activated. In 2008, Veterinary Corps members were provided several opportunities for group and individual training, with more planned in the near future.

In 2008, the Animal Health Program along with the Maryland Veterinary Medical Association and other partners continued to develop and expand the Maryland State Animal Response Team (MD-SART). While similar to the agency-sponsored Volunteer Veterinary Corps, MD-SART is a non profit entity with broad membership among those with responsibilities, interests and resources for animal emergency situations. The long term vision for the Maryland SART is to be an organization that can provide trained and organized animal response expertise and other resources to the secretary, other state agencies and local governments upon activation. SART serves as a mechanism for multi-entity coordination and training to better address various emergency situations involving animals, such as foreign animal disease incursions or animal sheltering in disasters. The MD-SART focus in 2008 was promoting the formation of County/City Animal Response Teams (CART) across the state to support local governments. Numerous CART organizations are either formed or in various stages of development. Those efforts will continue through 2009.

Animal Health Program staff continues to co-sponsor with USDA the Foreign Animal Disease (FAD) Practitioner Course at the College Park Animal Health Diagnostic Laboratory. The innovative, multi-site course is designed as an intermediate level of training for veterinarians who have not attended the live agent training at the USDA Plum Island, New York laboratory or as a review for those who have. Demand for live agent FAD training far exceeds available capacity at Plum Island and local training has improved readiness nationally. MDA veterinarians, federal and private veterinarians, including members of the Veterinary

Volunteer Corps have received this training during the two one-week courses presented in 2008. Course offerings will be restricted in 2009 because of extensive renovations to the Plum Island facility, where the course is based.

### **Disease Surveillance and Response**

The 2008 fair and show season presented more opportunities for disease surveillance and producer education concerning biosecurity and the prevention of infectious diseases. The field inspection staff, augmented by other program staff, exhibit officials and trained volunteers, inspected and tested livestock and poultry upon entry to events and during the course of the exhibition. A 2006 evaluation of the regulations and procedures pertaining to livestock and poultry exhibition in the context of new and emerging disease threats has led to a new paradigm in regulating livestock exhibitions which was field tested in the 2007 season and formalized in 2008. Implementation of these policy and regulatory changes went smoothly during the 2008 fair and show season.

In November, Animal Health staff responded to an equine neurologic herpesvirus (EHV) case at Laurel Park race track, which resulted in a quarantine of the affected barn. In 2008, the College Park Laboratory developed and field tested a rapid form of the polymerase chain reaction (PCR) test for this disease. Previously, such testing had to be conducted at out-of-state facilities, which caused delays in obtaining results. This internal capability greatly enhanced MDA's ability to detect, respond and recover in this case and in any future cases. Earlier in the year, program staff members were interviewed by the USDA as part of an effort to better describe EHV and the methods for preventing, detecting and controlling it.

Another threat to the equine industry in 2008 was the introduction of contagious equine metritis (CEM) into the United States. CEM is a bacterial venereal disease of horses which may cause infertility and its presence has significant economic consequences. As of the end of 2008, horses linked to the CEM outbreak have been traced to more than 20 states. Maryland is one of a small number of states approved to conduct laboratory testing for CEM. It also hosts a CEM quarantine station in partnership with a private facility. At the quarantine station, imported horses receive extensive testing to ensure they are free of CEM prior to being released for breeding activity in the United States. Because of this extensive experience and laboratory capacity, Maryland is an important part of the national response to the CEM introduction.



Johne's disease in cattle continues to be a serious threat to profitable dairy and beef operations. Animal Health staff, working in close cooperation with our cattle industry and federal animal health partners, has enabled Maryland to continue to increase participation in the Voluntary National Johne's Control Program. This progress was achieved during a period of rapidly declining federal funding for the effort. MDA has focused a great deal of activity on educating producers, including enlisting the support of the attending herd veterinarian to work with the producer.

Other livestock diseases and issues such as bovine spongiform encephalopathy (BSE or mad cow disease) in cattle, brucellosis in cattle, illegal garbage feeding to swine and scrapie in sheep and goats continued to be part of our surveillance programs. Of particular concern is the ongoing reemergence of bovine tuberculosis (BTB) in cattle and white tailed deer. BTB has occurred in numerous states during the past several years and appears to be on the rise. In December, the program was represented at a BTB listening session sponsored by the USDA to hear the views of state officials, members of the livestock industries and others as to how best to proceed with control efforts.

This year saw continued progress with the Maryland Department of Agriculture's participation in the USDA National Animal Identification System (NAIS). The goal is to use automated recordkeeping, similar to that used for tracking packages, to trace the movements of animals implicated in a disease outbreak within 24-48 hours. While identifying the animals of concern is a priority, an equal or greater priority is identifying those animals, farms and facilities which *are not* involved in a disease investigation, so they can resume normal commerce with little or no delay.

The first step of registering producer premises in NAIS is well underway. To date, property owners and operators with livestock have registered 1,483 premises in Maryland. This represents approximately 18.5 percent of Maryland producers. Much remains to be done. Program staff, with federal and industry partners, is implementing ways to effectively integrate animal identification with existing production, marketing and disease control systems.

The NAIS staff also is aggressively registering poultry premises to comply with legislation enacted in 2005. An ORACLE database was instituted in 2008 to better manage the data collected. To date, 3,012 poultry premises are registered under the state program. The database has been used to notify and educate

poultry producers of biosecurity recommendations and testing availability, and has been used to locate flocks adjacent to farms where avian influenza has been suspected. The database allowed staff to quickly identify nearby premises, visit them to test birds and provide appropriate information for those producers.

Throughout the year other MDA Animal Health programs remained active. These included the licensing of livestock markets and dealers, investigation of antibiotic residues in meat, and accreditation of new veterinarians. Maryland also is an active participant in the National Poultry Improvement Plan (NPIP) and continues longstanding obligations to NPIP as well as vigorous participation in recent expansions of NPIP activities in response to avian influenza concerns.



(TOP) Nancy Tucker processes samples as they come into the Frederick Animal Health Laboratory for analysis. (BOTTOM) A restricted admittance sign can be found at nearly all poultry farms today for biosecurity purposes

## Animal Health Diagnostic Laboratory System

The Animal Health Diagnostic Laboratory System is comprised of five regionally-oriented laboratories throughout the state, with each having both specific geographic and technical focus. The mission of the system is to support the animal and public health regulatory and emergency support missions of the department; assist veterinarians and producers in maintaining healthy herds and flocks; and to support the regulatory activities of other governmental units involving animal health matters. To accomplish this mission, the system performs a wide array of diagnostic procedures on a variety of specimens and samples submitted by producers, agricultural businesses, animal owners, veterinarians and government agencies.

### Staff and Lab Focus

The Oakland laboratory has a general animal health focus and employs one veterinary pathologist, a laboratory technician and a field inspector.

The Frederick laboratory centers on food animal livestock and has a staff of three laboratory scientists, a veterinary pathologist and two office managers. The laboratory has special rabies and John’s disease diagnostic capabilities. The laboratory pathologist mentors

veterinary pathology graduate students from Johns Hopkins University and the Armed Forces Institute of Pathology.

The College Park laboratory concentrates on public health, equine, poultry and companion animals and has a staff of two laboratory scientists, a necropsy technician, two veterinary pathologists and two office managers. The lab has special rabies, contagious equine metritis, Lyme disease and equine herpesvirus diagnostic capabilities.

The Centreville laboratory focuses on equine and livestock and has a staff of one veterinary pathologist, a necropsy technician, a laboratory scientist and a part time office manager. This lab has the capacity to support the Salisbury facility.

The Salisbury laboratory has a unique poultry diagnostic laboratory and a staff of one veterinary poultry pathologist, two laboratory scientists, a field inspector/laboratory technician and a necropsy technician. The lab has large molecular diagnostic capability that is dedicated to the detection of avian influenza. Rabies and Salmonella diagnostics are carried out at the Salisbury lab as well. Plans to replace or renovate the aging facility are under active consideration.

## Laboratory Statistics

Diagnostic Activity	Number	Result
Mammalian necropsy	748	n/a
Avian Necropsies	6,974	n/a
Avian Influenza Samples	10,736	All negative
Rabies	102	2 positive
Equine Infectious Anemia	15,605	All negative
Contagious Equine Metritis	1,931	All negative
Equine Herpesvirus (EHV-1)	118	1 positive
Lyme Disease	161	109 positive
John’s Disease in Cattle	7,491 (7,056 were serum Enzyme-Linked Immuno Sorbent Assay (ELISA) blood tests and 435 were fecal tests)	379 positive ELISA, 165 positive fecal tests

## Laboratory Training/Quality Control and Certifications

To ensure the quality of laboratory services, the laboratory administration develops standards and periodic training for staff. Presently, the administration is gaining laboratory accreditation through the International Standards Organization's (ISO) Section 17025 and the World Organization for Animal Health (OIE). This accreditation is administered by the American Association of Laboratory Accreditation.

The College Park, Frederick and Salisbury facilities have been certified as Basic Sentinel Clinical Laboratories by the Department of Health and Mental Hygiene (DHMH). They participate with the Maryland Laboratory Response Network which provides microbial Challenge Sets. These tests check the proficiency levels of the technical staff and are administered by the Laboratory Emergency Preparedness and Response Committee of DHMH.

The 2008 laboratory training consisted of the National Poultry Improvement Program's salmonella workshop for all six bacteriologists from the five laboratories. Additionally, the laboratory staff in Salisbury and College Park have been participating in the National Animal Health Laboratory Network (a USDA program) which pertains to certification to perform molecular diagnostics associated with avian influenza.

The entire laboratory system staff was trained in shipping biological materials. This training included the use of standard operating procedures, training materials and training records.

Various individual technicians attended training including out-of-state workshops on the subject of molecular diagnostics (avian influenza), National Veterinary Services Laboratory training including Johne's disease and Contagious Equine Metritis. Staff were also trained to detect equine herpesvirus on the RT-PCR equipment.

The United States Animal Health Association's (USAHA) annual meeting/training was attended by seven Maryland Department of Agriculture veterinarians. Various lab directors attended the American Association of Veterinary Diagnosticians' Quality Assurance Symposium which featured responding to non-conformance in the laboratory environment. Other activities attended included scientific and regulatory sessions. MDA laboratory staff participated on the following USAHA committees:

Johne's disease, Nominations and Resolutions, International Standards, Government Relations and the National Assembly of State Animal Health Officials.

Laboratory directors participated in various livestock (Johne's) and poultry industry workshops. Directors and lab staff participated in Delmarva Incident Command workshops to plan and practice response to a possible avian influenza incident.

## Animal Health Laboratory Partners and Customers

The Maryland Department of Agriculture's Animal Health Diagnostic Laboratories serve and cooperate with a wide range of public and private entities including livestock producers, zoological parks, private veterinarians, the Maryland State Board of Veterinary Medical Examiners, the State Chemist, the equine industry, and state agencies such as the departments of Health and Mental Hygiene, Environment, Transportation and Natural Resources, the Maryland Occupational Safety and Health Administration, the Maryland Emergency Management Agency, the Maryland State Highway Administration, the University of Maryland Cooperative Extension, the Johns Hopkins University, local health departments, and local animal control organizations. Federal partners include the USDA-Animal and Plant Inspection Service, the Centers for Disease Control and Prevention, the Food and Drug Administration, the Environmental Protection Agency, the Federal Bureau of Investigation, the U.S. Army, and the Smithsonian Institution.

## Operational Goals for 2009

- Contract with an architect to design a replacement laboratory on the Lower Eastern Shore.
- Laboratory Accreditation (ISO 17025 and OIE) for all laboratories.
- Add additional rapid DNA-based molecular technology to lab system.
- Establish an integrated laboratory information management system (LIMS) with the Salisbury lab, DHMH and the Delaware Lasher poultry lab.
- Investigate Chemical Animal Digester Technology.

## 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. Chapter 416, Acts of 1998 defined six statutory duties of the Maryland Horse Industry Board. Those duties are to: create public awareness of the value of equine activities as they relate to the preservation of greenspace and agricultural land; promote the development and use of horses in Maryland; support research related to equine health and related issues; advise the Maryland Department of Agriculture (MDA) regarding matters affecting the horse industry; carry out the licensing, inspection, and enforcement of stable licensing in Maryland; and develop and disseminate information concerning the equine industry, including the history and tradition of breeding and the role of horses in recreational activities.

The MHIB continues to conduct projects for the benefit of the horse industry utilizing a specially funded source. The board continues to achieve all of its legislatively mandated functions.

### *Projects slated for the benefit of the Maryland horse industry in the near future include:*

- The review, analysis, dissemination and promotion of the equine results of the Maryland Agricultural Census, and possibly conducting an economic impact report on those findings.
- A 2009 Maryland Horse Forum to be held in August which will serve as a follow up to the 2004 Maryland Horse Forum. Industry leaders will lay out strategic plans for the future of the Maryland horse industry.
- Finalizing the Maryland Horse Park Project, through the selection of a final location.
- Initiating a new marketing campaign for the industry focused on increasing business for all sectors of the industry.

### *The main challenges the Board faces in the next year are:*

- Retaining and growing the entire industry in Maryland until such time as slot machine revenue is realized in the state.
- The limited budget for the promotion of the Maryland horse industry. With a budget of less than \$120,000 (including staffing), of which approximately \$115,000 is brought in as funds directly from the horse industry (this does not include revenue generated from the Maryland horse industry by other sections of the MDA), the board was forced to stop funding of all projects not related to stable licensing due to a lack of sufficient funding.

As the commodity board for the Maryland horse industry, the board hopes to continue to grow the success of the recreational horse industry and to work to re-establish the prominence of the Maryland horse racing and breeding industries. To that end the board endeavors to find new sources of revenue to support its activities.

### **Key Accomplishments in 2008**

#### ***Completed the feasibility study of an international import and export facility for horses.***

As international marketing efforts continue to attract foreign buyers to the Maryland market and as the popularity of Maryland horse competitions increases, there is a greater need to improve the quarantine and transportation options in the mid-Atlantic region. The installation of an animal export and import facility associated with the Baltimore-Washington International Airport (BWI) would enhance the potential for the equine industry by reducing transportation costs, enhancing the marketability of Maryland horses to foreign buyers, and improving access to in-state events, all of which contribute to the viability of this industry. The study found that the project would be feasible if coupled with another operation such as a state laboratory, due to the seasonality of the importation of horses.

#### ***Licensed 518 horse stables in FY 2008.***

The number of licensed stables has increased by 55 since FY 2006, but declined by 10 since FY 2007. The overall rise in facility licenses is attributed to the work of the stable inspectors, the executive director and administrative assistant, the continued use of an Oracle database to monitor licensed and unlicensed stables, improved records being supplied to stable inspectors, and the installation of civil penalties to allow the MHIB to pursue illegally operating stables more effectively. As of reporting time there were more than 550 licensed stables for FY 2009.

#### ***Assisted the Maryland Agricultural Land Preservation Foundation (MALPF) to draft guidelines for the acceptance of equine operations into the easement purchasing program.***

Over the previous two years the MHIB has worked with MALPF to better define what types of equine uses would be acceptable on preserved agricultural land. Funds are used to purchase the development rights from farms in order to allow those farm families to remain on the land and slow development. Equine boarding, training and breeding stables are now clearly acceptable uses of preserved properties.

***Continued to disseminate the information from the initial Feasibility Study of the Maryland Horse Park.***

A horse park would create a new large scale market for Maryland equine goods and services as well as an attraction for increased business, media attention, and marketability of Maryland’s equine industry. If located in Central Maryland the establishment of a Maryland Horse Park would generate more than \$123 million dollars per year in economic impact to the local and state economy, more than 1,900 new jobs, and millions of dollars in annual tax revenue from tourists. This project was one of the original missions of the MHIB and will remain a high priority until its completion. The project was highlighted in the Governor’s transition report as an important project for the future of the industry. While the MHIB selected not to pursue a long-term lease on the property in Gambrills, the board intends to work on its establishment at another as yet undetermined site. Currently, a number of counties including Harford, Howard and Wicomico have publicly expressed interest in the project. The MHIB has also been approached by interested parties located on the Eastern Shore, Central Maryland and in Southern Maryland regarding the potential for the project in those areas.



(LEFT) Jim and Christine Steele with a mare and foal at Shamrock Farms in Carroll County. (RIGHT) Pam Saul with a horse at Rolling Acres Farm riding stable in Montgomery County.

***Continued meetings of the MHIB – Health Advisory Committee.***

The Health Advisory Committee was established to advise the MHIB on matters of equine health and disease in the state; ensure the establishment and implementation of effective industry and community communication vehicles; and review and advise on a variety of Maryland policies and protocols. These include reportable diseases; Maryland statutes and regulations relating to equine health; interstate health requirements; capabilities of the Maryland State Animal Health Diagnostic Laboratories; and emergency preparedness protocols. Many of the efforts of the committee have had positive results including the acquisition of polymerase chain reaction equipment that enables Maryland to more quickly analyse diagnostic samples, including those from equine. This capability enables the MDA to resolve a potential disease outbreak in a matter of hours or days as opposed to weeks and to better protect horses and the industry.

***Assisted the Maryland Department of Agriculture’s Horse Outreach Workgroup in its grant applications for the installation of conservation best management practices at Maryland equine farms.***

The grant applications resulted in \$1.3 million dollars in new funding to assist operators of Maryland equine farms in their efforts to improve their conservation practices that protect the Chesapeake Bay and its tributaries.



Listed below are statistics from the past three fiscal years:

	2006	2007	2008
<b>Category:</b>			
Number of stable licenses issued	463	528	518
Number of inspections performed annually	468	440*	376*
Number of facilities inspected and in compliance	99%	100%	100%
Revenue collected from licensing and inspecting horse stables in Maryland and directed to General Funds	\$34,725	\$39,675	\$39,375
Revenue collected from a \$2/ton assessment of horse feed sold in Maryland.	\$108,356	\$85,792	\$78,194**
<b>Outcomes:</b>			
Total amount of money distributed as grants for promotional, educational, or research projects for the Maryland horse industry	\$35,721	\$19,416	\$22,270**
Percentage of total special fund revenue distributed as grants for the Maryland horse industry	33%	23%	28%**
Additional funds obtained for MHIB projects from public and private sources	\$227,500	\$63,750	\$18,000**
Staffed booths or presented talks at trade shows, conferences, fairs and exhibitions promoting Maryland equine	20	13	10**

\* Inspection numbers were down for FY 2007 and FY 2008 due to the loss of an inspector. Midway through FY2008 a new inspector was transferred to the board by the MDA.

\*\* In FY 2008 the revenue generated from the equine commercial feed assessment continued to decline, most likely due to decreased feed consumption caused by the loss of breeding and racing horses to neighboring states that have slots-supplemented racing and breeding sectors. The MHIB was able to acquire \$18,000 for its marketing efforts to offset the loss of revenue and enable the board to fund its grant commitments. However, the MHIB was forced to stop all of its remaining promotional activities.

## Weights and Measures Section

The regulation of commercial weights, measures, weighing and measuring devices, prepackaged products and methods employed in the sale of commodities is a necessary function of government and in Maryland is the responsibility of the Weights and Measures Section. These controls serve both buyer and seller by establishing standards of commercial measurement that can be uniformly applied to the exchange of goods and services.

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). 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 prior to entering the marketplace.

In FY2008, the field staff conducted approximately 38,022 inspections of commercial weighing and measuring devices. This is approximately 10,000 fewer devices than the previous year. There are three reasons for the major reduction of device inspections: 1) Consumer complaints have increased 40 percent or 200 more than the previous year; 2) For most of FY2008 the inspection staff was reduced to 11 full time inspectors due to extended sick leave, retirements and training of new personnel; and 3) An increase in the package inspection rejection rate caused many reinspections. Inspectors also tested 12,870 individual lots of prepackaged commodities offered for sale or approximately 1,200 lots more than the previous year. In FY2008, the field staff investigated 716 consumer complaints. The large number of complaints can be attributed to consumers being more aware of the Weights and Measures Section and the high price of gasoline. The investigation of consumer complaints is given priority over routine inspections. Complaints continue to require the equivalent of two inspectors working full time. With no one dedicated to investigating complaints, inspectors must be redirected on an as-needed basis and therefore, fewer routine

inspections can be done. The Weights and Measures Section needs a full time investigator who not only has investigative skills but understands all specifications and tolerances in NIST Handbook 44 along with the test procedures for all devices.

Funding for the field inspection program continues to be a major concern. The field inspection program currently operates on Special Fund revenue collected from device registration fees. Increases in health care and gasoline costs make it difficult to maintain current staffing levels. The 1992 Maryland General Assembly established registration fees to offset General Fund budget reductions and a fee increase passed the 2005 Maryland General Assembly. The fee increase proved to be only a temporary fix to the funding requirements. The statewide interval between inspections has risen to approximately 24 months. Program managers anticipate that the inspection interval will continue to increase because of the small number (18 field inspectors) of inspection staff. In light of the funding issues, the Weights and Measures staff continues to review the operational aspects of the program in an effort to maintain an acceptable level of service.

The Weights and Measures Section is using a database of approximately 7,000 registered businesses to best manage its limited resources to protect Maryland consumers and maintain a level playing field for industries that operate in the state. Field inspectors can work in the most critical areas and plan their inspection work more efficiently, thereby reducing driving time and providing more uniform inspection coverage.

The section published regulations for the Voluntary Registration of Service Agencies and Service Technicians early in FY2004. This program establishes controls over the installation, service or repair of commercial weighing and measuring devices with a goal of reducing the number of callback or follow-up inspections necessary each year. Currently, 43 states have a similar program. The effort has produced some additional Special Funds for the section, but not nearly enough to eliminate the problems it has encountered in the last five years.

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

The Maryland Weights and Measures Laboratory is 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 NVLAP is an independent agency under 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 (NTEP) Laboratory is authorized as one of only four fully participating laboratories in the nation. 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

	2006		2007		2008	
	Percent in Violation	Total Tests	Percent in Violation	Total Tests	Percent in Violation	Total Tests
<b>A. Weighing Systems</b>						
Large Scales	35.5	1,269	35.5	1,230	24.1	786
Medium Scales	20.0	1,315	22.3	877	17.9	677
Small Scales	16.0	11,289	16.0	12,140	17.5	6,971
<b>B. Liquid Measuring Systems</b>						
Retail Gasoline Meters	18.7	35,486	18.7	32,012	18.0	27,665
L P Gas Meters	26.7	511	26.7	852	18.7	465
Vehicle Tank Meters and Other Large Meters	15.5	1,323	15.5	1,641	20.8	1,288
<b>C. Grain Moisture Meters</b>						
	9.0	157	9.0	132	8.0	136
<b>D. Programmed Tare Inspections</b>						
	10.8	4,640	10.8	4,107	9.0	2,026
<b>E. Price Scanning and Method of Sale</b>						
	3.4	8,161	3.4	7,249	5.1	5,962
<b>F. Delivery Ticket Inspections</b>						
	1.7	2,572	1.7	3,715	.9	2,852
<b>G. Package Lots</b>						
	12.5	12,759	12.5	11,680	15.8	12,761

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



**Laboratory Effort Inspection and Test**

	2006		2007		2008	
	Number Tested	Percent Rejected	Number Tested	Percent Rejected	Number Tested	Percent Rejected
Weights	6,901	5.1	6,773	9.8	4,256	10.7
Volumetric Measures, (Non-Glass)	188	32.4	254	29.5	138	37.6
Length Devices	0	0.0	0	0.0	0	0.0
Temperature Devices	46	0.0	46	0.0	0	0.0
Timing Devices	0	0.0	13	24.0	0	0.0
Volumetric (Glass)	12	0.0	10	0.0	0	0.0
Scales/Meters	0	0.0	0	0.0	0	0.0
Milk Samples	114	2.6	108	5.6	0	0.0
Standard Grain Samples	654	N/A	710	N/A	700	N/A

*The laboratory effort 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.*

**Administrative Controls and Miscellaneous**

	2006 Number	2007 Number	2008 Number
Weighing and Measuring Devices Registration Certificates, Issued	7,239	7,255	7,239
Type Evaluation of Devices Conducted (NTEP)	57	26	21
Samplers and Testers Licenses, Issued	19	15	10
Citizen Complaints Received and Investigated	567	515	716
Disciplinary Hearings, Criminal Arrests, Summonses Obtained and/or Civil Penalties	18	25	44

*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 weighing and measuring devices, and the examination and licensing of individuals for specific functions.*

## Food Quality Assurance Program

### Grading Services

The Grading Services Section offers producers and processors a voluntary certification program for agricultural commodities including meat, poultry, eggs, fruit, vegetables and grain. Maryland Department of Agriculture graders sample commodities for comparison with standards developed by the U.S. Department of Agriculture 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 has assisted buyers in developing specifications to meet their needs. Many buyers have begun requiring audits of production practices in addition to the certification of product. The section conducts audits of agricultural production facilities for compliance with standards for animal welfare, good agricultural practices, food security, food safety and quality assurance programs. As buyers and consumers continue to demand verification of compliance with standards for animal welfare and food safety, the section anticipates increased demand for audits of these practices. Additional staff members are being trained to accommodate the anticipated increase in audit requests.

The agricultural commodity industry has continued to change and the section has adapted to these changes by offering the services necessary for the industry to market their products. Consolidation in the poultry and egg industries has reduced the number of processing plants in the state reducing the pounds of poultry and eggs certified. These reductions have resulted in higher fees charged to industry for the services provided. The number of Good Agricultural Practices audits conducted has continued to increase as more buyers are requiring the audits after recent high profile outbreaks, such as an *E. coli* outbreak in spinach and a salmonella outbreak in tomatoes and jalapenos, have caused increased concern about food safety and fresh produce. To address the needs of Maryland companies exporting grain in containers, official designation was received from USDA for a program developed to provide export grain grading services. The primary commodities graded by the section this year were 333 million pounds of poultry, 39 million pounds of shell eggs and 17 million pounds of fruits and vegetables.

### 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 levels 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 party. The inspection activities are funded through the collection of \$.0026 per dozen of eggs sold in Maryland.

The percentage of eggs sampled found to be in compliance with the Maryland Egg Law decreased to 85 percent this year compared to 89 percent last year. The lots inspected increased as a result of filling a vacancy in the program. The egg inspection chart shows comparison data for the eggs inspected and violations.



### Egg Inspection Lots Inspected / Violations



### Organic Certification Program

The United States Department of Agriculture-accredited Maryland Organic Certification Program certified 90 farms and 17 handlers of organic products in Maryland in 2008. The program also registered an additional 15 farms as organic that are exempt from the inspection requirements.

Maryland organic producers and handlers continue to benefit from the federal Cost-Share Reimbursement Program funded by USDA. This cost-share program allowed MDA to reimburse 75 percent of the inspection costs growers paid for certification. This program is expected to continue through 2009.

During 2007, the program developed a certification program that meets the requirements of the ISO 65 guidelines required for export to the European Union. In 2008, two MDA certified organic handlers were approved through this program.

### 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 issued based on the number of bushels purchased in a calendar year. Fees range from \$50 to \$300. A *Directory of Licensed Grain Dealers* is published and distributed annually. The section licensed 37 businesses with 59 business locations in 2008.

## Plant Protection and Weed Management

### 2008 Highlights

- Sirex woodwasp survey** - The Sirex woodwasp (*Sirex noctilio*), is an exotic pest of pine trees that was first detected in New York in 2004 and is currently known to occur in limited areas of Michigan, Pennsylvania and Vermont. Concern has been raised because this native of Europe, Asia and northern Africa has the potential to cause significant mortality of pines, including loblolly. This insect has a novel life cycle that includes inserting a fungus along with its egg into a healthy tree so that the young can feed on the wood fiber digested by the fungus. The fungus quickly kills the tree. Plant Protection and Weed Management staff surveyed Maryland's eight northern tier counties bordering Pennsylvania and 16 other high risk locations. Each of the counties had 10 traps which were serviced from June into October. No target species were collected.
- Interdiction of interstate plant and animal commerce**- In May 2008, a multi-agency exercise was conducted to test capabilities to detect and intercept animal and plant pests accompanying interstate agricultural commerce. Plans called for the use of the Incident Command System as the model for the field response. Active participants included MDA, USDA, the Maryland State Police, the Maryland Department of the Environment, and the Office of the Comptroller. Working under the authority of the State Police, commercial vehicles traveling northbound on Route 301 in Queen Anne's County were detained and the contents of the vehicle determined. Any vehicle that contained plants, plant products, or livestock was segregated and an agricultural inspection team determined compliance with quarantines. Vehicles in compliance were allowed to proceed, while those with violations of plant and animal quarantines were detained and cited. An after-action report cited many strengths of the event including proper inspection techniques and protocols, a satisfactory knowledge of the applicable quarantines and regulations, proper use of the WebEOC network, and a multi-agency approach to driver interviews and commodity inspections. Areas for improvement included lack of suitable communication equipment and prolonged inspections due to inability to visually inspect portions of tightly packed commodities.



Apiary inspector Bill Troup and his black Labrador retriever, Klinker, check hives for American foul brood disease.

### 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 more than \$40 million of Maryland crops. Maryland growers of fruit and vegetable crops annually rent approximately 5,000 colonies to improve pollination. Beekeepers' colonies are essential to Maryland because two parasitic mites have nearly eliminated feral colonies.

**American foul brood** disease is the most serious brood disease of honey bees and can destroy a colony in one year. The 45 colonies that inspectors found to have American foul brood were destroyed to control the spread of this bacterial disease to healthy colonies.

The incidence of disease remains relatively low - less than two percent of colonies inspected.

**Varroa and tracheal mite** populations were very low in Maryland in 2008, but brood problems were attributed to Varroa mite in the season. The Varroa mite often has been found to be resistant to Apistan®, the primary product used to control this parasite. Four additional products are now available to control Varroa.

**Africanized honey bees** arrive occasionally on cargo ships coming from South or Central America. Swarm traps for collecting and monitoring bees were placed at 35 sites at marine terminals and other shipping locations. Only two swarms were collected in 2008 and were determined to be local bees, not Africanized. MDA is working with two groups – the Mid-Atlantic Apiculture Research and Extension Consortium (MAAREC) to provide information to the general public about emergency incidents and the Apiary Inspectors of America (AIA) for information on the control of movement, other than through natural spread.

**The small hive beetle** was detected in packaged bees and reported or detected in 19 counties this past year. Each apiary was treated and monitored to ensure successful control of the beetles. There have been no reports of larvae or damage to established colonies. The small hive beetle is a pest mainly in stored equipment and in honey houses, although it can render stored honey in the hive unmarketable.

**Permits** were issued for 3,975 honey bee colonies to move out of Maryland and 550 colonies to move into Maryland for pollination services. For the third year, Maryland beekeepers sent colonies to California for almond pollination. In December, 2,432 colonies were transported to California for this purpose, to return to Maryland in March of 2009.

### **Nursery Inspection and Plant Quarantine**

The nursery and greenhouse industry continues to be a leading part of Maryland's agricultural economy, currently ranking second among commodities with a total of approximately \$360 million in farm income. Other horticultural products and services sold boosted the total gross receipts to nearly \$1.04 billion. A primary goal of state plant protection and quarantine efforts is to facilitate the production, sale, and distribution of Maryland nursery stock. This is accomplished in large part by inspection and certification activities conducted on-site by MDA staff.

Maryland law and reciprocal agreements with other states require that plant material at each producing nursery be inspected annually for freedom from dangerously injurious plant pests prior to its subsequent sale to other states. State phytosanitary certificates that assure specific compliance with established domestic quarantines were issued to 12 states. Federal phytosanitary certificates required to export Maryland nursery stock were issued to 12 foreign countries including Australia, Morocco, and Taiwan. A total of 58 federal and 190 state certificates were issued in 2008. Although this reflects a 25 percent reduction in total certificates issued from certificates issued in 2007, MDA staff continued to pursue further cooperative agreement opportunities and followed revised protocols that have streamlined and improved the preparation of Maryland nursery stock for sale and distribution to both foreign and domestic markets.

Maryland Department of Agriculture staff inspected plant material at 604 Maryland locations to intercept dangerously injurious or exotic pests. The general health of Maryland-produced nursery stock was found to be excellent.

### **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 Department of Agriculture Plant Protection & Weed Management Section's pest survey program fulfills this mission.

The **Cooperative Agricultural Pest Survey (CAPS)** is a joint project between MDA and the U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine (PPQ). USDA recommends pests of quarantine export significance as survey priorities and provides funding for these surveys. MDA adapts 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.

CAPS surveys document the presence or absence of exotic pests in Maryland, support PPQ exotic pest survey activities, and provide state-specific data for exotic pests in the United States. If any of these species were to become established, it would pose a significant threat to 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 undertaken and protect Maryland agriculture and the environment from potentially devastating losses.

A total of 3,663 insect traps was deployed and monitored in 2008. Through the various types of surveys conducted, 11,099 samples were collected and more than 13,668 insects identified. Trapping techniques involved a wide range of devices including blacklight and pheromone traps. Visual surveys accounted for new detections of giant hogweed in past years although no new sites were detected in 2008. The blacklight and pheromone traps were instrumental in alerting growers on the Eastern Shore of potential outbreaks of black cutworm. The black cutworm can cause severe losses to corn and vegetable crops.

The surveys target pests that are both exotic and endemic to Maryland. Sixteen extensive surveys for exotic wood borers, stored product pests, and field, fruit and vegetable crop pests including diseases such as soybean rust were conducted. The majority of the pests targeted were either not present or did not reach significant levels of concern. A few pests, such as the emerald ash borer and imported fire ant, caused responses. It is interesting to note that the euonymus leaf notcher, an exotic moth that can completely strip a euonymus bush of its leaves, has expanded its known range around Glen Burnie to the vicinity of Annapolis/Hillsmere.

The red **imported fire ant**, *Solenopsis invicta*, a South American stinging insect, is occasionally shipped out of the southern United States, in spite of a federal domestic quarantine that prohibits 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. Thirty-two isolated infestations have been eradicated in the state since 1989. New imported fire ant detections in Maryland were down from three in 2007 to two in 2008. The reduction is largely due to MDA's efforts in the spring to inspect trucks transporting tropical foliage plants from the quarantined areas in the southern United States and to work closely with officials in those states. Four positive sites of the 94 surveyed in 2008 were associated with areas under eradication and were likely not new infestations.

The **emerald ash borer** (*Agrilus planipennis*), is an exotic, devastating pest of ash trees was first detected in the Detroit,

Michigan/Windsor, Ontario area in 2002. Because of the emerald ash borer, more than 20 million ash trees have died in Michigan, Ohio, and Indiana. In 2003, a Michigan nurseryman shipped infested trees, in violation of a quarantine in that state, to a Prince George's County, Maryland nursery. Eradication activities continued in 2008. Because of an emerald ash borer detection in Charles County in August of 2008, the Maryland Secretary of Agriculture issued a revised Quarantine Order (#08-01) that prohibits anyone from moving ash trees, wood, or any hardwood firewood out of Prince George's or Charles counties until further notice. The MDA, with federal funding support and in cooperation with federal, state, and local government partners, has undertaken a massive eradication effort continuing into 2008. In the winter of 2007/2008 nearly 12,000 ash trees were removed from the approximately 16,000 acre project area. For more information on the Maryland Emerald Ash Borer Project, please visit [www.mda.state.md.us/go/eab/](http://www.mda.state.md.us/go/eab/)

See the Plant Protection and Weed Management Highlights earlier in this section for information about the **Sirex woodwasp** survey.



Large purple bait traps are hung in trees to survey for the emerald ash borer.

## Diagnostic Laboratories

The Plant Protection and Weed Management diagnostic laboratories provide testing and analyses that support departmental programs and provide answers to inquiries from outside the department and from the general public. During 2008, samples submitted to the laboratory were received from section survey and inspection programs, other MDA sections, University of Maryland Cooperative Extension, nursery and landscape businesses, and the general public.

## Entomology Laboratory

In 2008, some unusual samples were submitted for identification. An imported, three or four-year old bottle of balsamic vinegar grew a large lump of “mother-of-vinegar,” with the consistency and appearance of a chicken liver.

A few people were stung by, or saw, puss caterpillars (*Megalopyge opercularis*). Television and newspaper accounts erroneously reported these insects as a new invasive from the south. It is a Maryland native which was judged the most toxic caterpillar in the United States.

Other specimens of note included foliar nematodes in hosta leaves, tropical rat mites on two hamsters, and a pyramid of horse fly eggs deposited on a leaf. A beautiful caterpillar killer beetle (*Calosoma sycophanta*) was collected in Prince George’s County. This species was briefly studied in Maryland as a bio-control agent for gypsy moth (*Lymantria dispar*).

Also in Prince George’s County, specimens of a striking metallic blue and red stink bug (*Euthyrhynchus floridanus*) were collected on an apple tree. This predatory bug is not common here because Maryland is the northern edge of its range. Several cicada killer (*Sphecius sphecius*) and brown marmorated stink bug (*Halyomorpha halys*) invasions were reported this year and the number of bedbug (*Cimex spp*) submittals continued to increase, with seven in 2008.

## Plant Pathology Laboratory

The mission of the Plant Pathology Laboratory at the Maryland Department of Agriculture is to evaluate plant samples for plant pathogens and diseases. General activities include: evaluating plant samples in support of the Nursery Inspection Program to ensure that all plant material in Maryland intended for distribution or sale is disease free; diagnosing plant diseases submitted by other

sections of MDA, other Maryland agencies, home gardeners, homeowners, consultants, and industry representatives; providing technical and diagnostic support for virus-free certification programs; supporting the Cooperative Agricultural Pest Survey Program through laboratory assays for specific diseases; and supporting USDA APHIS and MDA regulatory functions through diagnostic assays for pathogens of regulatory importance. The Plant Pathology Laboratory was impacted in 2008 by the departure of the Plant Pathologist in March. Surveys continued and the Plant Disease Diagnostic Clinic was run by the Plant Pathology Laboratory Technician until her departure in September of 2008.

A survey in the watersheds of Maryland to look for *Phytophthora ramorum*, which began in 2006, continued into 2008. The pathogen, *P. ramorum*, is a fungus-like microorganism which can affect economically important nursery plants (*Camellia*, *Pieris*, *Rhododendron*, *Viburnum*). The survey used rhododendron leaf baits that were floated in streams for two weeks in each month from June through August at five sites in Frederick, Harford, and Montgomery counties. In addition to culture analysis conducted at the MDA plant pathology lab, samples were tested independently at Mississippi State University by real-time PCR. No samples tested positive for *Phytophthora ramorum* during the 2008 watershed survey.

**Soybean rust**, caused by *Phakopsora pachyrhizi*, remains a threat to Maryland soybeans as it has the potential to severely limit soybean production. Soybean rust over-winters on kudzu and other legume hosts in the southern states and has the potential to move north every year, depending on weather conditions.

MDA established two sentinel soybean plots in St. Mary’s County in Southern Maryland in 2007 and 2008, in addition to those established by the University of Maryland. These plots were sampled for both healthy and diseased tissue and all samples were negative for *P. pachyrhizi*. Late in the growing season, Maryland’s first positive detection of soybean rust was made in a soybean sentinel plot in Wicomico County by the University of Delaware. Because of the lateness of the detection there was no impact on the soybean crop in 2008. The survey will continue in 2009.

The MDA **Plant Disease Diagnostic Clinic** was established primarily to assist MDA nursery inspection staff with routine diagnostics of plant diseases. The clinic received 187 samples



during the 2008 growing season. Samples were submitted by MDA nursery inspectors and pesticide investigators, Maryland nurseries, landscapers, IPM scouts, private consultants, and homeowners. Samples received this year included common cankers, leaf spots, root rots, and several virus samples. Samples that tested positive for *Phytophthora* by ELISA tests were then cultured and screened for *Phytophthora ramorum*. Only typical *Phytophthora* species (not *ramorum*) were found associated with dying plants in Maryland in 2008.

### **Greenhouse Laboratory**

Plants were produced for integrated pest management and biological control programs that require food for insect colonies and plant material for research. A collection of herbaceous perennials used for teaching and testing purposes by the Certified Professional Horticulturist Program, in conjunction with the Maryland Nursery and Landscape Association, was increased.

### **Plant Certification**

The **Maryland Ginseng Management Program** protects American ginseng, *Panax quinquefolius*, from over-harvest by monitoring the harvest and by licensing diggers and dealers of wild, wild-simulated, woods-grown and cultivated ginseng. MDA conducts a management program in cooperation with the U.S. Fish and Wildlife Service (USF&WS) that follows established protocols to insure the continued viability of a potentially threatened native resource and to protect it from over-harvest. Harvested ginseng is certified through the program to enable licensed dealers to sell this wild-harvested plant product in international markets. MDA also works with growers of wild-simulated and woods-grown ginseng to allow them to market and export their highly valued crops. The dried roots are highly prized, especially in China and Korea, for properties that putatively promote good health. In 2007-2008, the program licensed 10 Ginseng Dealers and 230 Ginseng collectors in the state.

During the 2007-2008 harvest and sales season, the certification program inspected, collected size and age data from, and weighed 148.12 pounds of dry wild and wild-simulated ginseng root; 750 pounds of artificially propagated dry ginseng root and 10 pounds of wild-simulated stratified ginseng seed. Data were gathered and reports submitted in accordance with U.S. Fish and Wildlife Service requirements.

The amount of ginseng cultivated including woods-grown and wild-simulated designations in Maryland, and certified by the department, continues to remain high relative to the amount of wild ginseng harvested and certified in the state. 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, in turn, allowing wild ginseng populations to rebound.

The MDA continues to participate in the virus-free **rose certification** program with Angelica Nursery. MDA maintained and certified stock plants of two varieties of roses in 2008. One variety was propagated by tissue culture, producing a total of 300 plants. Laboratory and greenhouse personnel participated in a visual inspection of all rose plants at the nursery both in the spring and the fall, and submitted nine leaf samples of stock plants to Agdia for testing in their rose screen for viruses. Visual surveys are conducted twice a year, and testing occurs once each year.

### **Integrated Pest Management and Biological Control**

Cooperative efforts continued among MDA, the University of Maryland, growers, and the Northeast Integrated Pest Management Center (NEIPMC). MDA represents Maryland state regulators at the NEIPMC through a seat on the Advisory Council. In 2008, the section participated in a Plant Protection Guest Lecture Series at the University of Maryland, in ongoing cooperation with the Maryland Plant Protection Center. This effort is a collaboration between USDA and the University of Maryland that aims to establish a leading academic research and extension program in the mid-Atlantic region.

### **Weed Integrated Pest Management (IPM)**

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



Weed IPM research activities were conducted at field plots at the MDA facility in Cheltenham and along State Highway Administration rights of ways during each of the past eight years. These plots continued to be used for evaluation and to conduct weed suppression trials. Additionally, plots long established at Western Maryland Research and Education Center (WMREC) in Keedysville were supplemented in 2008 with newly planted research plots. Integrated Pest Management investigations continued to be targeted at suppression of *Cirsium* and *Carduus* thistles. Research is focused on the evaluation of organisms for potential biocontrol, testing herbicide formulation efficacy, and evaluating the use of competitive vegetation (including native grasses and forbs) in an effort to provide environmentally-sound and cost-effective methods for suppression of noxious thistle species in Maryland.

Presentations regarding the progress of ongoing biocontrol and weed management programs were made to State Highway Administration managers, staff and guests from other state agencies at an SHA sponsored Vegetation Management Conference by the staff entomologist coordinating the program and by Weed Management Program staff. The staff entomologist and MDA Plant Protection Section Program Manager also met with SHA Landscape Operations Division staff and administrators to review program accomplishments and progress, and to coordinate and develop a work plan for the next few years.

A survey for the presence and effects of **rose rosette disease** was continued in 2008. Rose rosette disease is a pathogenic malady of the multiflora rose, *Rosa multiflora*, a problem weed in pastures, woodlands, and rights of ways in Maryland and many other states. The disease, which has become established in North America and is spread by natural means, reduces populations of this invasive rose species.

Since the disease was first detected in Maryland in the 1990s, results of surveys conducted by MDA Plant Protection and Weed Management staff indicate that the disease is continuing to spread over a wide portion of Central and Northern Maryland, and has become locally established in Southern Maryland and on Maryland's Eastern Shore. In 2002, a field experiment to test the relative susceptibility of various rose cultivars and native rose species to rose rosette disease was designed and implemented at the MDA facility in Cheltenham. Experimental results continued to be recorded and accessed in 2008. This experiment is intended

to provide valuable information needed to assess the effects of the disease on rose species other than *R. multiflora* including native species and cultivars important to the landscape and nursery trade in Maryland.

This was another active year for releases of biological control agents, the leaf-feeding beetles *Gallerucella californiensis* and *G. pusilla*, on populations of **purple loosestrife** (*Lythrum salicaria*). During the summer of 2008, more than 2,500 adult beetles were released at several locations on the Patuxent River near Jug Bay and adjacent to the Merkle Wildlife Management Area. An additional 2,500 beetles were released along the Anacostia River between Bladensburg, Md and the U.S. National Arboretum in Washington, D.C. The first MDA-reared beetle adults and larvae were also released in 2008. Adult beetles were released in central Howard County and adult beetles and larvae were released in southern Charles County near Port Tobacco. Partners with the Maryland Department of Agriculture in these efforts are the Maryland Department of Natural Resources, the Maryland-National Capital Park and Planning Commission, and the Howard County Department of Recreation and Parks. Funding for the project was, in part, derived from funds dedicated by the Maryland Department of Transportation, State Highway Administration. MDA was the primary coordinating agency.

The rearing program move from Cheltenham to MDA's headquarters in Annapolis has proven to be successful as well as efficient. MDA staff reared beetles at the MDA greenhouse and rearing laboratories in Annapolis throughout the 2007 season and in 2008 were successful for the first time at bringing the adult beetles out of overwintering diapause and increasing beetle numbers significantly over the course of the spring and summer. MDA staff is making preparations to increase production even further in 2009.

In addition to the releases and the rearing project described above, locations where beetles were previously released in Prince George's and Howard counties were surveyed for the biocontrol agent; beetle activity was again detected. An average of 30,000 beetles per year had been released over several years through 2003 to establish populations of the leaf feeding beetles in field insectaries, to support field collections for biological control efforts, and to allow for redistribution in the future. Sites in Howard and Prince George's counties where beetles were released in past years were evaluated for levels of plant control and were surveyed for

establishment of the beetles. No detectable level of control of purple loosestrife has been noted, but for the fourth consecutive year, high numbers of beetles were observed at the Howard County site, indicating that established populations are reproducing at that location. Slow increase of beetle populations is not uncommon, and significant reduction of purple loosestrife populations has taken five to seven years or longer in some other states. Additional releases of adult and larval beetles are planned for 2009.

The Maryland Department of Agriculture, in partnership with the Howard County Department of Recreation and Parks, released an additional 1,150 mile-a-minute weevil adults (*Rhyncomimus latipes Korotyaev*) in 2008. The releases were performed at two sites in central Howard County including one of the original locations where 500 mile-a-minute weevil adults were released in 2007. The weevil is a beetle that feeds exclusively on an invasive vine from Asia known as the mile-a-minute weed (*Persicaria perfoliata*). The beetles were released in test plots located on county property near Meadowbrook Park in Columbia. The release is part of cooperative research with the University of Delaware Department of Entomology and Wildlife Biology in a mile-a-minute biological control study. Weevils overwintered successfully at the field release sites and were active in the spring of 2008. As part of an agreement with the U.S. Forest Service, the Plant Protection Section Weed Biocontrol Program began a greenhouse and laboratory mile-a-minute weevil rearing program in 2008. Preliminary rearing program and field results show great promise for use of the weevil as a host-specific control against mile-a-minute weed.

### **Noxious Weed Management**

This program supports the control and eradication of designated noxious weeds in order to reduce their economic and aesthetic impact on farmers and landowners. Noxious weeds (Johnsongrass, shattercane, thistles, and multiflora rose) cause losses in excess of \$25 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.

A weed control advisory committee has been established in each of the 20 participating counties, with representatives from farming organizations, governmental agencies, and local farmers. Each committee provides advice or input into planning the noxious weed control program in that county. A county weed control coordinator, 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 Maryland State Highway Administration, to help eliminate Johnsongrass or thistles and to control noxious weeds on private or public lands for a fee. In counties with no weed control coordinator, section employees handle these duties. This program was highly successful in most areas of the state during 2008.

The weed control program provided an average of \$4,400 per county in grant assistance to 20 counties. The grants were leveraged with similar amounts of money from the counties and the counties generated in excess of \$900,000 from spraying services provided by the county programs. The county programs are supervised by the state personnel as specified by contract.

Under the direction of Plant Protection and Weed Management Section entomologists, staff assisted in an integrated pest management program to provide biological control of certain thistle species. Noxious weed advisory notices were mailed to 193 managers of property infested with a noxious weed. Generally these notices were effective in obtaining compliance. When necessary, MDA sent follow-up correspondence resulting in compliance.

The weed control program responds to citizens' requests for technical assistance in controlling invasive, difficult to control, persistent weeds, such as phragmites, kudzu, mile-a-minute, tree of heaven (*Ailanthus*), Japanese stilt grass, purple loosestrife, Japanese bamboo, (*falopia japonica*), as well as invasive bamboo (*Bambuseae*).

Giant hogweed is a federal noxious weed that was first detected in the State of Maryland in 2003. Giant hogweed (*Heracleum mantegazzianum*) was originally detected at 29 sites in Baltimore and Harford counties. In 2005, eight additional sites in Garrett County were added to this list as was one additional site in 2007. No new sites were found in 2008. A multi-state eradication effort is underway, all previous sites and all newly verified sites were brought into this program. Plans have been made for continuing this effort in 2009.

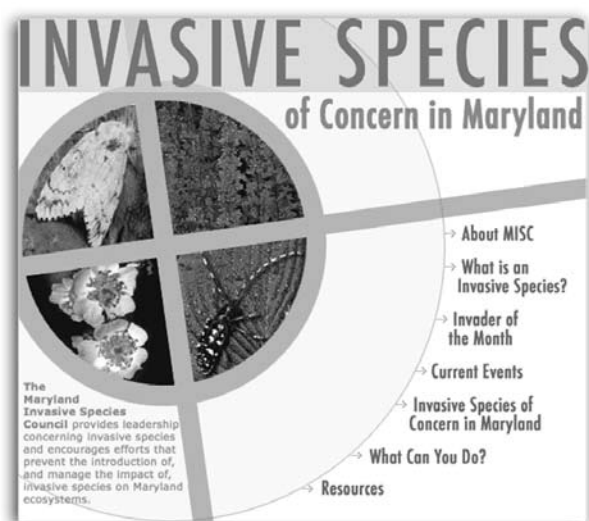
The Weed Control staff partnered with the Maryland Department of Natural Resources for the 10th year in providing a Phragmites Management Program. Upon request from landowners or managers, the Weed Control Program staff supplied technical and spraying assistance for control. The DNR provided 100 percent of the cost of the herbicide (Aquaneet) applied in the nine counties of the Eastern Shore for phragmites. Total spray revenue

for phragmites control was in excess of \$58,000 for treating approximately 300 acres in 260 locations in 16 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 2008, 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 spraying as well as partner with other agencies on grants to control invasive species. Through MISC, the MDA has been able to disseminate information on many of the serious pests cited in this report. The MISC Web site is [www.mdinvasivesp.org](http://www.mdinvasivesp.org).



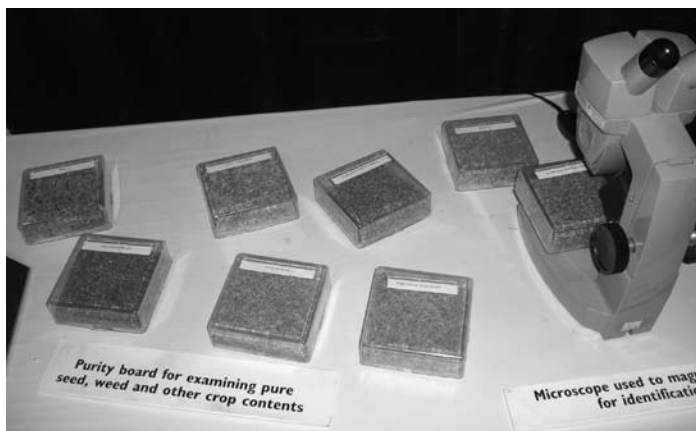
**Plant Protection and Weed Management Summary of 2008 Activity**

	<b>2006</b>	<b>2007</b>	<b>2008</b>
Beekeepers Registered	1,059	1,331	1,152
Apiaries Registered	1,379	1,460	1,152
Apiaries Visited	734	620	725
Apiaries Inspected	572	509	593
Apiaries with Disease	32	29	25
Bee Colonies Registered	7,274	8,212	9,379
Bee Colonies Inspected	4,215	4,603	4,725
Bee Colonies with Disease (American Foul Brood)	50	45	34
Laboratory Diagnoses of Bee Diseases and Pests	82	98	21
Colonies Certified for Movement Out of State	5,140	3,860	3,975
Colonies Moved into Maryland Under Permit	378	452	550
Bee Colonies Certified During Inspection	4,215	4,603	4,725
Field Diagnoses for Varroa Mite	64	92	70
Ginseng Dealers Registered	9	10	9
Ginseng Collectors Licensed	210	230	230
Plant Inspections Conducted	1,263	920	602
Nurseries Certified	374	400	369
Nursery Acreage Certified	10,503	9,540	9,360
Plant Dealers Licensed	664	642	644
Plant Dealer Retail Outlets Licensed	734	739	838
Greenhouse Plants Inspected (1,000 sq. ft.)	7,853	7,978	7,978
Plant Brokers Licensed	14	13	16
Post-entry Quarantine Inspections	39	11	5
Phytosanitary Certificates Issued	510	328	301
Condemnation-Seizure Notices Issued	24	13	9
Plants Condemned	624	1,149	617
Imported Fire Ant Positive Sites	12	3	6
Imported Fire Ant Traps Placed	3,056	1,395	1,593
Imported Fire Ant Traps With Some Species of Ants	927	409	712
Special Insect Traps Monitored	3,934	2,027	3,663
Blacklight Samples Processed	6,433	5,875	5,611
Soil Samples Processed for Nematode Surveys	24	14	10

## Turf and Seed

Seed is the single most important input to any agricultural system. To be successful, the grower, whether a farmer tilling hundreds of acres or a homeowner with a garden, must begin with quality seed. The Turf and Seed Section conducts regulatory and service programs, including seed inspection, testing, certification and quality control services, which are 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 of biotechnology and the expansion of genetically modified organism (GMOs), or genetically-modified crops, have had an enormous effect on the production, distribution and marketing of seed and upon state seed programs. Seed regulatory, testing and certification programs throughout the country are being challenged to meet the demands brought about by these changes.



### Seed Laboratory

The Maryland Department of Agriculture'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, dealers, farmers and other seed consumers. Turfgrass professionals look to the laboratory to provide them with purity and noxious weed seed examinations on seed lots 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 government 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 Association of Official Seed Analysts (AOSA) maintains an accreditation program for seed analysts in official laboratories throughout the United States. Analysts who pass rigorous tests, which include both written and practical examinations, are certified as official purity and germination analysts. At the present time, six members of our staff are certified by AOSA in both purity and germination testing, out of a nationwide total of 104 analysts who have achieved this level of certification. 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, while also serving as continuing education requirements necessary for certified analysts to maintain their credentials. During the past year, several of our analysts participated in a seed testing workshop in Harrisburg, Pa.

### Seed Regulatory

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



For much of its seed needs, 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, ensure 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 re-labeling, 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.

### **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. More and more seed varieties are being developed by large investments in biotech research by private companies. 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 their own 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 producing a product that meets some of the highest quality standards in the United States. Maryland seedsmen have become net exporters of wheat, barley, and soybean seed, adding much revenue to the Maryland agricultural economy.

Staff members cooperated with the Maryland Crop Improvement

Association, the Maryland Agricultural Experiment Stations, and the University of Maryland 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 be continued when certified lots of different kinds and varieties of seeds are mixed together. Demand from the industry and consumers for supervised seed mixing is strong. The supervised seed mixing program’s oversight ensures that the consumer receives quality seed by precluding the opportunity for substitution of varieties or seed lots that have not been approved. All seed used on State Highway Administration projects and the seed used for the production of Maryland certified turfgrass sod is mixed under this program. Many county and local governments, school systems, golf courses, recreation departments and professional seeding contractors also require that the seed they purchase be mixed under this program.

Prior to mixing, component seed lots must be officially sampled and tested by the Maryland State Seed Laboratory. 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 onto each bag to verify that the seed was mixed under MDA supervision.

**Turf Regulatory**

Maryland’s Turfgrass Law requires that all turfgrass sod, plugs and sprigs be accurately labeled. Due to the overall high quality of sod produced by Maryland sod growers, staff efforts are usually limited to responding to complaints which are promptly investigated and resolved. In the majority of cases, the problems are determined to be due to site preparation and other growing conditions rather than the quality or condition of the sod. In these cases, staff makes recommendations 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 has served as a model for certification programs in other states. Growers must plant varieties recommended by the University of Maryland based on performance trials conducted in this region. All seed used in this program is tested by the Maryland State Seed Laboratory and mixed under the supervision of MDA inspectors. Many sod specifications require the use of Maryland certified turfgrass as a means of assuring the use of high quality turfgrass varieties that are well adapted to this area.

**Turf and Seed Activities 2006 – 2008**

	2006	2007	2008
<b>Field Inspections</b>			
Acres in Turf Certification Program	3,433	3,810	7,140
Acres of Crop Seed Inspected	11,189	10,726	13,066
<b>Supervised Mixing</b>			
Pounds of Seed Mixed (thousand)	3,937	2,486	1,446
<b>Retail and Wholesale Seed Inspections</b>			
Number of Lots Sampled	856	970	917
Number of Regulatory Seed Tests Conducted	2,984	3,221	3,243
<b>Seed Testing</b>			
Purity Service Tests Conducted	2,663	2,969	3,200
Germination Service Tests Conducted	4,925	4,646	5,230

## 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 about the management of 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 measures 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 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 amounts of 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 insecticides may be implemented.

The Cooperative Forest Health Program monitors and evaluates insects and diseases affecting Maryland forests and conducts education and training activities. In addition, staff conducts separate projects to address specific agents or situations that are having or may have significant impact on the health of Maryland's forests. In 2008, staff did specific assessment surveys for hemlock woolly adelgid (HWA), emerald ash borer, southern pine beetle and others.

### 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. As part of a mid-Atlantic, multi-state survey, MDA monitors 13 plots established in six Maryland counties to assess the impact of the adelgid on hemlock resources. The condition of hemlock trees in these plots continues to deteriorate with significant dieback and mortality. By the close of 2008, the leading edge of this pest was in central Garrett County.

**Southern pine beetle (SPB)** – Since 1989, Maryland has participated in a multi-state SPB survey throughout the southern United States using pheromone-baited traps. Trap data indicated that SPB numbers would continue to remain low in 2008. Populations have been below outbreak level since 1994. A minor outbreak of SPB occurred in 2005 in Talbot County (99 acres, 22 spots), a first time record for that county, but did not carry over into the next season. Two SPB spots were found in Talbot in November of 2008 (eight acres).

**Emerald ash borer (EAB)** – With special funding from the U.S. Forest Service, MDA's Forest Pest Management Section conducted a survey for emerald ash borer in state parks where Michigan campers had visited by placing trap trees and conducting visual surveys. No detections were made in 2006, 2007 and 2008 by either survey method.

**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, Washington, Frederick and Montgomery counties are now regulated by a federal quarantine. In 2008, surveys were conducted in 13 counties in Western, Central, and Northeast Maryland and on the Eastern Shore.

**Ramorum blight (sudden oak death) disease** – In cooperation with the USFS and MDA's Plant Protection and Weed Management Section, Forest Pest Management conducted a survey for the organism causing sudden oak death. [See Plant Protection Section report for sudden oak death survey details.] In 2004-2006, the Forest Pest Management Section conducted a U.S. Forest Service-funded nursery perimeter survey around those establishments that received host plant material from a source with infected plants. Landscape and forest trees around 33 nurseries and forest sites were surveyed for *P. ramorum* infections in 2006. No infected plants were found in any of the surveys 2004-2006. In addition, nine watersheds near two nurseries positive for *P. ramorum* infested plants in 2004 were sampled in



2006 by leaf baits placed in the stream. In 2007 and 2008, 10 and five watersheds were sampled respectively by stream baiting. No *P. ramorum* was found in any of the samples, though numerous recoveries of other *Phytophthora* were made.

### **Defoliation and Damage Report**

After seeing 15,793 acres of gypsy moth defoliation in 2006 and 68,460 acres in 2007, the third year of this gypsy moth outbreak caused only 19,279 acres of defoliation in the state in 14 Maryland jurisdictions. The counties of Allegany and Frederick combined to account for 73 percent of the defoliated acres. Defoliation rated as heavy accounted for 24 percent of the total while moderate defoliation was 76 percent. For comparison, nearby states had the following defoliation; Delaware, 791 acres; Virginia, 112,340 acres; West Virginia, 81,308 acres; New Jersey, 339,240 acres; and Pennsylvania, 766,507 acres.

### **Suppression and Management Report**

The hemlock woolly adelgid remains the major threat to the health of Eastern hemlock. Infested hemlocks occur in the metropolitan area between Baltimore and Washington and in natural stands from Harford to Garrett counties. The predatory beetle, *Laricobius nigrinus*, was recovered from Rocky Gap in the fall of 2005 and 2006. The beetle release site in the Rocky Gap gorge has been declared an established population after recoveries in 2007. Recoveries have been so numerous that efforts have begun to establish a field insectary at Rocky Gap with the hopes of harvesting enough *L. nigrinus* in future years to release in other areas of the state. The beetles have also been recovered from a release site at the Fredrick City Watershed. More beetle releases were made in 2007 at Rocky Gap, Hagerstown watershed, Pretty Boy Reservoir and Broad Creek Boy Scout Camp. In 2008, additional *L. nigrinus* releases were made at Rocky Gap, Broad Creek, Savage River State Forest, Frederick City Watershed and Potomac State Forest. Two other predatory beetle species, *Scymnus sinuanodulus* and *Sasajiscymnus tsugae* were released at several different sites, with no recoveries made. Through 2008, 2,928 trees in priority sites have been soil injected and 461 were trunk injected with imidacloprid insecticide for control of HWA and an additional 382 trees were soil injected on property owned by The Nature Conservancy.

### **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, and forested residential areas. Eighteen counties and Baltimore City were cost share partners in conducting the surveys in 2008. Recently, the FPM Section has been alerted to growing populations in Northeastern, Central and Western Maryland. The 2007-2008 fall/winter surveys disclosed a sudden increase in infestation levels resulting in the prescribed treatment of 99,222 acres of trees by the Forest Pest Management Section in 13 counties across the state, the most since 1995. Despite this, some 19,276 acres of defoliation were seen.

Treatment with aerial application of insecticide to suppress gypsy moth caterpillar populations may be proposed 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. One of two insecticides is used - diflubenzuron (Dimilin) or *Bacillus thuringiensis* (*B.t.*) – and are chosen for their specificity and effectiveness. In 2008, some 78,848 acres (80 percent) were treated with the B.t. insecticide and some 20,374 acres (20 percent) were treated with the Dimilin insecticide.

Fifty-two percent of treatments in 2008 were to protect resources on state-owned land (state forests, state parks, etc.). The largest portion of the 20,692 acres of state land that was treated was in the Savage River State Forest in Garrett County where the worst part of the outbreak was centered. This marks the second distinct outbreak of the gypsy moth since the mid 1990s. Both the current outbreak and an earlier one starting in 2000 have been characterized by a sharp initial increase in populations.



Carol Holko with an educational EAB display at a Bowie BaySox game.

## Maryland Cooperative Gypsy Moth Suppression Program 1999 – 2008

*NOTE: In 2005, no gypsy moth suppression was conducted.*

	<b>2008 Total Acres</b>	<b>2007 Total Acres</b>	<b>2006 Total Acres</b>	<b>2004 Total Acres</b>	<b>2003 Total Acres</b>	<b>2002 Total Acres</b>	<b>2001 Total Acres</b>	<b>2000 Total Acres</b>	<b>1999 Total Acres</b>
Allegany	12,136	2,295	2,001	0	0	3,941	18,979	2,344	0
Anne Arundel	878	3,781	0	93	1,821	4,845	3,381	166	0
Baltimore	3,372	3,138	0	0	388	1,041	1,050	251	0
Baltimore City	193	709	0	0	0	135	0	0	0
Calvert	0	0	0	0	0	0	0	0	0
Caroline	0	0	0	0	0	0	0	0	0
Carroll	1,698	921	541	0	29	272	220	313	0
Cecil	5,927	3,220	2,941	567	5,644	13,114	2,971	0	0
Charles	0	0	0	0	879	3,809	1,517	362	0
Dorchester	0	0	0	0	1,198	1,148	156	416	521
Frederick	19,094	10,197	1,848	0	968	4,331	9,172	5,638	3,150
Garrett	32,257	16,340	14,188	0	0	0	429	0	0
Harford	2,898	1,134	870	0	0	0	0	0	0
Howard	1,465	813	216	0	159	255	149	0	0
Kent	0	0	0	0	0	0	0	0	0
Montgomery	1,205	445	0	0	1,273	413	2,112	640	26
Prince George's	0	0	0	0	0	505	499	512	0
Queen Anne's	0	0	0	0	0	0	0	0	0
Somerset	0	0	0	0	0	52	0	0	219
St. Mary's	0	0	0	0	0	0	0	56	0
Talbot	38	0	0	0	1,289	0	0	120	0
Washington	17,662	7,180	2,851	0	115	5,204	7,953	5,853	2,390
Wicomico	0	0	0	0	290	69	0	300	0
Worcester	399	0	0	0	0	0	0	0	0
<b>State Totals</b>	<b>99,222</b>	<b>50,173</b>	<b>25,456</b>	<b>660</b>	<b>14,053</b>	<b>39,134</b>	<b>48,588</b>	<b>16,971</b>	<b>6,306</b>

## Defoliation by Gypsy Moth 1999 – 2008

*NOTE: There was no gypsy moth defoliation detected in 2004 or 2005.*

	2008 Total Acres	2007 Total Acres	2006 Total Acres	2003 Total Acres	2002 Total Acres	2001 Total Acres	2000 Total Acres	1999 Total Acres
Allegany	5,905	6,575	0	0	0	25,194	8,913	0
Anne Arundel	310	8	0	0	203	527	2	0
Baltimore	413	549	57	0	27	9	104	29
Baltimore City	0	12	0	0	0	0	0	0
Calvert	0	0	0	0	0	0	0	0
Caroline	0	0	0	0	0	0	0	0
Carroll	10	67	4	0	0	10	2	0
Cecil	190	683	2	0	1,161	49	734	11
Charles	15	0	0	0	346	0	0	0
Dorchester	0	0	0	112	7,055	12,150	4,698	1,101
Frederick	8,204	5,578	244	0	1,156	799	2,402	32
Garrett	1,793	45,524	15,422	0	0	0	0	0
Harford	180	341	16	0	0	0	0	0
Howard	165	114	14	0	0	4	13	0
Kent	0	0	0	0	0	2	0	0
Montgomery	55	46	0	0	755	116	272	0
Prince George's	0	6	0	0	50	98	2	0
Queen Anne's	0	0	0	0	0	0	0	0
Somerset	0	0	0	0	536	663	0	0
St. Mary's	0	0	0	0	0	0	0	1
Talbot	184	19	0	0	6	24	0	0
Washington	1,855	8,938	34	0	507	5,079	6,089	23
Wicomico	0	0	0	0	1,937	1,459	0	0
Worcester	0	0	0	0	0	0	0	0
<b>State Totals</b>	<b>19,279</b>	<b>68,460</b>	<b>15,793</b>	<b>112</b>	<b>13,739</b>	<b>46,183</b>	<b>23,231</b>	<b>1,197</b>

## Mosquito Control

During 2008, the Maryland Department of Agriculture and cooperating local agencies provided mosquito control services to 2,006 communities with an estimated population of 1.32 million residents in 22 counties. The increase in community participation from 1,974 in 2007 was a result of the increasing problem with the tiger mosquito infestations, particularly in the central region. The tiger mosquito is affected less by drought conditions than other species and, based on landing rate counts and public complaints, this species has yet to reach its full distribution. This species is exclusively a container breeder, primarily found in the urban and suburban environment where it lives in close association with people. Containers of all types, from flower pots to tire casings, discarded cans and bottles, plastic tarps and boat bilges serve as breeding locations. A very small amount of rain or irrigation provides sufficient water for this species to prosper. There is evidence that drier than normal conditions are beneficial to tiger mosquito breeding success because abundant rainfall fills breeding containers causing them to overflow, which flushes tiger mosquito larvae to the ground where they quickly die. The large number of tiger mosquitoes from July through October continues to be the principal reason for the increase in community participation in Anne Arundel County.

By most measures, the mosquito population in Maryland during 2008 was below normal. In fact, 2008 was the fifth consecutive year of mosquito populations below the long-term average. This trend is the result of drought conditions and tides which caused a decrease in production of both fresh and salt flood-water mosquito species. Seasonal patterns of rainfall did affect mosquito production. Frequent rainfall during May and June resulted in higher than usual numbers of fresh flood-water mosquitoes, particularly in the central region. Mosquito populations in Western Maryland were below normal levels through the season.

Salt marsh mosquitoes (*Ochlerotatus sollicitans* and *Ochlerotatus taeniorhynchus*) were below 2007 levels. The 204,159 acres sprayed by aircraft in 2008 to control salt marsh mosquitoes was 25 percent below the 273,880 acres sprayed in 2007 but only 4 percent below the seven year average.

Pesticide use and the number of acres treated with insecticides by ground equipment and aircraft were down in 2008 by 4 percent from the 2007 level. The number of acres treated to control adult mosquitoes remained consistent in 2008 and 2007 – 1,635,363 and 1,686,726 acres, respectively. The 14,800 acres treated to

control mosquito larvae was significantly lower than in previous years primarily due to a decrease in the production of salt marsh mosquitoes. Acreage sprayed to control salt marsh mosquitoes on the Lower Eastern Shore was on average 22 percent below 2007. In contrast, the number of acres sprayed in the central region, particularly in Anne Arundel and Kent counties, increased significantly. Mosquito control work in the central region decreased dramatically in 2007 due, in part, to a season-long vacancy in the entomologist staff. This position was filled and as a result surveillance and spraying in Carroll, Frederick and Washington counties increased by 100 percent in 2008.

The community participation level in Anne Arundel County rose for the second consecutive year in 2008 and spraying increased by 92 percent over 2007. Kent County had the largest increase in spraying in 2008. Improved manpower led to more surveillance and spraying, particularly for tiger mosquitoes in urban environments.

The stocking of stormwater management ponds with mosquito fish increased for the second consecutive year in 2008 and increased by 42 percent over the seven year average. The increase is due to the aquaculture pond established at the Salisbury office in 2006.

Wetlands management as a source reduction technique of mosquito control continued to make progress in 2008. Permits from federal and state agencies remain difficult to obtain. Source reduction techniques were applied to 876 acres of wetlands, exceeding the seven year average of 501 acres by 75 percent.

Public education efforts continue to teach residents how to eliminate mosquito breeding sites in communities, primarily by draining or removing containers. In 2008, mosquito control staff participated in 10 community meetings, four school events and four workshops. Educational materials were distributed door-to-door in seven communities.

Private land owners and a representative of the Maryland Ornithological Society requested to have the Rumbly Point Marsh excluded from the larviciding program. This Somerset County marsh contains about 780 acres of high salt marsh, an extremely prolific source of salt marsh mosquitoes. Low levels of tidal and non-tidal activity caused a decrease in breeding in 2008. This marsh has a 50 year documented history of breeding. Suspending

larviciding on this marsh will eventually affect the surrounding countryside and towns and will require increased spraying of adult mosquitoes.

Our ability to maintain services on the Eastern Shore was hampered by the sudden resignation of an experienced and proficient employee assigned to Talbot County. Filling this position will be critical to maintaining service in Talbot County and in the region as it may be necessary to redistribute existing resources to close the gap. During 2008, three mosquito control vacancies existed. One was filled, which allowed for restored services in the central region. Of the other vacancies, one was eliminated in budget adjustments and the other was closed by the general freeze on hiring. These positions are critical to maintaining county programs. It may become necessary to fill these positions with unbudgeted contractual employees, which will affect all participating counties through reductions in state allocations or possible elimination of entire programs.

### **Mosquito-borne Disease Surveillance**

The Maryland Department of Agriculture and the Maryland Department of Health and Mental Hygiene (DHMH) completed their eighth year of a cooperative effort to monitor the occurrence and distribution of mosquito-borne pathogenic viruses throughout the state. A total of 30,952 mosquitoes was collected and divided into 3,286 pools by mosquito control staff and analyzed for viruses by the DHMH Laboratory. Sixteen mosquito collections were positive for pathogenic virus. Of that total, 12 pools tested positive for West Nile virus (WNV) from three jurisdictions: Baltimore County(1), Montgomery County(7) and Prince George's County(4). An additional four mosquito collections tested positive for eastern equine encephalitis (EEE) from the Patuxent Wildlife Research Center in Anne Arundel County. In addition to the 12 WNV positive mosquito pools collected by

MDA, 11 pools, all collected in Montgomery County, tested positive for WNV through the Department of Defense arbovirus surveillance program.

The Department of Health and Mental Hygiene documented 14 cases of WNV illness in Maryland residents during 2008 in six jurisdictions: Baltimore City(3), Baltimore County(2), Frederick County(1), Harford County(3), Montgomery County(4), and Queen Anne's County(1).

### **Interactions with Other Agencies**

The cooperative effort between MDA and DHMH for mosquito-borne disease surveillance is of great benefit to public health. DHMH administers a federal grant for mosquito-borne disease surveillance and provides funds to MDA for collection, identification and preparation of mosquito samples for virus detection. Unfortunately, the level of federal funding for this work has been greatly decreased during the past four years and currently pays for only 10 percent of the actual costs incurred by MDA.

Cooperative activities are planned with the Maryland Department of Natural Resources, the Maryland Department of the Environment, the U. S. Fish and Wildlife Service, and the Army Corps of Engineers to restore marshes on the Eastern Shore. These projects will attempt to restore natural hydrology and wildlife value of wetlands adversely impacted by past, ill-advised management efforts. Mosquito Control staff and equipment was used to restore 205 acres of tidal wetland on the Deal Island Wildlife Management Area in Somerset County.

The Maryland Department of General Services (DGS) is an essential partner for the Mosquito Control Program. DGS arranges contracts for insecticide purchases and major equipment requisitions.

## Mosquito Control Activity Summary

	2005	2006	2007	2008
Communities Participating in Mosquito Control Program	2,104	2,106	1,974	2,006
Number of Light Trap Nights	3,333	3,762	3,539	2,711
Percent of Light Trap Nights Below Threshold	63	65	68	68
Number of Landing Rate Counts Performed	18,971	20,756	25,861	22,672
Percent of Landing Rate Counts Below Action Threshold	68	66	71	49
Number of Public Service Requests	3,324	4,636	2,879	2,743
Number of Mosquitofish Stocked	16,138	3,737	14,251	19,756
Acres Managed by Open Marsh Water Management	812	493	302	876
Acres Treated with Insecticide	1,701,685	1,431,127	1,716,510	1,650,163
Acres Treated for Mosquito Larvae	15,095	24,880	29,784	14,800
Acres Treated for Adult Mosquitoes	1,686,590	1,406,247	1,686,726	1,635,363
Acres Treated by Aircraft	81,631	220,038	273,880	204,159
Acres Treated by Ground Equipment	1,620,054	1,186,209	1,442,630	1,446,004
Number of Mosquitoes Tested for Arboviruses	74,930	51,289	21,024	30,952
Number of Human Cases of Arbovirus Statewide	5	11	10	14
Number of Human Cases of Arbovirus in Areas with Mosquito Control	0	3	0	1
Number of Cases of Arbovirus in Domestic Animals	0	0	0	2
Number of Mosquito Pools Positive for Arbovirus	24	9	6	16*

*\*Department of Defense collected an additional 11 positive pools at military reservations in Montgomery County, Maryland.*

**Number of Human Cases of West Nile Virus Illness in Maryland, 2001 – 2008**

	2001	2002	2003	2004	2005	2006	2007	2008	TOTAL
Allegany									0
Anne Arundel		8	7	2			2		19
Baltimore City	3	5	14	4	2	6		3	37
Baltimore Co.	3	1	17	3	1	3	2	2	32
Calvert							1		1
Caroline			1	1					2
Carroll			2						2
Cecil									0
Charles		1	1						2
Dorchester				2					2
Frederick		5	3					1	9
Garrett									0
Harford			2				2	3	7
Howard			3			1	1		5
Kent									0
Montgomery		7	10	1				4	22
Prince George's		7	4	3	1	1	1		17
Queen Anne's			5					1	6
St. Mary's		1							1
Somerset									0
Talbot									0
Washington		1	4		1				6
Wicomico									0
Worcester							1		1
<b>Statewide</b>	<b>6 (3*)</b>	<b>36 (7)</b>	<b>73 (9)</b>	<b>16</b>	<b>5</b>	<b>11</b>	<b>10</b>	<b>14</b>	<b>170 (19)</b>

*\*Number of fatalities in parentheses*

## Number of Communities Participating in Mosquito Control During 2007 – 2008

County	# of Communities		% Change
	2007	2008	
Allegany	6	2	-66.7
Anne Arundel	206	242	+17.5
Baltimore City	1	1	0
Baltimore County	329	329	0
Calvert	69	67	-2.9
Caroline	8	8	0
Carroll	3	3	0
Cecil	43	42	-2.3
Charles	92	97	+5.4
Dorchester	136	127	-6.6
Frederick	9	19	+111
Garrett	0	0	0
Harford	42	46	+9.5
Howard	7	9	+28.6
Kent	38	38	0
Montgomery	24	22	-8.3
Prince George's	302	302	0
Queen Anne's	22	20	-9.1
St. Mary's	110	111	+9
Somerset	121	125	+3.3
Talbot	108	110	+1.9
Washington	7	4	-42.9
Wicomico	161	152	-5.6
Worcester	130	130	0
<b>TOTAL</b>	<b>1,974</b>	<b>2,006</b>	<b>+1.6</b>



## Cumulative Acres Treated with Insecticides for Mosquito Control by County During 2007 – 2008

County	Acres Sprayed		% Change
	2007	2008	
Allegany	0	3.44	+100
Anne Arundel	51,642	98,936.56	+91.6
Baltimore City	0.10	0	-100
Baltimore County	88,898	87,619.5	-1.4
Calvert	83,517	103,634	+24
Caroline	41,249	45,119.1	+9.4
Carroll	0.10	263.24	+100
Cecil	69,927	56,011.5	-19.9
Charles	87,364	68,628.19	-21.4
Dorchester	305,719	283,717.43	-7.2
Frederick	2.60	1,202.74	+100
Garrett	0	0	0
Harford	12,247	12,348.9	+8
Howard	1.80	2.94	+63.3
Kent	9,488	36,412.13	+283.8
Montgomery	6.80	7.66	+12.6
Prince George's	3,643	8,187.4	+124.7
Queen Anne's	102,818	100,018.8	-2.7
St. Mary's	108,019	102,591.49	-5
Somerset	198,971	143,676	-27.8
Talbot	138,016	209,543	+51.8
Washington	0.03	268.72	+100
Wicomico	213,467	202,425	-5.2
Worcester	201,513	89,545.13	-55.6
<b>TOTAL</b>	<b>1,716,509</b>	<b>1,650,163</b>	<b>-3.9</b>

## State Chemist Section

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 2008, the section registered 11,983 pesticide products; 3,778 fertilizers; 596 soil conditioners; 779 fertilizer/pesticide combinations; 181 liming materials and 14,555 commercial feeds. See Table 1 for details and comparisons to product registrations of prior years.

### Inspection

Field inspectors routinely sample products that are randomly selected 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 the environment, when used in accordance with approved label instructions. The inspectors sample a representative cross section of products for chemical analysis and obtain reliable data on the distribution, formulation and sale of these commodities. This 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 2008, section inspectors performed approximately 1,147 on-site inspections. See Table 2 for additional details.

### Laboratory Analyses/Investigations

The Maryland Department of Agriculture'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 such as water, soil, fish, etc. The laboratory staff provides reliable scientific data that are used to assist farmers and to initiate or support regulatory actions against violative products or violators of state and federal agricultural and environmental laws. The laboratory has also provided support to the state departments of the Environment and Natural Resources, to the federal Department of Agriculture (USDA) and the U. S. Environmental Protection Agency (EPA).

### Homeland Security - Food Emergency Response Network (FERN) for Chemistry

MDA's State Chemist Section's laboratory is the primary Food Emergency Response Network (FERN) chemistry laboratory for the State of Maryland. It is an essential part of a national federal-state network that is expected to be ready for a quick response to a chemical terrorist attack on state and/or national human and animal food supplies. In the event of such an attack, the section's laboratory staff would be expected to provide rapid and accurate analysis of food, feed, crops and water samples to determine if such items would be embargoed or released for human and animal consumption. The laboratory is an active participant in a federal/state laboratory proficiency program for the analysis of highly toxic materials in food and water.

### 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 2 and Table 3 for details relating to stop sale orders.

### Human and Animal Health Activities

#### *Toxic "Home Made Stew"*

The Department's State Chemist Section received a call from the department of Health and Mental Hygiene (DHMH) requesting assistance in determining the presence of any toxic material in homemade stew consumed by Montgomery County residents who were in a critical comatose condition at a local hospital. The State Chemist laboratory was the only government laboratory that was capable of performing the analysis. Four hours after receiving

the stew sample on the morning of July 10, laboratory personnel identified the presence of significant amounts of alkaloid toxins (Atropine, Scopolamine, alpha Solanine and alpha Chaconine) - components of Jimson weed and green potatoes. The results were immediately reported to the Montgomery County Health Department and were reported in the news media.

#### ***Stop Sale Order of Products Containing Camphor***

In order to ensure that a potentially hazardous product was removed from the market place, the State Chemist Section placed a stop sale order on an unregistered pesticide product which was improperly labeled and packaged in a manner that could be mistaken for mints intended for human consumption. Analysis of the pesticide by laboratory scientists indicated that the material contained significant amounts of camphor. The New York City Department of Health and Mental Hygiene reported three confirmed illnesses involving children having seizures associated with similar type products. Camphor is absorbed through the skin as well as through inhalation and ingestion. It can cause symptoms ranging from nausea to seizures and death.

#### ***East Coast Recall of a Well-Known Animal Feed Product***

An East Coast recall involving regulatory officials in Maryland, Pennsylvania and the U.S. Food and Drug Administration (FDA) was a result of an MDA routine inspection sample and laboratory analysis that revealed the potential widespread distribution of an animal feed product containing significant levels of the mycotoxin Aflatoxin. The agency quickly issued a stop sale order. MDA traced the contaminated product to a Purina feed mill in Camp Hill, PA and a Cooperative Milling facility in Gettysburg, PA. The Pennsylvania Bureau of Plant Industry was alerted and it immediately launched an investigation of the mills. The Pennsylvania authorities promptly referred the problem to the FDA. Further investigation by the FDA led to an East Coast recall of the feed.

#### ***Pesticide Cross-Contamination of Snap Bean Field***

In July, a major agricultural chemical company informed MDA's State Chemist quality assurance officer of its concern about possible pesticide cross-contamination of a large Eastern Shore field of snap beans ready for processing. The company had inadvertently sold a number of containers of a cross-contaminated pesticide which had been applied to the bean field by the farmer. After several telephone calls between State Chemist Section, EPA Headquarters/Region III and FDA regulatory officials it was

determined that there was no protocol for this situation. The farmer and the food processor needed to harvest the product within 10 days but would not proceed without MDA and FDA assurances that the processed beans would be acceptable for human consumption. The MDA coordinated the activities between five federal offices, a Maryland farmer, a Maryland food processor, and the pesticide manufacturer/registrant. After seven days of scientific and regulatory documentation, the snap beans were deemed safe for human consumption and were processed and distributed.

#### ***Milk***

The State Chemist laboratory staff continues to closely work with DHMH and MDA's Animal Health office to monitor for the presence of lead in raw milk. The State Chemist Section is uniquely capable of providing laboratory support for such a project because it has the expertise and the necessary sophisticated instrumentation to detect and quantify exceptionally low concentrations of heavy metals in many different matrices. Table 4 is a compilation of laboratory analyses.

#### ***Bovine Spongiform Encephalopathy (BSE-Mad Cow Disease)***

The section continued an inspection program in conjunction with FDA that began in 1999 to determine if feed mills, retail and wholesale distributors, haulers and grain storage facilities within Maryland comply with U.S. Food & 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 out of compliance with state and FDA regulations.

In 2008, the State Chemist Section completed 100 BSE inspections and collected 100 samples from 35 feed mills, various retail and wholesale distributors, grain haulers/storage facilities and pet food manufacturers. All facilities that were inspected during the contract period were found to be in compliance with the FDA regulations pertaining to BSE.

All samples were analyzed by PCR (polymerase chain reaction) to determine the presence of bovine tissue via DNA replication. Four samples contained bovine tissue - the results were reported to FDA.

The threat of terrorist activities has resulted in additional emphasis on inspection activities that go beyond the protocols established

by the FDA. Section 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, and others 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 such as fast food companies, food stores, and restaurants. 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.

#### ***Anti-terrorism and Homeland Security Issues***

Because of the nature of the duties and capabilities of the section, many of the activities reported elsewhere in this document have homeland security implications. Specific mention has been made of the section's BSE and FERN activities. In addition, the section cooperates with the Department of Health and Mental Hygiene, Laboratories Administration, the State Police, the Maryland Department of the Environment and all of the local health departments through its position on the Laboratory Emergency Preparedness Advisory Committee.

As noted above, the section has inspectors routinely inspecting establishments distributing fertilizer. A part of the inspection protocol involves reviewing the measures that the establishment uses to assure that fertilizer ingredients are not diverted to illegal uses. Protocols that are recommended at these inspections are those that have been developed in cooperation with the federal government, other states and industry groups.

#### ***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 pineapples, potatoes, processed food, processed fruit juices, produce, milk, and peanut butter which are analyzed by federal and state laboratories for several hundred different pesticides. 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. See Table 2 for details.

#### ***USDA - Microbiological Data Program (MDP)***

Since 2001, the section has contracted with the USDA to sample various produce items from principal food distribution centers for analysis to determine the presence of specific pathogens relative to a national health concern about food-borne bacteria. 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. See Table 2 for details.

#### ***Food Safety Survey of Maryland Produce***

In 2008, the section collected from roadside vegetable/fruit stands 64 random samples of Maryland grown produce which were then tested for 400 different pesticides. 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 and formulation are removed from the market place. Removal of violative products not only protects farm livestock but also provides protection to the public against exposure to drug resistant bacteria. In 2008, the section analyzed 132 samples of feed for 81 different drugs and 51 feeds for phytase. Distributors and registrants of defective feed products were notified and either stop sale orders or warnings of potential regulatory action were issued to remove unacceptable products from the marketplace. In addition to monitoring animal feed for drugs and phytase, the section randomly samples and screens the ingredients that are used in the production of feed for pesticides and heavy metals.

#### ***Commercial Compost Inspection and Certification Program***

Two-thousand and eight was a difficult year for the Maryland compost industry. Two large sites, Chesterfield Farms in Anne Arundel County and Bay Organics in Dorchester County, were closed by the Maryland Department of the Environment because of ongoing air and water pollution issues. This represented the resolution of problems predating the Compost Facility Certified Operator program. Despite this, the industry sold approximately

150,000 tons of compost to homeowners and agricultural establishments, including lawn care companies.

The section took part in the following interagency initiatives to eliminate or minimize adverse impacts on the Chesapeake Bay and the rest of the environment:

- A preliminary review of the operational plans of a corporation preparing to process a large amount of organic waste from both the poultry and seafood industries on the Eastern Shore. This review involved personnel from MDA's State Chemist Section and Nutrient Management Program as well as the Air, Water, and Solid Waste divisions of the Department of the Environment and representatives from the companies. The company is now working to incorporate the suggestions made during the review process and expects to present final documents soon.

- A compost training program for potential compost facilities. The intent is to help avoid the pollution and odor issues that have plagued outdoor composting operations nationwide.
- A training program for farmers interested in on-farm composting of food waste.
- A workshop on the state fertilizer law and regulations at the Better Compost School. As a result of the session, five members of the class were among the seven persons who took the examination in December.

The section administered the certified operator examination on December 15 to seven applicants and received inquiries from five others. Five of the seven examinees passed and are now Compost Facility Certified Operators. This brings the total number of past and present holders to 56. An additional administration of the examination is to be scheduled in the early spring of 2009.

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

	<b>2006</b>	<b>2007</b>	<b>2008</b>
<b>Product Registration</b>			
Pesticides	11,208	10,721	11,983
Fertilizers	3,383	3,483	3,778
Soil Conditioners	494	555	596
Fertilizer/Pesticide Combinations	550	689	779
Liming Materials	145	162	181
Feeds	12,515	13,209	14,555
<b>TOTAL</b>	<b>28,295</b>	<b>28,819</b>	<b>31,872</b>
Number of Companies with Registered Products		2,503	3,034
Registrants		2,086	2,559
<b>Enforcement</b>			
Non-Registered Notices	227	757	495
Stop Sale Orders	167	217	195

**Table 2. Inspection Program**

	<b>2008</b>
<b>Inspections (Feed, Fertilizer, Pesticides, Compost, etc.)</b>	
Plants, warehouses, retailers, etc.	1,147
Inspections for BSE (mad cow disease)	100
Pesticide and microbiological data sites visited (USDA/MDA)	334
Pesticide and microbiological samples collected (USDA/MDA)	696
<b>Food Safety Program Samples Collected</b>	
(farmer's market, roadside stands, etc.)	64
Composting sites	2
<b>Samples Obtained for Chemical Analyses</b>	
Pesticide formulations (farms, homes, disinfectants)	320
Fertilizers, soil conditioners, etc.	480
Fertilizer/pesticide combinations	36
Liming materials	42
Feeds (livestock, pet food)	1,080
Raw milk	12
<b>Non-Registered Product Stop Sales</b>	
Pesticides	16
Fertilizers	13
Feeds	166

**Table 3. Regulatory Actions**

	<b>2008</b>
<b>Sample Tracking Stop Sales</b>	
Deficiencies	
Pesticides	6
Fertilizers	127
Feeds	40
Over-Formulations	
Pesticides	0
Fertilizers	9
Feeds	9
<b>Label Violations</b>	
	9
<b>Warnings</b>	
Deficiencies	
Pesticides	0
Fertilizers	4
Feeds	20
Over-Formulations	
Fertilizers	9
Feeds	9
<b>Products Not Registered Brought into Compliance</b>	
Pesticides	42
Fertilizers	39
Soil conditioners	16
Fertilizer/pesticide combinations	6
Liming materials	5
Feeds	341
<b>TOTAL</b>	<b>449</b>

**Table 4. Samples Collected and Analyzed – 2008**

	<b>Samples Collected</b>	<b>Total Number of Chemical Analyses</b>
Pesticide Formulation Analysis	193	772
Fertilizers (nitrogen, phosphorus, potassium, micro-nutrients)	538	4,196
Agricultural Liming Materials	51	196
Feeds and Pet Foods (protein, drugs, phytase, etc.)	1,046	13,025
Broiler Feed for Phytase	45	90
Livestock Feed for Drugs and Additives	132	616
Ruminant Tissue Analysis of Feed	151	182
Toxic Metal Analysis of Feeds, Fertilizers and Liming Material	87	1,305
Melamine & Related Compounds - Public Complaints	6	13
State Chemist Feed & Pet Food Inspection Samples	42	56
Aflatoxin in State Chemist Inspection Samples	398	464
Milk Samples for Lead Analysis	12	36
Food Safety of Maryland Produce & Fruit (not processed - in storage)	64	23,393
Animal Health Samples	3	4
Plant Protection Soil Samples	0	0
Service Samples for Farmers, Veterinarians, etc.	13	156
National & International Quality Assurance Samples	55	2,250
EPA Samples (pesticide misuse investigations, market place product monitoring)	49	490

## Pesticide Regulation Section

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 84 private applicators was certified in 2008 for a three-year period after passing a closed book examination administered by section personnel during exam sessions. One thousand six hundred nineteen (1,619) private applicators renewed their certificates by attending recertification training. Currently, there are 3,434 certified private applicators. Section staff approved and monitored 109 private applicator recertification training sessions that the University of Maryland Cooperative Extension, MDA, or the pesticide industry conducted.

A total of 445 new commercial pest control applicators and consultants were certified in one or more of the 13 categories of pest control by satisfying minimum experience or education requirements and by passing written certification exams. The section certified 1,054 public agency applicators in 2008, bringing the total number of certified commercial applicators to 4,167. Staff processed 982 applications for certification in 2008 and held 18 exam sessions during which 2,463 exams were administered to 982 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 nine (309) 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. By attending recertification training, 4,219 applicators were recertified in 2008.

During 2008, the section licensed 1,631 businesses to apply pesticides and to perform pest control services. Three hundred twenty-one (321) public agency permits were issued to governmental agencies that apply pesticides. Forty-seven (47) pest control consultant licenses were issued. A total of 2,850 registered employee identification cards were issued during 2008. The department currently has 13,981 employees of pesticide businesses and public agencies registered to apply pesticides under the supervision of certified applicators. A total of 141 dealer permits were issued to businesses that sell restricted use pesticides.

### Pesticide Use Inspection and Enforcement

Besides enforcing state pesticide laws, MDA 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 2008, 975 routine business inspections were performed, during which 363 businesses were cited for violations of the Pesticide Applicators Law and Regulations. Seventy-seven (77) pesticide dealer inspections were conducted to ensure that restricted use pesticides were sold only to certified applicators. Eighty-six (86) 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 54 consumer complaints were investigated. Under the federal cooperative agreement, 28 pesticide producer establishment and 42 market place inspections were conducted. Other enforcement actions taken during 2008 included the assessment of 29 civil penalties totaling \$12,840.

### Pesticide Technical Information Collection and Dissemination

The section developed and printed new training manuals on Rodent Control and Public Health and also modified EPA's National Core Manual to include a chapter on Maryland's laws and regulations.



A listing of pesticide sensitive individuals was first compiled in 1989. During 2008, this section registered 159 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. A mailing was sent to all commercial companies and public agencies licensed or permitted in the ornamental plant and turf pest control category.

Searchable databases of registered pesticide products, licensed pesticide businesses, commercial and private applicators and pesticide dealers continue to be posted on the MDA's web site. These databases provide information to applicators and the public about pesticides that may legally be sold, distributed, or used 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 EPA's registration database so that information on each pesticide product queried, such as the EPA registration number, pest controlled, site of application, formulation, active ingredient, and the brand name, can be obtained.

### **Integrated Pest Management in Schools**

The section continues to promote and support implementation of the Integrated Pest Management (IPM) Program in Public Schools. Regulations that require schools to develop and implement notification and IPM plans for indoor pest control became effective in 1999, and regulations for notification and IPM plans for school grounds became effective in 2002. Staff provided technical assistance in the development of the plans and distribution of information on potential adverse effects of pesticides applied. The section has made improvements to the department's IPM In-Schools website including a Frequently Asked Questions page, a listing of the School Systems Contacts, links to both the Law and Regulations, a form for filing complaints or tips regarding compliance issues.

### **Special Programs**

During 2008, the section offered the recycling program for empty plastic pesticide containers to growers and commercial pesticide applicators at 18 locations. Collection centers were maintained in nine counties (Caroline, Frederick, Harford, Kent, Prince George's, Talbot, Washington and Wicomico) with the assistance of county government agencies. A total of 28 collection days were held from June through September. In addition, 12 pesticide dealers/custom

applicators participated in inspection and collection of containers at their own facilities. A total of 40,000 containers, weighing nearly 17 tons, were collected from 124 participants, of which 28 were first time participants. The containers were processed for transporting to a plastic recycling facility.

The Maryland Department of Agriculture's Pesticide Regulation 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 agricultural workers, who might be exposed to pesticides, to receive training on pesticide safety.

Brochures on the Worker Protection Standard have been produced and widely distributed to the regulated community. To aid with on-farm compliance, the section has developed a pocket-sized WPS Compliance Evaluation Checklist, which is available to all of the WPS regulated community. The section also contracted with Telamon Corporation to provide pesticide safety training to farm workers. In 2008, Telamon members provided training to 577 farm workers and 14 non-farm workers (health care providers). Telamon also provided pesticide safety and awareness training to 45 children of farm workers, from pre-K through eighth grade.

The section, in cooperation with the Maryland Department of the Environment, the University of Maryland Cooperative Extension and various agricultural organizations, offered an



MDA Entomologist Rob Hofstetter (right) and Supervising Inspector Ellis Tinsley (center) hand containers to the Empty Pesticide Container Recycling Program contractor, US Ag Recycling, Inc., for chipping.

unusable/unwanted pesticide disposal program, for all agricultural producers, in nine Eastern Shore counties. More than 20,500 pounds of unwanted pesticides were collected from 14 sites in 2008. Since 1995, the program has collected more than 600 different pesticides totaling nearly 172,000 pounds of unwanted or outdated pesticides.

During FY 2008, the section contracted with the United States Geological Survey (USGS) to summarize MDA's ground water monitoring data. The focus area was within Maryland's Piedmont area. The finalized fact sheet was published in December of 2008 and is available for distribution to all interested parties.

### **Pesticide Regulation Section Activities, 2006 – 2008**

	<b>2006</b>	<b>2007</b>	<b>2008</b>
Pesticide Businesses Licensed	1,374	1,354	1,631
Commercial Pest Control Applicators Certified in One or More Category	2,852	2,947	3,113
Registered Personnel Employed by Licensed Businesses and Public Agencies	45,311	47,719	13,981
Public Agency Permits Issued	299	301	321
Public Agency Applicators Certified In One or More Category	1,000	996	1,054
Private Applicators Certified to Date	3,516	3,494	3,434
Dealer Permits Issued	157	149	141
Examination Sessions Held	18	18	18
Individuals Taking Examinations	729	934	982
Examinations Administered in All Categories	1,823	2,172	2,463
Number of Businesses Inspected	823	801	975
Number of Businesses with Violations	199	203	363
Unregistered Employees	15	15	42
Records Incomplete or Inaccurate	101	98	175
Vehicles Not Properly Identified	4	30	34
No Anti-siphon Device	15	10	27
No First-aid/Safety Equipment	16	11	13
Incomplete or No Customer Information	15	0	27
Pesticide Dealer Inspections	81	78	77
Application Records Reviewed	973	801	975
Hearings and Investigation Conferences	2	0	1
Consumer Complaints Investigated	74	79	54
Pesticide Use Observations	76	66	86
Pesticide Samples Collected for Analysis	33	32	48
Market Place Inspections	33	35	42
Producer Establishment Inspections	20	28	28

## Maryland Department of Agriculture Budget Allocations for Fiscal Year 2008

<b>Total State Budget</b> (Operating and Capital)	\$29,526,297,989
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<b>Maryland Department of Agriculture Budget</b>	\$122,500,406
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### Maryland Department of Agriculture Budget Sources

State General Fund	\$34,572,679
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Special and Reimbursable Funds (Fees, Registration, Testing & MALPF)	\$66,602,451
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Federal Funds (Grants & Cooperative Agreements)	\$16,525,676
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General Obligation Bonds (Maryland Agricultural Water Quality Cost Share, and Tobacco Conversion )	\$4,800,000
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*Source: Fiscal Digest of the State of Maryland, 2008 Session  
C-12, C-25, I-8*

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