



Michigan Department of
AGRICULTURE
& Rural Development

**Pesticide & Plant Pest
Management Division
Annual Report
2013**



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Welcome to the Pesticide and Plant Pest Management Division (PPPM). We are a division within MDARD with a broad and diverse range of responsibilities for protecting human and animal health, the environment, and domestic plant industries; and facilitating international and interstate trade of plant-based commodities. PPPM accomplishes this by regulating the production, distribution, and use of pesticides, animal feed and fertilizer products; by surveying for and responding to detection of invasive species; by inspecting nursery stock and Christmas trees; and by certifying plants, plant products, fruits and vegetables meet grade or phytosanitary requirements of receiving businesses, states, and countries. PPPM's diverse activities are divided into the three programmatic sections:



Our **Pesticide Section** is responsible for protecting human health and the environment from unnecessary risks associated with improper pesticide use. Program responsibilities include the certification and licensing of pesticide applicators and firms, registration of pesticide products, monitoring pesticide manufacturing establishments, regulating the sales and distribution of restricted use pesticide products, investigating pesticide use practices and misuse complaints, and enforcement of federal worker protection standards. Additional activities include insect, rodent, and arbovirus management.

Our **Plant Industry Section** is responsible for assuring plant material as well as fruits and vegetables meet specific standards and are free of harmful insects and diseases. Program responsibilities include certifying nursery stock and Christmas trees; inspecting commodities such as dry beans, lumber, fresh produce, nursery stock, and flowers for foreign export; and inspecting and grading fresh fruits and vegetables. Additional responsibilities include enforcement of various state and federal quarantine programs and exotic pest survey and response.

Lastly, our **Agricultural Products/Producer Security Section** is responsible for enforcement of producer and consumer protection laws related to the storage and handling of grain products including the manufacture and distribution of commercial animal feeds, fertilizers, and liming materials. Program responsibilities include licensing and auditing of grain storage facilities; inspection and sampling of animal feeds, remedies, fertilizers, and liming materials for quality assurance and food safety; and inspecting bulk agrichemical storage facilities.

This report summarizes the many activities and accomplishments of the PPPM division for fiscal year (FY) 2013. As in previous years, staff worked closely with consumer and commodity groups, industry, and state and federal partners to provide exceptional, high quality service to our stakeholders and the citizens of the state. I am extremely proud of the work performed by division staff each and every day and happy to share this report with you.

The mission of the Pesticide and Plant Pest Management Division is to:
***Protect human health and the environment, while fostering
a diverse, viable Michigan agriculture.***

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Section 1 – Exotic & Invasive Species Pest Management



Photo by Debbie Miller, USDA Forest Service, Bugwood.org



Photo by Canadian Food Inspection Agency

Emerald Ash Borer

Emerald ash borer (EAB) was first identified in 2002 in six Michigan counties and has since spread to 75 counties, including seven in the Upper Peninsula (UP). There were no new counties identified as being infested in 2012 or 2013. Michigan's internal EAB Quarantine was last revised on February 8, 2011.

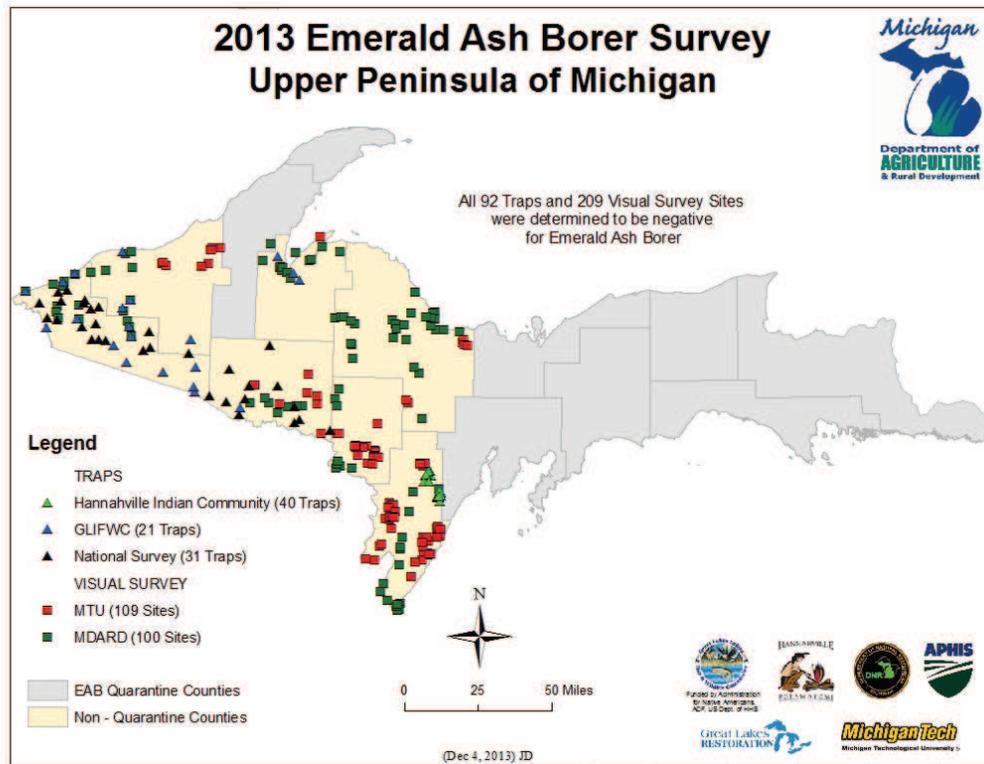
EAB is responsible for the death or damage of 50 million ash trees in the Michigan and surrounding states. EAB infestations have been found in Colorado, Connecticut, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Massachusetts, Minnesota, Missouri, New Hampshire, New York, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, Wisconsin, and Ontario and Quebec, Canada. These infestations are attributed to movement through nursery stock, firewood, and other ash material, including logs.

During the past 10 years, the Michigan Department of Agriculture and Rural Development (MDARD), along with its partners, the Michigan Department of Natural Resources (MDNR), United States Department of Agriculture – Animal and Plant Health Inspection Service (USDA - APHIS), the USDA - Forest Service, Michigan State University, and Michigan Technological University (MTU) have learned a great deal about this pest's life cycle, its flight patterns, its reproductive habits, and how it spreads. They have focused on utilizing new methods to identify the leading edge of infestations to further suppress the spread of EAB into new areas.

Survey of the non-quarantined counties in Michigan continues to be a critical activity. Knowing where EAB exists in the UP will allow for regulation of areas once they are found to be infested and protection of areas that remain uninfested.

Emerald Ash Borer Survey

MDARD did not participate in the 2013 USDA-APHIS National EAB Survey in which baited panel traps designed to detect EAB were utilized due to financial constraints. USDA-APHIS engaged a contractor to establish and monitor 31 traps in two of the seven non-quarantined counties of the UP (Gogebic and Iron counties). The information collected from that survey effort was combined with survey information collected by MDARD field staff (100 sites), MTU staff (109 sites), the Great Lakes Indian Fish and Wildlife Commission (21 traps) and the Hannahville Indian Community (40 traps) to create the following 2013 *Emerald Ash Borer Survey Upper Peninsula of Michigan* map. All surveyed sites were negative for EAB.



EAB Regulatory Activities

Preventing the artificial spread of EAB continues to be a priority for PPPM. In 2013, PPPM continued its focus on enforcing the EAB Quarantine and increasing compliance. Regulatory activities included monitoring the movement of ash products, conducting regular inspections, investigating quarantine violations, and issuing compliance agreements to firms that process, or have the potential to process, ash wood products. Compliance agreements are issued to firms allowing for the movement of regulated products out of quarantined areas. In 2013, PPPM maintained approximately 125 compliance agreements with receivers, brokers and shippers.

Outreach Activities

Outreach and education efforts are essential in every aspect of the EAB program. Public awareness and understanding enhances compliance with the quarantine and supports the state's overall efforts to prevent the artificial spread of EAB.

PPPM produced and distributed educational materials to stakeholders as well as the general public. Additionally, staff hosted several informational booths and presented EAB information at educational seminars and workshops.

Highway signs continued to be positioned at key locations, informing northbound travelers approaching the Mackinac Bridge to not move firewood into the UP.

One press release was issued in May 2013. It announced EAB Awareness Week, reminded travelers to leave their firewood at home, and to "burn it where they buy it."

Aquatic Invasive Species

Aquatic invasive species (AIS) obtained through trade find their way into lakes and streams through a variety of pathways. Although well-intentioned, un-informed consumers may purposely release unwanted pets or plants species and associated pathogens believing it is a humane action without knowing the consequences to the environment. Unintentional escapes of AIS can occur from water gardens through wind, flooding, and human activities. AIS can also be distributed unintentionally as contaminant species associated with legitimately sold species, or through misidentification and unfamiliarity with the common or scientific name of a given species.

In 2010-2013, the State of Michigan received funding from a Great Lakes Restoration Initiative (GLRI) grant through the U.S. Fish and Wildlife Service. The grant is administered by the Michigan Department of Environmental Quality's (MDEQ) Water Resources Division, supports five employees, and funds a state-level AIS Core Team and other AIS-related monitoring, early detection and rapid response, and program and project activities.

PPPM is a member of the AIS Core Team and conducted the following activities in FY 2013 under this grant:

- Performed targeted site visits to assure no prohibited or restricted aquatic plants were being distributed in Michigan. These sites consisted of firms which had potential to be selling aquatic plants on a wholesale or retail basis, including plant growers, plant dealers, home improvement chain stores, and pet stores. Site visits were conducted statewide at 176 locations. The majority of firms with aquatic plants in stock were in compliance; however, two firms carried plant species identified as prohibited species by the Natural Resources and Environmental Protection Act (NREPA) and were issued orders to destroy the plants.
- Updated the Aquatic Invasive Species State Management Plan relating to AIS Organisms in Trade (AIS-OIT), such as aquatic plant species sold through aquarium dealers, pet shops, and water garden suppliers.
- Updated the MDARD prohibited and restricted weeds webpages on MDARD's website. In addition, this information was updated on the National Plant Board webpages summarizing state regulations.
- PPPM staff worked cooperatively with MDNR and MDEQ staff on the OIT subcommittee providing input to the Aquatic Invasive Species Council regarding recommendations to the state legislature on options for certification programs and risk assessments for the aquatic plant industry.



Photo by PPPM Staff

- PPPM staff administered prohibited and restricted species permits as required under NREPA Part 413. Six permits were issued in support of education, research studies, and for biological control implementation.
- PPPM initiated the process of obtaining and compiling contact information on firms and individuals involved in the trade of aquatic plant species, pet trade, plant growers, plant dealers, water garden, and backyard pond industries.
- PPPM assured staff were provided training in the recognition of NREPA Part 413 species through a series of training sessions conducted by MSU and DNR subject matter experts.

Exotic Pest Detection and Management

PPPM is responsible for the detection, regulation, and when applicable, control or eradication of exotic insects and plant pathogens. These exotic pests can significantly impact agricultural production, ecological sustainability, and human health. Exotic pests gain entry into new areas as contaminants in agricultural and related commodities, as hitchhikers in cargo and baggage, or through natural spread of established populations. PPPM utilizes a variety of trapping, sampling, and inspection techniques in an effort to locate these pests while there is still time to implement successful mitigation strategies.

Michigan is home to eight significant ports-of-entry, including the busiest commercial border crossing in the world. Its agricultural, horticultural, and industrial sectors receive plants and plant products from around the globe. And with more than 300 commodities, Michigan has the nation's second-most diverse agricultural economy. Taken together, these factors place Michigan at exceptional risk for the introduction and impact of exotic pests.

Detection and management of exotic pests are facilitated through PPPM's participation in the Cooperative Agricultural Pest Survey (CAPS), Farm Bill Section 10201, and U.S. Forest Service Forest Health programs.

Potato Cyst Nematodes

Three species of exotic *Globodera* cyst nematodes pathogenic on potato are known to occur at a handful of sites in the U.S. and Canada. To ensure foreign markets remain open to Michigan-grown seed potatoes, PPPM participates in a national soil sampling program to detect populations of nematodes or demonstrate their absence in the state's seed potato fields. In 2013, PPPM completed its sixth consecutive year of sampling, and to date nearly 5,500 acres in the Upper Peninsula and northern Lower Peninsula have been intensively surveyed. No *Globodera* cyst nematodes have been found in Michigan.

Plum Pox Virus

Plum pox virus (PPV), the world's most serious viral disease of peaches, plums, apricots, and nectarines, was detected in a single tree in the southwestern Lower Peninsula during a routine survey in 2006. All potentially infected trees were removed, and the impacted area was quarantined. An annual survey to intensively sample the major stone fruit-producing areas of the state began in 2007 and continued in 2013. To date, 215,000 samples have been collected and processed with no additional PPV detections. This remains one of the best examples of the importance of early detection in the response to exotic plant pests.

Honey Bee Pests

Honey bees across the nation are under enormous stress from a host of known and unknown pests and other harmful agents. In 2013, PPPM participated for the fourth year in a Farm Bill-funded national honey bee survey with the goals of establishing baseline pest information, detecting previously unknown exotic pests, and demonstrating pest freedom for federal regulatory purposes. This work is important to protect the state's beekeeping industry and the fruit and vegetable industries dependent on its pollination services. To date, 98 apiaries have been surveyed and samples analyzed by USDA. No previously unknown pests have been found.



Photo by Brian Rowe, PPPM

Asian Longhorned Beetle

Active Asian longhorned beetle (ALB) infestations in New York, New Jersey, Massachusetts, and since 2011, in Ohio, have increased the risk of ALB moving into Michigan. Michigan must be vigilant in its efforts to keep ALB out of the state; and if introduced, ensure it will be quickly detected and reported. Early detection of infestations and rapid treatment response are crucial to effective eradication efforts.

This highly destructive wood boring insect attacks at least 13 genera of trees, including maple, birch, willow, elm, sycamore, and poplar. Hardwood species, particularly red maple and sugar maple, make up a majority of Michigan's 19.3 million acres of forestland and a high percentage of the urban tree canopy. There are an estimated 4.4 billion cubic feet of sugar maple growing in Michigan forests.

Adult Asian Longhorned Beetles



Photo by Connecticut Agricultural Experiment Station



Photo by Jennifer Forman-Orth, MA Department of Agricultural Resources

PPPM is increasing its surveillance activities and outreach and education efforts for the insect. Knowledge of the signs and symptoms of ALB is critical for all persons working with trees in both urban and forested areas, such as tree-care professionals, foresters, loggers, campground operators, and firewood dealers. Based on previous infestations in other states, trained individuals along with an educated public greatly expands the number of surveyors and increases the probability that infested trees will be spotted and reported early.

In 2013, PPPM staff presented ALB information, including proper reporting mechanisms, at 24 outreach/educational sessions with 960 participants attending these sessions. Attendees included loggers, consulting foresters, municipal foresters, landscapers, arborists, campground owners and managers, master gardeners, tribal representatives and other forest professionals.

Early detection and subsequent eradication anywhere in the state will have a direct or indirect impact on Michigan's communities. Eradication will greatly reduce the overall economic impact to:

- Homeowners and urban communities (loss of trees, cost of tree removals, and tree replacement costs);
- State and private forest lands (loss of timber resources, alter ecology of impacted sites);
- Recreational areas (loss of trees resulting in loss of aesthetic resources and cost associated with removal of hazard trees) and;
- Maple sugar industry (maples are a preferred ALB host plant).

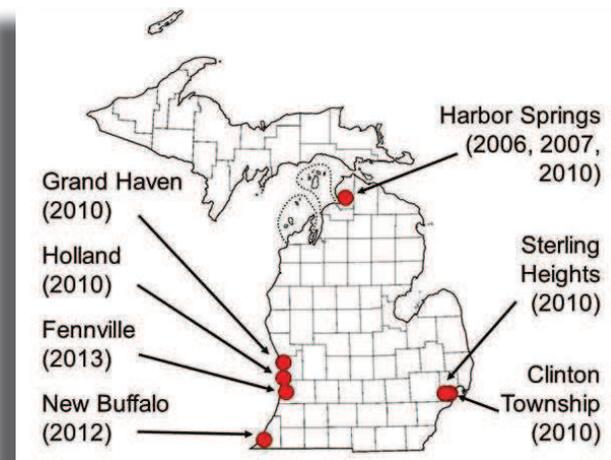
Hemlock Woolly Adelgid

PPPM responded to a new detection of hemlock woolly adelgid (HWA) in Allegan County in May of 2013. This detection brings to five the number of counties impacted by HWA since its first discovery in Emmet County in 2006. Hemlock is an ecological keystone species, making this pest one of the most significant threats to the health of Michigan's northern forest ecosystems. Tree removals, pesticide treatments, and large-scale survey efforts were initiated in 2013 in Allegan County and continued in Berrien, Emmet, Macomb, and Ottawa counties. After the 2013 survey was completed in Macomb County, it was declared free of HWA since three consecutive years of survey did not find any evidence that HWA persists there. Efforts in the four remaining counties will continue in 2014 using funds acquired through a U.S. Forest Service grant. Sustained diligence will be necessary to ensure Michigan remains free of this extremely destructive insect.



Hemlock Woolly Adelgid

Photo by Michael Montgomery, USDA Forest Service, Bugwood.org



Infestation History in Michigan

Exotic Fruit and Forest Pest Surveys

In 2013, PPPM conducted its eighth consecutive year of survey for numerous high-priority forest pests statewide. This year, in collaboration with Michigan State University, 60 high-risk sites were targeted for detection activities, which included trapping for more than 30 exotic woodboring and defoliating insect species. To date, nearly 360 high-risk sites have been surveyed. No significant exotic pests were discovered. Also in 2013, PPPM provided Farm Bill-funding to MSU to survey for

a series of high-priority exotic fruit pests at 60 grape vineyards, apple orchards, and stone fruit orchards in the western Lower Peninsula. No exotic pests were found.

Section 2 – Plant Pest & Commodity Certification

PPPM's Plant Pest and Commodity Certification programs facilitate interstate, intrastate, and foreign trade through inspection and certification of nurseries and plant material and provide an unbiased, third-party inspection service for the produce industry through the fruit and vegetable inspection program. The goals of these programs are to:

- Prevent the spread of harmful pests and diseases which could lead to serious ecological and economic losses.
- Facilitate the export of plant-based commodities (dry beans, grain, hay, nursery stock, logs, and lumber) to markets in more than 85 countries.
- Ensure plants purchased by consumers meet requirements for viability, trueness to varietal name, and quality standards.
- Assure Michigan fruit and vegetable producers meet the requirements necessary to access local and international markets.



Photo by David Kenyon

Nursery Program

Nursery inspections facilitate the sale of plant materials, such as trees, shrubs, herbaceous perennials, small fruit plants, and hardy bulbs. Nursery and perennial plant producers generate about \$261 million in annual sales. Sales of Christmas trees by Michigan producers generate another \$41.5 million, representing 2.87 million trees; sales of wreaths and boughs account for an additional \$1.3 million (*source: 2004 Rotational Survey*). Michigan nursery growers produce stock for sale within the state and ship to 35 states and foreign markets. Through the inspection process, PPPM ensures plant materials entering market channels are free of pests and diseases. In addition, PPPM field staff also makes sure production areas are free from weeds. For those plants destined for out-of-state markets, the commodity must meet the phytosanitary requirements of the receiving state. Inspectors visit nursery stock dealers who receive stock from high-risk states to review shipping documents and confirm the stock is free of pests and diseases. Over a dozen pests are the main focus of these inspections. Import inspections are also performed at both the grower and dealer level when nursery stock arrives from foreign sources.

Export - Interstate Certification

PPPM certifies nursery stock, Christmas trees, logs, hay, and bedding plants for interstate shipment. PPPM field staff ensures plant materials meet the quarantine requirements of the receiving states. Of primary importance are five major quarantine-significant pests: gypsy moth, pine shoot beetle, emerald ash borer, Japanese beetle, *Phytophthora ramorum* blight, and black stem rust. Japanese beetle is the focus of several external state quarantines as well as the National Japanese Beetle Harmonization Plan. To certify plant materials for shipment outside gypsy moth regulated areas, PPPM inspectors assure freedom from this pest through annual nursery inspections. In areas of high gypsy moth populations, PPPM also conducts additional checks in the spring for the presence

of larvae that may be blown in from surrounding areas. The black stem rust quarantine applies to barberry and related species and only approved resistant varieties may be sold.

Export - Foreign Certification

Under cooperative agreement with USDA, commissioned PPPM staff members receive training and authorization to issue federal phytosanitary certificates facilitating trade in foreign markets and the export of Michigan commodities shipped to 85 countries worldwide. The vast majority of exports went to trading partners in Canada and Mexico as well as to China, Europe, and South America. The largest export categories by volume are propagative items (nursery stock and agricultural seed), grain for consumption, straw, logs, and lumber.

PPPM also monitors compliance with special export programs to assure producers meet the requirements of these new initiatives. The “Apples to Mexico” program is the most recent initiative facilitated by a partnership between PPPM, USDA, Michigan Apple Committee, Michigan State University, and Mexican officials. The Blueberry Certification Program for exporting fresh blueberries to Canada and the U.S./Canada Greenhouse Certification Programs are successful export programs facilitated in Michigan by PPPM staff.

Plant Pathology Laboratory Activities in Support of Export and Plant Disease Prevention

PPPM's Plant Pathology Laboratory, located within MDARD's Geagley Laboratory, performs many activities in support of phytosanitary certification and export. To improve the quality of pome and stone fruit in Michigan, PPPM-Plant Pathology is actively involved in the virus-testing of pome and stone fruit trees for a large commercial firm in Van Buren County based on phytosanitary guidelines established by the National Clean Plant Network. PPPM-Plant Pathology also conducts virus-testing certification of blueberry plants to help growers obtain disease-free vigorous plants for export and domestic markets. Other activities include dry bean and seed corn testing, phytosanitary export certification, seed potato winter testing, and support of CAPS surveys such as plum pox virus, ramorum blight, and viruses of imported perennial ornamental material.

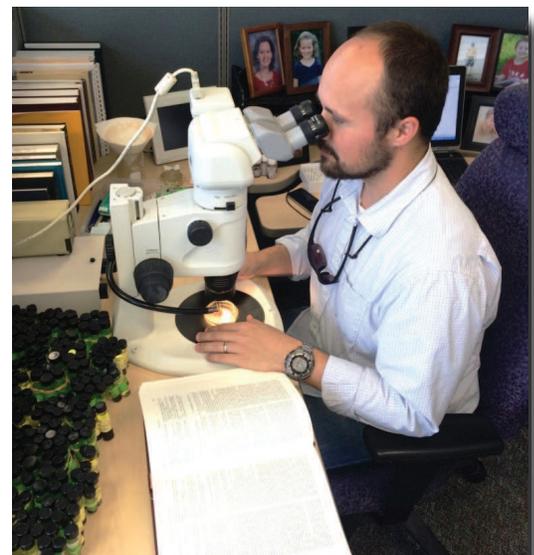


Photo by Brian Verhougstraete, PPPM

Biotechnology and Plant Post-Entry Quarantine Import Permits

To facilitate safe introduction of foreign genetic material to improve the quality of crops and plant products in Michigan, PPPM reviews applications and issues import permits in cooperation with USDA-APHIS-PPQ. In 2013, PPPM, in agreement with USDA, approved a total of 83 permits, including renewals, for commercial companies and research and teaching institutions in Michigan. Fifty-six permits were issued for interstate movement and field trials of genetically modified organisms (GMO), 18 for the importation and movement of plant pathogenic organisms, three for movement of federal noxious weed plants, and six for the importation of soil samples for laboratory research and analysis.

Fruit and Vegetable Inspection Program

The Fruit & Vegetable (F&V) inspection program offers an unbiased, third-party inspection service for the produce industry in Michigan and throughout the United States. Inspections are based on federal and state standards, processor specifications, and/or industry requests. USDA standards are used nationwide as a basis for purchase, and to resolve disputes. All F&V staff must be licensed by USDA on each commodity they inspect.



Photo by David Kenyon

Shipping Point Inspections

Shipping point inspections are used to assure the quality and condition of Michigan produce prior to shipment. This type of inspection verifies Michigan produce meets the grade marked on the containers and bags. Some shipping point inspections are mandatory such as exports, the school lunch program, and government purchase inspections. USDA grades are recognized throughout the world and are used as a basis to market produce.

Process Inspections

Seasonal F&V inspectors perform inspections on raw produce received from farmers at processing plants and receiving points. The inspections are based upon USDA standards and/or processor specification. Process inspections protect Michigan farmers by providing them with an unbiased, third-party inspection upon which they are paid fairly for their produce. In addition, inspections protect processing plants from receiving poor-quality produce from Michigan farmers and protect consumers from receiving poor-quality produce in processed goods.

Market Inspections

F&V inspection staff are licensed by USDA to conduct market inspections on produce entering the channels of trade from anywhere in the world. Market inspections protect the buyer, broker, and consumer from receiving poor-quality produce or produce not meeting the promised grade or condition. Market inspections are used to resolve disputes which may end up in court and are vital to the survival of the state's buyers, brokers, and receivers of Michigan produce worldwide. PPPM has three F&V staff fully licensed to inspect incoming market loads of produce.

Good Agricultural Practices and Good Handling Practices

Good Agricultural Practices and Good Handling Practices (GAP/GHP) were developed by USDA as a result of requests from states, shippers, and growers and provide set guidelines designed to minimize microbial contamination on fresh produce. These inspections are an independent, third-party, audit-based service provided by trained and licensed F&V inspectors and staff. These staff have successfully completed the GAP/GHP training class and have participated in a minimum of three audits, including two as the lead auditor.



Photo by PPPM staff

Currently, there are 10 MDARD staff members fully trained and licensed to perform audits for USDA GAP/GHP in Michigan. This program is currently being used by Michigan’s apple, asparagus, potato, peach, carrot, cherry, onion, blueberry, radish, green onion, beet, raspberry, apricot, pear, strawberry, watermelon, winter squash, summer squash, and cantaloupe industries. These audits are required by some purchasers of produce and are mandatory in order to participate in the school lunch program.

Controlled Atmosphere Storage Licensing Program

Enjoying crisp, juicy, flavorful Michigan apples year-round is possible due to controlled atmosphere (CA) storage. CA involves careful monitoring and control of temperature, oxygen, carbon dioxide, and humidity. All CA rooms are inspected and sealed by F&V inspection staff annually. CA is required by some foreign countries as a condition of sale or as a phytosanitary requirement.

Seed Potato Inspection

F&V inspectors conduct mandatory shipping point inspections on all Michigan certified seed potatoes prior to shipment to various farms throughout the U.S. The state continues to be a national leader in production of potato seed with the largest market here in Michigan. In the fall, F&V inspection staff conduct quality control inspections during harvest of Michigan certified seed potatoes prior to placement in storage bins for shipment in the spring. The final grade and disease certification inspection occurs while seed potatoes are being loaded into trucks and represents the last control measure to prevent diseased potatoes from being shipped out of Michigan, thereby helping to preserve the integrity of Michigan’s seed potato program. During 2013, F&V inspectors conducted 127 shipping point inspections on 6,739,500 million pounds of seed potatoes.

Fruit & Vegetable Certificates Issued

Shipping point inspections.....	632
Process inspections.....	392
Market inspections.....	782
GAP/GHP audit inspections	267

Licenses issued

Wholesale potato dealer licenses.....	14
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Plant Pest & Commodity Certification Statistics

Nursery licensing

Total licenses	5,269
Total growers licensed	1,289
General nursery licenses	890
Plant grower licenses.....	92
Small scale grower licenses	307
Total dealers licensed	3,801
Nursery stock dealer license.....	3,184
Nursery stock dealer market licenses.....	161



Photo by David Kenyon



Photo by PPPM staff

Plant dealer licenses.....	275
Plant dealer market licenses.....	40
Registered nursery dealer licenses	156
Registered nursery dealer market licenses	23
Small scale dealer market licenses	141

Nursery inspections

Growers: total acres inspected.....	6,856
Dealers: dealers inspected.....	896
Aquatic plant compliance monitoring sites	176

Seed corn inspections

Total acres inspected	47,845
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Christmas tree inspection – federal gypsy moth & pine shoot beetle quarantines

Fields inspected	324
Percent of fields in compliance	98.5%

Pine shoot beetle compliance management program

Firms enrolled	10
Fields enrolled.....	27
Acres enrolled	775

Export certification

Federal phytosanitary certificates issued	3,822
Re-export certificates issued.....	71

US/Canada greenhouse certification program

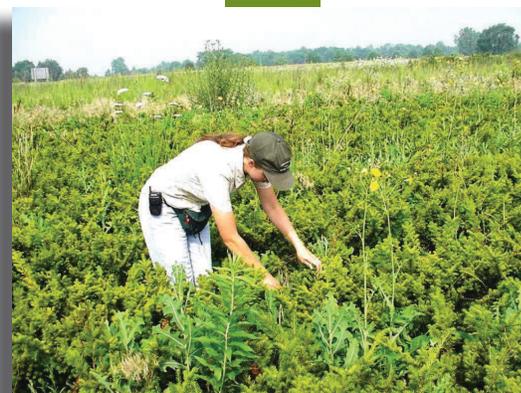
Firms enrolled	3
Shipments certified.....	212

Blueberry certification for exporting fresh fruit to Canada

Firms enrolled.....	11
Shipments certified	30

Nursery firms issued compliance agreements for federal/state quarantines

Black stem rust.....	20
Gypsy moth	99
Japanese beetle	88
Pine shoot beetle.....	42
Total compliance agreements issued	249



Photos by PPPM staff

Plant Pathology Laboratory

Virus-testing of pome and stone fruit trees

Stone and pome fruit trees maintained for certification of budwood for virus-free status (2804 apple and 2276 cherry).....5,080

Virus-testing of blueberry for certification

Samples tested representing 153 cultivars from five commercial growers.....515
(Two nurseries submitted 86 samples for Blueberry Scorch Virus testing)

Dry bean seed testing

Samples tested for seed-borne diseases.....48

Seed corn certification

Seed corn samples representing 44,200 acres.....846

Plum pox virus

Samples collected from 21 growers in 4 counties - all negative.....5,045

Phytophthora ramorum blight

Leaf samples from 47 nursery grower and dealer locations – all negative.....610
Water samples from 11 locations.....10

Seed Potato Winter Testing

Leaf samples tested for the presence of Potato virus Y (PVY) for certification of 8 lots representing approximately 3000 plants.....292

Section 3 – Food Safety & Consumer Protection

Commercial Feed Program

The commercial feed program helps to assure the safety and wholesomeness of feed and food products in Michigan through its inspection and sampling program. Approximately 1,350 feed manufacturers and distributors of more than 3 million tons of commercial feed and feed ingredients are regulated under the program. Safe and nutritious feed, free of contaminants and harmful residues, is the over-arching goal.

PPPM regularly inspects, samples, and analyzes commercial feed to ensure that feeds are in compliance with the Michigan Commercial Feed Law and the rules promulgated under the act. Inspections and sampling help to assure that feed products offered for sale are safe and that they provide the promised nutrition. In 2013, PPPM sampled over 700 feed products. Sixty-seven violation notices were issued to firms and manufacturers for products that did not meet label guarantees. Staff conducted audits and worked with firms to help identify and correct deficiencies.



Photo by David Kenyon

To ensure companies comply with Michigan's licensing and labeling requirements, PPPM inspectors inspect any facility in which feeds are manufactured or distributed including feed mills, farm suppliers, grocery stores, pharmacies, gas stations, and wholesale distributors. In addition, PPPM staff review feed labels to prevent deceptive labeling and investigate reports of animal deaths or illnesses where feed may be implicated.

Feed Program Highlight

FDA 2013 Commissioner's Special Citation

The Michigan Pet Food Investigation Team, comprised of MDARD and Michigan Department of Community Health staff, received the United States Food and Drug Administration (FDA) Commissioner's Special Citation – one of the highest level awards at FDA.

The award was for Michigan's 2012 Pet Food Salmonella Infantis outbreak recall response. The outbreak caused numerous human and animal illnesses that ultimately resulted in a massive pet food recall (over 30,000 tons). MDARD staff collected and analyzed samples, identified the pathogen, linked the pathogen to an outbreak, identified the responsible firms, and then coordinated and communicated with State and Federal agencies to facilitate a recall.

The Michigan Pet Food Investigation Team was also the recipient of a Michigan Commission of Agriculture and Rural Development Resolution that recognized its efforts, in July 2013. The team's discovery is unique and serves as a national case study on the interconnection between animal feed safety and human health. This discovery has been highlighted in over 15 national publications, posters and presentations.

Medicated Feed

Therapeutic and production drugs are commonly administered to livestock and poultry through their feeds. For this reason, PPPM monitors the manufacturers of medicated feeds and takes samples to ensure compliance with federal regulations. These regulations cover good manufacturing practices designed to prevent unsafe drug residues in human food.

In 2013, 222 medicated feed samples were collected and analyzed. Out of these samples, 17 were found to be violative and did not meet drug label guarantees. Violation notices were sent to these retailer and manufacturers. Traceforward and traceback inspections, audits and additional enforcement were conducted at the retailer and in-state manufacturer locations.



Photo by David Kenyon

Bovine Spongiform Encephalopathy (BSE or "Mad Cow Disease")

PPPM is an active participant in a national effort led by the FDA to prevent the introduction and establishment of BSE in the United States. This is done by closely monitoring the use of certain animal-derived proteins in animal feed. PPPM has been inspecting feed manufacturing facilities

throughout the state under this program since 1998. All firms handling restricted protein materials are inspected at least yearly to assure continued compliance. In 2013, 85 inspections helped to assure that Michigan livestock and consumers were protected from BSE. PPPM collected 100 samples to be analyzed for prohibited protein as part of the annual feed sampling program. No prohibited protein was found.

Food and Feed Safety Grant Awards

In September 2010, Michigan was one of 12 states to be awarded with a FDA Feed Safety Cooperative Grant. The five-year, \$1.25 million grant will allow MDARD to enhance its feed surveillance capabilities in the areas of early detection, rapid response and effective recovery.

In 2012, MDARD was awarded two FDA building-capacity food safety grants that will provide funding for food and feed safety and animal health projects. The grant activities will better integrate food, feed, and animal health best practices that reduce risk and protect human and animal health.

Though these grants and MDARD's Rapid Response Team activities, PPPM's feed program continues to utilize and build on its multi-divisional partnerships and training. This multi-divisional collaboration has been especially significant pertaining to feed training and investigations. Here are some examples from 2013:

- Michigan's 35-year-old feed law was revised to be more in line with the Association of American Feed Control Officials (AAFCO) model feed bill and to support increased feed safety and security. Introduced in December 2013, HB 5180 of 2013 proposes updates to the Michigan Commercial Feed, Act 120, Public Acts of 1975, as amended.
- In March 2013, MDARD found Salmonella Livingstone in a routine retail sample of cat food and initiated a recall response. As a result of additional sampling positives from MDARD, state of Georgia and FDA, the manufacturer updated its recall three additional times. No human or animal illnesses confirmed, but many were likely prevented as a result of feed safety surveillance activities.
- Proper rodenticide use at food establishments, including feed distributors and grain elevators, was identified as a high food safety risk based on the FY 2013 sanitation inspections. All feed licensees received a letter explaining MDARD's interpretation of proper rodenticide use at feed mills, distributors and grain elevators. PPPM will be following up during the FY'14 sanitation inspections and cross training MDARD food inspection staff.
- PPPM staff identified a firm that was distributing Veterinary Feed Directive animal drugs without proper federal registration. MDARD sent a violation letter to the firm and advisory letters to the farm and veterinarian. As a result, three new firms became registered to properly administer these limited-use medications.
- As a result of aseptic animal feed sampling, four poultry feed samples were found to be contaminated with Salmonella. The Salmonella serotype identified was not considered pathogenic to poultry. MDARD feed staff worked with all four firms to examine sanitation practices, re-sample of feed product and ingredients, and notify customers. No animal or human illnesses were ever reported as a result of these findings.

Animal Remedies Program

Modern animal husbandry practices often demand the use of drugs and vaccines to prevent or treat diseases which can harm herd health and cause decreases in production. Many drugs and vaccines are also used extensively by homeowners in the care of their pets. The PPPM animal remedy program helps assure drugs and vaccines are registered, safe, properly labeled, and effective for their intended uses.

Elevator and Feed Mill Sanitation Program

Through this program, PPPM addresses and prevents insanitary grain storage conditions that could negatively impact the safety of Michigan's feed and food supply. The inspection program also helps prevent costly economic losses due to pests and other forms of environmental or chemical contamination. Through these inspections, PPPM helped to safeguard nearly 460 million bushels of grain and 3.5 million hundredweight of dry edible beans processed and stored in Michigan's grain elevator system and valued at nearly \$4.8 billion.



Photo by PPPM staff

In 2013, PPPM's animal feed program continued to make enhancements to its risk-based animal feed sanitation inspection program. This program allows inspectors to assess a facility's sanitation practices based on a weighted scoring system. Each sanitation violation found at a firm is given a score based on the criticality of the violation, where the violation occurred within the facility, and its overall severity. PPPM issued 30 advisory letters and five warning letters to firms with a failing score. Identifying key critical factors and implementing preventative controls will help MDARD's stakeholders prevent insanitary feed handling and storage conditions and grain contamination in the food supply chain.

Seed Program

There are approximately 450 seed labelers and 140 dealers who process and distribute agricultural and non-agricultural seed in Michigan. Michigan farmers spend more than \$600 million annually on agricultural seed. The goal of the seed program is to ensure the seed purchased by Michigan growers and homeowners for planting purposes is of good quality and meets standards for germination, purity, and freedom from noxious weeds established in the Michigan Seed Law. Through its seed program, PPPM also provides oversight of seed certification activities ensuring the genetic purity of plant varieties and potato seed and other quality standards for crops.

Additionally, PPPM assists USDA in making sure seed companies comply with federal seed requirements and assist in the enforcement of the Federal Seed Act by providing samples and documentation for seed shipped in interstate commerce.

Fertilizer and Liming Program

The fertilizer and liming program regulates approximately 600 manufacturers and distributors of 1.4 million tons of fertilizers, soil conditioners, and liming materials for both farm and non-farm use. Fertilizer is the most widely used agrichemical and is agronomically applied on about 5.5 million acres of Michigan farmland. Michigan producers and industry rely on this program to maximize yields and maintain a profitable agricultural operation. In addition, millions of state residents depend on this program to protect them from fraud when purchasing fertilizer for home and garden use.

PPPM took 208 fertilizer samples that were analyzed for nitrogen, available phosphate, and soluble potash. The Iowa Department of Agriculture and Land Stewardship conducted the sample analysis. Thirty-five of the samples were violative, a 16.8% violation rate. Thirty-three violation notices were sent to retailer and manufacturer locations with a violative sample.

Michigan is the first pilot state on a national, industry-wide AgGateway Tonnage Reporting Project for more efficient reporting of fertilizer and feed tonnage. Currently, 47 states require fertilizer and feed tonnage reporting and payment of fees with 47 different sets forms. The Tonnage Reporting Project aims to help companies collaborate with state officials on a standardized format that can be used to streamline the industry's feed and fertilizer reporting.

New Statewide Phosphorus Fertilizer Restrictions on Turf

In 2012, the Michigan Fertilizer Law began restricting phosphorus fertilizer applications on residential and commercial lawns, including athletic fields and golf courses, statewide. The new legislation prevents unnecessary applications of phosphorus fertilizer to turf and will help maintain and protect Michigan's vast water resources. The legislation provides statewide uniformity and guidance for local government, homeowners and industry.

In November 2013, the phosphorus restrictions were updated. Public Act 151 of 2013 amends the Michigan Fertilizer Law to authorize the application of a natural fertilizer with phosphorus to turf in certain amounts.

MDARD's phosphorus outreach information is available at www.michigan.gov/mda-fertilizer and at www.BePhosphorusSmart.msu.edu.

Producer Security Program

This program regulates the enforcement of the Grain Dealers Act (PA 141 of 1939, as amended) and provides producer security review services for the Wholesale Potato Dealers Act (PA 158 of 1964), Manufacturing Milk (PA 266 of 2001) and Fluid Milk (PA 267 of 2001) Acts, and the Licensing Livestock Dealers Act (PA 284 of 1937).

This program also provides financial accounting and assessment review services for the Agricultural Commodities Marketing Act (PA 232 of 1965), and administers the Farm Produce Insurance Act (PA 198 of 2003) and the Agricultural Marketing and Bargaining Act (PA 344 of 1972).

The Grain Dealers Act regulates the storage, warehousing, and sale of farm produce in Michigan by providing for the licensure of 233 grain dealers. In 2012, corn, dry beans, oats, soybeans, and wheat field crops in Michigan were valued at \$3.5 billion. A 2012 amendment provides for a grain dealer license fee increase to partially offset a loss in General Fund. The legislation also eliminated bailment bond requirements. Also in 2012, an Exam Net self-inventory system was approved to provide a gain in regulatory efficiency, benefiting both Michigan grain dealers and MDARD.

The Farm Produce Insurance Act was enacted to protect farmers in the event of a farm produce dealer's financial failure. The \$6.1 million fund provides payments to those farmers that are economically damaged by the financial failure of a farm produce dealer. Participation in the insurance fund is voluntary and is governed by a 10-member board appointed by the Governor to represent farmers and banking interests.

Administrative and regulatory responsibilities are provided by the Producer Security Program through a memorandum of understanding with the Farm Produce Insurance Authority. A 2012 amendment required licensed grain dealers in Michigan to collect, beginning January 1, 2013, an administrative assessment of 15 cents per \$1,000 of farm produce sold (\$0.00015 per dollar) from each producer's payment.

Prior to the enactment of the Farm Produce Insurance Act, producers had lost \$13 million through numerous insolvencies at grain dealers in Michigan. Since 2005, the Farm Produce Insurance Authority has paid \$920,000 in claims to 92 producers and has recovered \$600,000 from bankruptcy and probate proceedings. Under the voluntary provision of the Farm Produce Insurance Act, 67 producers out of an estimated 15,000 have requested assessment refunds.

The Agricultural Marketing and Bargaining Act works with the industry to establish marketing and processing pricing for asparagus and apple crops grown in Michigan. The Producer Security Program oversees the arbitration process if these negotiations are not successful and investigates unfair practice complaints.

Section 4 – Pesticides and Agrichemicals

Inspections/Investigations

PPPM conducts a variety of inspections and investigations to assure pesticides are used in compliance with state laws and regulations and in a manner minimizing adverse effects on human health and the environment. Pesticide inspections monitor the compliance of an individual or firm through routine contacts either in the field or at business locations. Pesticide investigations are based on an alleged violation and are conducted to determine if the allegation is true as well as monitor compliance with all pesticide regulatory requirements. In either case, detection of violations results in appropriate enforcement action and compliance assurance.

Common pesticide inspection activities include a variety of compliance monitoring such as federal and state marketplace inspections at locations where pesticides are sold, federal inspections at pesticide manufacturing facilities, and bulk pesticide storage inspections. Planned use inspections are a comprehensive inspection which may occur at a variety of operations, such as commercial businesses, schools, private farm operations, and other locations where pesticides are used and pesticide regulatory requirements apply.

Pesticide investigations usually start with the receipt of a complaint alleging one or more potential violations of Michigan pesticide laws or regulations. Within 24 hours, PPPM field staff first contact the complainant and then the applicator, investigate allegations, and determine compliance with all regulatory requirements. Inspectors also collect physical, photographic, and documentary evidence to determine if violations occurred. Like an inspection, investigations also use an objective approach to determine compliance with all applicable regulatory requirements.

PPPM responded to 217 pesticide complaints in 2013.

Certification

In Michigan, applicators who apply restricted use pesticides (RUPs) must become certified to use or supervise the use of RUPs. This requirement applies to private applicators producing agricultural commodities or commercial applicators (applicators that are not private). In addition, any person applying a pesticide, other than a general use, ready-to-use pesticide (as defined), as part of their job duties must be a certified or registered applicator. Registration and certification of applicators ensure that persons applying pesticides achieve a level of comprehension appropriate to apply pesticides. There are 22,045 certified applicators and 277 registered applicators in Michigan.



Photo by PPPM staff

Agricultural Pesticide Dealer Licensing

In February 2008, legislation was passed creating a new agricultural pesticide dealer (APD) license program. The new license program regulates the sale of agricultural pesticides into Michigan, regardless of the point of origin. Any APD that is not licensed as a RUP dealer must obtain the new APD license. If the APD business is located outside Michigan, they must also retain a resident agent in Michigan. Out-of-state RUP or APD locations must now report the sale of all agricultural pesticides to the registrant/producer so that all applicable sales-based groundwater protection fees are paid. In 2013 PPPM issued 342 APD licenses.

Registration

Pesticides sold, offered for sale, or used in Michigan must be registered with PPPM. This program gives PPPM the ability to regulate which products are registered for use in Michigan and allows the division to place additional use restrictions on pesticides, when warranted, to protect human health or the environment. Generally speaking, pesticides registered in Michigan are first registered by the Environmental Protection Agency (EPA), where they undergo a number of environmental and toxicological assessments. Pesticides are registered for sale annually. In addition to registration fees, registrants also pay an annual groundwater protection fee to support environmental stewardship projects. PPPM registered 15,551 pesticide products in 2013.

Pesticide Enforcement Activities

When violations of Public Act 451, Part 83, Pesticide Control, or regulations thereunder, are detected, PPPM has a variety of enforcement activities that can be used to gain compliance and issue penalties. Options include: warning letters requiring a written response as to how an individual or firm will comply with requirements, or hearings where PPPM and the defendant review findings and develop a compliance agreement. PPPM can issue administrative penalties (fines) or work within the judicial system to seek warrants and prosecute violators as well as conduct formal hearings to revoke business licenses or certification/registration credentials.



Photo by PPPM staff

Agrichemical Safety and Security

In response to recent world events, PPPM strives to ensure fertilizers and pesticides are stored properly and securely to prevent terrorism and other misuse. Each year, PPPM staff inspects agrichemical containers to ensure they are properly identified, locked, and secure. PPPM also continues its outreach efforts to advise agricultural dealers and farmers on how they can help deter illicit use of agrichemicals while protecting their safe, intended use.

Bulk Agrichemical Storage Program

The program ensures that bulk storage facilities are constructed, installed, and maintained in a safe manner with the least possible impact on people, property, and the environment. MDARD conducted 48 bulk pesticide and fertilizer storage inspections in FY 2013 and issued notices of intent for incomplete secondary containment and failure to use operational containment pads.

More than 60 million gallons of Michigan agrichemicals are safeguarded through the bulk storage program. With 15 construction products in place during 2012-2013, this amount increased by 35% by the end of 2013. In 2013, PPPM registered 219 fertilizer and pesticide bulk storage facilities, issued a compliance agreement for a new construction technology, and performed numerous consultations with firms building new bulk storage containment facilities and renovating existing containment to ensure compliance with storage regulations. PPPM also continues to conduct on-farm consultations and outreach activities to inform staff, industry, and producers about on farm fertilizer storage and poly tank integrity.

Section 5 – Food Safety, Consumer Protection & Environmental Protection Statistics

Food Safety & Consumer Protection

Inspections

Total no. of inspections	1,174
Agricultural products	614
BSE rule compliance	84
Bulk agrichemical storage	48

Grain elevator sanitation.....	363
Federal contract medicated feed.....	4
State medicated feed.....	61
Complaint investigations.....	12
Products sampled.....	1,166
Feed - Nutrient.....	225
Feed - Medicated.....	222
Feed - BSE.....	100
Feed - Pathogens.....	226
Feed - Metals.....	94
Feed - Mycotoxins.....	92
Fertilizer - Nutrient.....	207

Licenses/Registrations

Animal remedies	
Product registrations.....	1,025
No. of registrants.....	111
Commercial feed manufacturer/distributor.....	1,329
Michigan firms.....	384
Out-of-state firms.....	945
Fertilizer manufacturer/distributor.....	666
Michigan firms.....	231
Out-of-state firms.....	435
Specialty fertilizer & soil conditioner	
Product registrations.....	5,086
Liming materials	
Product registrations.....	86
Agrichemical bulk storage facilities.....	219
Fertilizer product distribution.....	1.4
(July 12-June 13) Tonnage	million tons
Commercial feed product distribution.....	3.6
(July 12-June 13) Tonnage	million tons

**Agricultural Products Enforcement
(feed, seed, fertilizer, remedies, lime,
bulk storage, elevator sanitation)**

Violation notices.....	200
Failure to license/register.....	58
Stop sale.....	142
Value of violative products seized.....	\$508,452
Warning letters.....	35
Notices of intent/compliance agreements.....	3



Photo by PPPM staff



Photo by David Kenyon



Photo by PPPM staff

Environmental Protection Statistics

Licenses/Certifications/Registrations

Commercial pesticide applicator

Business licenses	2,257
Restricted use pesticide dealer licenses	275
Agricultural pesticide dealer licenses.....	342

Total certified/registered applicators	22,322
Commercial pesticide applicator	
Certifications	14,615
Private pesticide applicator	
Certifications	7,430
Commercial registered applicators	277

Total certification/registration exams

Administered	14,801
Pesticides registered in Michigan	15,551

Pesticide Inspections/Investigations

Pesticide misuse investigations	
(agriculture)	35
Pesticide misuse investigations	
(non-agriculture)	64
Planned use investigations	
(agriculture)	15
Planned use investigations	
(non-agriculture)	25
Other inspections.....	865
Restricted use pesticide sales audits	27
Federal marketplace inspections.....	15
Federal pesticide producer inspections	12

Pesticide enforcement

Advisory letters	3
Warning letters	51
Administrative penalties.....	43

Freedom of Information Act (FOIA) requests

Pesticide program requests.....	75
Plant industry program requests.....	2



Photos by PPPM staff

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