Michigan Agricultural Statistics 2002-2003

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UNITED STATES DEPARTMENT OF AGRICULTURE

Michigan
Agricultural
Statistics
Service

Michigan
Department of
Agriculture

Michigan Department Of Agriculture 2002 Annual Report

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Michigan Agricultural Statistics 2002-2003

Michigan Agricultural Statistics Service

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Issued cooperatively by:

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September 2003

The Michigan Department of Agriculture (MDA) is pleased to present its 2002 Annual Report. This report, combined with the 2002-2003 edition of the Michigan Agricultural Statistics, serves as a record of the department's accomplishments and initiatives during the year, and outlines important issues facing Michigan agriculture, our state's second-largest industry.

When MDA was created in 1921, its primary responsibility was to implement laws pertaining to the production, handling and distribution of agricultural products. The department's duties were varied, ranging from animal remedy testing to food inspection.

Throughout the years, MDA has incorporated extensive technological advances to help maintain and advance high standards for regulatory compliance and adjust to changing needs, but many of our core responsibilities remain the same. The priorities of today's MDA have broadened to include:

- Food Safety and Security
- Homeland Security
- Animal and Plant Health and Protection
- Environmental Stewardship and Protection
- A Viable Agriculture Economy
- Consumer Protection

MDA staff is dedicated to serving the citizens of Michigan with the guiding principles of integrity, credibility and excellence. We remain committed to helping Michigan's agricultural community thrive, while ensuring a fair and honest marketplace for Michigan citizens. Protecting Michigan's residents, animals, farmland and water resources, and, as always, safeguarding the quality of our food, remain MDA's top priorities.

I hope this summary of the 2002 MDA accomplishments is helpful and valuable to you. If you have questions or comments, please contact the Michigan Department of Agriculture toll-free at 800/292-3939 or by e-mail to mda-info@michigan.gov.

Sincerely,

Dan Wyant
Director

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in cooperation with the
Michigan Department of Agriculture

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September 2003

The 2002-2003 *Michigan Agricultural Statistics* publication provides a factual summary of Michigan agriculture and reflects the diversity and importance of each sector. In this Information Age it is essential to have current and reliable information. Each decision must be made faster and be based on facts not opinions. The importance of accurate, factual information is unequaled. The data in this publication helps meet that need by providing the most current and comprehensive information available for Michigan agriculture.

Outstanding cooperation and support by Michigan growers and agribusinesses made this report possible. The information provided was voluntarily given in response to numerous 2002 surveys to help make it known that "**Agriculture Counts**" in this State. These facts will become even more evident with the release of the 2002 Census of Agriculture next year. Thanks to everyone for contributing to an excellent 89.5 percent response rate.

Recent state budget reductions mean fewer print copies of this report will be available. However, having this information easily accessible remains a priority of the Michigan Department of Agriculture and U.S. Department of Agriculture National Agricultural Statistics Service. If obtaining the report on the internet at www.nass.usda.gov/mi/ is not convenient or does not fit your need, please contact us at 800-453-7501. I think you will like the re-designed website which is faster and easier to navigate. It contains all of our publications back to 1886.

The Michigan office and enumerator staff look forward to continuing to provide you with sound and reliable agricultural information. Don't hesitate to give us comments and suggestions on how we can better serve your agricultural data needs. Always remember, "Opinions may be given but Facts stand the test of time."

Sincerely,

David D. Kleweno
State Statistician

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Part I:

Michigan Department of Agriculture Annual Report 2002

ANNUAL REPORT 2002

Director's Summary

The Michigan Department of Agriculture (MDA), created in 1921, serves, promotes and protects the food, agricultural, environmental and economic interests of the people of Michigan. MDA is charged with a variety of program responsibilities that affect every person who lives, works, or simply travels through Michigan. Each division of MDA strives to reach program goals that reflect the department's main priorities of:

- Food Safety and Security;
- Environmental Stewardship;
- Animal and Plant Health and Protection;
- A Viable Agriculture Economy;
- Consumer Protection; and,
- Homeland Security.

This report highlights MDA's key achievements during 2002.

The department successfully implemented and enhanced programs to protect and preserve Michigan's food and agriculture industry, and our state's natural resources. During 2002, MDA:

- Implemented Phase I of a new web-based food inspection system, "e-Inspector." The system gives food inspectors immediate access to food safety information by allowing inspectors, statewide, to enter inspection data directly into the system via laptop computers in the field.

- Strengthened food safety measures during 2002 to stem the threat of domestic terrorism. Enhanced food safety and security measures will also increase the department's ability to trace food products to their origin and develop appropriate mitigation strategies to prevent potential pesticide or pathogen contamination in the future.

- Supported national efforts to develop coordinated emergency preparedness strategies, including an ongoing review of MDA programs, processes and procedures, to prepare for and minimize the effect of a potential terrorist attack on the state's food supply and other resources.

- Improved the state's response to foodborne illness outbreaks with the implementation of the Foodborne Illness Response Strategy (F.I.R.ST.) for Michigan. This collaborative effort with the Michigan Department of Community Health and the Michigan Association for Local Public Health establishes protocol for identifying outbreaks early and implementing effective control measures promptly to prevent additional human illness.

- Worked with producers through the Conservation Reserve Enhancement Program (CREP) to implement environmentally sound practices on agricultural lands to improve water quality, prevent soil erosion and enhance wildlife habitat. More than 2,700 miles (about the distance from New York City to Los Angeles) of 100-foot wide filter strips and riparian buffers have been implemented, 17,000 acres of wetlands restored, and 9,000 acres of native and introduced grasses planted.

- Advanced the Michigan Agriculture Environmental Assurance Program (MAEAP) to help prevent agriculture-related pollution. This innovative initiative helps participating producers use effective stewardship practices that comply with state and federal environmental laws and standards.

- Identified risks to groundwater associated with pesticide and nitrogen fertilizer use practices through the Michigan Groundwater Stewardship Program, and provided one-on-one technical assistance to nearly 11,500 farmers, coordinating local, state and federal resources to help them reduce those risks.

- Protected Michigan's farmers' right to farm while ensuring sound environmental stewardship through continued review, enhancement and implementation of scientifically based Generally Accepted Agricultural Management Practices (GAAMPs).

- Significantly increased new enrollments, and reduced the amount of land set to expire from a program to preserve farmland and open spaces. Michigan currently holds more than 50,000 of these agreements, preserving over 4.3 million acres of farmland – about 40 percent of Michigan's 10.4 million acres of agricultural production land.

- Responded to the discovery of a new exotic insect, the Emerald Ash Borer, in six counties in Southeast Michigan during the summer of 2002. The Emerald Ash Borer, an invasive species originally from Asia and

previously unknown in North America, affects ash trees. To prevent the spread of the insect, MDA quarantined all ash trees and products for the affected counties where millions of ash trees have already been killed or damaged. The state also established an Emerald Ash Borer Task Force to help control and eradicate the borer, and to minimize its damage and threat to Michigan and North America ash resources.

- Worked with federal, state and local governments and organizations to monitor for West Nile virus and other mosquito-borne viruses like Eastern Equine Encephalitis and St. Louis Encephalitis among bird, mosquito, horse and human populations.

- Continued the effort to eradicate bovine tuberculosis from Michigan's cattle herds through testing and surveillance of cattle, goats, bison and privately owned cervids. Over 832,400 livestock have been tested statewide to date. In addition, over 105,500 wild white-tailed deer have been examined for the disease. Michigan has been able to confirm that bovine TB is concentrated in a small area of Northeast Lower Michigan, and has refocused its resources accordingly. These efforts have laid the groundwork for MDA to establish zones, the first step to obtaining split state status from USDA, and enabling the majority of the state to regain TB-free status as soon as possible.

- Implemented a surveillance and response strategy for Chronic Wasting Disease. MDA oversees the licensing, registration and inspection of the state's privately owned cervid operations. This emerging disease has the potential to significantly impact both the privately owned and wild cervids if it is established in Michigan, and could cripple the state's agriculture, hunting and tourism industries. To date, MDA has tested 603 deer and elk from 53 counties for the disease, all of which have tested negative.

- Expanded value-added initiatives and marketing efforts to attract, expand or retain food processing companies, develop new products and new domestic and international markets for Michigan agricultural producers and agri-businesses.

- Fostered alliances with producers, industry organizations, and other agencies to ensure coordinated efforts for improving research opportunities and protected markets, resources and jobs in Michigan's agriculture sector.

- Encouraged participation and youth involvement in agriculture at Michigan's 87 county and local fairs and two state fairs, to help ensure that Michigan residents stay connected to their agricultural roots.

- Strengthened Michigan agriculture through the Julian-Stille Value-added Agriculture Development Grant, leveraging public funds with private investment for value-added agricultural initiatives for Michigan specialty crops. Twenty-eight projects were selected to receive $1.14 million.

- Built on existing domestic marketing efforts with the development of the "Select a Taste of Michigan Local and Organic Foods" program. The program, aimed at helping consumers and businesses identify and buy Michigan homegrown and organic foods, will be launched in early 2003.

- Prevented pesticide misuse, and the adverse health and environmental impacts that misuse can cause, through regulation of the distribution, sale and use of pesticides in Michigan.

- Ensured that gasoline sold in Michigan meets quality and quantity standards, protecting consumers against economic losses and industry against unfair trade practices. In 2002, 4.7 billion gallons of gas were sold in Michigan. More than 800 complaints were received against gasoline retailers, and 10 percent of gasoline failed to meet quality performance standards. This was a 3 percent improvement from the previous year, representing a reduction in fraud-related loss for consumers of about $176 million.

- Ensured that all transactions based on weight, measure or count were fair and accurate. In 2002, MDA responded to 800 complaints alleging short weight, short measure or item pricing violations. MDA also inspected over 14,000 devices at more than 3,800 establishments.

- Completed renovations at MDA's Geagley Laboratory in East Lansing. Equipped with the latest technology, the laboratory plays a key role in meeting a wide array of testing and diagnostic needs of the state's food and agriculture industry.

MDA Regional Offices

MDA's seven regional offices play a vital role in providing services to department customers. Located throughout the state, local experts are available to offer assistance to industry, residents and consumers quickly and efficiently.

In most cases, problems are solved at a regional level, allowing businesses to continue serving their customers effectively in accordance with state laws and regulations.

Commission Summary

Members of the Michigan Commission of Agriculture are appointed by the Governor to establish policies and provide administrative direction for the Michigan Department of Agriculture. The five Commission members are appointed for a four-year term, with confirmation of the Michigan Senate.

Commissioner Douglas E. Darling chaired the commission in 2002. Commissioner Nora M. Viau served as vice-chair and Commissioner William Pridgeon served as secretary. In 2002, Commissioners Douglas Darling and Jordan B. Tatter were re-appointed to four-year terms by the Governor. Commissioner James Maitland continued service on the commission.

The Michigan Commission of Agriculture met monthly in 2002 with the exception of May and October. In keeping with the Commission's desire to be accessible throughout Michigan, meetings were held in Grand Rapids (January), East Lansing (March, July, and September), Livonia (June), Escanaba (August), Hillsdale (November), and Traverse City (December). Remaining meetings were held in Lansing. Meeting in various parts of the state increases constituent input, and allows the Commission to get first-hand information about local issues from those directly involved. The Commission met in conjunction with Agriculture and Natural Resources Week at MSU, Ag Expo at MSU, Michigan Association of Fairs and Exhibitions Annual Convention, the Upper Peninsula State Fair, and the Michigan Farm Bureau Annual Meeting.

Bovine TB continued as the single biggest issue on the Commission agenda in 2002. Other prominent issues during 2002 were Generally Accepted Agricultural Management Practices (GAAMPs) and Right to Farm issues, Agricultural Processing Renaissance Zones, international marketing programs, agricultural development opportunities in Michigan, agricultural disasters involving frost-freeze, excess rainfall, and drought, West Nile virus, Chronic Wasting Disease and the Michigan Agricultural Environmental Assurance Program (MAEAP).

Commission staff prepared meeting notices, agendas, minutes and director's reports for each meeting. Staff also prepared nine resolutions that were adopted by the Commission during the year. The Commission conducted all of its meetings and other activities within its budget of $39,500.

Executive Office Summary

MDA's Executive Office oversees the administrative and policy issues of the department. The Executive Office consists of the director, deputy director, director of agriculture policy, legislative liaison, public information officer and support staff.

The director is appointed by the Michigan Commission of Agriculture and acts as the chief executive officer of the agency. The director also works in concert with the commission on policy issues and serves as the department's liaison with the Governor's Office and the Michigan Legislature.

The deputy director is responsible for managing the department's day-to-day operations, and works closely with the department's division directors and key program staff to oversee department functions.

The director of agriculture policy works with the director and other key personnel to review, revise and propose department programs and policies, and also serves as the key contact for federal issues and congressional contacts.

The legislative liaison is MDA's link to the Michigan Legislature and the Michigan Office of Regulatory Reform.

The public information officer serves as the department's point person and spokesperson for media contacts and the public regarding MDA programs and issues.

Division Accomplishments

Top Division Accomplishments for 2002
(October 1, 2001 – September 30, 2002):

Agriculture Development Division

The Agriculture Development Division (AgD) serves as a catalyst in expanding value-added agriculture initiatives and marketing efforts to attract, expand or retain food processing and agriculture support businesses as well as the development of new or enhanced domestic and international markets for Michigan food and agricultural products. The division also works to strengthen

profitability for Michigan's family farms and enhance opportunities for the state's food and agriculture industry. During 2002, AgD staff:

- Helped attract Michigan's first commercial ethanol plant, Michigan Ethanol LLC, in Caro, MI, which came online in November 2002. This value-added agriculture facility is expected to consume over 15 million bushels of Michigan corn annually, boosting local corn prices and expanding the local economic base by $110 million each year. Michigan Ethanol LCC will add nearly $20 million in household income annually, providing 41 direct jobs and supporting hundreds more throughout the regional economy.

- Provided leadership for the Michigan Apple Committee (MAC) and apple industry in opening the Mexican market for Michigan fresh apple shipments for the first time since adoption of the North American Free Trade Agreement (NAFTA).

- Assisted in the formation of the Michigan Sugar Beet Growers Cooperative, Inc., and facilitated the approval of a $5 million interest-free loan from the Michigan Department of Treasury to the cooperative, which enabled Michigan sugar beet farmers to purchase Michigan Sugar Company. The purchase by growers saved the company from closure, saved 350 full-time and 1,100 seasonal jobs, and maintained the $170 million economic base in the 11 Michigan counties where sugar beets are grown and processed.

- Supported the development of the Michigan Partnership for Product Agriculture, a value-added agricultural network to aid producers, food processors and agri-businesses in developing successful value-added agriculture ventures.

- Provided $150,000 through the MDA International Market Development Grant Program to 11 Michigan food and agricultural organizations. These proposals have the potential to leverage nearly $630,000, or more than a 4-to-1 basis, in federal and private resources to develop or enhance overseas markets.

- Administered the Julian-Stille Value-added Agriculture Development Grant Program, created by Public Act 322 of 2000 to strengthen Michigan agriculture by offering an opportunity for producers, food processors, agri-businesses and others to leverage public funds with private investment to foster value-added agricultural initiatives in the specialty crops industry. Twenty-eight projects were selected to receive funding totaling $1.14 million.

- Assisted in the establishment of trade opportunities with Cuba for the first time in over four decades, through a collaborative effort with Michigan Farm Bureau, Michigan Bean Commission, Michigan Bean Shippers Association and others at a trade show and educational seminar in Mexico. This resulted in a $300,000 sale of Michigan beans.

- Leveraged $70,000 in federal funds to promote Midwestern wines, including those of five Michigan wineries, which sold their first orders to three separate German importers.

- Leveraged $78,000 in federal funds and coordinated the promotion of processed apple, blueberry, cherry and cranberry products targeting the Mexican baking industry. Over 200 Mexican bakery industry professionals attended two seminars in Mexico City. Three Michigan-based fruit processors participated in a Mexican bakery trade show to meet with prospective importers of their products.

- Promoted the availability of Agricultural Processing Renaissance Zones (APRZs) to firms both in and outside of Michigan. Reviewed and recommended the approval of six APRZs to retain, expand or initiate value-added agriculture projects for Michigan's food and agriculture industry. The six new APRZs include: Keebler Company, Inc., Grand Rapids, Kent County; Graceland Fruit Company, Frankfort, Benzie County; New Era Canning Company, New Era, Oceana County; SubTerra, LLC, Carp Lake Township, Ontonagon County; Sunrise Aquaculture, LLC, Hillman, Montmorency County; and Zeeland Farm Services (ZFS), Zeeland, Ottawa County.

- Leveraged $1.6 million for the promotion and betterment of the specialty crop industries in Michigan. Grants were made available directly to Michigan commodity organizations and producers to strengthen, promote and develop markets of their specialty commodities. The USDA/MDA documented value and volume of each commodity produced in Michigan determined grant amounts available to each commodity.

- Assisted 26 Michigan firms in applying and qualifying for more than $209,500 in federal funds to reimburse their export development costs. Through membership in the Mid-America International Trade Council (MIATCO), MDA enables Michigan food producers and

processors to receive reimbursements of up to 44 percent of their export market development costs in the USDA Branded Market Access Program.

- Coordinated participation of 15 Michigan firms in the Michigan pavilion at the Food Marketing Institute/U.S. Food Export Showcase in Chicago, the largest grocery store trade show in the world. Six months after the show, participants reported sales directly resulting from the activity in excess of $650,000.

- Leveraged federal funds for Michigan food and agriculture organizations to access federal export development funds totaling nearly $606 million.

- Leveraged $180,175 in federal funds from the Federal State Market Improvement Program, funding three new projects. This was the most received by any state in this year's funding cycle. Funds went to the Midwest Nut Producers Council to conduct market place research on two new chestnut products (chestnut puree and chestnut crumble); the Michigan Asparagus Advisory Board for new product development, and MDA to create and maintain new market channels for specialty food producers based in Michigan's tourism industry.

- Attended 95 percent of regular, special and annual meetings for 15 legislatively established commodity, and worked with Assistant Attorney General to review proposed programs, statutory issues, and unpaid or unremitted assessment funds. Chaired several meetings with commodity executives and assisted the Michigan Legislature and the agricultural industry in the adoption of several amendments to Public Act 232 of 1965, the Agricultural Commodities Marketing Act, as amended.

- Conducted a producer survey of more than 2,000 agri-tourism entities in Michigan, in cooperation with Western Michigan University, to study the economic impact of agricultural tourism in Michigan.

- Assisted the Great Lakes Pork Cooperative with a membership drive to help the industry pursue value-added processing opportunities. The cooperative is currently exploring an opportunity to purchase a meat processing facility.

- Participated in Michigan Beef Quality Assurance producer training seminars across the state to certify producers as eligible to produce cattle in the Five State Beef Initiative (FSBI) system.

- Coordinated information and educational training to 1,985 individuals through the Michigan Risk Management Partnership Program. Program partners established a web site at www.michiganagrisk.org, sponsored speakers and provided financial support for several risk management outreach and educational meetings.

- Developed the concept and obtained federal funding for the Select Michigan Foods: "Select a Taste of Michigan" Organic and Local Foods Program, a partnership among MDA, Cooperative Development Services, Michigan Integrated Food & Farming Systems (MIFFS), and many local partners. MDA and MIFFS will develop and field educational campaigns to promote Michigan-produced organic and locally grown products to Michigan consumers and retailers. Although a statewide effort, the Grand Rapids area was chosen to pilot the advertising and marketing campaign. Growers will be recruited from across the state to produce product for partnering retailers.

- Served as a member of the Search and Review Committee for the C. S. Mott Endowed Chair of Sustainable Agriculture at MSU. This six-month search process resulted in the selection Dr. Michael Hamm to fill the position.

- Facilitated the development by Sietsema Farms of a $9 million feed mill near Howard City (Montcalm County), which will provide about 20 jobs in the Montcalm/Gratiot Renaissance Zone.

- Assisted in the development of a $2.5 million meat processing plant by Dublin Jerky Company near Irons, Michigan (Lake County), which will provide about 60 jobs and improve the local economy by over $10 million annually in Lake/Clare/Newaygo Renaissance Zone.

- Administered a $450,000 state grant, which was matched by private investment, to purchase $900,000 in new equipment by Michigan Turkey Producers Co-op, Inc. (MTPC), in Wyoming (Kent County). MTPC plans to launch their new "Legacy" brand in retail and institutional markets, and expand value-added turkey products over the next two years.

Animal Industry Division

The Animal Industry Division (AID) safeguards the health and welfare of livestock and domestic animals in Michigan. The division monitors animal disease, diseases

transmitted to humans by animals, and food safety hazards to protect the health of Michigan residents. The division is responsible for administering reportable animal disease programs and overseeing toxic substance contamination incidents relating to animal health. AID also enforces the humane treatment of animals through the licensing and regulation of animal shelters, pet shops, and riding stables. The state veterinarian administers the division, and supervises animal disease surveillance and eradication programs throughout the state.

The division remained very active in animal health programs in FY 2002. The division continues to address bovine tuberculosis eradication as well as the threat of Chronic Wasting Disease. Michigan's animal health emergency management planning was substantially strengthened in FY 2002. During FY 2002, AID:

- Submitted an application to the U. S. Department of Agriculture, Animal and Plant Health Inspection Service, Veterinary Services (USDA APHIS VS) for Michigan Split State Status for cattle in the National Tuberculosis Eradication Program.

- Implemented statewide zoning to split Michigan into three zones to enhance efforts to eradicate bovine tuberculosis. The three zones are designated Disease Free, Surveillance, and Infected, and each carries specific testing, movement, identification, and permitting requirements.

- Completed Michigan's Strategic Plan for the Eradication of Bovine TB, detailing Michigan's eradication project.

- Tested approximately 700,000 head of cattle statewide since the inception of the Bovine TB Eradication Project. Animals from a total of 26 herds tested positive for the disease, and were submitted for further testing. The number of positive herds identified each year has averaged between five and eight herds. Between 50 and 80 individual deer have tested positive during each year of testing.

- Enhanced the Michigan Electronic Identification Program for livestock, a program initiated in November 2001. In 2002, 21,578 head of cattle in Alpena, Montmorency, Alcona, Presque Isle, Oscoda, Cheboygan, Ogemaw, Otsego and Iosco counties received the electronic ID tags. In addition, four sale barns had stationary readers, and tracked 1,786 electronically tagged cattle through the barns. An additional two packing plants received stationary RFID readers, bringing the total to five. These readers tracked 712 electronically tagged cattle through the packing plants.

- Created a comprehensive surveillance and response plan for Chronic Wasting Disease (CWD), in concert with the Michigan Department of Natural Resources. It outlines the surveillance and testing activities of both agencies to prevent CWD from entering Michigan, plus a contingency plan should CWD be found in Michigan.

- Established a mandatory CWD surveillance plan for Michigan's privately owned cervids that will test all death losses and illnesses from herds in each county.

- Received, in June 2002, approximately $212,000 in Homeland Security Grant monies from USDA. Seven grant projects have been developed to increase animal disease surveillance activities and to improve response capabilities.

- Participated in a comprehensive two-week "Emergency Management Concepts and Issues for Animal Health Managers" training course conducted by USDA, APHIS and sponsored by the U. S. Department of Justice.

- Completed the development of Michigan Animal Disease Emergency Response System (MADERS), a cooperative project funded by USDA and involving Michigan State University, College of Veterinary Medicine (MSU CVM), Population Medicine Center; USDA, APHIS, VS; and MDA epidemiologists.

- Conducted biosecurity training for all MDA, AID and USDA, APHIS, VS field staff in Michigan. This two-day training consisted of a review of modes of spread of disease organisms, proper intervention strategies, and appropriate cleaning and disinfecting procedures.

- Handled an outbreak of avian influenza in turkeys (low pathogenicity, H5N1 strain). Ordered the destruction of 28,235 turkeys, which prevented the disease from spreading.

- Participated in a successful response to major emergence of West Nile virus (WNV). Three hundred forty-seven (347) equine cases of WNV were diagnosed in FY 2002 (no cases were found in FY 2001).

- Reached April 30, 2002, deadline for testing all equidae in Michigan for Equine Infectious Anemia (EIA). It

appears that nearly all equidae were tested, as required. Eight horses were found to be positive for EIA in FY 2002. Case investigations led to testing 150 additional exposed horses.

- Followed up on one case of Eastern Equine Encephalitis (EEE) in a horse.

- Followed up on 45 animals diagnosed positive for rabies.

- Conducted 22 tissue drug residue violation investigations. These cases are detected at slaughter and are traced back to the farm of origin for follow up to deter future violations.

- Successfully initiated changes in the USDA Scrapie Eradication, Uniform Methods and Rules to accept and reflect the Michigan Scrapie Risk Reduction Program.

- Received federal funding to implement a Johne's disease control and eradication demonstration project in four Michigan dairy herds, in cooperation with MSU, CVM, and USDA.

- Handled and completed 31 enforcement investigations. Five appearance tickets were issued. The enforcement investigations were in the following program areas: equine (11), bovine TB (4), bodies of dead animals (1), avian (2), and cervidae (1).

- Maintained Pseudorabies Stage V Free Status for Michigan swine.

- Provided animal health support at the UP State Fair and the State Fair in Detroit,

- Enhanced AID enforcement program through training with Michigan State Police.

Environmental Stewardship Division

The Environmental Stewardship Division (ESD) administers programs related to environmental protection and agriculture pollution prevention. Environmental stewardship activities ensure that farming operations protect land, water resources, and public health. During FY 2002, the division:

- Awarded 11 grants to Conservation Districts to provide technical assistance to landowners enrolled in the Conservation Reserve Enhancement Program (CREP). These districts have enrolled 2,747 miles of 100-foot wide filter strips. This accounts for 33,306 acres, the distance from Los Angeles to New York City. In addition, 15,470 acres of wetland restorations and shallow water areas for wildlife have been enrolled, 4,000 of these acres are wetlands and 11,000 acres are native warm season grass upland buffers. Additionally, 9,204 acres of highly erodible land have been enrolled into whole field conservation cover plantings, and 1,221 acres of windbreaks have been enrolled.

- Another state-sponsored component of CREP, the Livestock Access Program (LAP), provides producers 100% reimbursement for established practices to control or exclude livestock access to surface waters. Participants in LAP have installed five controlled livestock crossings, seven alternate watering sources and over six miles of exclusionary fencing.

- Launched the Michigan Agriculture Environmental Assurance Program's (MAEAP) Livestock System on-farm verification, with a total program menu of educational sessions, Comprehensive Nutrient Management Plan (CNMP) assistance, and the development of farm-specific verification. Over 1,200 producers and technical assistance providers have attended Phase 1 educational sessions. Program staff continued efforts with MAEAP partners and the Virtual University at MSU to develop a MAEAP Web site – www.maeap.org.

- Launched the MAEAP Farmstead System. Trained groundwater technicians to assist producers in assessing the risk of contaminating ground or surface water at the farmstead. A farm-specific action plan was developed to address identified risks for both livestock and non-livestock operations. Producers are encouraged to continue with on-farm verification.

- The Michigan Groundwater Stewardship Program (MGSP), in 2002, worked one-on-one with over 1,000 farmers to identify groundwater risks and to develop plans to reduce those risks. Technicians implemented a wide variety of Groundwater Stewardship Practices, including 544 abandoned well closures, 316 emergency plans, 2,130 spill kits, 2,731 acres of custom pesticide application, 14,864 acres of pre-sidedress nitrate testing and 1,346 acres of integrated pest management.

- The Michigan Pesticide Container Recycling Program recycled 39,194 pounds of properly rinsed pesticide containers at 80 agri-business sites.

- The MGSP Clean Sweep program collected, removed, and properly disposed of more than 185,000 pounds of pesticides and mercury in FY 2002. MGSP, in cooperation with county and local units of government, has established 16 permanent Clean Sweep sites located throughout the state.

- The MDA Groundwater Monitoring Program sampled 319 domestic wells in FY 2002 as part of MDA groundwater monitoring research and contamination investigations, at no charge to well owners. Many of the wells were sampled as part of an investigation into DCPA metabolite contamination of groundwater in Coloma, Michigan. Most of the remaining wells had been sampled previously by the department because they were near contaminated wells. These wells were re-sampled to ensure that they remained uncontaminated. The Groundwater Monitoring Program also screened 2,008 wells for atrazine and nitrate contamination in FY2002, at no charge to well owners.

- Through education and direct assistance, MDA/ESD field staff worked with 80 conservation districts to develop countywide resource assessments and strategic plans. These documents will guide the conservation efforts of the local conservation districts for the next three years.

- Inspected and licensed over 4,056 individual living units for migrant workers with a capacity of 23,115 workers at 870 locations. Administrated $550,000 through the migrant labor housing construction grant program, resulting in producers investing $2 million in housing construction projects, with significant improvements to over 489 living units and the establishment of 108 new living units.

- Responded to 145 new environmental complaints through the Right to Farm program, an increase in the number of complaints for any previous 12-month period. Received 27 requests for Site Selection and Odor Control verification on livestock facilities, 19 of which have been verified to date.

- Administered 33 petition projects benefiting 200 miles of drain and 1.3 million acres of farm and urban property. The drain maintenance program responded to 136 drain maintenance requests in 41 different counties improving approximately 400 miles of drains serving almost two million acres of multiple use watersheds. Seven of the drains are currently involved in multipurpose watershed projects which have received $1.9 million in grants to improve the quality of the watersheds from the Clean Michigan Initiative, Section 319 of the Clean Water Act, the Great Lakes Coastal Restoration Grant, the Great Lakes Protection Fund, and the Federal Hazard Mitigation Grant.

- Processed the renewal of 3,688 farmland and open space preservation agreements, securing 295,000 acres from development. A total of 50,000 agreements are protecting more than 4.3 million acres. Legislative changes improved the incentives for enrollment resulting in an increase, from an average of 155 new applications annually in the years 1997-2000 to 316 new applicants in 2002 alone.

- Permanently protected an additional 14,200 acres of farmland through the purchase of two additional farmland development rights easements that equaled 331 acres at a cost of $1.4 million. Two additional Farmland Development Rights Easements were donated, permanently protecting an additional 355 acres.

- Received $193,900 in 2001-2002 for the Agriculture Energy Program. The Energy Conservation Program receives funding from oil overcharge settlements to implement energy conservation practices. This program has been in place at various levels since 1987. Over $135,000 was distributed in grants and contracts for programs and projects with an energy conservation component. Efforts from these programs and projects combined to save an estimated 0.771 trillion Btu's.

- During the first 27 months of the Cooperative Resource Management Initiative (CRMI) program, staff: assisted over 15,400 landowners and other citizens on over 485,000 acres; conducted over 36,000 in-office and telephone visits and 2,300 government agency assists; facilitated over 2,000 comprehensive management plans on over 120,000 acres; conducted 1,400 public programs and demonstrations attended by more than 63,000 people; prepared and presented over 1,000 newspaper, newsletter, TV and radio articles and announcements; and provided technical assistance and referrals that enabled approximately $11.7 million of standing timber to be marketed.

Fairs, Exhibitions and Racing Division

The Fairs, Exhibitions and Racing (FER) Division oversees Michigan's state, county and local fairs, county horse racing programs, and horse racing breeding and owner assistance programs. The division also administers grant programs for the 89 fairs and the horse racing industry. FER staff during 2002:

- Partnered with the fair and festival industry to present workshops at both of their conventions on investigative techniques, disaster planning, Blue Ribbon premium program, and water quality management.

- Continued to lead a task force to study water safety issues at fairgrounds. This year nine studies were completed, including the two state fairgrounds. The team also presented a spring workshop for fairs and festivals on the study results and recommended preventive actions.

- Continued to work with the Michigan Thoroughbred Owners and Breeders Association to sponsor youth horse racing events. This year three fairs participated in youth racing.

- Offered $120,000 in competitive livestock grants to more than 30 organizations.

- Offered a statewide fine arts contest to fairs for the second year. Six classes were offered with a premium of $400 per class.

- Started the review process on Regulation 811, fair premiums. A series of focus group meetings were held at the fair convention to determine issues or concerns about current regulations. A work committee was then established, including representatives from the fairs and the livestock exhibition industry, to draft proposed revisions to the regulations. The target date for implementation is the 2004 fair season.

- Partnered with the Michigan Youth Livestock Fund to award six $1000 scholarships to youth exhibitors of the Michigan State Fair. The fund also provided $21,000 in educational awards to 125 exhibitors.

- Completed drug testing on race horses at 28 of the 29 fairs that offer county fair racing. Of the 1,635 samples collected and tested, only four were positive for illegal drugs. The crew also collected samples at 14 draft horse pulling events. There were no positive samples found in the 35 samples collected and tested.

- Funded 62.5 percent of the premiums paid for competitive exhibits at all fairs throughout the state. (This percentage is based on all premiums paid in 2001, which totaled more than $2.6 million.)

- Successfully presented the Michigan State Fair, finishing in the black for the third time in the past 30 years. The UPSF made a profit as well.

- Held a unique mat design contest at the UPSF. Over 228 proposals were submitted and 50,000 copies of the winning place mat, which advertised the UPSF and agriculture heritage at the fair, were distributed throughout the UP.

- Partnered with local schools, and International Paper to host the "technology and agriculture/natural resources challenge" at the UPSF. Power point and videos were submitted to reflect the diversity of agriculture and natural resources in Michigan.

Finance and Administrative Services Division

The Finance and Administrative Services Division (FAS) administers business processes for the department, including budget, accounting, auditing, procurement, facility management, travel arrangements and mail operations. During 2002, FAS:

- Made great strides in streamlining and clarifying the department's grants/contracts process, and developed a decision tree, available on the Intranet, for use by internal customers to decide which process to use when deploying resources.

- Improved the department's internal fiscal stewardship process through the implementation of a more structured mid-year review process and by meeting with program staff before each meeting with the executive office.

- Facilitated a number of training sessions with an emphasis on federal programs and accompanying requirements when MDA accepts federal funding.

- Closed the department books early, within the timelines required by DMB and the Governor's office.

- Clarified the role and independence of the Internal Auditor. This function now reports to the Executive Office where it maintains its audit and review independence.

- Continued a partnership with the Michigan Department of Education and the State Employees Credit Union to provide a fiscal stewardship program/brown bag lunch series for MDA and MDE.

Food and Dairy Division

The Food & Dairy Division is committed to protecting public health and ensuring a safe, secure and wholesome food supply. To achieve this, the division administers food, beverage and dairy laws in Michigan. FDD staff conducts regular inspections or oversees the inspections of food and dairy products from restaurants, farms, grocery stores and other food establishments across the state. In order to maintain a viable food industry, the division also lends support and assistance to food producers and provides information to consumers and stakeholders. All these functions support the primary mission of the Food & Dairy Division - food safety. In 2002, the Food & Dairy Division:

- Conducted 26,756 inspections at food and dairy facilities, 77 Right to Farm investigations, and 1,604 consumer complaint investigations of food facilities.

- Licensed 46,610 food service establishments, including restaurants and cafeterias.

- Licensed 17,284 retail food establishment including 1,278 temporary state/county fair retail food establishments.

- Conducted 983 enforcement actions in order to correct food safety violations.

- Implemented Phase I of the e-Inspector system, a web-based inspection system, consisting of a central database that is accessed by food supervisors and program management, and a laptop application that is utilized by field inspectors. This allows food inspection data to be captured and transmitted directly from the field to the central database. The e-Inspector system schedules inspections consistent with the food safety risk, flags inspection findings that require enforcement action, and generates management reports. While the initial implementation is underway, the ultimate goal of e-Inspector is to utilize the Internet, allowing the public to have direct access to inspection data of facilities throughout the state.

- Strengthened food safety measures during 2002 to stem the threat of domestic terrorism by maintaining a statewide foodborne illness database; working at the national level to develop coordinated preparedness strategies; providing extensive training to local health department and Food and Dairy Division staff in foodborne illness investigation techniques, and sharing of food security information and recommendations with Michigan food industry associations.

- Spearheaded the 2002 statewide rollout of the Foodborne Illness Response Strategy (F.I.R.ST.) for Michigan. F.I.R.ST. was developed through the collaboration of Michigan state and local agencies. The strategy seeks improved coordination during outbreak responses to identify outbreaks early, implement effective control measures promptly, and prevent further human illness.

- Participated in a multi-agency initiative to evaluate the safety of water supplies at nine fairs in Michigan and to identify effective risk reduction practices. This is part of an ongoing initiative to improve water quality at fairs in Michigan.

- Created and distributed publications to aid producers and consumers including ongoing issues of Food Digest and the inaugural issue of Dairy Digest, which informs dairy farmers, milk haulers and processors about the new Manufacturing Milk Law and the Grade A milk Law signed into law in January of 2002.

Human Resources Division

The Human Resources Division (HR) supports department personnel in a variety of program areas. The division is responsible for the selection, hiring and compensation of department employees, as well as the administration of employee benefits, position classification, labor relations and training. The division oversees programs that ensure equal employment and equitable representation of groups within the department's work force. Programs include: recruitment, student programs, career seminars, reasonable accommodation coordination, sexual harassment complaint investigations, health and safety coordination, and compliance with the Americans with Disabilities Act (ADA). During FY 2002, HR:

- Implemented the web-based Employee Self-Service feature of the Human Resource Management Network (HRMN). This system allows employees to access and update their own personnel records at their convenience on any computer with Internet access.

- Collaborated with the Departments of Civil Service and Management and Budget in the implementation of the state employee early retirement program. Helped 76 MDA employees transition into early retirement and coordinated the search and selection processes to hire authorized replacements.

- Coordinated and processed the hiring of 282 employees throughout the year. This included 35 full time employees, 48, non-career employees such as students and fruit/vegetable inspectors, and 199 special personal service contractual employees in State Fair operations, conservation services, horse racing operations, and animal industry activities.

- Conducted and coordinated numerous training programs throughout the year. These included conducting eight sessions of Civil Service mandated training on discriminatory harassment and workplace violence. These sessions were conducted throughout the state and reached 170 department employees.

- Coordinated a department administrative support conference attended by 85 employees.

- Conducted four two-day training sessions on targeted selection involving 25 employees. In addition, training was coordinated for approximately 300 department employees in competency development in the areas of customer service, technical expertise, leadership, problem solving, and communication.

Laboratory Division

The Laboratory Division performs scientific and analytical services that support MDA programs. The laboratory also performs tests and offers technical consultation services for other state and federal agencies, as well as fee-based services to Michigan industry and private citizens.

The Laboratory Division consists of two world-class facilities: the William C. Geagley Laboratory in East Lansing, Michigan, and the E.C. Heffron Metrology Laboratory in Williamston, Michigan.

The Geagley Laboratory performs more than 300 different biological, chemical and physical tests on a routine basis. The laboratory examines food samples, beverages, pesticides, seeds, fertilizers and feeds to ensure a safe food supply, verify labels, ensure compliance with state and federal regulations and to guarantee product quality. The Geagley Laboratory also monitors food and animal feed for contaminants, tests blood and urine from competing race horses for performance enhancing drugs, and tests livestock samples in order to prevent the spread of infectious diseases.

The Heffron Metrology Laboratory renders ultra-precise mass, volume and length calibration certification for Michigan businesses, and houses the consumer protection programs for Weights and Measures and Motor Fuels Quality. The metrology laboratory also conducts regulatory services; calibrating standards used for enforcement by the Michigan Treasury and Agriculture departments, Michigan State Police, and all county road commissions. The tests and analyses conducted by the metrology laboratory assure that weights and measures in Michigan comply with national standards, making items eligible for international trade, and preventing economic fraud and deception. During FY 2002, the Laboratory Division:

- Completed a three-year, $12 million renovation of the Geagley Laboratory. The project renovated over 65,000 square feet of laboratory space including the complete replacement of electrical, mechanical and HVAC systems as well as fume hoods, cabinetry and safety equipment. Most laboratory operations continued during the multi-phase project. The completed renovation provides the department with a world-class analytical laboratory to compliment its state of the art Metrology laboratory and ensures the production of high quality agricultural related testing and calibration services well into the future.

- Provided training on the ISO 17025 Laboratory Standard to all staff. The training prepares staff with the knowledge and skills to attain and/or maintain accreditation of their testing and calibration programs. Presently the Food and Dairy Chemistry and Microbiology programs, and the Metrology laboratory are accredited to ISO standards.

- Tested over 180,000 serum and other biological samples for Brucellosis, Equine Infectious Anemia, Pseudorabies, Johne's, Anaplasmosis and Bluetongue

diseases. Approximately 65,000 of these tests were fee-based samples that generated $290,000.

- Tested 438 bird sera and 1,617 mosquito pools for Eastern Equine and St. Louis Encephalitis in support of the department's arbovirus surveillance program. Of the bird sera samples,12 tested suspicious and three tested positive.

- In cooperation with the federal government, performed confirmation testing of Pseudorabies samples from Alabama.

- Successfully completed and passed all annual federal proficiency and check test samples in 2002 to maintain analyst certification for the lab's Animal Disease Surveillance Section.

- Performed over 190,000 tests on approximately 30,000 equine samples. Over 20,000 of these samples were submitted for Total Carbon Dioxide testing only. The TCO2 testing program is still growing. Over this past year there was approximately a 50 percent decrease in the number of positive samples, indicating that this program is still having the desired effect on controlling abuses related to "milkshaking" in race horses.

- Performed drug testing on harness horses racing at fairs and exhibitions throughout Michigan during the summer months, in cooperation with the Fairs, Exhibitions and Racing Division.

- Participated in the "split-testing program" which offers confirmation testing of equine samples that have been reported "positive" in other states.

- Offered testing of animals at various livestock shows throughout Michigan and surrounding states to help ensure integrity in livestock competitions. This resulted in additional revenue to the state.

- Re-established a routine testing program for fertilizer and feed samples after a two-year suspension due to renovation.

- Provided testing of ticks for the presence of Rocky Mountain Spotted Fever to PPPM's Rodent and Pest Control Program.

- Provided analytical services and expertise to local community health departments and for local and state law enforcement agencies investigating possible food tampering.

- Reorganized the Food, Dairy and Beverage section into two separated and distinct sections, Microbiology and Food, Feed and Fertilizer, in response to increases in microbiological programs.

- Continued to work on two federally funded programs – Microbiology Data Program (MDP) and Antimicrobial Efficacy Testing. The MDP received and tested (for Salmonella and E.coli) over 1,100 samples of fresh produce in 2002.

- Received 34 disinfectant samples and reported results on 13 product lots. One disinfectant product failed the efficacy test and was deemed ineffective. The analysis resulted in the manufacturer being issued a stop sale order by EPA.

- Received 88 samples as part of an annual apple cider project, which were tested for coliforms, generic E.coli, standard plate count and E.coli 0157:H7. None of the samples tested positive for pathogenic E. coli 0157:H7. Sixty samples contained coliforms, and two samples tested positive for non-pathogenic generic E. coli.

- Successfully participated in a mandatory on-site evaluation of the Pasteurized Milk Ordinance Program by the Food and Drug Administration (FDA), which occurs every three years. The dairy testing program became certified to run raw milk samples by two additional methods, the SNAP and Charm SL.

- Provided octane, vapor pressure, distillation range, sulfur content and oxygenates testing on motor fuels as both a monitoring program and in support of complaint investigations. Over 1,285 motor fuel samples were tested in 2002. Of those tested,137 failed to meet American Society for Testing and Materials (ASTM) standards of quality.

- Analyzed farm workers' clothing and rinses of their hands and faces for pesticide residues, as part of an EPA funded Worker Protection grant. In all, 485 samples were analyzed.

- Completed analysis of 193 groundwater samples for the presence of six corn herbicides, as part of the State Management Plan and in conjunction with the Environmental Stewardship Division.

- Received and completed 173 groundwater samples for the herbicide Dacthal as part of an investigation of groundwater contamination in Southwest Michigan.

- Provided remote testing services throughout the state to screen 1,866 groundwater samples from farmlands for the presence of triazine herbicides and nitrates.

- Analyzed 305 samples for pesticide residues collected during pesticide misuse investigations by the Pesticide & Plant Pest Management Division in 2002. Participated in the EPA/State Spring 2001 Check Sample program, receiving a satisfactory result.

- Completed testing of 45 pesticide formulation samples for label claims, in cooperation with Pesticide and Plant Pest Management Division.

- Completed testing of 15 disinfectant samples for label claims as part of the EPA- funded program.

- Re-initiated testing of dairy products after suspension due to renovation and completed pesticide analyses on five dairy samples.

- Completed pesticide analyses on 304 food and food related samples, in support of the federal Food Quality Protection Act (FQPA).

- Hosted the EPA Region 5 Workshop, September 9 –13, 2002. Eight participants from four other Region 5 states attended. The first day was spent on QA/QC issues, such as ISO 17025, document control, and measurement uncertainty. Discussions were held on analytical techniques for Genetically Modified Organisms and the differing roles of the state labs, the state lead agencies and EPA.

- Attended multiple training opportunities related to various mass spectrometry techniques as well as the Florida Pesticide Workshop, to maintain and increase staff expertise in pesticide residue analyses. The Pesticide and Environment section manager attended EPA's Region 5 Lab Director's Meeting. All members of the section received ISO training.

- Purchased, validated, and implemented new and updated analytical instrumentation which allowed the lab to produce data with lower detection limits and increased confidence in the confirmation of detected analytes.

- Validated and rotated one new commodity (onions) and several new compounds into the Pesticide Data Program workload.

- Collected approximately 1,400-1,450 samples in Michigan as part of the Pesticide and Microbiological Data Programs (PDP, MDP) in FY02.

- Received 1,054 samples in FY02 for pesticide residue analysis from sampling points throughout the U. S. as compared to 1,037 in FY01. Reported data for 799 samples to USDA and EPA for making science-based decisions in the registration of pesticides.

- Participated in two proficiency testing programs during FY 02, one from USDA-PDP and the other from the Association of Official Analytical Chemists (AOAC). Results were reported as excellent in both programs.

- Tested 71,864 stone fruit trees (excluding cherries) from 125 growers in 14 counties representing 1,324 acres, in order to declare Michigan free from plum pox virus (PPV). All samples collected were free from PPV. This was essential for the movement of stone fruit trees in the U.S., Canada and other foreign countries. The testing continues to ensure that stone fruit nursery stock in Michigan is free of the disease.

- Indexed and tested 14,000 trees from Hill Top Nurseries for several viruses to provide disease-free trees to the growers. (Hill Top Nurseries maintains these scion-wood trees of apples, peaches, plum, and bud-wood trees of cherries, apricots, nectarines and pears.)

- Tested 350,337 blueberry plants representing 23 varieties from two nurseries for five viruses, to facilitate movement of disease-free plants within Michigan, the U.S., and other countries. In addition, random screening was done for two additional viruses (blueberry shock and scorch) to protect growers from the introduction of emerging pathogens.

- Tested rose bushes to assess the incidence of apple mosaic virus in the plants that are shipped into Michigan, to ensure consumers purchase disease-free plants. The shippers are being contacted by PPPM Division to ensure that only disease-free roses are being shipped into Michigan.

- Issued 24 permits, cooperatively with the USDA Animal and Plant Health Inspection Service (APHIS), to conduct

research on poplar, grasses, sugar beets, asparagus, potato, apple, tobacco, alfalfa, cucumber, soybean, wheat and corn in Michigan. Among these, 13 permits were issued for field trials to assess insect and disease resistance, herbicide tolerance, improved oil content, altered carbohydrate metabolism, production of pharmaceutical protein and lignin biosynthesis. Nine companies and universities conducted environmental release trials in seven counties.

- Authorized five permits to import 650 plants (Rosa and Hydrangea species) under the post-entry quarantine program, to facilitate introduction of foreign genetic material to improve the quality of fruit trees and landscape material. Currently, 16,049 plants have been imported and are under post-entry quarantine.

- Tested bean samples for seed-borne diseases, to maintain the quality of dry bean seed and meet seed certification and export requirements. Tests included: Anthracnose, Common Bean Mosaic Virus and Common Bean Blight. Tested 126 samples and found three samples of certified seed and 7 samples of non-certified seed infected with common bean mosaic virus. One sample of certified dry bean seed was infected with anthracnose. All dry bean samples submitted for certification were free from common bean blight. In 2002, the number of samples submitted for certification was low as growers destroyed seed fields due to adverse climatic conditions in Michigan and competition from other states.

- Inspected 7,025 acres of seed corn submitted from four seed companies for phytosanitary certification. Inspected 127 fields submitted by four companies for bacterial, fungal and viral diseases in six counties.

- Due to the presence of Soybean Cyst Nematode (SCN) in 31 counties in Michigan, conducted a SCN survey to facilitate the movement of nursery stock and plant products for export. Collected 146 samples from 82 nurseries in 34 counties, representing 2,019 acres. In addition, analyzed 40 samples from seed potato fields in eight counties, representing 1,224 acres. None of the nurseries were found infested with SCN or Golden Cyst Nematodes.

- Conducted tests on 1,248 seed samples in enforcement of the Michigan Seed Law. In addition to purity analyses, germinations and noxious weed exams, 274 seed counts were conducted and 87 tests completed for soil content in dry bean seed in support of enforcement efforts related to the Rhizomania quarantine. Over 15 percent of the enforcement seed samples analyzed were found out of compliance with Michigan Seed Law.

- Analyzed 236 wild bird feed samples for enforcement of the Michigan Feed Law. One in four of these samples were found to contain viable noxious weeds or were misbranded/adulterated with regard to ingredient claims.

- Tested nearly 1,800 service type samples for the seed industry, farmers and for other government agencies such as the Michigan Department of Transportation and the USDA National Resources Conservation Service. Results from these tests are used to legally label seed, in decisions whether to use or sell the seed, and to verify the claims of out-of-state suppliers.

- Consulted with innumerable constituents in matters relating to seed test results, labeling, interpretations of law, seed count and more. Hosted many student tours from MSU, international groups and individuals.

- Transitioned seed section from its temporary residence at MSU back to the renovated Geagley facility. In nearly three years of cramped and sometimes awkward accommodations off-site, all seed tests were conducted and satisfactory turn-around times were maintained.

- Responded to over 700 consumer concerns about substandard gasoline and/or the wrong amount of gasoline from retailers. Retail investigations revealed that over 85 stations were found to be providing substandard fuels; 61 gasoline retailers and eight wholesalers were fined for quality violations.

- Issued over 660 warning letters to firms who were found violating the law for licensing, water content, labeling and gasoline quality.

- Monitored gasoline volatility at over 570 gasoline dispensing facilities to ensure that highly volatile fuels are not being sold in Southeast Michigan reducing their contribution to air pollution in the summer months. This assisted the area in maintaining National Ambient Air Quality Standards. One gasoline dispensing facility was found to be dispensing high volatility gasoline during routine sampling and received a corrective warning.

- Led a major overhaul of the Weights and Measures Act.

- Issued one prosecution warrant for violations of the Weights and Measures Act, P.A. 283 of 1964, as

amended, resulting in a no contest plea, with fines and costs of $6,500 assessed; issued six consent agreements, with penalties of $113,900 assessed.

- Investigated allegations of violations of the Consumer Pricing and Advertising Act, resulting in fines and costs of $275,000 being returned to MDA.

- Inspected over 14,836 weighing and measuring devices at over 3,800 establishments. In addition, over 800 complaints involving allegations of short weight, short measure, and violations of P.A. 449 (item pricing) were investigated; 17.6 percent of the commercial devices inspected failed to meet legal requirements.

- Issued 127 warnings and held 12 compliance meetings (compared with 121 and eight, respectively in 2001 and 33 and two, respectively, in 2000).

- Cooperated with auditors during an on-site audit of the E. C. Heffron Metrology Laboratory that resulted in continued accreditation to the National Voluntary Laboratory Accreditation Program (NVLAP) and the National Institute of Standards and Technology (NIST). Additionally, the NVLAP audit allowed temperature calibration to be added to the metrology laboratory's scope of accreditation.

- Acquired state-of-the-art equipment for temperature measurement within the lab's high precision balances, allowing tighter environmental control and more precise measurements for customers.

Marketing and Communications Division

The Marketing and Communications Division (MAC) coordinates MDA's response to serious incidents involving disasters or threats to food or animal safety and/or agricultural economic viability, emergency management and emergency response capabilities. The division regulates the enforcement of the Grain Dealers Act and provides producer security review services. MAC also coordinates meetings and activities for the Michigan Commission of Agriculture and the Michigan Grape & Wine Industry Council. MAC also works as an in-house agency creating a public identity for MDA. Consulting with MDA's public information officer and division experts, MAC staff helps create key communication pieces, handles promotions and special events planning, and identifies/generates marketing opportunities for the department. MAC During FY 2002, MAC:

- Established several critical communication tools at Constitution Hall, including a public meeting notice board, electronic "smart board" computer systems in conference rooms, and a satellite TV system critical for effectively handling public emergencies. Researched video conferencing, and provided audio/visual assistance to other divisions, as needed, and more.

- Coordinated MDA's response to serious incidents involving disasters or threats to food or animal safety and/or agricultural economic viability. Of these incidents, the President declared one a disaster, the Governor declared one a disaster, and three disaster requests were submitted to the Secretary of USDA.

- Coordinated participation of department emergency management staff in two drills and one exercise each for the Palisades Nuclear Power Plant in May and June and the Enrico Fermi 2 Nuclear Power Plant in August and September.

- Coordinated continued development of MDA's emergency response capabilities to meet the challenges posed by threats to Homeland Security. Represented the department on the Michigan Homeland Security Task Force, and chaired the Agriculture and Food Supply Subcommittee of the Critical Infrastructure Protection Committee.

- Represented MDA on the Michigan Hazard Mitigation Coordinating Council, participating on the Planning Committee, and the Michigan Emergency Planning and Community Right to Know Commission.

- Coordinated six public hearings and one contested case hearing during 2002. One involved a referendum for commodity organizations organized under P.A. 232 and five involved establishment or amendments to administrative rules.

- Held three public meetings at the request of the Michigan Commission of Agriculture to gather public input on Generally Accepted Agricultural and Management Practices pending decision before the Commission.

- Held two public meetings at the request of the Michigan Agriculture Preservation Fund Board to gather public input on proposed Standards, Guidelines, an Application Process, and a Scoring System for the purpose of providing grants to local units of government for the purchase of agricultural conservation easements.

- Conducted a referendum for a new commodity marketing program, for the state's ornamental plant growers.

- Coordinated two meetings of the Agricultural Marketing and Bargaining Board. Compiled data regarding MACMA (Michigan Agricultural Commodity Marketing Association) and non-MACMA purchases for processing of the 2002 apple and asparagus crops, and reported data to the board.

- Facilitated the transfer of the Producer Security Services Section from the Finance and Administrative Services Division to Marketing and Communications. This section, which includes three field auditors, a part-time licensing specialist and a financial analyst/compliance officer, regulates the enforcement of the Grain Dealers Act and provides producer security review services for the Whole Sale Potato Dealers Act (PPPM), Manufacturing and Fluid Milk Acts (F&D) and the Licensing Livestock Dealers Act (AID). The section also provides financial accounting and review services for the Agricultural Commodities Marketing Act (AgD), Bulk Feed & Fertilizer Tonnage (PPPM), and the Michigan & UP State Fairs (FER).

- Worked with the department's legislative liaison and industry to develop enforcement changes that took effect with the rewrite of the Michigan Grain Dealers Act. The rewrite of the act allows Michigan producers and grain dealers to compete with the national grain industry, while providing adequate producer security and regulatory controls.

- Conducted continuation referendums for four of the state's 15 legislatively- organized marketing programs. All four programs were producer approved for five more years.

- Processed 439 requests for information under the Freedom of Information Act.

- Co-funded with MSU, via the Michigan Grape & Wine Industry Council, an economic impact study of Michigan's wine industry. The study showed that the industry impacts our state's economy by over $75 million annually.

- Sponsored a two-day Michigan wine industry meeting in Northwest Michigan, attended by over 100 people, and coordinated and co-sponsored the Michigan Wine & Food Festival with partners Expositions, Inc., and Palace Sports & Entertainment. The 3-day outdoor wine event held, at Meadow Brook Music Festival in Rochester Hills, was attended by 9,000 people.

- Launched a "Vintage Michigan" loyalty program for consumers, offering members discounts on purchases at participating wineries and retailers. Over 500 members joined the program in the first nine months.

- Awarded research grants, totaling $129,000, for viticulture and enology research at MSU. These funds leveraged an additional $100,000 in federal funding through the USDA funded Viticulture Consortium.

- Coordinated the 2002 Michigan State Fair Wine Competition, which received a record number of entries. The Superintendent of the competition, Chris Cook, helped secure participation by two prestigious wine judges from outside the state, resulting in increased media exposure nationally.

- Welcomed four new members, appointed by the Governor, to the Michigan Grape & Wine Council. Two agencies made changes in their designee to the Council, resulting in a large turnover of members for the 10-member board.

- Expanded the department's Internet site to provide information that was formerly distributed manually, including: nursery, pesticide, animal, and food licensing; step-by-step and "how-to" guides for starting and licensing agriculture related businesses in Michigan; the Food and Dairy Division Sanitarian Training Modules in both HTML and PDF formats; dozens of databases, enabling the public to find the information they need at their convenience and freeing MDA staff for other projects; and a "Quick Guide" for food service establishment licensing.

- Migrated the MDA Web site into the e-Michigan site, www.michigan.gov. This involved the effort of numerous personnel working together over several months, including numerous weekends. The result is a uniform look and feel over the entire MDA site, continuous with the overall e-Michigan site.

- Received 420,730 visitors who traversed a total of 1,442,552 Internet pages on the MDA site in 2002. The Fairs, Racing and Recreation sub-portal received 231,101 of those 1.44 million page views in July alone.

- Designed and produced booklets, including: MDA Priorities and Accomplishments, Generally Accepted Agricultural Practices (GAAMPs), a Farm Market and U-pick Directory, the Select Michigan Specialty and Processed Foods Directory, and more.

- Enhanced and maintained the department's Intranet site that shares important and interesting internal information to MDA staff, including the development of an online (Intranet) "plan review" database that allows MDA program managers to monitor the progress of cases in the field, and gives access to the latest information on a case.

- Provided graphic arts services for all divisions, including development and production of logos, ceremonial checks, original art for displays at the Michigan State Fair, certificates, banners, maps, pie charts, power point presentations, advertisements, posters, pictorial displays and more.

- Created and designed brochures and newsletters for Chronic Wasting Disease, bovine tuberculosis, West Nile virus, Right to Farm GAAMPS, biosecurity, human health and food safety, groundwater protection, thoroughbred racing, fiscal stewardship, venison processing, analytical service testing fees, market development, and more.

- Designed and implemented a new, magazine-style Web portal intended to showcase the many ways in which the MDA enriches the lives of the people of Michigan. Called "Agriculture Every Day," the new site features entertaining and enlightening content, and planned to be officially launched in January of 2003.

Michigan Agricultural Statistics Service

The Michigan Agricultural Statistics Service (MASS) is responsible for compiling Michigan's official agricultural information database, which was established under a formal agreement between Michigan and the U.S. Department of Agriculture's National Agricultural Statistics Service (NASS).

MASS conducts numerous surveys and routinely prepares forecasts and estimates on acreage, yield and production of Michigan field crops, fruits and vegetables. Crop-weather information is provided weekly during the growing season to reflect current crop conditions and development progress. MASS also estimates Michigan's livestock, poultry and dairy populations, and tracks related commodity prices. The estimating program provides information on agricultural land values, farm numbers, land in farms, expenditures and labor. Growing areas, production and value of Michigan's floriculture industry are published annually. Another significant survey component involves collection of agriculture pesticide use data. MASS also conducts the Michigan Census of Agriculture every five years; supplemental surveys are periodically performed for aquaculture, irrigation, horticulture, and land ownership. During 2002, MASS:

- Provided county estimates for 15 major crop and livestock commodities as part of a cooperative program with MDA.

- Published the Michigan Rotational Vegetable Inventory, a complete enumeration of all Michigan commercial vegetable farms. The bulletin included the number of farms, acreage, yield, production, and prices for 19 vegetable crops. The bulletin is available in hard copy or on the Internet.

- Published the results of the 2002 Wine Grape Inventory. This provided updated wine grape information, including the number of farms, acreage, variety, and year of planting since the Rotational Fruit Inventory of 2000.

- Developed the survey methodology and collected turf management data for the first time from all sectors of the turfgrass industry. The survey, which started in the fall of 2002, was designed to measure the contribution of the industry to the state's economy, with results published in the summer of 2003.

- Prepared for the 2002 Census of Agriculture, which is conducted every five years. This involved expanding the list of potential farms to be contacted and publicizing the importance of the census through all agricultural interests in the state to maximize participation and ensure accurate statistics.

- Initiated a program for growers to earn pesticide recertification credits for completing chemical use surveys. The PPPM Division approved three surveys; growers could receive one credit for completing the survey. Approximately one-third of eligible growers in each survey earned a credit; many expressed their appreciation for the opportunity to earn credits in this way.

- Completed the initial fieldwork for the annual Tart Cherry Objective Measurement Survey in which fruit counts are made on a sample of tart cherry trees across the state. The survey was curtailed in June due to the extremely small crop and a grower loss mail survey was conducted instead. The 2002 crop was a record low 15 million pounds.

- Collected chemical use information on soybeans and seven vegetable crops. Survey data will be used to evaluate chemical use levels for the U.S. Environmental Protection Agency, to use in setting worker safety standards and in administering the Food Quality Protection Act (FQPA).

- Released the annual statistics bulletin, which included details of 2001 production, stocks, inventory, disposition, utilization and prices of agricultural commodities. The publication included MDA's annual report, Michigan rankings, record highs and lows, county estimates, and chemical usage data.

- Worked with the National Association of State Departments of Agriculture (NASDA), using telephone and field enumerator staff located throughout the state and employed by NASDA, to assist in collecting data from farmers and agribusinesses.

The Office of Racing Commissioner

The Office of Racing Commissioner (ORC) is an independent agency within MDA that regulates pari-mutuel horse racing in Michigan, in accordance with the state's Horse Racing Law and the rules of the Racing Commissioner.

The Racing Commissioner, appointed by the Governor for a four-year term, prescribes rules, regulations and conditions under which all pari-mutuel horse racing meets are conducted in the state.

The ORC allocates race dates and issues track, race meeting and occupational licenses. The office also collects license and track revenues, appoints stewards and veterinarians to represent the state, approves track-appointed officials, and monitors the daily conduct of horse racing. ORC also conducts equine and human drug testing programs, and investigates any irregularities in racing that may lead to formal hearings and sanctions. ORC functions primarily as a regulatory agency, but also focuses on improving and promoting horse racing in Michigan. During FY 2002, the ORC:

- Expanded regulatory functions through the licensing of all pari-mutuel tellers at Michigan's seven racetracks.

- Increased the level of security at racetracks by requiring track operators to develop emergency preparedness plans and train personnel in emergency procedures. ORC also introduced the use of video cameras and a mandatory sign-in procedure in the paddock and stable areas.

- Improved proficiencies in drug detection capabilities in the area of Blood-Carbon (TCO2), Salix and Eliza testing in cooperation with the Drug Testing Standards and Practices Committee of Racing Commissioners International.

- Engineered a fully integrated licensing system and issued approximately 8,500 occupation licenses in its first year of operation.

- Conducted investigations of three applications to build racetracks in the state filed by Magna Entertainment Corp., EQTAH Group Ltd., and Triple Creek Associates, LLC.

- Identified three offenders for accepting illegal telephone and Internet account wagers from Michigan residents and issued cease and desist letters in collaboration with the Michigan Attorney General.

- Initiated the collection of statistics, in partnership with Public Sector Consultants, to estimate the total economic impact of the horse racing industry on Michigan's economy. According to the report, horse racing is a $1.2 billion industry responsible for 26,200 jobs.

- Accepted the resignation of Annette Bacola as Michigan's Racing Commissioner on December 20, 2002. Bacola served as Racing Commissioner since August 1999. Welcomed Racing Commissioner Robert Geake, who was appointed December 21 for a term that extends through December 31, 2004.

Pesticide and Plant Pest Management Division

The Pesticide and Plant Pest Management (PPPM) Division, in cooperation with the U.S. Environmental Protection Agency (EPA), regulates the distribution, sale and use of pesticides in the state. Under the authority of state and federal laws, PPPM administers programs to

protect human health and the environment from potential risks related to the improper use of pesticides. The division also oversees programs to control exotic pests, certify nursery stock and other plant material for interstate shipment, inspect and grade fruits and vegetables, and certify commodities for export. PPPM also ensures consumer protection through proper storage and labeling of agricultural products such as feed, seed, fertilizer and animal remedies. During fiscal year 2002, the division:

- Worked on and implemented the State Arbovirus Emergency Response Plan as a result of the outbreak of West Nile virus (WNV) in Michigan. This plan also maintained a surveillance program looking for other arboviral diseases, including, Eastern Equine Encephalitis, St. Louis Encephalitis, and WNV. The 2002 arbovirus surveillance project involved individuals from local health departments, state agencies, mosquito control districts, and universities. In addition to previous activities such as submission of dead crows and mosquitoes for WNV analysis, PPPM monitored local mosquito suppression activities to ensure that community pesticide applications occur in compliance with regulatory requirements. PPPM also facilitated an update to the Michigan Mosquito Manual, working with numerous industry, education, state and federal partners. This manual provides a blueprint for any community to manage mosquito populations and communicate personal protection practices.

- Established quarantine measures to manage a new exotic insect - Emerald Ash Borer - identified in July 2002. Additionally, conducted intensive surveys in Southeast Michigan in order to define the limits of this destructive pest of ash trees. Over 3,000 sites (woodlots, street trees, and nurseries) were surveyed. The quarantine was implemented in six counties including, Livingston, Macomb, Monroe, Oakland, Washtenaw and Wayne, as a result of survey efforts. Also conducted outreach to the public and all those affected by this pest, including establishing a Web site, press releases; media events; various meetings with industry, forestry officials, right of way services and nursery businesses; and direct mailings to certified applicators.

- Inspected and certified more than 15,000 acres of nursery stock and more than 15,000 acres (831 fields) of commercial Christmas tree production for compliance with interstate and international trade standards.

- Issued 2,060 federal phytosanitary certificates for exports of agricultural commodities. Commodities certified for export included beans and grain, fruits and vegetables, logs and lumber and propagative plants and plant parts.

- Conducted 272 BSE (Bovine Spongiform Encephalopathy) inspections at 268 facilities producing or distributing animal feeds. More than 98 percent were in compliance with federal BSE regulations.

- Collected leaf samples from 35,932 stone-fruit trees to test them for Plum Pox Virus (PPV), as part of a national survey. All samples tested negative, providing reassurance to Michigan's $1.7 million stone fruit nursery and orchard industry.

- Coordinated the gypsy moth cooperative suppression program, resulting in the treatment of 2,271 acres in three counties. The Slow-the-Spread trapping program placed and retrieved 2,076 traps in 14 counties in both the Upper Peninsula and Lower Peninsula.

- Conducted 6,542 shipping-point inspections and 1,082 market inspections to determine the grade of produce. Produce entering Michigan from other states and foreign countries, and destined for both the fresh market and processing, was also inspected.

- Submitted 17 requests to EPA for emergency exemptions to allow the use of an unregistered pesticide to control an emergency pest problem, in accordance with Section 18 of the Federal Insecticide, Fungicide, Rodenticide Act (FIFRA).

- Conducted several pesticide product and use-related inspections and investigations, including 165 pesticide use investigations, 39 of which occurred in agricultural situations; 104 planned use inspections, 54 of which occurred at commercial applicator facilities; 55 pesticide-producing establishment inspections; 25 federal marketplace inspections; 67 restricted use pesticide audits and 1,077 compliance monitoring contacts/inspections.

- Administered 13,881 examinations to individuals seeking pesticide applicator certification or registration credentials and approved 754 seminars for recertification credits allowing 1,597 applicators to renew their credentials through continuing education programs.

- Finalized the amendments to Act 451, Part 83, Pesticide Control. Significant changes include e-commerce

regulatory authority for pesticide registration requirements, prohibitions for selling pesticides for illegal use (other than allowed by label use directions), minimum age restrictions for commercial applicator certification (18 years), and fee increases to support pesticide programs.

- Completed the rulemaking process for amending Regulation 636, Pesticide Applicators. Significant changes add two new categories for certification of applicators performing pest control on domestic animals and treating sewers for invading tree roots. Amendments also require applicators to complete the certification or registration process within six months instead of 12 months and collect recertification (continuing education) credits prior to credential expiration.

- Conducted more than 580 sanitation inspections of Michigan's 371 grain elevators and feed manufacturing facilities to ensure the safety and integrity of raw grain commodities in storage.

- Completed an EPA audit covering five years of state inspections related to federal Worker Protection Standards (WPS). Due to recent challenges and litigation related to EPA's national implementation of the WPS, EPA revised their inspection format and will implement changes through state cooperative agreements (grants). The purpose of the audit was to confirm that PPPM has taken appropriate action to update state inspection programs and conduct enforcement actions for non-compliance.

- Partnered with state agencies and stakeholders to advise agricultural dealers and farmers on how they can help deter illicit use of anhydrous ammonia while protecting its safe, intended use. Projects included presentations, press conferences, creating and updating Internet site information, and distributing bumper stickers, brochures, and tabletop displays to agricultural-related groups.

- Advised agricultural dealers and farmers on how to deter illicit use, including bioterrorism, of certain fertilizers, such as anhydrous ammonia and ammonium nitrate, while protecting their safe, intended use.

- Conducted annual inspections of commercial facilities storing bulk amounts of pesticides and fertilizers. In 2002, the structural compliance rate went from 60 percent to nearly 100 percent. In one year's time, MDA worked with industry to ensure that all commercial facilities storing bulk agrichemcials in Michigan have containment.

Conclusion

As you can see, the Michigan Department of Agriculture plays an extensive role in the daily lives of Michigan residents. The administration and staff of MDA respectfully submit this report to the citizens of Michigan. We hope you find it informative and useful.

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Michigan Agricultural Statistics 2002-2003

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Rank in U.S. agriculture by selected commodities, 2002

Rank	Item	Unit	Quantity	Percent of U.S.	Leading state
			Thousands	*Percent*	
1	Beans, dry, black	Cwt	2,030	65.2	Michigan
	Beans, dry, cranberry	Cwt	290	80.8	Michigan
	Blueberries	Pounds	64,000	33.4	Michigan
	Cucumbers (for pickles)	Tons	158.7	25.7	Michigan
	Flowering hanging baskets	Number	3,917	10.5	Michigan
	Geraniums (seed and cuttings)	Pots	21,402	21.1	Michigan
	Impatiens	Flats	2,289	16.7	Michigan
	Other potted perennials	Pots	26,813	14.7	Michigan
2	Beans, dry, all	Cwt	4,903	16.4	North Dakota
	Beans, dry, light red kidney	Cwt	260	21.7	Nebraska
	Beans, dry, navy	Cwt	1,620	30.5	North Dakota
	Beans, dry, small red	Cwt	208	34.4	Idaho
	Carrots (fresh market)	Cwt	1,452	5.0	California
	Celery	Cwt	987	5.3	California
	Cherries, tart	Pounds	15,000	24.0	Washington
	Hosta	Pots	1,857	16.9	South Carolina
	Marigolds	Flats	688	11.6	California
	Petunias	Flats	1,360	12.2	California
	Squash	Cwt	1,564	18.1	California
3	Apples	Pounds	500,000	5.8	Washington
	Asparagus	Cwt	219	11.7	California
	Beans, dry, dark red kidney	Cwt	130	12.1	Minnesota
	Cucumbers (fresh market)	Cwt	1,140	10.0	Georgia
	Grapes, Niagara	Tons	13.9	25.0	New York
	Vegetable type bedding plants	Flats	561	7.0	California
4	Cherries, sweet	Tons	2.7	1.5	Washington
	Grapes, Concord	Tons	25.3	6.6	Washington
	Sugarbeets	Tons	3,204	11.6	Minnesota
	Tomatoes (processing)	Tons	112.0	1.0	California
5	Beans, snap (processing)	Tons	60.0	7.2	Wisconsin
	Carrots (processing)	Tons	32.2	8.1	Washington
	Grapes, all	Tons	42.7	0.6	California
	Pumpkins	Cwt	600	7.6	Illinois
	Plums	Tons	2.5	0.1	California
7	Maple syrup	Gallons	66	4.9	Vermont
8	Milk	Pounds	5,945,000	3.5	California
10	Potatoes	Cwt	13,878	3.0	Idaho
11	Corn, for grain	Bushels	232,300	2.6	Iowa
	Soybeans	Bushels	78,155	2.9	Iowa
	Wheat, winter	Bushels	32,830	2.9	Kansas
14	Hogs, as of Dec. 1	Head	860	1.5	Iowa
18	Hay, all	Tons	3,700	2.4	Texas
21	Cash receipts	Dollars	3,390,072	1.8	California
31	Cattle, as of Jan. 1	Head	990	1.0	Texas

Number of farms and land in farms by economic sales class, 1998-2002 [1]

Year	Economic sales class			Total	Average size of farm
	$1,000-$9,999	$10,000-$99,999	$100,000 and over		
	1,000 farms	*1,000 farms*	*1,000 farms*	*1,000 farms*	
1998	27.0	17.0	8.0	52.0	
1999	28.5	16.5	8.0	53.0	
2000	27.5	16.5	8.0	52.0	
2001	28.5	15.5	8.0	52.0	
2002	28.5	15.5	8.0	52.0	
	Million acres	*Million acres*	*Million acres*	*Million acres*	*Acres*
1998	1.9	2.8	5.7	10.4	200
1999	1.9	2.8	5.7	10.4	196
2000	1.9	2.8	5.7	10.4	200
2001	1.8	2.7	5.9	10.4	200
2002	1.8	2.8	5.8	10.4	200

[1] USDA estimates of farm number and land in farms are based on the definition "a farm is any establishment from which $1,000 or more of agricultural products were sold or would normally be sold during the year."

Farm real estate: Values and cash rents, 1999-2003

Year	Farm real estate average value per acre	Cropland	
		Average value per acre	Average cash rent per acre
	Dollars	*Dollars*	*Dollars*
1999	1,850	1,670	60
2000	2,150	2,000	60
2001	2,300	2,100	60
2002	2,500	2,300	60
2003	2,700	2,400	60

Farm Income

Net farm income in 2002 fell 20 percent to $194 million. That was despite $189 million of government payments. The total agriculture output was $4.02 billion dollars, up 1.5 percent from 2001. Production expenses were $4.00 billion in 2002, down 1.3 percent from the previous year.

Preliminary cash receipts from 2002 marketings of Michigan crops, livestock and livestock products totaled $3.39 billion, down 3.3 percent from 2001. Michigan ranked twenty-first nationally in total cash receipts.

Crop receipts, at $2.13 billion, were up 5.7 percent from 2001. A decline in the market value of fruit crops was offset by increases in field crop and vegetable marketings. Livestock cash receipts were down 15.6 percent from a year earlier to $1.26 billion.

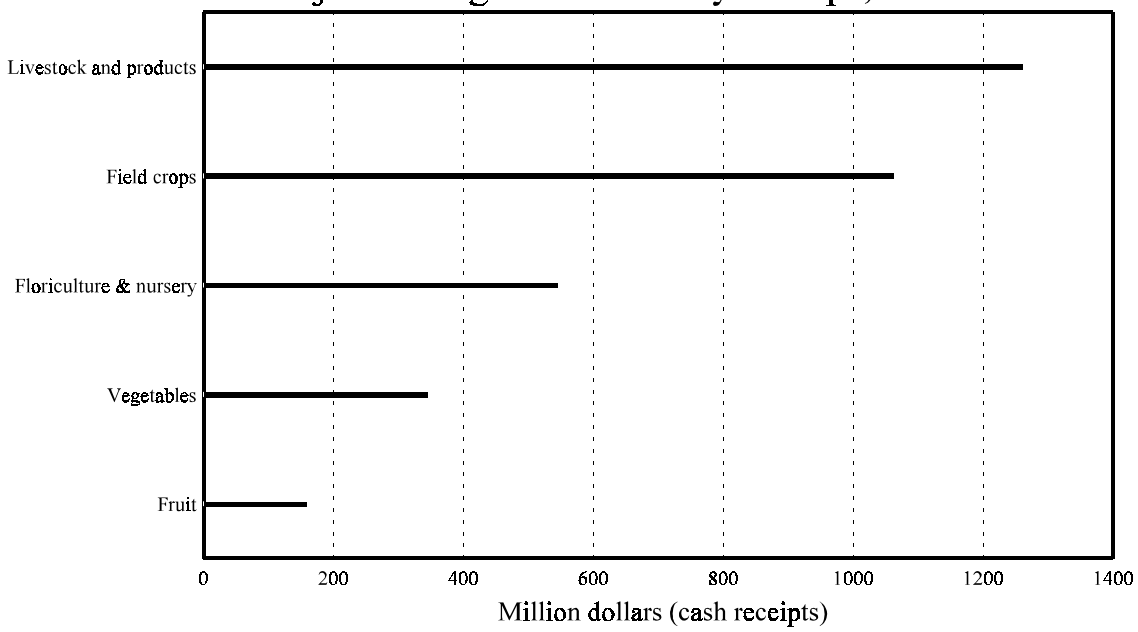
In 2002, the top ten Michigan commodities ranked by cash receipts were: milk, soybeans, corn, cattle and calves, woody ornamentals, hogs, annual bedding plants, sugarbeets, wheat, and potatoes.

Government payments, 1998-2002 [1]

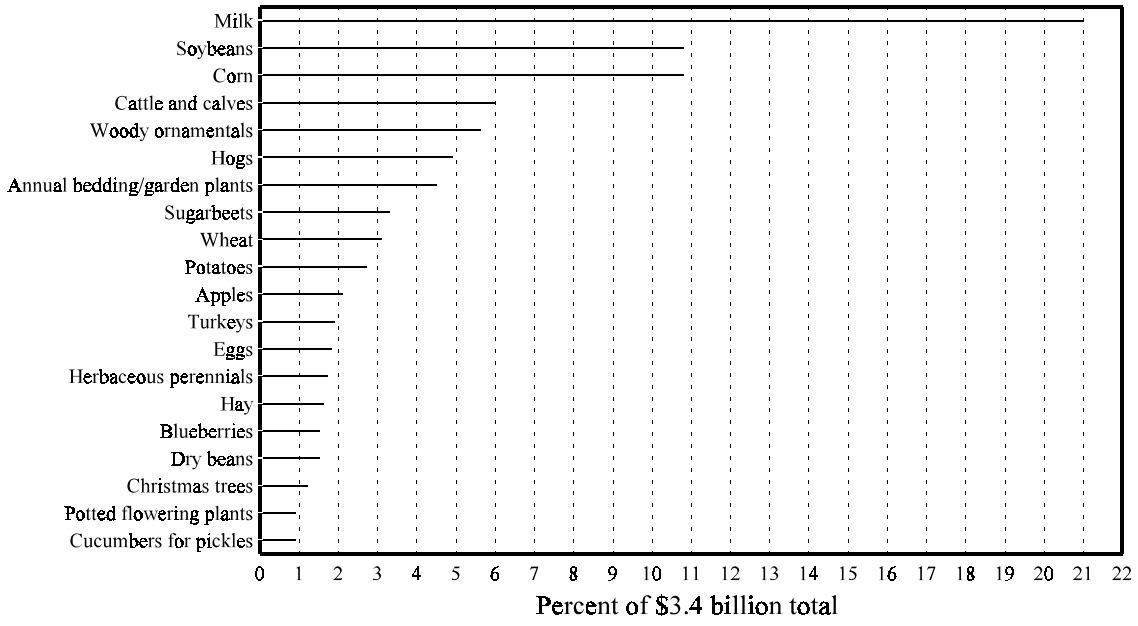
Program	1998	1999	2000	2001	2002
	1,000 dollars	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Conservation programs	17,488	16,893	16,842	21,335	28,193
Production flexibility contract payments	NA	NA	NA	NA	1,684
Direct payments	100,556	87,116	87,564	68,405	59,438
Loan deficiency payments	38,577	131,482	112,565	101,666	24,332
Miscellaneous programs	51,755	10,569	17,713	17,962	[2] 37,651
Supplemental Funding	NA	[3] 143,076	146,372	143,398	NA
Milk income loss payments	NA	NA	NA	NA	37,215
Total	208,077	389,099	381,056	352,766	188,513

[1] Source: U.S. Department of Agriculture, Economic Research Service.
[2] Programs included are disaster, marketing loan gains, and ad hoc and emergency programs; CAT, NAP, and repayments are no longer included.
[3] Provided by the Omnibus Supplemental Appropriations Act of 1999 and the Emergency Assistance Provisions of Agriculture Appropriation 2000.

Major Michigan Commodity Groups, 2002



Top 20 Commodities in Cash Receipts, 2002



Value added to the economy by the Michigan agricultural sector 1998-2002 [1]

Item [2]	1998	1999	2000	2001	2002
	Million dollars	*Million dollars*	*Million dollars*	*Million dollars*	*Million dollars*
Final crop output	2,134.2	2,269.3	1,997.4	1,881.9	2,248.4
Food grains	67.7	71.5	78.4	99.4	104.3
Feed crops	418.5	369.5	344.6	405.8	424.2
Oil crops	412.8	312.2	324.5	292.9	365.3
Fruits and tree nuts	217.2	246.4	238.5	214.9	157.7
Vegetables, potatoes, dry beans	429.3	452.0	402.6	351.2	394.6
All other crops	635.1	683.2	594.5	650.4	684.3
Home consumption	3.6	3.8	3.6	3.7	3.7
Value of inventory adjustment [3]	-50.1	130.8	10.7	-136.4	114.3
Final animal output	1,335.1	1,299.0	1,317.7	1,512.3	1,261.0
Meat animals	338.2	387.9	458.6	443.0	373.1
Dairy products	814.0	801.4	729.5	883.1	712.1
Poultry and eggs	119.2	90.9	98.7	119.2	123.6
Miscellaneous livestock	48.6	47.6	47.1	46.9	50.9
Home consumption	9.3	9.7	11.3	9.6	9.0
Value of inventory adjustment [3]	5.8	-38.5	-27.4	10.5	-7.7
Services and forestry	444.1	481.7	477.9	562.3	508.4
Machine hire and custom work	49.7	37.9	30.0	55.7	33.6
Forest products sold	10.0	10.0	10.0	10.0	10.0
Other farm income	91.9	95.7	92.7	125.2	92.1
Gross imputed rental value-farm dwellings	292.5	338.1	345.2	371.5	372.7
Final agricultural sector output	3,913.4	4,050.0	3,792.9	3,956.5	4,017.8
less: Purchased inputs	2,195.0	2,157.5	2,218.6	2,415.3	2,340.4
Farm origin	657.4	623.1	660.9	711.9	724.4
Feed purchased	373.8	329.6	344.7	369.7	387.0
Livestock and poultry purchased	39.2	44.1	53.0	58.9	41.7
Seed purchased	244.4	249.4	263.2	283.2	295.8
Manufactured inputs	663.9	635.7	680.3	693.9	672.9
Fertilizers and lime	249.9	235.2	236.9	255.9	235.9
Pesticides	228.7	217.9	225.1	211.8	216.7
Petroleum fuel and oils	128.7	124.3	160.4	162.4	153.7
Electricity	56.6	58.3	58.0	63.7	66.7
Other intermediate expenses	873.7	898.7	877.4	1,009.5	943.2
Repair and maintenance of capital items	308.1	297.8	273.7	375.7	300.9
Machine hire and custom work	77.5	72.5	75.6	120.0	81.1
Marketing, storage, and transp. expenses	93.1	114.0	122.4	97.4	121.6
Contract labor	21.6	16.0	14.0	22.9	17.3
Miscellaneous expenses	373.4	398.6	391.6	393.5	422.3
plus: Net government transactions	-14.2	180.3	151.4	124.1	-34.2
plus: Direct Government payments	210.6	401.4	381.1	352.8	188.5
less: Motor vehicle reg. and licensing fees	10.5	9.3	8.6	10.0	8.7
less: Property taxes	214.3	211.8	221.0	218.7	214.1
Gross value added	1,704.2	2,072.9	1,725.8	1,665.4	1,643.1
less: Capital consumption	538.7	565.7	581.3	595.7	615.5
Net value added	1,165.4	1,507.1	1,144.5	1,069.6	1,027.6
less: Payments to stakeholders	799.9	782.5	850.9	828.6	833.8
Employee compensation (total hired labor)	511.0	496.5	567.4	560.9	578.2
Net rent received by nonoperator landlords	28.0	29.6	11.9	21.1	21.7
Real estate and nonreal estate interest	260.9	256.5	271.6	246.6	234.0
Net farm income	365.5	724.6	293.6	241.1	193.7

[1] Source: U.S. Department of Agriculture, Economic Research Service.

[2] Final sector output is the gross value of the commodities and services produced within a year. Net value-added is the sector's contribution to the National economy and is the sum of the income from production earned by all factors-of-production. Net farm income is the farm operator's share of income from the sector's production activities. The concept presented is consistent with that employed by the Organization for Economic Cooperation and Development.

[3] A positive value of inventory change represents current-year production not sold by December 1. A negative value is an offset to production from prior years included in current-year sales.

Cash receipts by commodity groups and selected commodities 1998-2002 [1]

Item	1998	1999	2000	2001	2002
	1,000 dollars	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
Total cash receipts	3,500,694	3,462,584	3,316,884	3,506,871	3,390,071
Total livestock and products	1,320,034	1,327,853	1,333,868	1,492,242	1,259,700
Meat animals	338,236	387,877	458,574	442,970	373,105
Cattle and calves	196,656	235,829	255,892	227,930	204,629
Hogs	138,347	149,937	200,485	212,599	165,928
Sheep and lambs	3,233	2,111	2,197	2,441	2,548
Dairy (milk)	813,960	801,420	729,495	883,120	712,085
Poultry and eggs	119,233	90,914	98,739	119,207	123,620
Eggs	57,639	53,655	56,739	61,063	59,459
Turkeys		35,092	40,460	56,700	62,832
Other	61,594	2,167	1,540	1,444	1,329
Miscellaneous livestock	48,605	47,642	47,060	46,945	50,890
Honey	4,488	4,095	3,240	3,694	7,429
Mink pelts	1,854	1,339	1,719	1,445	1,809
Trout	1,151	1,113	1,037	823	663
Other	41,112	41,095	41,064	40,983	40,989
Total crops	2,180,660	2,134,731	1,983,016	2,014,629	2,130,371
Field crops	1,109,725	1,012,477	937,336	941,909	1,061,744
Corn	380,769	328,897	295,917	346,105	364,637
Dry beans	101,836	135,567	75,340	24,669	49,416
Hay	32,468	35,272	45,379	56,232	54,991
Soybeans	412,373	311,866	324,092	292,548	364,915
Sugarbeets	101,586	115,915	106,514	112,056	111,499
Wheat	67,293	70,789	77,613	98,841	103,819
Other	13,400	14,171	12,481	11,458	12,467
Vegetables	327,465	316,386	327,279	326,505	345,157
Asparagus	17,320	18,822	18,075	12,516	11,703
Beans, snap	21,659	19,493	16,778	15,614	17,005
Carrots	19,281	16,717	19,292	25,358	21,033
Celery	13,327	11,005	13,421	12,650	14,441
Corn, sweet	12,900	13,282	13,430	11,880	16,800
Cucumbers, fresh	21,366	22,506	25,192	24,200	20,520
Cucumbers, pickles	21,970	26,076	38,700	30,843	30,153
Onions	10,077	8,866	9,127	9,655	9,347
Peppers, green, fresh	8,640	9,600	10,395	8,008	9,600
Potatoes	82,603	82,258	87,362	91,478	92,925
Pumpkins			8,448	6,336	9,600
Squash			9,333	15,254	22,365
Tomatoes, fresh	18,596	16,549	18,115	13,230	10,889
Tomatoes, processing	7,560	7,308	6,804	8,432	9,296
Other	72,166	63,904	32,807	41,051	49,480
Fruit	217,243	246,377	238,523	214,916	157,667
Apples	93,808	98,551	91,304	78,280	70,925
Blueberries	30,260	54,660	55,140	49,840	52,240
Grapes	19,820	21,083	24,156	10,110	14,757
Peaches	11,546	5,440	11,340	12,503	4,452
Strawberries	7,089	6,412	6,145	4,682	3,804
Sweet cherries	18,551	14,149	10,290	11,092	2,222
Tart cherries	32,162	42,134	36,370	44,412	7,192
Other	4,007	3,948	3,778	3,997	2,075
Miscellaneous crops	17,783	16,552	17,926	19,554	20,885
Floriculture and nursery	508,444	542,939	461,952	511,745	544,918

[1] Source: U.S. Department of Agriculture, Economic Research Service.

Soybean production costs and returns, excluding direct Government payments, 2000-2001

Item	United States		Northern Crescent [1]	
	2000	2001	2000	2001
	Dollars per planted acre	*Dollars per planted acre*	*Dollars per planted acre*	*Dollars per planted acre*
Gross value of production	182.45	178.45	182.04	150.59
Operating costs:				
Seed	19.18	22.59	19.37	25.34
Fertilizer	7.87	8.32	13.12	14.30
Soil conditioners	0.14	0.11	0.20	0.20
Manure	0.84	1.09	2.01	2.68
Chemicals	22.32	22.89	25.07	26.51
Custom operations	5.94	6.13	6.51	6.83
Fuel, lube, and electricity	8.60	8.77	8.95	8.94
Repairs	10.17	10.56	9.79	10.23
Purchased irrigation water	0.06	0.06	0.00	0.00
Interest on operating capital	2.16	1.36	2.45	1.60
Total, operating costs	77.28	81.88	87.47	96.63
Allocated overhead:				
Hired labor	2.03	2.04	2.13	2.22
Opportunity cost of unpaid labor	19.49	20.17	26.42	27.70
Capital recovery of machinery and equipment	53.61	55.75	53.88	56.41
Opportunity cost of land (rental rate)	80.12	81.98	67.40	68.71
Taxes and insurance	7.01	7.14	7.10	7.21
General farm overhead	14.56	15.17	15.06	15.62
Total, allocated overhead	176.82	182.25	171.99	177.87
Total, costs listed	254.10	264.13	259.46	274.50
Value of production less total costs listed	-71.65	-85.68	-77.42	-123.91
Value of production less operating costs	105.17	96.57	94.57	53.96
Supporting information:				
Yield (bushels per planted acre)	41	43	41	37
Price (dollars per bushel at harvest)	4.45	4.15	4.44	4.07
Enterprise size (planted acres) [2]	220	220	115	115
Production practices: [2]				
Irrigated (percent)	5	5	3	3
Dryland (percent)	95	95	97	97

[1] Includes NE Minnesota, Wisconsin, Michigan, NE Ohio, Pennsylvania, New York, and New England.
[2] Developed from survey base year, 1997.

Livestock and products: Marketing year average prices received by farmers, 1998-2002

Marketing year	All hogs per cwt	All beef per cwt [1]	Cows per cwt [2]	Steers and heifers per cwt	Milk cows per head [3]	Calves per cwt	Market eggs per dozen	All milk wholesale per cwt	Turkeys per pound [4]
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
1998	33.90	47.70	34.40	55.40	1,130	51.70	0.496	15.30	
1999	29.80	50.50	35.30	58.70	1,310	68.90	0.420	14.80	0.41
2000	40.70	56.00	38.10	63.60	1,350	102.00	0.419	12.90	0.34
2001	41.70	58.80	41.70	66.10	1,460	109.00	0.437	15.20	0.35
2002	30.70	54.20	39.00	60.50	1,580	104.00	0.402	12.10	0.35

[1] Combined price for "Cows" and "Steers and Heifers."
[2] Beef cows and cull dairy cows sold for slaughter.
[3] Sold for dairy herd replacement only. Prices published January, April, July, and October.
[4] Data not available prior to 1999.

Livestock and products: Monthly prices received by farmers, 2002-2003

2001-2002 Marketing years	All hogs per cwt	Beef cattle per cwt [1]	Cows per cwt [2]	Steers and heifers per cwt	Milk cows per head [3]	Calves per cwt	Market eggs per dozen	All milk wholesale per cwt
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
2001								
December	31.30						0.420	
2002								
January	35.20	54.90	40.50	61.00	1,550	105.00	0.460	13.70
February	36.70	56.90	42.50	63.00		110.00	0.370	13.30
March	34.40	57.70	43.00	64.00		110.00	0.570	12.60
April	28.50	55.70	41.00	62.00	1,650	109.00	0.280	12.50
May	30.80	55.90	41.50	62.00		110.00	0.240	12.20
June	32.10	55.20	41.50	61.00		108.00	0.420	11.50
July	33.80	53.60	41.00	59.00	1,600	105.00	0.350	11.10
August	29.60	53.20	39.50	59.00		100.00	0.410	11.50
September	24.10	51.90	37.50	58.00		97.00	0.380	11.60
October	27.20	51.40	36.00	58.00	1,500	95.00	0.350	12.00
November	26.40	51.50	34.00	59.00		95.00	0.580	11.90
December		52.40	34.50	60.00		90.00		11.80
2002								
December	28.40						0.540	
2003								
January	29.20	54.90	36.00	63.00	1,400	92.00	0.530	11.80
February	32.00	57.50	37.50	66.00		90.00	0.450	11.60
March	32.20	58.60	39.00	67.00		88.00	0.540	11.00
April	32.70	59.60	40.00	68.00	1,350	88.00	0.540	11.10
May	37.40	61.80	42.50	70.00		91.00	0.390	11.30
June	41.10	63.00	42.00	72.00		95.00	0.500	11.10
July	40.40	62.20	44.00	70.00	1,350	93.00	0.540	12.00
August								
September								
October								
November								
December								

[1] Combined price for "Cows" and "Steers and Heifers."
[2] Beef cows and cull dairy cows sold for slaughter.
[3] Sold for dairy herd replacement only. Prices published January, April, July, and October.

Dry edible beans: Percent of sales by month, 1997-2002

Month	1997-98	1998-99	1999-00	2000-01	2001-02
	Percent	*Percent*	*Percent*	*Percent*	*Percent*
September	5	30	49	10	5
October	16	12	17	23	13
November	11	6	3	14	23
December	16	10	3	28	18
January	11	20	3	10	11
February	10	5	1	4	9
March	6	3		5	7
April	6	4	3	1	4
May	5	7	2	2	2
June	5	1	3	1	2
July	5	1	5	1	1
August	4	1	11	1	5

Corn: Percent of sales by month, 1997-2002

Month	1997-98	1998-99	1999-00	2000-01	2001-02
	Percent	*Percent*	*Percent*	*Percent*	*Percent*
October	5	16	20	9	9
November	20	14	19	14	27
December	19	14	8	12	8
January	16	12	15	12	10
February	9	6	4	7	4
March	7	8	7	7	3
April	5	3	4	6	5
May	5	4	4	4	3
June	4	5	4	5	5
July	3	5	4	11	10
August	3	9	6	7	9
September	4	4	5	6	7

Hay: Percent of sales by month, 1997-2002

Month	1997-98	1998-99	1999-00	2000-01	2001-02
	Percent	*Percent*	*Percent*	*Percent*	*Percent*
June	13	13	17	12	18
July	13	13	10	12	17
August	9	9	9	8	16
September	6	6	3	5	6
October	6	6	7	7	6
November	12	5	8	10	7
December	12	6	14	12	6
January	8	7	10	8	6
February	6	11	9	9	6
March	7	11	6	8	4
April	5	9	5	6	4
May	3	4	2	3	4

Oats: Percent of sales by month, 1997-2002

Month	1997-98	1998-99	1999-00	2000-01	2001-02
	Percent	*Percent*	*Percent*	*Percent*	*Percent*
July	7	23	17	9	19
August	39	25	35	37	19
September	7	9	11	6	4
October	2	3	7	3	3
November	2	2	1	4	2
December	2	2	4	4	6
January	1	4	2	9	5
February	4	7	3	8	2
March	11	2	6	4	28
April	15	5	3	3	2
May	4	9	3	4	6
June	6	9	8	9	4

Soybeans: Percent of sales by month, 1997-2002

Month	1997-98	1998-99	1999-00	2000-01	2001-02
	Percent	*Percent*	*Percent*	*Percent*	*Percent*
September	1	12	8	6	2
October	31	34	33	25	25
November	19	8	7	11	20
December	8	9	7	9	6
January	8	8	12	14	9
February	7	5	3	6	4
March	5	7	7	5	6
April	4	5	4	7	2
May	4	2	3	8	2
June	5	4	4	5	7
July	4	3	4	3	9
August	4	3	8	1	8

Wheat: Percent of sales by month, 1997-2002

Month	1997-98	1998-99	1999-00	2000-01	2001-02
	Percent	*Percent*	*Percent*	*Percent*	*Percent*
July	20	30	42	32	50
August	27	12	18	15	18
September	7	21	2	12	7
October	3	4	2	6	4
November	25	3	1	1	2
December	3	6	1	3	4
January	3	5	12	11	4
February	5	3	2	6	3
March	2	6	12	5	1
April	2	3	3	5	4
May	2	3	2	2	1
June	1	4	3	2	2

Crops: Marketing year average prices received by farmers, 1998-2002 [1]

Year	Corn per bushel	Winter wheat per bushel	Oats per bushel	Soybeans per bushel	Dry beans per cwt	Navy beans per cwt	Fall potatoes per cwt	All hay per ton	Alfalfa hay per ton
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
1998	1.90	2.33	1.42	4.99	21.60	NA	6.70	89.00	90.00
1999	1.78	2.12	1.35	4.61	16.80	NA	6.80	69.00	72.00
2000	1.90	2.11	1.30	4.54	13.70	NA	6.70	62.50	64.50
2001	1.97	2.43	1.80	4.47	24.60	NA	7.65	70.50	73.50
2002	2.30	3.30	1.75	5.50	14.50	NA	7.80	80.00	82.00

[1] Marketing year average prices received by farmers are based on monthly prices weighted by monthly marketings during specific periods. Prices do not include allowance for CCC loans outstanding, purchases by the government, or deficiency payments.

Crops: Monthly prices received by farmers, 2001-2002

Year	Corn per bushel	Winter wheat per bushel	Oats per bushel	Soybeans per bushel	Dry beans per cwt	Navy beans per cwt	Fall potatoes per cwt	All hay per ton	Alfalfa hay per ton
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
2001									
June								52.00	55.00
July		2.34	1.40				6.50	69.00	75.00
August		2.42	1.36				6.90	75.00	75.00
September		2.39	1.46	4.76	21.20	18.00	6.35	74.00	75.00
October	1.82	2.46	1.57	4.06	23.50	19.20	6.45	74.00	75.00
November	1.75	2.61	1.80	4.09	25.30	21.50	7.10	74.00	75.00
December	1.90	2.89	2.10	4.16	24.50	22.30	7.20	79.00	80.00
2002									
January	1.93	2.81	2.32	4.24	24.60	22.20	7.80	79.00	80.00
February	1.90	2.63	1.99	4.26	24.20	23.20	8.25	77.00	80.00
March	1.92	2.65	2.03	4.44	26.90	23.00	9.20	77.00	80.00
April	1.88	2.49	2.49	4.66	28.70	20.80	9.40	84.00	85.00
May	1.95	2.50	2.34	4.65	30.00	20.70	9.40	73.00	75.00
June	1.97	2.69	2.30	4.97	27.10	15.30	10.00		
July	2.16			5.46	27.50	14.00			
August	2.44			5.56	20.00	14.60			
September	2.41								
2002									
June								54.00	55.00
July		3.11	1.80				9.70	63.00	65.00
August		3.34	1.70				7.20	85.00	85.00
September		3.54	1.66	5.37	15.70	15.00	6.50	84.00	85.00
October	2.31	3.76	([1])	5.25	14.80	14.80	6.40	89.00	90.00
November	2.31	3.87	1.64	5.67	13.00	11.40	7.05	104.00	105.00
December	2.30	3.39	1.82	5.66	15.20	13.00	7.40	99.00	100.00
2003									
January	2.33	3.53	1.97	5.68	17.40	10.50	7.75	95.00	95.00
February	2.36	3.17	1.84	5.63	15.70	11.60	8.10	98.00	100.00
March	2.41	3.35	2.39	5.73	12.50	9.50	8.70	103.00	105.00
April	2.43	3.26	2.15	5.94	17.70	11.60	9.10	99.00	100.00
May	2.45	3.20	2.13	6.28	15.20	12.60	9.30	99.00	95.00
June	2.43	([2])	2.22	6.08	14.00	13.90	([1])	89.00	95.00
July	2.26	3.10	1.84	6.06	18.00	15.10	8.70	89.00	95.00
August									
September									

[1] Insufficient sales to establish a price.
[2] Price not published to avoid disclosure of individual firms.

Prices paid by farmers, 1999-2003 [1]

Item	Unit	1999	2000	2001	2002	2003
		Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Dairy feed, 16% protein [2]	Ton	171	167	184	184	190
Hog concentrate, 38-42% protein [2]	Ton	273	288	290	298	313
Soybean meal, 44% protein [2]	Cwt	9.50	10.90	11.00	11.50	11.70
Gasoline, unleaded, bulk [2]	Gallon	1.17	1.48	1.48	1.40	1.64
Diesel fuel [2]	Gallon	0.76	1.12	1.15	1.00	1.28
Tractor, 110-129 hp [3]	Each	60,100	62,400	63,000	63,700	63,800
Tractor, 200-280 hp, 4-wd [3]	Each	116,000	120,000	127,000	132,000	133,000
Planter, row crop, 8-row [3]	Each	26,000	26,900	28,800	29,000	30,000
Grain drill, press, 23-25 openers [3]	Each	15,600	17,500	18,500	23,100	20,300
Combine, self-prop. w/ grain head, large cap. [3]	Each	142,000	146,000	152,000	156,000	159,000
Ammonium nitrate [4]	Ton	168	181	243	180	224
Muriate of potash 60-62% K_2O [4]	Ton	166	162	167	161	162
Superphosphate, 44-46% P_2O_5 [4]	Ton	252	227	229	215	238
Anhydrous ammonia [4]	Ton	211	231	408	254	368
Atrazine, 4#/gallon [3]	Gallon	13.70	13.60	12.50	12.20	12.30
Roundup, 4#/gallon EC [3]	Gallon	45.50	43.30	44.50	43.50	43.30
Harness, Surpass, 6.4-7#/gallon [3]	Gallon	68.00	68.40	68.90	68.10	68.20
Dual, 8#/gallon EC [3]	Gallon	77.70	82.60	94.50	99.00	104.00
Captan, 50% WP [3]	Pound	3.46	3.45	3.61	3.76	3.50
Ziram, 76% WP [3]	Pound	2.92	2.72	2.82	2.82	2.70
Guthion, 50% WP [3]	Pound	9.20	9.68	9.87	10.60	10.60
Imidan, Prolate, 50% WP [3]	Pound	6.25	6.59	6.98	7.30	7.40

EC=Emulsifiable concentrate. WP=Wettable powder.
[1] Regional and U.S. data only. Published in April.
[2] Lake States=MI, MN, WI.
[3] United States.
[4] North Central Region=IL,IN, IA, MI, MN, MO, OH, WI.

Farm production expenses, 1998-2002

Item	1998	1999	2000	2001	2002
	Million dollars	*Million dollars*	*Million dollars*	*Million dollars*	*Million dollars*
Feed purchased	373.8	329.6	344.7	369.7	387.0
Livestock and poultry purchased	39.2	44.1	53.0	58.9	41.7
Seed purchased	244.4	249.4	263.2	283.2	295.8
Fertilizers and lime	249.9	235.2	236.9	255.9	235.9
Pesticides	228.7	217.9	225.1	211.8	216.7
Petroleum fuel and oils	128.7	124.3	160.4	162.4	153.7
Electricity	56.6	58.3	58.0	63.7	66.7
Repair and maintenance of capital items	308.1	297.8	273.7	375.7	300.9
Machine hire and custom work	77.5	72.5	75.6	120.0	81.1
Contract and hired labor expenses	532.6	512.5	581.4	583.8	595.5
Marketing, storage, and transportation expenses	93.1	114.0	122.4	97.4	121.6
Capital consumption	538.7	565.7	581.3	595.7	615.5
Real estate and nonreal estate interest	260.9	256.5	271.6	246.6	234.0
Property taxes	214.3	211.8	221.0	218.7	214.1
Net rent received by nonoperator landlords	28.0	29.6	11.9	21.1	21.7
Miscellaneous expenses	373.4	398.6	391.6	393.5	422.3
Total production expenses	3,747.9	3,717.8	3,871.8	4,058.1	4,004.2

Farm Labor

Hired farm workers: Annual average wage rates, 1998-2002

Year	All hired workers	Field workers	Field and livestock workers
	Dollars per hour	*Dollars per hour*	*Dollars per hour*
1998	7.87	7.39	7.39
1999	8.21	7.44	7.37
2000	8.77	7.87	7.93
2001	8.96	8.15	8.18
2002	9.62	8.62	8.66

Agricultural Exports

Michigan ranked twenty-third in agricultural exports for fiscal year 2002. The table below shows the value of agricultural exports by commodity group. The data are calculated annually by commodity based on each States' share of the U.S. agricultural production. The top seven commodities accounted for 81.5 percent of the State's agricultural exports. The total value of agricultural exports from Michigan in 2002 was estimated at $735 million.

Top agricultural exports: Fiscal year 2002

Commodity	Value Million $	Percent of Total	Rank in U.S.
1. Soybeans and products	161.9	22.0	12
2. Feed grains and products	127.1	17.3	12
3. Vegetables and preparations	105.8	14.4	9
4. Fruits and preparations	79.5	10.8	5
5. Live animals and meat*	53.0	7.2	20
6. Wheat and products	48.9	6.7	26
7. Feeds and fodders	22.7	3.1	26
8. Other	136.0	18.5	--
Total	734.9		23

* Excluding Poultry
Source: U.S. Department of Agriculture, Economic Research Service, http:/www.ers.usda.gov/data/fatus, State export data.

Agricultural exports from Michigan: Top 10 destinations, 2001-2002

Country	2001	2002
	Thousand dollars	*Thousand dollars*
Canada	185,746	198,723
Mexico	13,686	11,383
Italy	5,727	5,340
Japan	5,062	4,540
France	752	1,893
United Kingdom	7,573	1,661
Guatemala	1,063	799
Spain	1,417	625
South Africa	NA	582
Dominican Republic	1,002	576

Source: US Department of Commerce, International Trade Administration (www.ita.doc.gov)

Agricultural Chemical Usage

The 2002 chemical use summaries for vegetables, field crops, and postharvest chemical provide pesticide data on 7 Michigan vegetables, soybeans, and chemical applications made to apples postharvest. Vegetable chemical use statistics are published every other year alternating with fruit chemical use statistics. Postharvest chemical use statistics for apples are published every 5 years. The entire series of chemical useage statistics since 1990 for Michigan and the U.S. can be accessed at http:/www.usda.gov/nass. A list of associated trade names is provided following the chemical application tables as an aid in reviewing data and does not mean to imply use of any specfic trade name.

Asparagus: Agricultural chemical applications, 2002 [1]

Agricultural chemical	Area applied	Applications	Rate per application	Rate per crop year	Total applied
	Percent	*Number*	*Pounds per acre*	*Pounds per acre*	*1,000 lbs*
Herbicides					
2,4-D	30	1	1.2	1.27	6
Diuron	96	1.8	1.24	2.3	35.3
Glyphosate	80	1.5	0.73	1.12	14.2
Linuron	8	1.2	0.62	0.74	0.9
Metribuzin	66	1.7	0.42	0.71	7.5
Paraquat	26	1.1	0.56	0.61	2.6
Insecticides					
Carbaryl	88	3.2	0.63	2.06	28.9
Chlorpyrifos	54	1	0.87	0.89	7.7
Permethrin	58	2.5	0.09	0.22	2
Fungicides					
Chlorothalonil	66	2.9	1.41	4.08	43.2
Mancozeb	26	2.2	1.43	3.27	13.4

[1] Planted acres in 2002 were 16,000 acres.

Snap Beans, Processing: Agricultural chemical applications, 2002 [1]

Agricultural chemical	Area applied	Applications	Rate per application	Rate per crop year	Total applied
	Percent	*Number*	*Pounds per acre*	*Pounds per acre*	*1,000 lbs*
Herbicides					
Bentazon	46	1.0	0.09	0.09	0.7
EPTC	36	1.0	3.23	3.23	19.2
Fomesafen	32	1.0	0.12	0.12	0.7
S-Metolachlor	59	1.0	1.16	1.18	11.6
Trifluralin	31	1.0	0.59	0.59	3.1
Insecticides					
Acephate	25	1.1	0.76	0.88	3.7
Bifenthrin	50	1.1	0.04	0.05	0.4
Dimethoate	23	1.0	0.33	0.36	1.4
Disulfoton	31	1.0	0.88	0.88	4.6
Esfenvalerate	20	1.0	0.04	0.04	0.1

[1] Planted acres in 2002 were 16,700 acres.

Carrots, Fresh: Agricultural chemical applications, 2002 [1]

Agricultural chemical	Area applied	Applications	Rate per application	Rate per crop year	Total applied
	Percent	*Number*	*Pounds per acre*	*Pounds per acre*	*1,000 lbs*
Herbicides					
Fluazifop-P-butyl	94	1.3	0.16	0.22	1
Linuron	74	2.5	0.52	1.32	4.6
Insecticides					
Esfenvalerate	28	4	0.03	0.12	0.2
Fungicides					
Chlorothalonil	84	4.7	0.84	3.94	15.5

[1] Planted acres in 2002 were 4,700 acres.

Sweet Corn, Fresh: Agricultural chemical applications, 2002 [1]

Agricultural chemical	Area applied	Applications	Rate per application	Rate per crop year	Total applied
	Percent	*Number*	*Pounds per acre*	*Pounds per acre*	*1,000 lbs*
Herbicides					
2,4-D	([2])	1.0	0.53	0.53	0.1
Alachlor	12	1.0	2.13	2.13	2.9
Atrazine	78	1.2	0.86	1.11	9.5
Bentazon	34	1.0	0.53	0.54	2.0
Dimethenamid	2	1.0	0.89	0.89	0.2
Glyphosate	3	1.0	0.80	0.83	0.3
Pendimethalin	5	1.0	1.13	1.13	0.6
S-Metolachlor	58	1.0	1.11	1.11	7.1
Insecticides					
Carbaryl	6	3.0	0.91	2.75	1.7
Cyfluthrin	3	3.0	0.05	0.14	([3])
Esfenvalerate	12	2.6	0.04	0.10	0.1
Lambda-cyhalothrin	63	2.7	0.02	0.07	0.5
Methomyl	25	1.2	0.33	0.42	1.2
Permethrin	10	2.8	0.13	0.36	0.4
Terbufos	10	1.0	0.95	0.95	1.0
Thiodicarb	31	2.5	0.61	1.57	5.4
Fungicides					
Propiconazole	5	1.5	0.08	0.13	0.1

[1] Planted acres in 2002 were 11,000 acres.
[2] Area applied is less than one percent.
[3] Total applied is less than 50 lbs.

Cucumbers, Fresh: Agricultural chemical applications, 2002 [1]

Agricultural chemical	Area applied	Applications	Rate per application	Rate per crop year	Total applied
	Percent	*Number*	*Pounds per acre*	*Pounds per acre*	*1,000 lbs*
Herbicides					
Clomazone	28	1.0	0.14	0.14	0.3
Ethalfluralin	54	1.0	0.95	0.95	3.5
Glyphosate	3	1.9	1.10	2.11	0.5
Paraquat	33	1.0	0.63	0.63	1.4
S-Metolachlor	6	1.0	2.22	2.22	0.9
Insecticides					
Carbaryl	12	1.5	0.92	1.39	1.1
Endosulfan	47	1.9	0.51	0.99	3.1
Esfenvalerate	45	1.7	0.04	0.06	0.2
Permethrin	21	1.0	0.05	0.05	0.1
Fungicides					
Chlorothalonil	76	1.9	1.33	2.59	13.4
Copper hydroxide	74	1.9	0.37	0.71	3.6
Other Chemicals					
Chloropicrin	5	1.0	97.12	97.12	31.4

[1] Planted acres in 2002 were 6,800 acres.

Cucumbers, Pickles: Agricultural chemical applications, 2002 [1]

Agricultural chemical	Area applied	Applications	Rate per application	Rate per crop year	Total applied
	Percent	*Number*	*Pounds per acre*	*Pounds per acre*	*1,000 lbs*
Herbicides					
Clomazone	59	1.0	0.13	0.13	2.7
Ethalfluralin	70	1.0	0.57	0.57	14.1
Halosulfuron	31	1.0	0.02	0.02	0.2
Naptalam	17	1.0	0.75	0.76	4.6
Insecticides					
Carbaryl	4	1.1	0.60	0.68	0.9
Carbofuran	13	1.0	0.99	0.99	4.4
Endosulfan	1	3.0	0.49	1.52	0.8
Esfenvalerate	4	1.4	0.03	0.05	0.1
Fungicides					
Chlorothalonil	12	1.3	1.41	1.91	8.2
Copper hydroxide	6	1.5	0.55	0.87	1.8
Mefenoxam	10	1.0	0.11	0.11	0.4

[1] Planted acres in 2002 were 35,500 acres.

Pumpkins: Agricultural chemical applications, 2002 [1]

Agricultural chemical	Area applied	Applications	Rate per application	Rate per crop year	Total applied
	Percent	*Number*	*Pounds per acre*	*Pounds per acre*	*1,000 lbs*
Herbicides					
Bensulide	([2])	1.0	4.76	4.76	0.2
Clomazone	44	1.0	0.38	0.39	1.0
Ethalfluralin	37	1.0	0.68	0.70	1.6
Glyphosate	4	1.0	0.68	0.69	0.2
Trifluralin	3	1.0	0.71	0.71	0.1
Insecticides					
Carbaryl	30	1.8	0.90	1.70	3.1
Endosulfan	9	2.0	0.70	1.42	0.7
Esfenvalerate	37	2.7	0.03	0.09	0.2
Malathion	2	1.0	0.74	0.79	0.1
Fungicides					
Azoxystrobin	3	1.0	0.20	0.20	([3])
Chlorothalonil	48	2.5	1.35	3.39	9.8
Copper hydroxide	23	1.8	0.51	0.93	1.3
Mancozeb	2	2.0	0.79	1.62	0.2
Mefenoxam	7	1.5	0.18	0.27	0.1
Myclobutanil	36	1.5	0.09	0.15	0.3
Thiophanate-methyl	3	2.0	0.65	1.33	0.2
Triadimefon	6	1.0	0.07	0.07	([3])
Trifloxystrobin	20	2.2	0.06	0.13	0.2

[1] Planted acres in 2002 were 6,000 acres.
[2] Area applied is less than one percent.
[3] Total applied is less than 50 lbs.

Squash: Agricultural chemical applications, 2002 [1]

Agricultural chemical	Area applied	Applications	Rate per application	Rate per crop year	Total applied
	Percent	*Number*	*Pounds per acre*	*Pounds per acre*	*1,000 lbs*
Herbicides					
Bensulide	([2])	1.0	4.42	4.42	0.2
Clomazone	35	1.0	0.17	0.17	0.4
Ethalfluralin	60	1.0	0.83	0.85	3.7
Glyphosate	5	1.4	0.79	1.15	0.4
Insecticides					
Carbaryl	40	2.4	0.84	2.09	6.0
Carbofuran	13	1.0	0.59	0.59	0.5
Diazinon	1	1.1	1.64	1.83	0.2
Endosulfan	13	2.7	0.57	1.60	1.5
Esfenvalerate	27	1.9	0.04	0.07	0.1
Malathion	4	2.3	0.81	1.90	0.6
Permethrin	20	1.5	0.14	0.21	0.3
Fungicides					
Chlorothalonil	63	2.7	1.44	3.87	17.4
Copper hydroxide	30	2.7	0.54	1.47	3.2
Mefenoxam	16	1.7	0.10	0.18	0.2
Myclobutanil	13	1.4	0.10	0.14	0.1
Thiophanate-methyl	4	1.6	0.31	0.51	0.1

[1] Planted acres in 2002 were 7,200 acres.
[2] Area applied is less than one percent.

Apples: Postharvest chemical applications, 2001-02 marketing year [1] [2]

Agricultural chemical	Volume treated	Applications	Rate per application	Rate per market year	Total applied
	Percent	*Number*	*Pounds per 1,000 lbs*	*Pounds per 1,000 lbs*	*1,000 lbs*
Diphenylamine	2.16	1.0	([3])	([3])	0.1
Thiabendazole	9.13	1.0	0.04	0.04	4.3
	7.34	1.1	0.01	0.01	1.0

[1] Volume handled by Michigan apple storage and processing facilities was 1,261 million pounds.
[2] Insufficient or limited reports to publish usage data for alkaline cleaner, calcium chloride, captan, chlorine, dodecylbenzene sodium sulfonate, and fruit wax.
[3] Rate applied is less than 0.01 pounds per 1,000 pounds.

Agricultural chemical applications: Soybeans, 2002 [1]

Agricultural chemical	Area applied	Applications	Rate per application	Rate per crop year	Total applied
	Percent	*Number*	*Pounds per acre*	*Pounds per acre*	*1,000 pounds*
Herbicides					
Glyphosate	82	1.2	0.86	1.06	1,791
Glyphosate diam salt	9	1.3	0.71	0.92	163
Imazethapyr	12	1.0	0.06	0.06	14

[1] Planted acres in 2002 were 2.05 million acres.

Fertilizer applications: Soybeans, 2002 [1]

Fertilizer	Symbol	Area applied	Applications	Rate per application	Rate per crop year	Total applied
		Percent	*Number*	*Pounds per acre*	*Pounds per acre*	*Million pounds*
Nitrogen	N	44	1.0	26	27	24.4
Phosphate	P_2O_5	34	1.0	46	46	32.0
Potash	K_2O	67	1.0	82	87	119.1

[1] Planted acres in 2002 were 2.05 million acres.

Agricultural chemicals: Common and trade names by class

Herbicides	
Common name	Trade name
2, 4-D	several names
Alachlor	Bullet, Lasso, Lasso II, Lariat, Micro-Tech, Saddle
Atrazine	several names
Bensulide	Prefar
Bentazon	Basagran, Laddok, Pledge, Laddok S-12, Basagran T/O
Clomazone	Command
Dimethenamid	Guardsman, Frontier, LeadOff, OpTill
Diuron	Direx, Diuron, Karmex, Krovar, Sprakil
EPTC	Eptam, Eradicane Extra
Ethalfluralin	Sonalan, Curbit, Strategy
Fluazifop-P-butyl	Fusilade, Fusion, Ornamec
Fomesafen	Reflex
Glyphosate	several names
Glyphosate diam salt	Touchdown
Halosulfuron	Permit, Yukon, Sandea
Imazethapyr	Pursuit, Pursuit W, Pursuit Plus, Lightning, Extreme, Steel
Linuron	Linex, Lorox
Metribuzin	Lexone, Sencor, Axiom
Naptalam	Alanap
Paraquat	Cyclone, Gramoxone
Pendimethalin	Corral, OH 2, Pendimax, Pendulum, Prowl, Pursuit Plus, Squadron, Steel, Stomp
S-Metolachlor	several names
Trifluralin	Preen, Snapshot, Treflan, Trifluralin, Trilin Trust

Fungicides	
Azoxystrobin	Abound, Heritage, ICIA5504, Quadris
Chlorothalonil	several names
Copper hydroxide	several names
Mancozeb	several names
Mefenoxam	Flouronil, Quell, Ridomil, Subdue
Myclobutanil	Eagle, Laredo, Nova, Rally, RH-144228, Systhane
Propiconazole	Banner, Orbit, Tilt, Stratego
Thiabendazole	several names
Thiophanate-methyl	Duosan, Fungo Flo, Systec, Topsin, Zyban
Triadimefon	Bayleton, Reach
Trifloxystrobin	Compass, Flint

Insecticides	
Common name	Trade name
Acephate	Acephate, Orthene, Payload
Bifenthrin	Attain, Brigade, Capture, Talstar
Carbaryl	Agway Fruit Tree Spray, Carbaryl, Sevin
Carbofuran	Furadan
Chlorpyrifos	several names
Cyfluthrin	Baythroid, Decathlon, Duraplex, Tempo Aztec
Diazinon	Diazinon, Knox Out, Spectracide, Spectracide 25
Dimethoate	Cygon, Digon, Dimate, Dimethoate Dimet, Cymate, De-Fend
Disulfoton	Di-Syston
Endosulfan	Endocide, Endosulfan, Phaser, Thiodan Thirethn
Esfenvalerate	Asana
Lambda-cyhalothrin	Karate, Warrior
Malathion	Agway Fruit Tree Spray, Cythion, Fyfanon, Green Devil, Malathion, Atrapa
Methomyl	Lannate, Methomyl
Permethrin	several names
Terbufos	Counter
Thiodicarb	Larvin

Other	
Chloropicrin	several names
Chlorine dioxide	Chlorine dioxide
Diphenylamine	several names

Commercial fertilizer consumption: 1998-2002 [1]

Item	Year ending June 30				
	1998	1999	2000	2001	2002
	Short tons	*Short tons*	*Short tons*	*Short tons*	*Short tons*
Primary plant nutrients					
Total N	248,102	263,948	249,543	238,810	240,680
N in multi-nutrients	58,790	62,713	57,104	55,076	55,048
Total P_2O_5	92,236	94,890	87,001	85,873	84,734
P_2O_5 in multi-nutrients	90,323	92,063	84,539	83,794	82,377
Total K_2O	213,954	211,739	202,481	184,568	189,200
K_2O in multi-nurtrients	66,246	60,635	47,828	47,563	41,924
Total plant nutrients	554,291	570,576	539,024	509,251	514,615
Average analysis	44.8	43.1	42.9	42.6	43.1
Total nutrients in multi-nutrients	215,360	215,411	189,471	186,433	179,349
Selected single-nutrient materials					
Ammonium nitrate	6,483	9,533	5,622	6,287	5,405
Anhydrous ammonia	71,765	68,349	56,757	50,984	52,766
Nitrogen solutions	269,136	300,761	265,544	288,641	284,355
Urea	88,167	98,820	126,452	110,001	107,305
Ammonium sulfate	20,168	20,468	22,477	22,164	23,569
Concentrated superphosphate	3,961	4,880	4,966	3,945	4,984
Potassium chloride	237,257	244,519	250,410	221,427	236,720
Multiple-nutrient fertilizers					
N-P-K	387,053	388,303	361,992	366,861	334,670
N-P	115,178	124,833	115,616	122,840	129,900
N-K	26,527	27,386	22,281	24,353	27,096
P-K	7,891	5,526	4,561	4,771	3,831
Leading multiple-nutrient grades					
10-34-0	35,525	42,668	37,385	40,775	44,303
18-46-0	36,974	37,709	34,569	33,232	36,672
11-52-0	14,860	20,069	24,987	26,571	24,636
19-19-19	18,527	21,201	11,564	13,035	13,989
9-24-3	2,917	4,674	8,510	9,150	11,627
28-3-3		5,265	5,595	4,517	7,761
Fertilizer consumption by classes					
Dry bulk single-nutrient	401,282	430,931	452,227	382,845	392,966
Dry bagged single-nutrient	9,267	7,581	7,453	14,862	23,385
Fluid single-nutrient	348,333	371,425	324,357	343,883	339,295
Dry bulk multiple-nutrient	293,499	283,761	259,482	243,576	223,668
Dry bagged multiple-nutrient	179,578	187,767	165,491	188,375	187,396
Fluid multiple-nutrient	63,570	76,463	79,476	86,874	84,433
Organics, secondary and micronutrients	38,839	37,943	39,220	24,729	31,883
Total	1,334,370	1,395,870	1,327,707	1,285,144	1,283,026

[1] Source: The Association of American Plant Food Control Officials

Field Crops

Growing Season Weather Summary

Dr. Jeff Andresen, Michigan State University

The 2002 growing season began with a period of abnormally warm weather during the middle two weeks of April. Mean daily temperatures at or in excess of 90 degrees were recorded at some locations in the State. Temperatures at least 35 degrees above climatological normal high temperatures for the season set new maximum records at many locations on April 16 to 18. Seasonal growing degree day (GDD) accumulations, which had been near zero due to cooler than normal temperatures during much of March and early April surged to much above normal levels, resulting in rapid early growth and development of most overwintering crops, and allowing rapid progress of spring fieldwork and planting. Base GDD accumulations for April 8 to 20 ranged from about 40 units in the far northern Upper Peninsula to more than 150 units in the southern Lower Peninsula, which was nearly double the normal accumulation for this time of year and versus the 2001 growing season totals. The unusual warmth came to an abrupt end on April 20 and again on April 25 with the passages of cold fronts through the region. The change in the jet stream was accompanied by snowfall on April 21 and 22, and near-record minimum temperatures which fell into the upper teens and twenties on the morning of April 23. The cold temperatures caused extensive damage to many perennial crops, especially tree fruit and grapes.

In contrast to the record warmth of April, much of May and June were cooler than normal. A series of frontal systems also brought above normal precipitation totals to much of the State. The cool, wet weather caused major delays in spring planting and slowed germination, growth, and development of all crops. In some areas, the conditions necessitated replanting. By mid-June, seasonal base 50 GDD totals lagged from 50 to 100 units behind normal, a dramatic change from the much above normal totals experienced at the beginning of the season. A return of an upper air ridging pattern across the midwest during late June led to yet another major weather change which continued through much of the remainder of the growing season. The middle and latter portions of the growing season were characterized by warmer than normal temperatures, and during much of June, July, and early August, by much drier than normal conditions. During the period between the first week of June and the second week of July, rainfall totals were less than 0.25 inches across much of the Lower Peninsula. The dryness led to increasing levels of moisture stress in most spring and summer crops, but favored harvest of winter grains. Much needed rainfall brought relief to the stressful conditions in early August. A drier than normal pattern developed across much of the State once again in late August and continued through the remainder of the fall season. By late September, sections of southern Lower Michigan were characterized by NOAA's Palmer Drought Index as experiencing 'moderate' drought conditions. A notable exception to the drier than normal pattern were the western and central sections of the Upper Peninsula, where periodic heavy rainfall led to above normal precipitation totals and a Palmer Drought Index characterization of 'abnormally wet' conditions during much of the fall season.

September and much of October were characterized by warmer and drier than normal weather, which favored maturation and drydown of summer crops as well as harvest activities. The first killing freeze of the fall season occurred during the last week of September and first two weeks of October over most of the State, which is near to a few days later than normal. Overall, for the 5-month May to September period, mean temperatures and GDD accumulations ranged from near to above normal statewide. From a climatological standpoint, the varying nature of GDD accumulations during the season was unusual. It is uncommon in Michigan for significant GDD deficits or excesses that develop during the first half of the growing season to be reversed by the end of the season as was the case this year. Precipitation totals were also variable across the State, ranging from below normal totals across much of the Lower Peninsula to much above normal levels in the Upper Peninsula.

Field crops: Acres harvested and value of production, 1998-2002

Item	Unit	1998	1999	2000	2001	2002
Acres harvested	1,000 acres	6,653	6,730	6,593	6,448	6,483
Value of production	1,000 dollars	1,503,206	1,569,098	1,428,981	1,297,866	1,680,878

Grain storage capacity, December 1, 1998-2002

Year	Off farm		On farm capacity
	Facilities	Rated capacity	
	Number	*Million bushels*	*Million bushels*
1998	286	143	270
1999	270	141	280
2000	250	141	280
2001	245	146	280
2002	235	148	270

Field crops: Record highs and lows

Crop	Unit	Record high		Record low		Year estimates started
		Quantity	Year	Quantity	Year	
Barley						
Harvested acres	1,000 acres	303	1932	16	1974	1866
Yield per acre	Bushels	68.0	1985	13.5	1933	
Production	1,000 bu	8,400	1918	546	1866	
Dry Edible beans						
Harvested acres	1,000 acres	690	1930	130	2001	1909
Yield per acre	Pounds	2,100	1999	320	1917	
Production	1,000 cwt	8,585	1963	780	2001	
Corn for grain						
Harvested acres	1,000 acres	2,800	1981	480	1866	1866
Yield per acre	Bushels	130.0	1999	21.5	1917	
Production	1,000 bu	293,180	1982	15,120	1869	
Corn for silage						
Harvested acres	1,000 acres	498	1971	211	1942	1924
Yield per acre	Tons	17.5	1999	4.7	1930	
Production	1,000 tons	5,565	1977	1,542	1930	
Hay, alfalfa						
Harvested acres	1,000 acres	1,444	1950	74	1919	1919
Yield per acre	Tons	4.2	1993	1.1	1934	
Production	1,000 tons	5,040	1985,1986	118	1919	
Hay, all						
Harvested acres	1,000 acres	2,947	1924	780	1866	1866
Yield per acre	Tons	3.8	1993	0.6	1895	
Production	1,000 tons	5,743	1986	1,014	1866	
Oats						
Harvested acres	1,000 acres	1,658	1918	55	2001	1866
Yield per acre	Bushels	67.0	1985,1989	18.5	1921	
Production	1,000 bu	69,388	1946	3,520	2001	
Potatoes						
Harvested acres	1,000 acres	374.0	1895	36.4	1975	1866
Yield per acre	Cwt	315.0	1998,1999,2000	26.0	1887,1916	
Production	1,000 cwt	23,256	1904	3,557	1876	
Soybeans						
Harvested acres	1,000 acres	2,130	2001	1	1930	1924
Yield per acre	Bushels	40.0	1995,1999	8.0	1927	
Production	1,000 bu	78,155	2002	10	1930	
Spearmint						
Harvested acres	1,000 acres	8.7	1954	0.7	1935	1935
Yield per acre	Pounds	50.0	2001,2002	20.0	1965	
Production	1,000 lbs	280	1948	27	1996	
Sugarbeets						
Harvested acres	1,000 acres	190	1999	48	1943,1953	1909
Yield per acre	Tons	21.3	1970	5.5	1916	
Production	1,000 tons	3,534	1999	298	1943	
Wheat, winter						
Harvested acres	1,000 acres	1,515	1953	400	1987	1909
Yield per acre	Bushels	72.0	2000	10.5	1912	
Production	1,000 bu	45,600	1984	7,350	1912	

Barley

Michigan barley growers planted 20,000 acres and harvested 19,000 acres in 2002. Total production was 988,000 bushels, down 2 percent from 2001. The average yield decreased 4 bushels to 52 bushels per acre. Barley planting in Michigan was delayed by cool, wet weather in May, but was completed by early June. Rainfall was above normal for the barley growing season. Hot, dry weather in July dried the crop down quickly. Harvest weather in August was generally favorable.

Barley: Acres, yield, production, and value, 1998-2002

Year	Planted	Harvested	Yield	Production	Price [1]	Value of production
	1,000 acres	*1,000 acres*	*Bushels*	*1,000 bushels*	*Dollars*	*1,000 dollars*
1998	27	23	50	1,150	1.50	1,725
1999	23	21	66	1,386	1.70	2,356
2000	20	19	60	1,140	1.10	1,254
2001	21	18	56	1,008	1.50	1,512
2002	20	19	52	988	1.60	1,581

[1] Marketing year average.

Corn

Michigan had 2.25 million acres planted to corn in 2002, up 2 percent from 2001. Grain corn production was 232.3 million bushels, up 16 percent from 2001; 2.02 million acres were harvested for grain. The yield of 115 bushels per acre was up 10 bushels from the 2001 crop. Michigan ranked eleventh among states in corn for grain production. Farmers harvested 220,000 acres of corn for silage with an average yield of 15.0 tons per acre.

Planting of corn in Michigan began in earnest the last week of April. Cool, wet weather during May kept planting progress about one week behind normal throughout the month and slowed emergence. Planting was completed near schedule by mid-June. Moisture and heat stress became a problem in late June. Curling leaves were a common sight due to the dryness. As of August 1, the corn crop improved and was tasseling. Just over half of the crop reached the silked stage by August 1, near the 5-year average. The corn crop was about one week behind the average stage of development by September 1. The major corn growing areas of the State received 2 to 4 inches of rain during August, improving the yield potential.

Combining of Michigan's corn began on schedule the last week of September. Plant development, pushed by above normal September temperatures, was ahead of average. About 40 percent of the crop was rated in good to excellent condition. Yield potential varied widely across the State. Nearly 75 percent of the Michigan corn crop was harvested by November 1. That was about two weeks ahead of the 5-year average. November field conditions were very good, and harvesting neared completion by mid-November, ahead of normal.

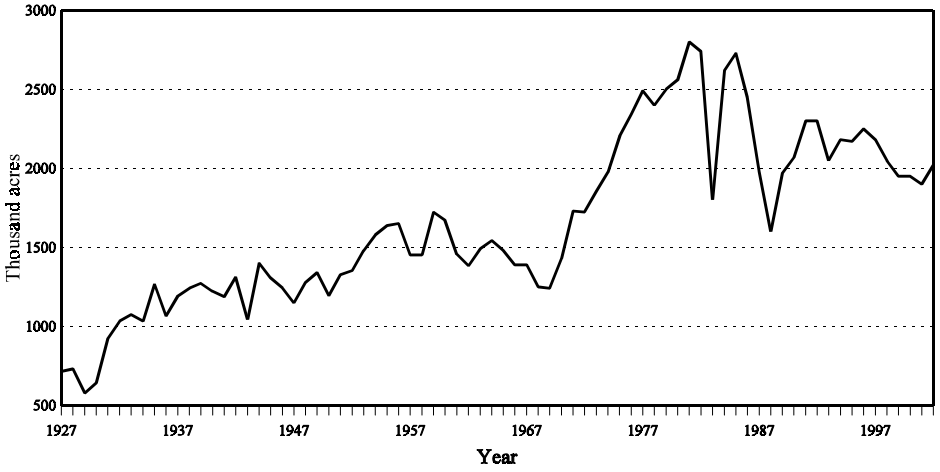
The 2002 corn crop was valued at $534 million, up 36 percent from 2001. Corn continued to be Michigan's number one crop in value of production. The top four counties in corn production in 2002 were Huron, Sanilac, Tuscola, and Saginaw.

Corn: Acres, yield, production, and value, 1998-2002

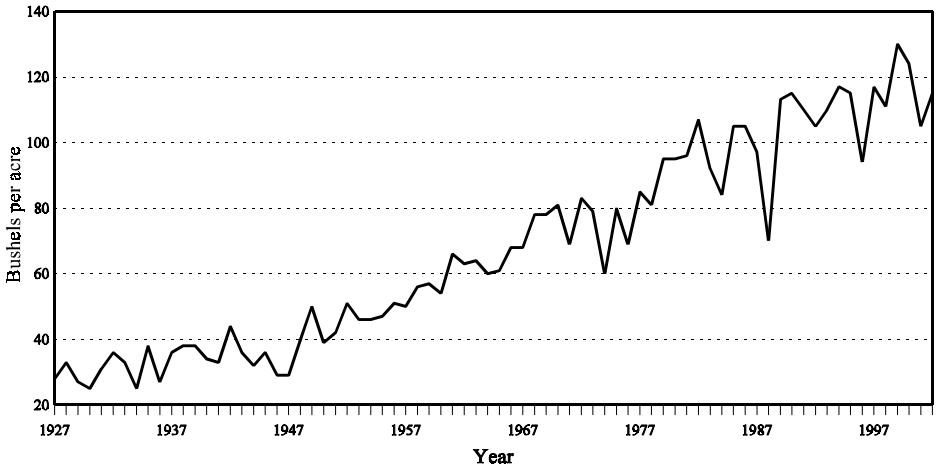
Year	Planted	Harvested	Yield	Production	Price [1]	Value of production
	1,000 acres	*1,000 acres*	*Bushels*	*1,000 bushels*	*Dollars*	*1,000 dollars*
All						
1998	2,300					
1999	2,200					
2000	2,200					
2001	2,200					
2002	2,250					
Grain						
1998		2,050	111	227,550	1.90	432,345
1999		1,950	130	253,500	1.78	451,230
2000		1,950	124	241,800	1.90	459,420
2001		1,900	105	199,500	1.97	393,015
2002		2,020	115	232,300	2.30	534,290
	1,000 acres	*1,000 acres*	*Tons*	*1,000 tons*		
Silage						
1998		240	12.5	3,000		
1999		235	17.5	4,113		
2000		230	14.0	3,220		
2001		280	13.0	3,640		
2002		220	15.0	3,300		

[1] Marketing year average.

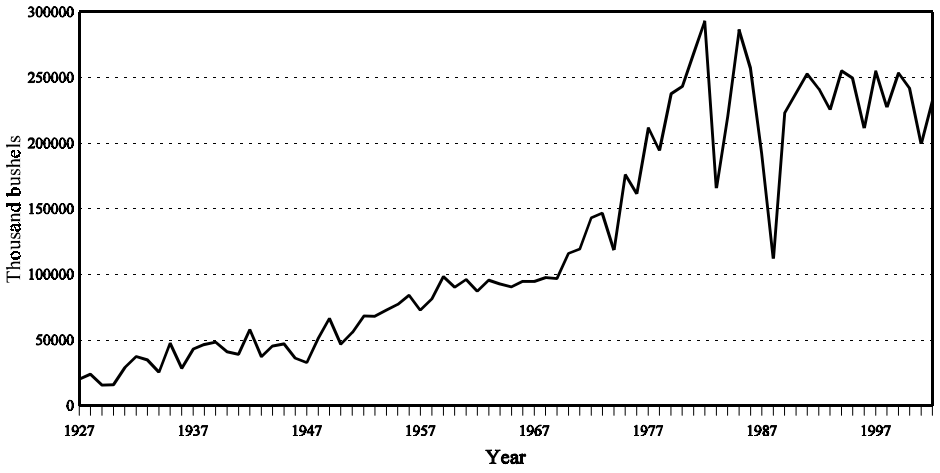
Corn for grain acres, 1927-2002



Corn yield, 1927-2002



Corn production, 1927-2002



Corn for grain: Stocks by quarter, 1998-2002

Crop year	December 1		March 1		June 1		September 1	
	On farm	Off farm	On farm	Off farm	On farm	Off farm	On farm	Off farm
	1,000 bushels	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*
1998	150,000	59,500	90,000	44,200	58,000	21,000	22,000	13,650
1999	135,000	68,300	95,000	49,700	53,000	30,500	26,000	15,000
2000	145,000	58,200	90,000	46,800	55,000	24,800	21,000	12,500
2001	120,000	55,700	80,000	46,700	54,000	29,050	16,000	13,600
2002	130,000	59,800	88,000	46,700	40,000	27,600		

Corn: Percentage of acreage planted, 1998-2002

Year	Month and day					
	April		May			June
	20	30	10	20	30	10
1998	0	20	50	88	96	100
1999	0	5	46	80	94	99
2000	0	3	39	69	84	92
2001	0	14	62	81	93	100
2002	0	9	34	54	81	96
5-year-average	0.0	10.2	46.2	74.4	89.6	97.4

Corn: Percentage of acreage silked, 1998-2002

Year	Month and day					
	July				August	
	1	10	20	30	10	20
1998	0	11	40	79	95	100
1999	0	10	46	88	100	100
2000	0	1	15	53	81	94
2001	0	2	22	66	91	100
2002	0	0	8	63	88	98
5-year-average	0.0	4.8	26.2	69.8	91.0	98.4

Corn: Percentage of acreage dent stage, 1998-2002

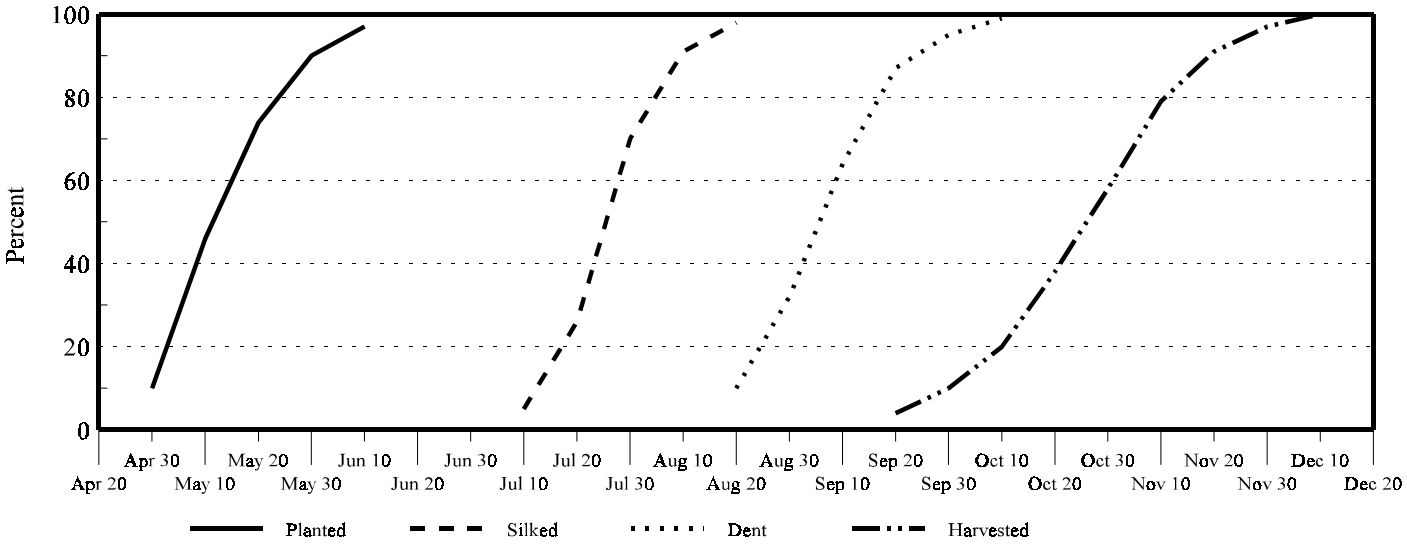
Year	Month and day						
	August			September			October
	10	20	30	10	20	30	10
1998	0	19	60	90	94	100	100
1999	0	17	50	85	97	100	100
2000	0	3	10	33	73	86	98
2001	0	10	25	52	76	93	98
2002	0	2	16	62	96	98	100
5-year-average	0.0	10.2	32.2	64.4	87.2	95.4	99.2

Corn: Percentage of acreage harvested for grain, 1998-2002

Year	Month and day									
	September			October			November			December
	10	20	30	10	20	30	10	20	30	10
1998	0	5	19	32	55	71	87	98	100	100
1999	2	7	13	28	50	76	89	96	99	100
2000	0	0	3	8	24	40	70	81	94	100
2001	0	3	7	14	27	41	62	87	94	100
2002	0	3	8	20	34	63	89	94	97	100
5-year-average	0.4	3.6	10.0	20.4	38.0	58.2	79.4	91.2	96.8	100.0

Corn progress

Five-year-average, 1998-2002



Dry Edible Beans

Michigan dry beans were planted at a normal pace with adequate moisture. Conditions were excellent for a rapid start. Hot and dry weather persisted from late June through most of July. Significant rainfall did arrive in most dry bean areas in late July. The major bean areas received nearly 3 inches of rainfall in August to help during pod set. Some fields were damaged by too much rain. Warm, dry conditions in September helped dry the crop down. Harvest advanced quickly and was nearly complete by mid-October, ahead of normal.

Michigan's 2002 total dry bean production was 4.9 million hundredweight (cwt) which represented 16 percent of U.S. production. Michigan ranked second in dry bean production for 2002, compared to seventh last year. The number one dry bean producer in the nation was North Dakota with 10.6 million cwt.

Michigan continued to lead the country in cranberry and black bean production. Michigan dry beans are consumed throughout the world and are largely shipped to the United Kingdom, Japan, France, Mexico, and Italy.

Dry edible beans: Acres, yield, production, and value, 1998-2002

Year	Planted	Harvested	Yield	Production	Price [1]	Value of production
	1,000 acres	*1,000 acres*	*Cwt*	*1,000 cwt*	*Dol/cwt*	*1,000 dollars*
1998	300	295	1,500	4,425	21.60	95,580
1999	350	350	2,100	7,350	16.80	123,480
2000	285	275	1,500	4,125	13.70	56,500
2001	215	130	600	780	24.60	19,188
2002	270	265	1,850	4,903	14.50	71,094

[1] Marketing year average.

Dry edible beans: Acres, yield, and production, by class, 1998-2002

Class and Year	Planted	Harvested	Yield	Production
	Acres	*Acres*	*Pounds*	*1,000 cwt*
Black				
1998	135,000	134,000	1,570	2,100
1999	108,000	108,000	2,090	2,260
2000	55,000	53,000	1,580	840
2001	63,000	52,000	640	335
2002	110,000	108,000	1,880	2,030
Cranberry				
1998	27,000	26,000	1,100	285
1999	31,000	31,000	1,600	496
2000	26,000	25,000	1,520	380
2001	26,000	12,000	580	70
2002	20,000	19,000	1,530	290
Great Northern				
2001	8,000	3,500	570	20
2002	3,000	3,000	2,000	60
Navy				
1998	75,000	74,000	1,600	1,180
1999	150,000	150,000	2,300	3,450
2000	125,000	120,000	1,500	1,800
2001	65,000	30,000	570	170
2002	85,000	84,000	1,930	1,620
Pinto				
1998	21,000	20,000	1,470	293
1999	9,000	9,000	1,890	170
2000	21,000	20,000	1,450	290
2001	7,000	4,500	510	23
2002	9,500	9,500	1,930	183
Red kidney, dark				
1998	9,000	9,000	1,000	90
1999	9,000	9,000	1,700	153
2000	12,000	12,000	1,520	182
2001	9,000	7,000	430	30
2002	8,500	8,000	1,630	130
Red kidney, light				
1998	14,000	13,000	1,310	170
1999	17,000	17,000	1,800	306
2000	19,000	19,000	1,500	285
2001	18,000	11,000	770	85
2002	15,000	14,500	1,790	260
Small, red				
1998	11,000	11,000	1,820	200
1999	15,000	15,000	2,070	310
2000	8,000	8,000	1,410	113
2001	12,000	6,500	420	27
2002	11,000	11,000	1,890	208
Other				
1998	8,000	8,000	1,340	107
1999	11,000	11,000	1,860	205
2000	19,000	18,000	1,310	235
2001	7,000	3,500	570	20
2002	8,000	8,000	1,530	122

Hay and Haylage

Michigan hay production was estimated at 3.7 million tons, down 3 percent from 2001. Alfalfa and alfalfa mixtures accounted for 85 percent of all dry hay produced. All hay harvested acres were estimated 1.15 million, unchanged from 2001. The average all hay yield was 3.2 tons per acre, down 0.1 tons from 2001. First cutting of alfalfa was slowed by cool weather conditions in May. Weevils were found in moderate numbers. The second cutting was poor to fair and short because of lack of rain and damage from potato leafhoppers. The third cutting was an improvement over the second cutting. Alfalfa accounted for 900,000 acres of the total harvested with a yield of 3.5 tons per acre. Other hay accounted for 250,000 acres with a yield of 2.2 tons per acre. Value of the hay crop was $292 million, up 9 percent from 2001.

Hay, haylage, and greenchop: Acres, yield, production, and value, 1998-2002

Year	Planted	Harvested	Yield	Production	Price [1]	Value of production
	1,000 acres	*1,000 acres*	*Tons*	*1,000 tons*	*Dollars*	*1,000 dollars*
All dry hay						
1998		1,250	2.85	3,565	89.00	306,410
1999		1,300	3.40	4,415	69.00	305,805
2000		1,300	3.33	4,330	62.50	272,040
2001		1,150	3.30	3,790	70.50	266,740
2002		1,150	3.22	3,700	80.00	291,850
Alfalfa hay						
1998		850	3.30	2,805	90.00	252,450
1999		950	3.80	3,610	72.00	259,920
2000		1,000	3.70	3,700	64.50	238,650
2001		900	3.60	3,240	73.50	238,140
2002		900	3.50	3,150	82.00	258,300
Alfalfa seedings						
1998	95					
1999	100					
2000	140					
2001	100					
2002	125					
Other hay						
1998		400	1.90	760	71.00	53,960
1999		350	2.30	805	57.00	45,885
2000		300	2.10	630	53.00	33,390
2001		250	2.20	550	52.00	28,600
2002		250	2.20	550	61.00	33,550
All haylage and greenchop						
2000		310	5.76	1,785		
2001		340	5.82	1,980		
2002		280	6.05	1,694		
Alfalfa haylage and greenchop						
2000		280	6.00	1,680		
2001		320	6.00	1,920		
2002		260	6.20	1,612		

[1] Marketing year average.

Hay: Stocks on farms, 1999-2003

Year	May 1	December 1
	1,000 tons	*1,000 tons*
1999	566	2,110
2000	1,170	3,460
2001	1,000	3,450
2002	811	2,109
2003	480	

Maple Syrup

Michigan maple syrup production was estimated at 59,000 gallons for the 2003 season, 7,000 gallons below the 2002 output. This season was not ideal for the production of quality syrup. Sugar content of the sap was higher and the syrup was medium to dark in color, which was darker than last year.

Michigan ranked 5th in maple syrup production in 2003, up from seventh and produced about 5 percent of the total U.S. production. The tapping season started March 11th and ended April 5th for most producers. Total taps were 360,000 and the syrup yield in gallons was 0.164 per tap. In 2002, Michigan producers sold 65 percent of their syrup retail, 15 percent wholesale, and 20 percent bulk. The average price per gallon for 2002 was $32.50 compared with $29.70 in 2001. The value of production for 2002 was $2.1 million up 20 percent from 2001.

Maple syrup: Taps, yield, production, price, and value, 1999-2003

Year	Taps	Yield per tap	Production	Price per gallon	Value of production
	1,000	*Gallons*	*1,000 gallons*	*Dollars*	*1,000 dollars*
1999			73	28.20	2,058
2000			44	35.10	1,544
2001	332	0.181	60	29.70	1,782
2002	320	0.206	66	32.50	2,145
2003	360	0.164	59	([1])	([1])

[1] Published in June 2004.

Mint

Mint: Acres, yield, production, and value, 1998-2002

Year	Harvested	Yield	Production	Price per pound [1]	Value of production
	1,000 acres	*Pounds*	*1,000 Pounds*	*Dollars*	*1,000 dollars*
Peppermint					
2000	1.0	50	50	9.20	450
2001	1.0	50	50	9.90	495
2002	1.0	50	50	9.00	450
Spearmint					
1998	1.7	42	71	11.20	795
1999	1.7	40	68	10.00	680
2000	1.7	45	77	9.20	708
2001	1.7	50	85	9.80	833
2002	1.7	50	85	9.00	765

[1] Marketing year average.

Oats

Oat acreage increased in Michigan during 2002. Growers planted 80,000 acres of oats in 2002 compared with 70,000 the year before. Harvested acres, at 65,000, were up 10,000 from last year. The 2002 oat production was 4.16 million bushels, up 18 percent from the previous year. Yields remained the same as 2001, at 64 bushels per acre. Chilly weather in May slowed Michigan's oat crop progress; however, hot and dry weather in July moved the crop along. Harvest began in late July with over half of the crop rated good to excellent. Rains in August slowed progress, and harvest was not completed until early September, slightly behind normal. Sanilac county ranked first in oat production for 2002, while Huron, Shiawassee, Presque Isle, and Tuscola rounded out the top five counties.

Oats: Acres, yield, production, and value, 1998-2002

Year	Planted	Harvested	Yield	Production	Price [1]	Value of production
	1,000 acres	*1,000 acres*	*Bushels*	*1,000 bushels*	*Dollars*	*1,000 dollars*
1998	110	100	48	4,800	1.42	6,816
1999	100	75	65	4,875	1.35	6,581
2000	95	75	64	4,800	1.30	6,240
2001	70	55	64	3,520	1.80	6,336
2002	80	65	64	4,160	1.75	7,280

[1] Marketing year average.

Potatoes

Michigan's 2002 potato production was 13.88 million hundredweight (cwt) down from 13.95 million in 2001. Planted acres were 46,500 and harvested acres were 45,500. The State's average yield was 305 cwt per acre, down from 310 cwt per acre in 2001. The potato growing season started with a cold spring, followed by a warm and dry summer. Potato harvest started late. Many growers indicated yields down due to the dry summer weather.

Michigan ranked tenth among states in potato production in 2002. Most Michigan potatoes are whites, which comprised approximately 85 percent of planted acreage, followed by russets and reds at 12 and 3 percent of planted acreage, respectively. Whites are processed for potato ships or sold for table use while russets are used for french fries and other frozen products.

Fall potatoes: Acres, yield, production, and value, 1998-2002

Year	Planted	Harvested	Yield	Production	Price [1]	Value of production
	1,000 acres	*1,000 acres*	*Cwt*	*1,000 cwt*	*Dollars*	*1,000 dollars*
1998	47.0	46.5	315	14,648	6.70	98,142
1999	48.0	47.5	315	14,963	6.80	101,748
2000	49.0	47.5	315	14,963	6.70	100,300
2001	46.0	45.0	310	13,950	7.65	106,718
2002	46.5	45.5	305	13,878	7.80	108,248

[1] Marketing year average.

Fall potatoes: Stocks by type as percent of total stocks, December 1, 1998-2002

Type	1998	1999	2000	2001	2002
	Percent	*Percent*	*Percent*	*Percent*	*Percent*
White	81	87	86	90	85
Russet	18	11	12	8	12
Red	1	2	2	2	3

Fall potatoes: Production and disposition, 1998-2002

Crop year	Production	Total used for seed	Farm Disposition		Sold
			Seed, feed, and home use	Shrinkage and loss	
	1,000 cwt	*1,000 cwt*	*1,000 cwt*	*1,000 cwt*	*1,000 cwt*
1998	14,648	888	200	1,348	13,100
1999	14,963	1,005	213	1,300	13,450
2000	14,963	1,099	250	1,700	13,013
2001	13,950	1,181	245	945	12,760
2002	13,878	1,123	205	1,400	12,273

Fall potatoes: Stocks, 1998-2002

Crop year	December 1	January 1	February 1	March 1	April 1	May 1
	1,000 cwt	*1,000 cwt*	*1,000 cwt*	*1,000 cwt*	*1,000 cwt*	*1,000 cwt*
1998	9,100	7,500	5,400	4,100	2,200	800
1999	8,800	7,100	5,800	4,200	2,700	1,300
2000	8,700	6,900	5,200	3,400	1,500	700
2001	8,200	6,200	4,800	3,200	1,500	400
2002	7,900	6,500	5,600	4,500	2,900	1,000

Soybeans

Michigan soybean production totaled 78.2 million bushels, up 22 percent from 2001. The yield was 38.5 bushels per acre in 2002. Planted and harvested acres were down from the 2001 total to 2.05 million and 2.03 million, respectively. Soybean planting began at a slow pace, but by June 2, earlier planted fields had started to emerge and planting was 72 percent complete. Grubs and crusting on some soils hurt the soybean crop as it emerged. Aided by ample soil moisture, emergence was good in later planted soybeans. Soybean harvest got off to a good start and advanced ahead of normal pace. Harvest was nearly complete by the beginning of November. Sanilac, Saginaw, Lenawee, Gratiot. and Monroe were the top five counties in soybean production.

Soybeans: Acres, yield, production, and value, 1998-2002

Year	Planted	Harvested	Yield	Production	Price [1]	Value of production
	1,000 acres	*1,000 acres*	*Bushels*	*1,000 bushels*	*Dollars*	*1,000 dollars*
1998	1,900	1,890	39.0	73,710	4.99	367,813
1999	1,950	1,940	40.0	77,600	4.61	357,736
2000	2,050	2,030	36.0	73,080	4.54	331,783
2001	2,150	2,130	30.0	63,900	4.47	285,633
2002	2,050	2,030	38.5	78,155	5.50	429,853

[1] Marketing year average.

Soybeans: Stocks by quarter, 1998-2002

Crop year	December 1		March 1		June 1		September 1	
	On farm	Off farm	On farm	Off farm	On farm	Off farm	On farm	Off farm
	1,000 bushels	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*
1998	30,000	18,000	22,000	9,950	11,000	5,600	4,000	2,150
1999	33,000	20,200	17,000	12,750	6,000	6,250	4,100	1,500
2000	30,000	19,800	18,000	9,600	8,500	3,225	2,400	1,220
2001	30,000	20,800	18,000	11,750	7,700	5,450	1,200	1,700
2002	26,000	21,000	16,000	13,450	9,100	5,650		

Soybeans: Percentage of acreage planted, 1998-2002

Year	Month and day						
	May			June			July
	10	20	30	10	20	30	10
1998	10	56	81	92	98	100	100
1999	12	49	81	93	99	100	100
2000	12	29	42	63	82	94	100
2001	31	58	75	80	91	96	100
2002	16	26	59	88	98	100	100
5-year-average	16.2	43.6	67.6	83.2	93.6	98.0	100.0

Soybeans: Percentage of acreage setting pods, 1998-2002

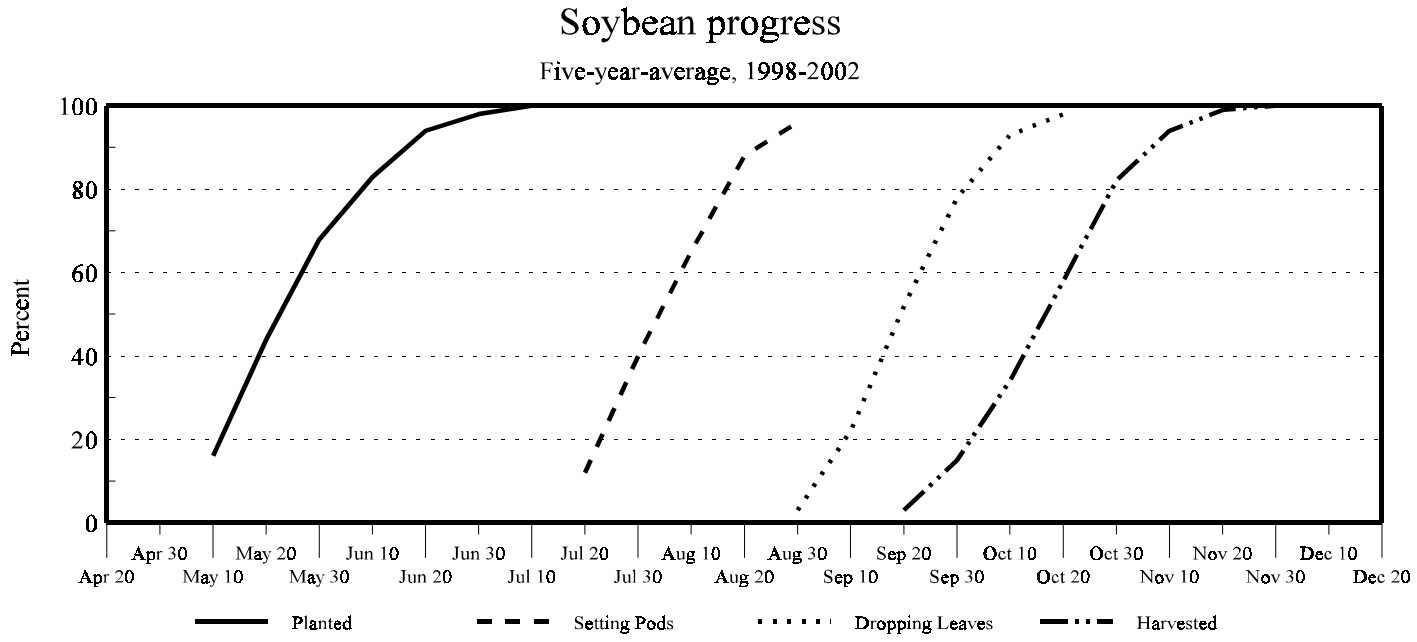
Year	Month and day					
	July			August		
	10	20	30	10	20	30
1998	0	17	57	73	96	100
1999	0	20	48	77	93	100
2000	0	4	20	42	74	86
2001	0	15	46	70	84	94
2002	0	4	29	62	95	100
5-year-average	0.0	12.0	40.0	64.8	88.4	96.0

Soybeans: Percentage of acreage shedding leaves, 1998-2002

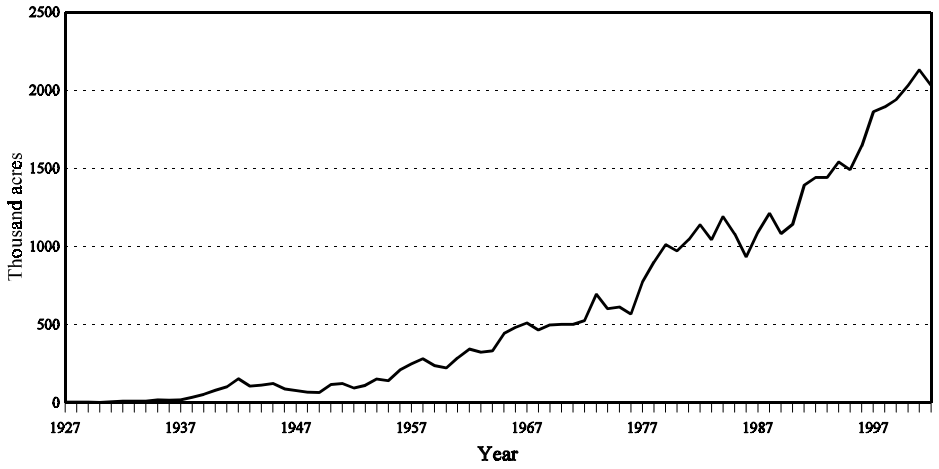
Year	Month and day						
	August		September			October	
	20	30	10	20	30	10	20
1998	0	9	40	68	87	100	100
1999	0	2	31	66	98	100	100
2000	0	0	3	26	54	78	93
2001	0	4	18	47	64	87	99
2002	0	0	17	52	89	99	100
5-year-average	0.0	3.0	21.8	51.8	78.4	92.8	98.4

Soybeans: Percentage of acreage harvested, 1998-2002

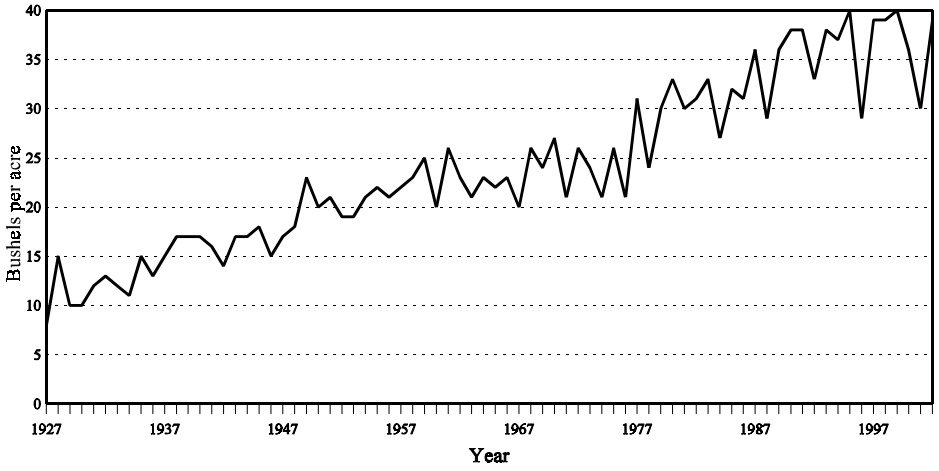
Year	Month and day								
	September			October			November		
	10	20	30	10	20	30	10	20	30
1998	0	3	22	44	66	93	99	100	100
1999	0	5	22	46	67	92	98	100	100
2000	0	0	3	15	48	76	92	100	100
2001	0	1	6	18	36	57	79	96	100
2002	0	4	20	45	73	93	100	100	100
5-year-average	0.0	2.6	14.6	33.6	58.0	82.2	93.6	99.2	100.0



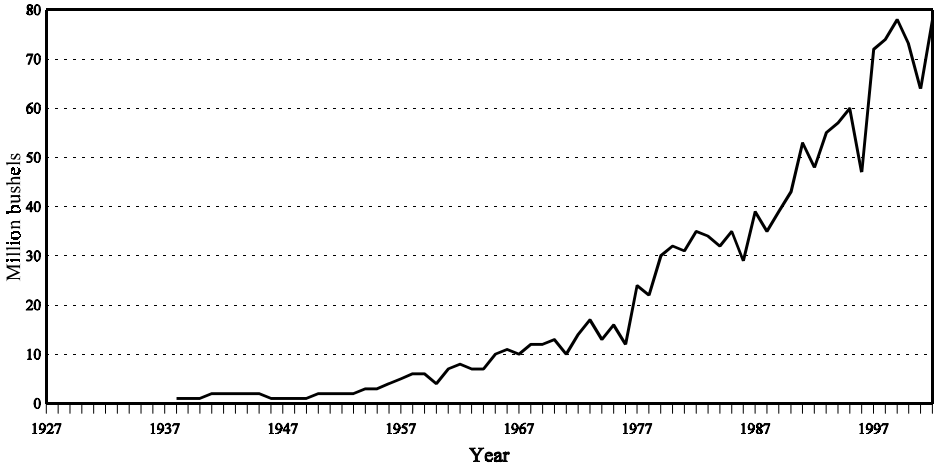
Soybean harvested acres, 1927-2002



Soybean yield, 1927-2002



Soybean production, 1927-2002



Sugarbeets

Acres planted to sugarbeets were estimated at 179,000, down 1,000 acres from the previous year. Harvested acreage at 177,000, increased 7 percent from 2001. All of the crop was planted by the middle of May. Planting conditions for sugarbeets were excellent. High winds damaged some acres and some re-planting was required. Sugarbeet harvest was slow and additional moisture would have made harvest easier. The rains and cooler weather in October helped harvest speed up. Sugarbeet harvest wrapped up by the middle of November. Sugarbeet tonnage was light but had excellent quality. Yields averaged 18.1 tons per acres compared with 19.4 tons per acre in 2001. The total tonnage decreased 7 percent from 2001. Huron and Tuscola were the top sugarbeet producing counties for 2002.

Sugarbeets: Acres, yield, production, and value, 1998-2002

Year	Planted	Harvested	Yield	Production	Price [1]	Value of production
	1,000 acres	*1,000 acres*	*Tons*	*1,000 tons*	*Dollars*	*1,000 dollars*
1998	177	173	16.0	2,768	36.70	101,586
1999	194	190	18.6	3,534	32.80	115,915
2000	189	166	20.5	3,403	31.30	106,514
2001	180	166	19.4	3,220	34.80	112,056
2002	179	177	18.1	3,204	([2])	([2])

[1] Marketing year average.
[2] Published in February 2004.

Wheat

Michigan's 2002 winter wheat crop totaled 32.8 million bushels, down 3.0 million bushels from 2001. Planted acres were down from 570,000 acres the previous year to 500,000. Harvested acreage was at 490,000 acres. The average yield was 67 bushels per acre. The value of the crop rose 24 percent to $108 million. Sanilac, Huron, Lenawee, Saginaw, and Tuscola were the top five counties in wheat production.

Planting began on schedule the second week of September. There was little snow cover for the 2002 winter wheat crop. There was, however, very little extremely cold weather. At the outset of May nearly 70 percent of the crop was rated good to excellent. As a result of an exceedingly cool wet spring, the crop was behind normal progress. By June 1, almost 20 percent of the crop was headed, well below the five year average of 60 percent.

Just over half of the winter wheat crop was turning color as of July 1, below the average of two-thirds for that date. Michigan wheat growers had excellent weather for combining, which began on schedule the second week of July. The crop was generally of high quality. Harvest proceeded quickly with hot, dry conditions and the majority of the wheat crop was harvested by August 1.

Wheat: Acres, yield, production, and value, 1998-2002

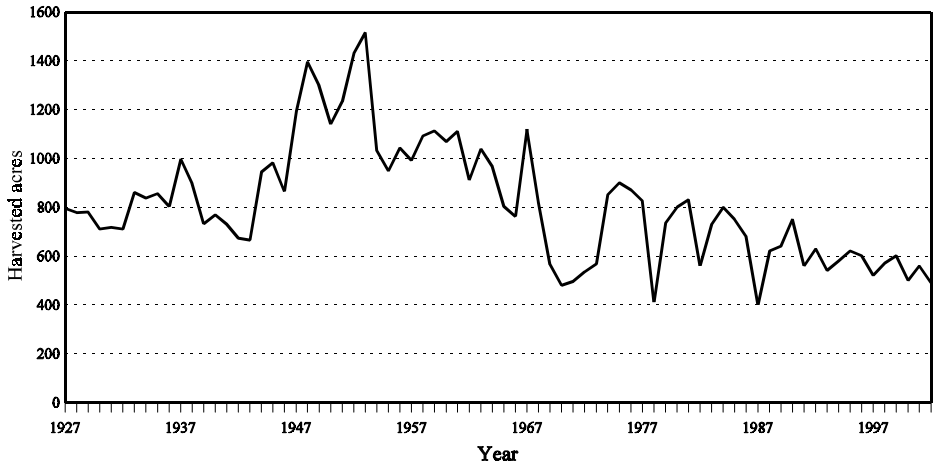
Year	Planted	Harvested	Yield	Production	Price [1]	Value of production
	1,000 acres	*1,000 acres*	*Bushels*	*1,000 bushels*	*Dollars*	*1,000 dollars*
1998	600	570	54	30,780	2.33	71,717
1999	610	600	69	41,400	2.12	87,768
2000	530	500	72	36,000	2.11	76,000
2001	570	560	64	35,840	2.43	87,091
2002	500	490	67	32,830	3.30	108,339

[1] Marketing year average.

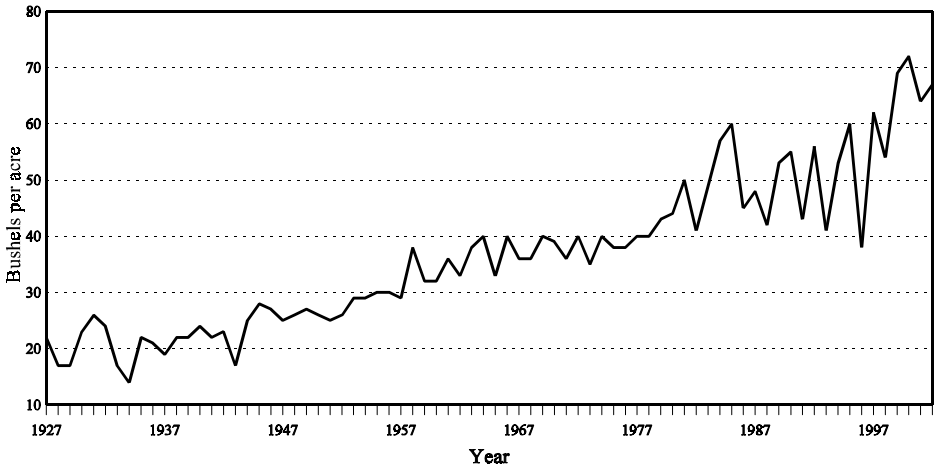
Wheat: Stocks by quarter, 1998-2002

Crop year	September 1		December 1		March 1		June 1	
	On farm	Off farm	On farm	Off farm	On farm	Off farm	On farm	Off farm
	1,000 bushels	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*	*1,000 bushels*
1998	6,500	25,200	4,500	21,000	3,000	17,500	1,100	12,000
1999	5,000	31,050	3,200	25,050	2,800	19,450	1,900	12,900
2000	7,000	28,950	4,100	22,400	3,000	17,150	800	12,380
2001	4,500	25,900	3,300	19,700	1,200	16,050	600	11,330
2002	2,800	23,700	1,200	15,700	400	12,450	300	6,580

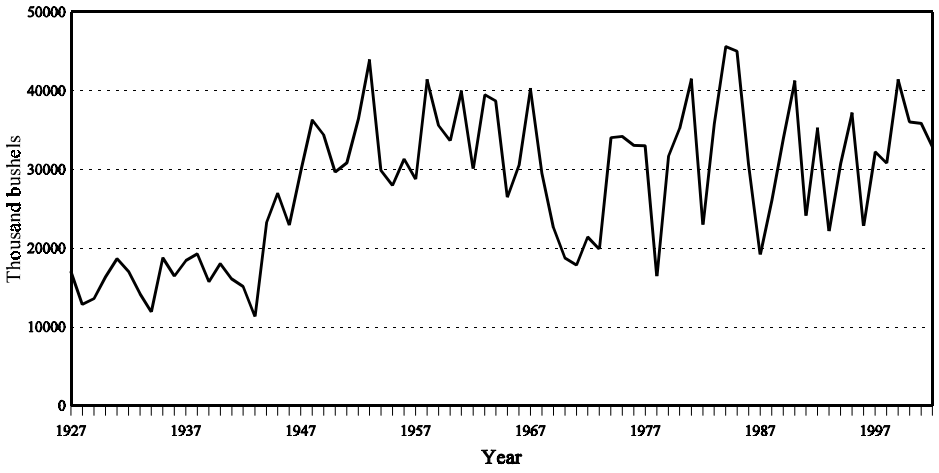
Wheat harvested acres, 1927-2002



Wheat yield, 1927-2002



Wheat production, 1927-2002



Fruit

The 2002 fruit season was one of the worst in history. The season began with cool weather in March and early April. A week of warm, summer like weather in mid-April caused rapid plant growth. Frost hit the State on April 22, causing significant damage to all fruit crops. The following four weeks were wet and cold. This cold and wet period ended with cold weather and frosts from May 17 through May 21. June and July were hot and dry. Drought conditions reduced both plant and fruit growth. Rain returned in August, helping fruit to develop. Dry weather returned in September and continued until early fall when wet, cool weather returned during the apple and grape harvest.

Michigan growers harvested 500 million pounds of apples from 41,000 acres in 2002. The preliminary farm level value of the crop in Michigan was $61 million, down 27 percent from 2001. Michigan ranked third in apple production behind Washington and New York.

Tart and sweet cherries were severely damaged by the spring frosts. Buds that did survive the frosts were not pollinated due to cold weather that hampered insect activity. The cool, wet spring caused widespread disease in both crops. Bacterial spot and cherry leaf spot pressure was very high in 2002. In the northwest, bacterial canker infection in sweet cherries was the worst in 27 years. Insect pressure was light throughout the season. Birds were a major difficulty as harvest neared. Tart cherry production was the lowest since 1945. Sweet cherry production was the lowest since 1948. Michigan growers harvested 15 million pounds of tart cherries from 27,000 acres. The preliminary farm level value of the crop in Michigan was $7.2 million. Michigan ranked second in tart cherry production behind Washington. Sweet cherry growers utilized 2,600 tons from 7,400 acres. The preliminary farm level value of the crop in Michigan was $2.2 million. Michigan ranked fourth in sweet cherry production behind Washington, California, and Oregon.

Blueberries were not as damaged by the cold, damp spring as other crops. Scattered frost damage in Berrien and Van Buren counties was reported. A common problem in blueberries was fewer leaves on a bush than fruit. Hot, dry conditions during harvest kept the fruit size of later pickings small. Birds were a major concern during harvest. Michigan growers harvested 64 million pounds of cultivated blueberries from 16,900 acres. The preliminary farm level value of the crop in Michigan was $52.2 million. Michigan ranked first in blueberry production.

Peaches were significantly damaged by the spring frosts. In southwest Michigan, the frost reduced the crop, but most growers had a fair crop on good peach sites. Lower sites and sites away from Lake Michigan suffered a complete loss. Peaches did not fare much better in southeast Michigan. One bright spot in southeast Michigan was Macomb county, where growers reported a full crop. Peach growers in northern Michigan reported poor yields, but excellent size and quality. Bacterial spot symptoms were common on susceptible varieties. Split pits were common. Oriental fruit moth was a steady problem throughout the season. Michigan growers harvested 14 million pounds of peaches from 4,700 acres. The preliminary farm level value of the crop in Michigan was $4.5 million.

Grapes suffered from the spring frosts, though not as badly as originally anticipated. In the southwest, juice grapes lost almost all primary buds. Secondary buds began to grow in late May. Wine grapes suffered less, as they begin growth later and are usually on higher, better sites. In the northwest, wine grapes weathered the frosts well and produced a crop of excellent quantity and quality. Vintners across the State reported exceptional quality of both red and white grapes. In the northwest, Pinot Noir showed especially deep color with both good body and balance. Cool, wet conditions in early shoot growth favored Phomopsis, the major disease of 2002. Black rot and downy mildew were not significant. Grape berry moth pressure was heavy throughout the season. Michigan growers harvested 42,700 tons of grapes from 12,300 acres. The preliminary farm level value of the crop in Michigan was $14.8 million.

Fruit: Record highs and lows

Crop	Unit	Record high		Record low		Year estimates started
		Quantity	Year	Quantity	Year	
Apples	Million pounds	1,200	1999	53	1945	1889
Blueberries	Million pounds	87	1993	34	1992	1992
Cherries, sweet	Tons	37,500	1978	500	1945	1925
Cherries, tart	Million pounds	380	1964	15	2002	1925
Grapes	Tons	87,200	2000	4,200	1889	1889
Peaches	Million pounds	255	1945,1946	7.4	1918	1889
Pears	Tons	48,600	1964	1,400	2002	1889
Plums	Tons	25,000	1971	250	2002	1919
Strawberries	1,000 cwt	451	1940	42	2002	1928

Fruit: Acres harvested and value of production, 1998-2002

Item	Unit	1998	1999	2000	2001	2002
Acres harvested	1,000 acres	127	124	121	116	112
Value of production	1,000 dollars	205,010	249,763	218,999	218,234	145,721

Fruit: Acres, production, and value, 1998-2002

Fruit and Year	Bearing acres	Yield	Production		Price	Value of production
			Total	Utilized		
	Acres	*Pounds*	*Million pounds*	*Million pounds*	*Dollars per pound*	*1,000 dollars*
Apples						
1998	54,000	18,500	1,000	960	0.087	83,200
1999	52,000	23,100	1,200	1,180	0.088	103,465
2000	48,500	16,500	800	795	0.093	74,065
2001	44,500	20,900	930	900	0.094	84,330
2002	41,000	12,200	500	495	0.124	61,223
Blueberries [1]						
1998	16,400	2,990	49	49	0.618	30,260
1999	16,600	4,220	70	70	0.781	54,660
2000	16,700	3,710	62	62	0.889	55,140
2001	16,800	4,170	70	70	0.712	49,840
2002	16,900	3,790	64	64	0.816	52,240
Cherries, tart						
1998	28,400	9,260	263	229	0.140	32,162
1999	28,100	6,580	185	185	0.228	42,134
2000	28,500	7,020	200	200	0.182	36,370
2001	27,400	10,800	297	242	0.184	44,412
2002	27,000	556	15	15	0.479	7,192
Peaches						
1998	5,000	8,600	43.0	42.5	0.272	11,546
1999	4,600	5,000	23.0	23.0	0.237	5,440
2000	4,800	9,900	47.5	45.5	0.249	11,340
2001	4,600	9,130	42.0	42.0	0.298	12,503
2002	4,700	2,980	14.0	14.0	0.318	4,452
	Acres	*Tons*	*Tons*	*Tons*	*Dollars per ton*	*1,000 dollars*
Cherries, sweet						
1998	7,900	4.43	35,000	33,000	562	18,551
1999	7,700	3.51	27,000	26,500	534	14,149
2000	7,600	2.76	21,000	21,000	490	10,290
2001	7,400	3.11	23,000	23,000	482	11,092
2002	7,400	0.36	2,700	2,600	855	2,222
Grapes						
1998	12,300	5.72	70,400	70,400	282	19,820
1999	11,700	6.40	74,900	74,900	281	21,083
2000	12,500	6.98	87,200	87,200	277	24,156
2001	12,300	2.35	28,900	28,500	355	10,110
2002	12,300	3.47	42,700	42,500	347	14,757
Pears						
1998	900	5.60	5,040	4,800	271	1,302
1999	850	5.88	5,000	4,900	265	1,300
2000	800	6.50	5,200	5,200	270	1,402
2001	800	5.75	4,600	3,900	297	1,160
2002	800	1.75	1,400	1,400	318	445
Plums						
1998	1,100	3.27	3,600	3,600	300	1,080
1999	900	4.44	4,000	3,750	299	1,120
2000	800	4.50	3,600	3,300	261	861
2001	800	4.50	3,600	3,600	358	1,289
2002	800	0.31	250	240	358	86

[1] Harvested acres.

Apples: Stocks in cold and controlled atmosphere storage [1]

Month	Crop year				
	1998	1999	2000	2001	2002
	1,000 pounds	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*
October		525,756	416,923	484,244	237,062
November	405,993	534,061	343,731	392,432	216,805
December	347,729	382,346	294,088	343,380	173,503
January	241,038	357,336	238,013	261,696	130,325
February	177,725	264,771	215,482	199,318	99,044
March	101,682	193,012	160,481	178,996	58,155
April	58,357	127,684	104,512	78,303	22,467

[1] End-of-month stocks.

Apples: Utilization and price, 1998-2002

Year	Fresh market		Processing		Total	
	Quantity	Price per lb	Quantity	Price per lb	Quantity	Price per lb
	Million pounds	*Dollars*	*Million pounds*	*Dollars*	*Million pounds*	*Dollars*
1998	320	0.140	640	0.060	960	0.087
1999	370	0.145	810	0.062	1,180	0.088
2000	260	0.147	535	0.067	795	0.093
2001	270	0.170	630	0.061	900	0.094
2002	150	0.223	345	0.805	495	0.124

Apples, processing: Utilization and price, 1998-2002

Year	Canned		Frozen		Juice and cider		Other	
	Quantity	Price per lb	Quantity	Price per lb	Quantity	Price per lb	Quantity	Price per lb
	Million pounds	*Dollars*	*Million pounds*	*Dollars*	*Million pounds*	*Dollars*	*Million pounds*	*Dollars*
1998	230	0.073	100	0.086	300	0.041	10	0.050
1999	255	0.072	160	0.082	380	0.045	15	0.060
2000	190	0.078	120	0.085	215	0.048	10	0.083
2001	220	0.072	115	0.082	280	0.042	15	0.065
2002 [1]								

[1] Published in January 2004.

Blueberries: Utilization and price, 1998-2002

Year	Production		Fresh market		Processed	
	Total	Utilized	Quantity	Price per pound	Quantity	Price per pound
	Million lbs	*Million lbs*	*Million lbs*	*Dollars*	*Million lbs*	*Dollars*
1998	49	49	16	0.860	33	0.500
1999	70	70	18	1.130	52	0.660
2000	62	62	19	1.250	43	0.730
2001	70	70	21	1.090	49	0.550
2002	64	64	22	1.210	42	0.610

Cherries, sweet: Production and utilization, 1998-2002

Year	Total production	Utilized production							
		Fresh		Canned		Brined		Other [1]	
		Quantity	Price per ton	Quantity	Price per ton	Quantity	Price per ton	Quantity	Price per ton
	Tons	*Tons*	*Dollars*	*Tons*	*Dollars*	*Tons*	*Dollars*	*Tons*	*Dollars*
1998	35,000	700	1,400	4,700	580	24,500	530	3,100	598
1999	27,000	950	1,500	3,900	540	19,300	470	2,350	650
2000	21,000	600	1,680	900	500	15,000	430	4,500	528
2001	23,000	1,000	1,280	700	450	15,500	440	5,800	460
2002	2,700	200	2,540	280	1,000	1,700	630	420	864

[1] Frozen, juice, etc.

Cherries, tart: Utilization, 1998-2002

Year	Production		Fresh market	Processed					
	Total	Utilized		Canned		Frozen		Other [1]	
				Quantity	Price per pound	Quantity	Price per pound	Quantity	Price per pound
	Million lbs	*Million lbs*	*Million lbs*	*Million lbs*	*Dollars*	*Million lbs*	*Dollars*	*Million lbs*	*Dollars*
1998	263	229	1.0	65.0	0.147	150	0.139	13.0	0.064
1999	185	185	1.0	69.0	0.239	100	0.230	15.0	0.144
2000	200	200	1.0	80.0	0.187	110	0.181	9.0	0.106
2001	297	242	1.0	80.0	0.179	151	0.189	10.0	0.098
2002	15	15	0.1	6.5	0.460	8	0.500	0.4	0.340

[1] Juice, wine, and dried.

Cherries, tart: Production by region, 1998-2002

Region	1998	1999	2000	2001	2002
	Million pounds	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*
Northwest	186	108	109	183	3
West Central	59	48	71	84	4
Southwest and other	18	29	20	30	8
Michigan	263	185	200	297	15

Cherries, tart, frozen: Stocks in cold storage, 1999-2002, crop years

Month	East North Central region [1]				48 States total [2]			
	1999	2000	2001	2002	1999	2000	2001	2002
	1,000 pounds	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*	*1,000 pounds*
July	141,216	135,748	135,786	65,585	162,135	166,000	158,160	81,794
August	131,875	133,294	151,858	58,797	156,754	160,497	174,165	78,729
September	126,300	115,570	137,019	52,852	149,070	141,514	155,033	74,498
October	114,435	110,116	124,835	45,814	136,220	133,210	144,013	66,942
November	105,799	101,551	111,568	39,524	125,343	122,339	129,620	59,721
December	98,574	95,628	109,652	36,543	116,364	115,042	127,215	54,724
January	88,934	90,638	101,979	32,558	105,384	107,783	117,143	48,085
February	82,887	83,994	101,197	26,030	97,224	98,810	115,834	38,771
March	72,641	75,583	94,168	23,580	84,957	88,595	106,150	34,968
April	67,478	68,465	85,579	19,409	78,475	78,721	96,170	27,766
May	57,753	58,553	78,357	12,440	66,628	66,095	86,138	18,375
June	53,578	50,822	68,655	8,681	61,412	56,927	75,159	12,684

[1] Illinois, Indiana, Michigan, Ohio, and Wisconsin.
[2] Excluding Alaska and Hawaii.

Grapes: Processed utilization and value, 1998-2002

Year	Concord	Niagara	Other	Total		
				Utilized production	Price per ton	Value
	1,000 Tons	*1,000 Tons*	*1,000 Tons*	*1,000 Tons*	*Dollars*	*1,000 dollars*
1998	53.8	13.7	2.5	70.0	278	19,460
1999	57.3	14.4	2.7	74.4	278	20,683
2000	64.5	19.1	3.1	86.7	274	23,756
2001	19.0	7.0	2.2	28.2	350	9,870
2002	25.3	13.9	3.0	42.2	344	14,517

Grapes: Processed for wine by category, 1998-2002 [1]

Year	Hybrids		Vinifera		Other		Total		
	Quantity	Price per ton	Quantity	Price per ton	Quantity	Price per ton	Quantity	Price per ton	Value of production
	Tons	*Dollars*	*Tons*	*Dollars*	*Tons*	*Dollars*	*Tons*	*Dollars*	*1,000 dollars*
1998							2,500	775	1,938
1999							2,900	700	2,030
2000							3,100	825	2,558
2001							2,200	940	2,068
2002	1,300	425	1,650	1,330	50	250	3,000	920	2,760

[1] Quantity and price per ton by category first published in 2002.

Peaches: Utilization and value, 1999-2002

Year	Fresh Market			Processing		
	Production	Price per pound	Value of production	Production	Price per ton	Value of production
	Million lbs	*Dollars*	*1,000 dollars*	*Million lbs*	*Dollars*	*1,000 dollars*
1998	31.5	0.315	9,923	11.0	295	1,623
1999	11.0	0.320	3,520	12.0	320	1,920
2000	29.5	0.280	8,260	16.0	385	3,080
2001	27.0	0.375	10,125	15.0	317	2,378
2002	10.6	0.370	3,922	3.4	312	530

Plums: Utilization and value, 1998-2002

Year	Fresh Market			Processing		
	Production	Price per Ton	Value of production	Production	Price per ton	Value of production
	Tons	*Dollars*	*1,000 dollars*	*Tons*	*Dollars*	*1,000 dollars*
1998	1,200	390	468	2,400	255	612
1999	1,100	440	484	2,650	240	636
2000	1,250	270	338	2,050	255	523
2001	1,800	442	796	1,800	274	493
2002	60	600	36	180	278	50

Strawberries: Acres, production and value, 1998-2002

Year	Total	Harvested	Yield	Production	Price per cwt	Value of production
	Acres	*Acres*	*Cwt*	*1,000 cwt*	*Dollars*	*1,000 dollars*
1998	1,500	1,400	68	95	74.60	7,089
1999	1,400	1,400	64	90	71.20	6,412
2000	1,200	1,200	69	83	74.00	6,145
2001	1,000	900	56	50	93.60	4,682
2002	1,000	900	47	42	90.60	3,804

Strawberries: Utilization and value, 1998-2002

Year	Fresh Market			Processing		
	Production	Price per cwt	Value of production	Production	Price per cwt	Value of production
	1,000 cwt	*Dollars*	*1,000 dollars*	*1,000 cwt*	*Dollars*	*1,000 dollars*
1998	82	79.00	6,478	13	47.00	611
1999	71	78.00	5,538	19	46.00	874
2000	66	81.00	5,346	17	47.00	799
2001	44	100.00	4,400	6	47.00	282
2002	36	98.00	3,528	6	46.00	276

Refrigerated warehouses: Number and capacity, October 1, 2001 [1]

Type	Number	Usable freezer space	Usable cooler space	Controlled atmosphere
		1,000 cu ft	*1,000 cu ft*	*1,000 bushels*
Apple	181		29,742	7,537
General-public	25	47,423	7,783	
General-private and semi-private	22	12,446	6,240	

[1] Conducted biennially.

Vegetables

Michigan vegetable growers produced 820,430 tons of fresh and processed vegetables in 2002. Harvested acreage was 117,700, up 5 percent from 2001. Value of production totaled $209 million. Nationally, Michigan ranked seventh and fifth in fresh market and processing vegetable sales, respectively.

Michigan farmers produced 9.15 million hundredweight of fresh market vegetables, a slight decrease from 2001. Processing vegetable production totaled 362,930 tons, up 14 percent from 2001. Michigan was again the top state in pickle production. Vegetable planting and progress were slowed by cool and wet weather through May. Some frost damage to early crops was reported. However, the above normal rainfall in late May and early June benefitted crops. Vegetables were in good condition and grew rapidly in response to warmer June temperatures. Harvest progressed smoothly across the State.

Dual purpose vegetable acreage is used for both fresh market and processing. Nationally, Michigan ranked third for dual purpose asparagus production with 219,000 hundredweight produced on 15,000 acres harvested. Harvest progress in the State was hindered by hard frost damage. Harvest continued until late June with few problems. Production was down 24 percent from 2001.

Vegetables: Record highs and lows

Crop	Unit	Record high		Record low		Year estimates started
		Quantity	Year	Quantity	Year	
Asparagus						
Harvested	1,000 acres	23.0	1989	1.0	1928	1928
Yield	Cwt	31	1947	9	1981	
Production	1,000 cwt	306	1995	17	1928	
Beans, snap (processing)						
Harvested	1,000 acres	27.0	1999	0.8	1921	1918
Yield	Tons	3.89	1998	0.60	1947	
Production	Tons	100,970	1999	600	1921	
Carrots (fresh market)						
Harvested	1,000 acres	7.7	1994	0.5	1929	1929
Yield	Cwt	398	1995	155	1957	
Production	1,000 cwt	2,610	1995	132	1936	
Celery						
Harvested	1,000 acres	7.2	1941	1.8	1966,1968	1928
Yield	Cwt	520	1996	174	1935	
Production	1,000 cwt	1,915	1941	576	1966	
Corn, sweet (fresh market)						
Harvested	1,000 acres	15.2	1961	9.0	1988,2001	1949
Yield	Cwt	85	1994,1995,1996,1997	42	1949	
Production	1,000 cwt	1,020	1994	525	1949	
Cucumbers (processing)						
Harvested	1,000 acres	46.3	1949	9.3	1932	1918
Yield	Tons	6.7	1987	0.6	1924	
Production	Tons	180,000	2000	8,900	1932	
Onions						
Harvested	1,000 acres	12.7	1935	3.5	2000	1928
Yield	Cwt	350	1960	120	1935	
Production	1,000 cwt	2,833	1948	852	1928	
Tomatoes (fresh market)						
Harvested	1,000 acres	9.4	1943	1.7	2002	1928
Yield	Cwt	210	1998,2001,2002	60	1959	
Production	1,000 cwt	797	1943	204	1988	
Tomatoes (processing)						
Harvested	1,000 acres	9.7	1982	1.0	1921	1918
Yield	Tons	36.0	1998	2.7	1943	
Production	Tons	205,000	1982	5,000	1921	

Vegetables: Acres harvested and value of production, 1998-2002

Item	Unit	1998	1999	2000	2001 [1]	2002 [1]
Acres harvested	1,000 acres	107	114	123	112	118
Value of production	1,000 dollars	183,399	177,903	219,240	208,121	208,848

[1] Includes crops for which no data were available before 2000.

Principal vegetables, fresh market: Acres, production, and value, 1998-2002

Year	Planted	Harvested	Production	Value
	Acres	*Acres*	*1,000 cwt*	*1,000 dollars*
1998	56,600	53,550	7,307	136,522
1999	56,500	54,000	7,378	124,282
2000	69,700	64,850	8,493	156,650
2001 [1]	70,100	62,300	9,154	157,708
2002 [1]	67,800	62,600	9,150	157,609

[1] Includes crops for which no data were available before 2000.

Principal vegetables, processing: Acres, production, and value, 1998-2002

Year	Planted	Harvested	Production	Value
	Acres	*Acres*	*Tons*	*1,000 dollars*
1998	55,000	53,300	345,740	46,877
1999	61,500	59,900	390,370	53,621
2000	60,760	58,450	390,580	62,590
2001	52,350	50,100	318,280	50,413
2002	56,900	55,100	362,930	51,239

Vegetables, processing: Acres, production, and value, 1998-2002 [1]

Item and Year	Planted	Harvested	Yield	Production	Price per ton	Value
	Acres	*Acres*	*Tons*	*Tons*	*Dollars*	*1,000 dollars*
Carrots						
1998	1,700	1,600	19.00	30,400	59.40	1,806
1999	1,600	1,500	26.00	39,000	67.60	2,636
2000	1,260	1,250	28.00	35,000	68.80	2,408
2001	1,550	1,500	21.00	31,500	69.00	2,174
2002	1,400	1,400	23.00	32,200	67.00	2,157
Cucumbers						
1998	27,000	26,000	5.00	130,000	169.00	21,970
1999	27,000	26,500	6.00	159,000	164.00	26,076
2000	31,000	30,000	6.00	180,000	215.00	38,700
2001	31,000	29,500	4.25	125,380	246.00	30,843
2002	35,500	34,500	4.60	158,700	190.00	30,153
Snap beans						
1998	21,500	21,000	3.89	81,600	171.00	13,973
1999	28,000	27,000	3.74	100,970	166.00	16,765
2000	25,500	24,400	3.75	91,580	160.00	14,678
2001	16,500	16,000	3.50	56,000	160.00	8,964
2002	16,700	16,000	3.75	60,030	160.00	9,633
Tomatoes						
1998	2,600	2,500	36.00	90,000	84.00	7,560
1999	2,900	2,900	30.00	87,000	84.00	7,308
2000	3,000	2,800	30.00	84,000	81.00	6,804
2001	3,300	3,100	34.00	105,400	80.00	8,432
2002	3,300	3,200	35.00	112,000	83.00	9,296

[1] Cabbage for sauerkraut and green peas are not published to avoid disclosure of individual operations.

Vegetables, fresh market: Acres, production, and value, 1998-2002

Item and year	Planted	Harvested	Yield	Production	Price per cwt	Value [1]
	Acres	*Acres*	*Cwt*	*1,000 cwt*	*Dollars*	*1,000 dollars*
Beans, snap						
1998	2,200	2,100	60	126	61.00	7,686
1999	2,200	2,200	40	88	31.00	2,728
2000	2,300	2,000	42	84	25.00	2,100
2001	4,200	3,800	50	190	35.00	6,650
2002	4,400	4,300	45	194	38.00	7,372
Cabbage						
1998	1,800	1,700	260	442	13.30	5,879
1999	1,900	1,800	280	504	8.60	4,334
2000	1,800	1,700	250	425	12.80	5,440
2001	2,000	1,800	320	576	14.00	8,064
2002	1,900	1,800	300	540	12.00	6,480
Cantaloups						
1998	800	750	150	113	19.00	2,147
1999	800	700	140	98	17.30	1,695
2000	800	750	140	105	15.30	1,607
2001	600	500	105	53	21.00	1,113
Carrots						
1998	4,700	4,600	290	1,334	13.10	17,475
1999	4,700	4,700	280	1,316	10.70	14,081
2000	4,700	4,500	280	1,260	13.40	16,884
2001	5,000	4,800	350	1,680	13.80	23,184
2002	4,700	4,400	330	1,452	13.00	18,876
Corn, sweet						
1998	11,000	10,000	75	750	17.20	12,900
1999	11,500	10,600	70	742	17.90	13,282
2000	11,500	10,600	70	742	18.10	13,430
2001	10,500	9,000	60	540	22.00	11,880
2002	11,000	10,000	80	800	21.00	16,800
Cucumbers						
1998	7,000	6,500	190	1,235	17.30	21,336
1999	7,000	6,600	220	1,452	15.50	22,506
2000	7,000	6,700	200	1,340	18.80	25,192
2001	6,500	5,500	220	1,210	20.00	24,200
2002	6,800	6,000	190	1,140	18.00	20,520
Onions						
1998	4,500	4,200	260	1,092	11.00	9,614
1999	4,100	4,000	270	1,080	10.00	8,640
2000	4,100	3,500	270	945	12.50	9,450
2001	4,100	3,700	270	999	12.20	9,748
2002	4,000	3,900	230	897	12.50	8,963
Radishes						
2000	2,700	2,500	70	175	27.20	4,760
2001	2,700	3,000	70	195	27.20	4,760
Tomatoes						
1998	2,500	2,300	210	483	38.50	18,596
1999	2,800	2,600	190	494	33.50	16,549
2000	2,500	2,400	170	408	44.40	18,115
2001	1,900	1,800	210	378	35.00	13,230
2002	1,800	1,700	210	357	30.50	10,889

[1] Onions = Value of sales.

Vegetables, dual purpose: Acres, production, and value, 1998-2002

Item and year	Planted	Harvested	Yield	Production	Price per cwt	Value
	Acres	*Acres*	*Cwt*	*1,000 cwt*	*Dollars*	*1,000 dollars*
Asparagus						
1998	17,500	17,000	16	278	62.30	17,320
1999	17,000	16,500	18	297	63.40	18,822
2000	17,000	16,500	17	283	63.90	18,075
2001	15,500	14,300	20	290	43.20	12,516
2002	16,000	15,000	15	219	53.40	11,703
Celery						
1998	2,300	2,200	470	1,034	12.90	13,327
1999	2,000	1,900	450	855	12.90	11,005
2000	2,000	1,900	500	950	14.10	13,421
2001	2,000	1,900	460	873	14.50	12,650
2002	2,200	2,100	470	987	14.60	14,441
Peppers, bell						
1998	1,900	1,800	200	360	24.00	8,640
1999	2,100	2,000	200	400	24.00	9,600
2000	2,200	2,100	220	462	22.50	10,395
2001	1,900	1,400	260	364	22.00	8,008
2002	1,800	1,600	250	400	24.00	9,600
Pumpkins						
2000	5,500	4,400	160	704	12.00	8,448
2001	5,500	4,400	120	528	12.00	6,336
2002	6,000	5,000	120	600	16.00	9,600
Squash						
2000	5,600	5,300	115	610	15.30	9,333
2001	6,900	6,400	200	1,278	11.90	15,254
2002	7,200	6,800	230	1,564	14.30	22,365

Asparagus: Utilization and value, 1998-2002

Year	Fresh market			Processing		
	Production	Price per cwt	Value of production	Production	Price per ton	Value of production
	1,000 cwt	*Dollars*	*1,000 dollars*	*Tons*	*Dollars*	*1,000 dollars*
1998	36	65.00	2,340	12,080	1,240	14,980
1999	34	74.00	2,516	13,150	1,240	16,306
2000	41	69.00	2,829	12,100	1,260	15,246
2001	48	49.00	2,352	12,100	840	10,164
2002	21	67.00	1,407	9,900	1,040	10,296

U.S. Pickle stocks in tanks, barrels, and fresh pack, December 1, 2000-2002

Year	From current year crop			From previous year crop		Total stocks
	Salt stock including dill	Fresh pack	Refrigerated	Salt stock including dill	Fresh pack	
	Tons	*Tons*	*Tons*	*Tons*	*Tons*	*Tons*
2000	192,647	42,642	1,449	141,556	9,250	387,544
2001	285,902	129,986	12,426	123,989		552,303
2002	225,243	54,329	1,236	19,772		300,580

Principal vegetables: Number of farms and harvested acres, 2001

County and district	Farms	Processing	Fresh market	Total
	Number	*Acres*	*Acres*	*Acres*
Delta	12		750	750
Dickinson	6	300	145	445
Marquette	3	200	150	350
Other counties	24	300	420	720
Upper Peninsula	45	800	1,465	2,265
Antrim	14		1,500	1,500
Grand Traverse	16	50	125	175
Kalkaska	4		750	750
Manistee	15	700	550	1,250
Other counties	41	50	475	525
Northwest	90	800	3,400	4,200
Presque Isle	19	50	2,080	2,130
Other counties	26	50	170	220
Northeast	45	100	2,250	2,350
Mason	46	3,450	750	4,200
Muskegon	20	2,050	450	2,500
Newaygo	28	900	4,400	5,300
Oceana	130	11,400	3,400	14,800
Gratiot	17	4,350	260	4,610
Isabella	7	800	600	1,400
Mecosta	17	4,800	250	5,050
Midland	10	300	30	330
Montcalm	39	16,900	830	17,730
Other counties	11	50	330	380
West Central and Central	325	45,000	11,300	56,300
Arenac	20	2,200	850	3,050
Bay	67	2,500	2,500	5,000
Saginaw	27	2,950	250	3,200
Tuscola	20	2,850	350	3,200
Other counties	21	700	950	1,650
East Central	155	11,200	4,900	16,100
Allegan	52	3,550	4,300	7,850
Berrien	116	800	6,300	7,100
Cass	16	2,850	1,100	3,950
Kalamazoo	22	2,100	300	2,400
Kent	40	600	2,650	3,250
Ottawa	71	300	2,850	3,150
Van Buren	63	7,100	3,000	10,100
Southwest	380	17,300	20,500	37,800
Branch	15	2,700	250	2,950
Calhoun	24	200	650	850
Clinton	26	200	400	600
Eaton	18		1,550	1,550
Ingham	17		900	900
Ionia	12	550	550	1,100
Jackson	21		550	550
St Joseph	42	14,300	800	15,100
Other counties	25	250	350	600
South Central	200	18,200	6,000	24,200

--continued

Principal vegetables: Number of farms and harvested acres, 2001 (continued)

County and district	Farms	Processing	Fresh market	Total
	Number	*Acres*	*Acres*	*Acres*
Genesee	31	750	650	1,400
Lapeer	33		2,250	2,250
Lenawee	25	2,750	850	3,600
Livingston	20	50	1,250	1,300
Macomb	48		2,650	2,650
Monroe	45	1,950	2,300	4,250
Oakland	14		400	400
St Clair	32		700	700
Washtenaw	34		2,500	2,500
Wayne	28		800	800
Southeast	310	5,500	14,350	19,850
Michigan	1,550	98,900	64,165	163,065

Principal vegetables: Planted and harvested acres, 1998-2001

Vegetable	1998			2001		
	Total planted	Harvested for processing	Harvested for fresh market	Total planted	Harvested for processing	Harvested for fresh market
	Acres	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*
Asparagus	17,500	14,200	2,800	15,500	11,500	2,800
Beans, snap	23,700	21,000	2,100	20,700	16,000	3,800
Cabbage	2,250	450	1,700	2,300	300	1,800
Cantaloups	800	0	750	600	0	500
Carrots	6,400	1,600	4,600	6,550	1,500	4,800
Cauliflower	400	0	400	400	150	220
Celery	2,300	400	1,800	2,000	500	1,400
Corn, sweet	11,000	0	10,000	10,500	0	9,000
Cucumbers	34,000	26,000	6,500	37,500	29,500	5,500
Onions, dry	4,500	0	4,200	4,100	0	3,700
Peas, green	1,765	1,700	50	1,750	1,500	45
Peppers, bell	1,900	250	1,550	1,900	200	1,400
Peppers, other	775	580	140	1,400	1,100	250
Potatoes	47,000	30,200	13,850	46,000	31,500	11,100
Pumpkins	4,100	0	3,800	5,500	0	4,400
Radishes	2,700	0	2,500	([1])	0	([1])
Squash, summer	2,250	900	1,300	3,200	800	2,200
Squash, winter	2,900	900	1,800	3,700	1,100	2,300
Tomatoes	5,100	2,500	2,300	5,200	3,100	1,800
Other	3,800	0	3,600	8,350	150	7,150
Michigan	175,140	100,680	65,740	177,150	98,900	64,165

[1] Included in other vegetables.

Horticulture

Michigan placed fourth nationally in value of wholesale sales of floriculture products in 2002. Reports from Michigan's 657 commercial growers ($10,000 or more in gross sales) showed an estimated wholesale value of $313.9 million for all surveyed floriculture crops, up 12 percent from last year's revised figure. This estimate includes summarized sales data as reported by growers with $100,000 or more in sales plus a calculated wholesale value of sales for operations with sales from $10,000 to $99,999. The leading crop category breakdowns for Michigan operations with more than $100,000 in sales were:

First, annual bedding/garden plants with $154 million in sales.
Second, herbaceous perennial plants with $57 million in sales.
Third, propagative materials with $45 million in sales.
Fourth, potted flowering plants with $31 million in sales.

Michigan leads the nation in value of sales for 8 floriculture crops:

- Propagative (Unfinished) Annual Bedding/Garden plants, valued at $37 million.
- Potted Geraniums (seed) with 16.2 million pots sold, valued at $13.1 million.
- Other Flowering Hanging Baskets with 1.5 million baskets sold, valued at $9.6 million
- New Guinea Impatiens Pots with 3.8 million pots sold, valued at $5.1 million
- New Guinea Impatiens Hanging Baskets, 680,000 baskets sold, valued at $4.4 million.
- Geranium Hanging Baskets (cuttings) with 512,000 baskets sold, valued at $3.5 million.
- Begonia Hanging Baskets with 325,000 sold, valued at $1.9 million.
- Marigold Hanging Baskets with 3,000 baskets sold, valued at $17,000.

Other notable Michigan crops that ranked second in value of sales nationally were:

- Other Potted Herbaceous Perennials with 26.8 million pots sold, valued at $45 million.
- Impatiens (flats) with 2.3 million flats sold, valued at $16.9 million.
- Petunias (flats) with 1.4 million flats sold, valued at $10.1 million.
- Potted Geraniums (cuttings) with 5.2 million pots sold, valued at $8.6 million.
- Gladioli Cut Flowers (spikes) with 46.9 million spikes sold, valued at $6.5 million.
- Begonias (flats) with 870,000 flats sold, valued at $6.4 million.
- Potted Hosta with 1.9 million pots sold, valued at $5.9 million.
- Marigolds (flats) with 688,000 flats sold, valued at $5.1 million.
- Potted Easter Lilies with 1.4 million pots sold, valued at $4.9 million.
- Impatiens Hanging Baskets with 428,000 baskets sold, valued at $2.3 million.
- Petunia Hanging Baskets with 322,000 baskets sold, valued at $1.8 million.
- Geraniums from Seed (flats) with 103,000 flats sold, valued at $1.1 million.
- Pansy/Viola Hanging Baskets with 51,000 baskets sold, valued at $283,000.

Floriculture crops: Number of growers by gross value of sales, 1998-2002

Year	$10,000-$19,999	$20,000-$39,000	$40,000-$49,000	$50,000-$99,999	$100,000-$499,999	$500,000 or more	Total growers
	Number	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
1998	77	111	45	139	263	111	746
1999	78	82	49	190	222	117	738
2000	74	89	44	170	239	131	747
2001	57	83	47	161	239	121	708
2002	31	87	53	144	221	121	657

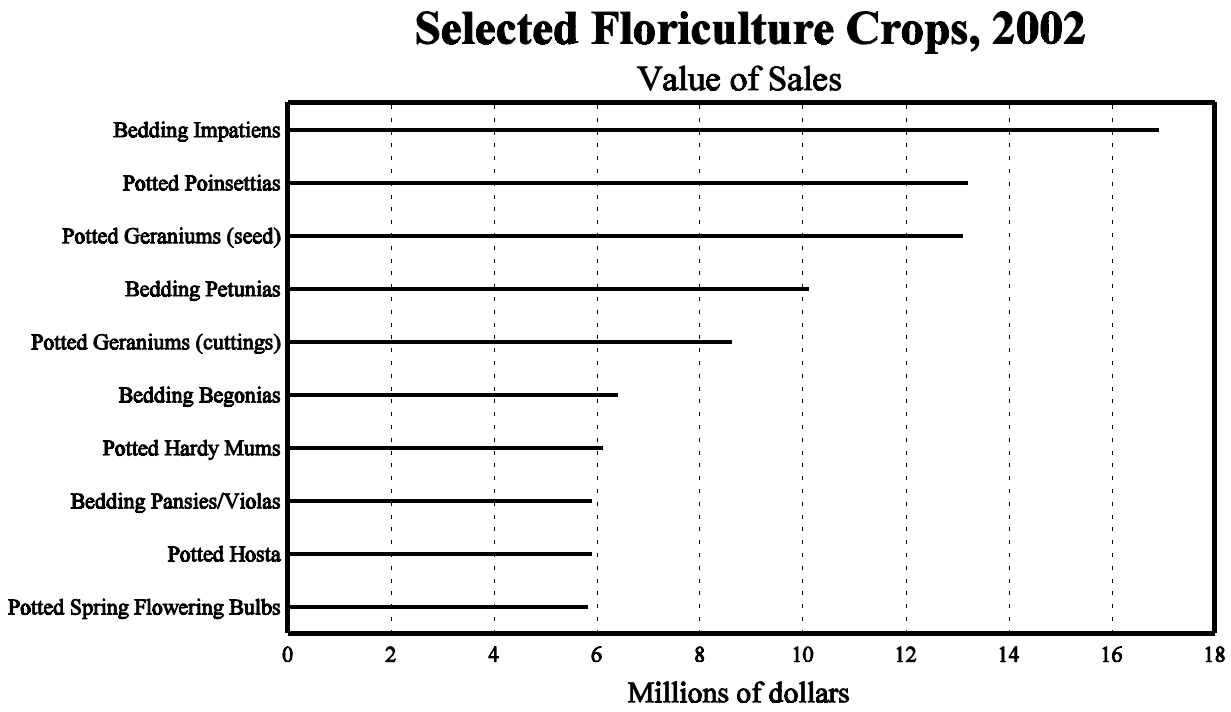
Floriculture crops: Growing area by type of cover, 1998-2002

Year	Glass greenhouses	Fiberglass and other rigid greenhouses	Plastic film greenhouses	Total greenhouse cover	Shade and temporary cover	Total covered area	Open ground
	1,000 square feet	*1,000 square feet*	*1,000 square feet*	*1,000 square feet*	*1,000 square feet*	*1,000 square feet*	*Acres*
1998	4,515	3,643	33,174	41,332	836	42,168	2,298
1999	4,487	3,736	31,585	39,808	949	40,757	2,205
2000	4,441	4,096	32,665	41,202	1,106	42,308	3,299
2001	4,706	3,876	31,902	40,484	1,141	41,625	3,235
2002	4,578	4,635	39,719	48,932	2,182	51,114	3,583

Floriculture crops: Wholesale value of sales by category, 1998-2002

Year	Total cut flowers	Total potted flowering plants	Total foliage for indoor or patio use	Total bedding/ garden plants	Total wholesale value of reported crops [1]	Expanded wholesale value of reported crops [2]
	1,000 dollars	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
1998	8,551	27,621	3,056	172,615	211,509	228,444
1999	4,995	27,828	2,996	175,988	211,807	231,939
2000	7,624	32,363	3,601	188,648	254,953	273,517
2001	8,119	29,447	3,531	188,216	263,158	280,745
2002	8,298	30,660	3,644	210,627	298,588	313,918

[1] Total data for 1999 and 2000 are not comparable; total sales of propagative material were added in 2000.
[2] Wholesale value of sales as reported by growers with $100,000 or more in sales of floriculture crops plus a calculated wholesale value of sales for growers with sales below $100,000. The value of sales for growers below the $100,000 level was estimated by multiplying the number of growers in each size group by the midpoint of each dollar range.



Bedding plants: Producers, quantity sold, price, and value, 1998-2002

Item	Producers	Quantity sold	Percent of sales at wholesale	Wholesale price	Value of sales at wholesale
	Number	*1,000 flats*	*Percent*	*Dollars*	*1,000 dollars*
Begonias					
2000	199	847	83	7.15	6,056
2001	209	1,025	86	7.06	7,237
2002	207	870	84	7.33	6,377
Geraniums					
1998	97	783	94	7.02	5,497
1999	99	757	88	8.28	6,268
Geraniums from cuttings					
2000	43	292	78	6.21	1,813
2001	27	85	39	12.25	1,041
2002	20	76	33	12.55	954
Geraniums from seed					
2000	50	219	93	8.11	1,776
2001	52	113	87	11.53	1,303
2002	45	103	89	10.31	1,062
Impatiens					
1998	269	3,314	81	5.88	19,486
1999	249	2,912	82	6.47	18,841
2000	251	2,403	83	6.81	16,364
2001	242	2,344	83	7.05	16,525
2002	215	2,289	88	7.39	16,916
Marigolds					
2000	205	789	89	6.87	5,420
2001	214	794	86	7.35	5,836
2002	210	688	90	7.45	5,126
New Guinea Impatiens					
1998	36	86	85	8.25	710
1999	58	151	84	9.21	1,391
2000	46	125	91	8.21	1,026
2001	40	99	83	11.17	1,106
2002	40	100	75	9.89	989
Pansies/Violas					
2000	195	679	90	6.67	4,529
2001	200	637	89	6.94	4,421
2002	201	802	92	7.35	5,895
Petunias					
1998	272	1,787	79	5.96	10,651
1999	250	1,651	85	6.35	10,484
2000	268	1,502	85	6.76	10,154
2001	259	1,484	86	7.03	10,433
2002	242	1,360	88	7.46	10,146
Other flowering and foliar					
1998	291	7,152	84	5.83	41,696
1999	259	7,683	88	6.36	48,864
2000	258	4,506	86	6.89	31,046
2001	243	3,985	86	6.91	27,536
2002	232	3,609	87	7.50	27,068
Vegetables [1]					
1998	189	1,008	72	6.69	6,744
1999	210	827	85	6.69	5,533
2000	218	720	83	6.99	5,033
2001	187	567	82	6.97	3,952
2002	180	561	84	7.24	4,062

[1] Does not include vegetable transplants grown for commercial use.

Hanging baskets: Producers, quantity sold, price, and value, 1998-2002

Item	Producers	Quantity sold	Percent of sales at wholesale	Wholesale price	Value of sales at wholesale
	Number	*1,000 baskets*	*Percent*	*Dollars*	*1,000 dollars*
Begonias					
2000	148	261	83	5.61	1,464
2001	145	276	82	5.94	1,639
2002	139	325	84	5.84	1,898
Geraniums					
1998	230	497	71	6.46	3,211
1999	240	685	67	6.41	4,391
Geraniums from cuttings					
2000	211	485	73	6.39	3,099
2001	199	399	75	6.76	2,697
2002	201	512	81	6.80	3,482
Geraniums from seed					
2000	23	58	70	5.85	339
2001	30	101	76	5.82	588
2002	26	52	91	6.54	340
Impatiens					
1998	210	406	76	4.90	1,989
1999	218	438	79	4.94	2,164
2000	195	411	85	4.95	2,034
2001	186	376	86	5.49	2,064
2002	172	428	88	5.41	2,315
Marigolds					
2000	5	2	94	5.89	12
2001	3	4	100	5.61	22
2002	3	3	96	5.60	17
New Guinea Impatiens					
1998	233	574	80	6.28	3,605
1999	229	727	73	6.41	4,660
2000	226	607	82	6.45	3,915
2001	219	586	83	6.50	3,809
2002	213	680	88	6.44	4,379
Pansies/Violas					
2000	30	36	96	5.65	203
2001	27	33	87	5.57	184
2002	32	51	93	5.54	283
Petunias					
1998	183	164	76	5.12	840
1999	210	252	80	5.27	1,328
2000	178	251	85	4.96	1,245
2001	168	236	79	5.66	1,336
2002	161	322	87	5.66	1,823
Other flowering					
1998	244	1,465	71	6.12	8,966
1999	262	1,935	85	5.92	11,455
2000	189	1,346	82	5.95	8,009
2001	177	1,164	82	6.21	7,228
2002	182	1,544	88	6.24	9,635
Foliage					
1998	47	253	90	4.57	1,156
1999	55	315	93	5.06	1,594
2000	64	299	93	5.54	1,656
2001	52	306	95	4.95	1,515
2002	55	316	95	5.01	1,583

Potted flowering and annual bedding plants: Producers, quantity sold, price, and value, 1998-2002

Item	Producers	Quantity sold			Percent of sales at wholesale	Wholesale price		Value of sales at wholesale
		Less than 5 inch pots	5 inch pots or larger	Total		Less than 5 inch pots	5 inch pots or larger	
	Number	*1,000 pots*	*1,000 pots*	*1,000 pots*	*Percent*	*Dollars*	*Dollars*	*1,000 dollars*
Azaleas								
1998	39	19	164	183	85	3.14	6.65	1,177
1999	34	16	149	165	84	3.27	6.81	1,113
2000	36	31	116	147	83	3.16	7.20	933
2001	34	14	110	124	69	3.47	6.64	779
2002	28		94	94	87		7.29	685
Begonias								
2000	65	397	31	428	63	1.05	1.92	476
2001	69	577	38	615	61	1.26	3.01	841
2002	71	458	54	512	80	1.08	1.60	689
Chrysanthemums, florist								
1998	41	100	458	558	95	1.49	3.91	1,940
1999	41	153	434	587	93	1.42	3.88	1,901
2000	38	127	320	447	87	1.69	3.87	1,453
2001	46	162	647	809	64	1.48	3.78	2,685
2002	36	104	504	608	98	1.69	3.00	1,688
Chrysanthemums, hardy garden								
1998	139	637	2,294	2,931	86	0.91	1.74	4,571
1999	131	828	2,692	3,520	93	0.99	2.18	6,688
2000	131	631	2,487	3,118	90	1.11	1.79	5,152
2001	119	255	2,670	2,925	90	1.21	1.76	5,008
2002	121	214	3,541	3,755	94	1.32	1.65	6,125
Geraniums from cuttings								
1998	228	6,355	1,173	7,528	78	1.33	2.55	11,443
1999	203	5,709	1,434	7,143	81	1.32	2.41	10,992
2000	222	3,298	1,369	4,667	67	1.54	2.43	8,406
2001	217	3,101	1,422	4,523	70	1.71	2.52	8,886
2002	206	4,059	1,186	5,245	78	1.40	2.45	8,588
Geraniums from seed								
1998	110	14,360	13	14,373	95	0.74	2.86	10,664
1999	104	14,469	108	14,577	97	0.72	2.99	10,741
2000	112	17,662	54	17,716	95	0.76	3.88	13,633
2001	100	15,391	39	15,430	95	0.77	5.45	12,064
2002	95	16,147	10	16,157	98	0.81	3.46	13,114
Marigolds								
2000	14		198	198	62		1.22	242
2001	12		212	212	65		1.45	307
2002	14		201	201	99		0.86	173
New Guinea Impatiens								
1998	193	1,469	234	1,703	79	1.14	3.49	2,491
1999	174	1,832	270	2,102	86	1.12	2.92	2,840
2000	190	2,848	287	3,135	89	1.10	3.93	4,261
2001	178	2,753	307	3,060	90	1.23	3.12	4,344
2002	168	3,524	230	3,754	95	1.23	3.27	5,087
Pansies/Violas								
2000	34	329	58	387	80	0.67	4.83	501
2001	25	280	64	344	80	0.66	1.93	308
2002	30	575	141	716	98	0.68	2.59	756

See footnote(s) at end of table.

--continued

Potted flowering and annual bedding plants: Producers, quantity sold, price, and value, 1998-2002 (continued)

Item	Producers	Quantity sold			Percent of sales at wholesale	Wholesale price		Value of sales at wholesale
		Less than 5 inch pots	5 inch pots or larger	Total		Less than 5 inch pots	5 inch pots or larger	
	Number	*1,000 pots*	*1,000 pots*	*1,000 pots*	*Percent*	*Dollars*	*Dollars*	*1,000 dollars*
Petunias								
1998	45	119	56	175	75	0.76	2.56	234
1999	61	179	190	369	92	0.97	2.10	573
2000	64	390	336	726	63	1.15	1.92	1,094
2001	49	360	243	603	56	1.12	2.16	928
2002	58	458	312	770	94	0.85	2.44	1,151
Poinsettias								
1998	100	1,111	2,584	3,695	83	2.01	3.96	12,466
1999	94	1,029	2,894	3,923	90	1.70	3.98	13,267
2000	97	1,375	3,138	4,513	87	1.23	3.88	13,867
2001	100	992	3,057	4,049	85	1.45	3.98	13,605
2002	92	915	2,844	3,759	90	1.60	4.12	13,181
Roses, florist								
2000	14	67	37	104	90	2.25	4.24	308
2001	17	52	55	107	95	2.69	4.23	373
2002	9	85		85	95	3.57		304
Flowering bulbs								
2000	43	735	999	1,734	97	1.59	3.31	4,475
2001	47	821	665	1,486	96	1.48	3.40	3,476
2002	49	666	1,467	2,133	99	1.52	3.29	5,839
Other flowering plants								
1998	91	1,171	1,013	2,184	94	1.41	3.67	5,369
1999	61	1,023	1,377	2,400	92	1.51	2.89	5,524
2000	66	982	722	1,704	88	1.64	4.43	4,809
2001	55	805	485	1,290	84	1.61	3.54	3,013
2002	59	977	452	1,429	87	1.58	4.28	3,478
Other flowering and foliar type bedding plants								
1998	215	8,427	8,740	17,167	83	1.07	3.38	38,558
1999	198	10,519	5,595	16,114	82	1.08	2.95	27,866
2000	131	9,571	1,848	11,419	80	1.01	2.87	14,970
2001	120	9,026	1,372	10,398	82	1.16	3.49	15,258
2002	119	10,237	2,799	13,036	95	1.07	3.10	19,630
Vegetable type [1]								
1998	66	470	153	623	64	0.77	1.28	558
1999	77	651	230	881	81	0.61	1.43	726
2000	73	871	135	1,006	88	0.65	1.79	808
2001	65	594	169	763	90	0.86	1.54	771
2002	69	1,066	163	1,229	93	0.69	2.16	1,088

[1] Does not include vegetable transplants grown for commercial use.

Herbaceous perennials: Producers, quantity sold, price, and value, 2000-2002

Item	Producers	Quantity sold				Percent of sales at wholesale	Wholesale price			Value of All sales at wholesale
		Less than 1 gallon	1 to 2 gallon	2 gallon and larger	Total		Less than 1 gallon	1 to 2 gallon	2 gallon and larger	
	Number	*1,000 pots*	*1,000 pots*	*1,000 pots*	*1,000 pots*	*percent*	*Dollars*	*Dollars*	*Dollars*	*1,000 dollars*
Hosta										
2000	106	996	1,040	40	2,076	93	2.75	3.76	7.21	6,938
2001	111	584	1,073	46	1,703	94	2.76	2.89	6.43	5,009
2002	107	936	876	45	1,857	92	2.50	3.70	6.04	5,853
Other										
2000	131	13,634	3,613	162	17,409	94	1.03	3.61	6.05	28,066
2001	136	13,890	5,110	317	19,317	94	1.25	3.06	5.90	34,869
2002	133	20,250	6,277	286	26,813	95	1.06	3.43	6.86	44,957

Livestock, Dairy, and Poultry

Livestock: Record highs and lows

Livestock	Unit	Record high		Record low		Year estimates started
		Quantity	Year	Quantity	Year	
Cattle and calves	1,000 head	2,036	1944	538	1867	1867
Cattle on feed	1,000 head	200	2000	57	1931	1930
Chickens, all [1]	1,000 birds	15,512	1944	6,190	1997	1924
Cows, beef	1,000 head	239	1977	24	1925,1933	1920
Cows, milk	1,000 head	1,080	1945	225	1867	1867
Eggs [2]	Million eggs	1,771	2002	1,104	1929	1924
Hogs and pigs [1]	1,000 head	1,397	1943	512	1934	1867
Honey	1,000 pounds	11,780	1939	4,386	1980	1921
Milk	Million pounds	5,945	2002	3,941	1927	1924
Sheep	1,000 head	3,100	1867	62	1999	1867
Wool	1,000 pounds	8,424	1934	430	1998	1934

[1] December 1.
[2] December 1 previous year to November 30.

Cattle and Calves

The January 1, 2003, Michigan cattle herd totaled 990,000 head, unchanged from a year ago. The milk cow inventory, at 301,000 head, was up 1 percent from the previous year. Milk cow replacement heifers were steady at 135,000. Beef cows, at 89,000 head, were up 22 percent from last year. Calves on hand were at 175,000, down 23,000 from last year. Beef cow replacement heifers, at 35,000 head, were up 5,000 head. The 2002 calf crop was 340,000 head, up 5,000 from last year. Steer numbers were steady at 195,000 head Other heifers dropped to 42,000 from 45,000, while bulls at 18,000 head were up by 1,000. Cattle on full feed for slaughter totaled 180,000 head, down 10,000 from last year. Michigan has 15,000 operations with cattle, down 500 from a year ago.

The January 1 Michigan cattle and calf inventory was valued at $871 million, down 3 percent from January 1, 2002. Cash receipts from cattle and calf marketings totaled $205 million, while total liveweight marketed was 364 million pounds.

Cattle and calves: Number of operations by size group, 1998-2002 [1]

Size group by head	Year				
	1998	1999	2000	2001	2002
1-49 head	11,000	11,200	11,200	10,800	10,400
50-99 head	2,280	2,170	2,200	2,100	2,040
100-499 head	2,500	2,400	2,350	2,350	2,300
500-999 head	160	170	190	180	180
1000 + head	60	60	60	70	80
Total	16,000	16,000	16,000	15,500	15,000

[1] An operation is any place having one or more head of cattle on hand at any time during the year.

Cattle and calves: Number on farms by class, January 1, 1999-2003

Class	1999	2000	2001	2002	2003
	1,000 head	*1,000 head*	*1,000 head*	*1,000 head*	*1,000 head*
All cows that have calved	405	395	385	370	390
Beef cows	105	95	85	73	89
Milk cows	300	300	300	297	301
Heifers, 500 pounds and over	222	205	210	210	212
Beef cow replacement	32	30	35	30	35
Milk cow replacement	145	125	130	135	135
Other	45	50	45	45	42
Steers, 500 pounds and over	195	200	190	195	195
Bulls, 500 pounds and over	18	18	17	17	18
Calves, under 500 pounds	210	192	178	198	175
All cattle and calves	1,050	1,010	980	990	990

Cattle and calves: Production and income, 1998-2002

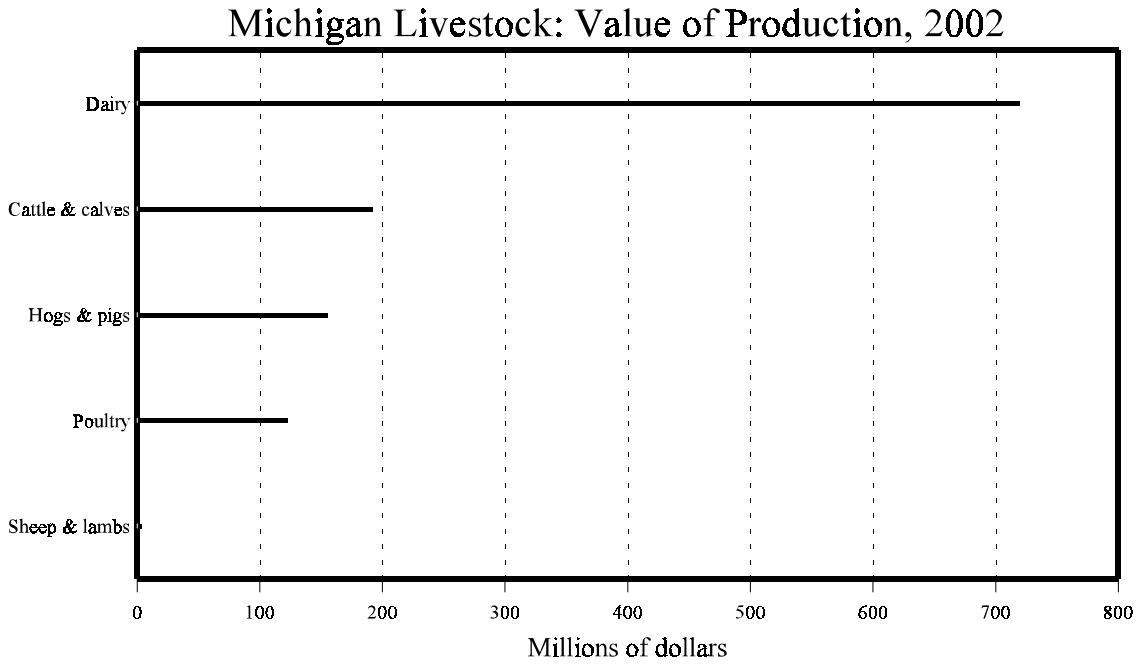
Year	Production [1]	Marketings [2]	Average price per cwt		Value of production	Cash receipts [4]	Value of home consumption	Gross income
			All beef [3]	Calves				
	1,000 pounds	*1,000 pounds*	*Dollars*	*Dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
1998	385,229	411,250	47.70	51.70	183,321	196,656	7,465	204,121
1999	405,770	461,250	50.50	68.90	200,427	235,829	8,067	243,896
2000	407,661	446,600	56.00	102.00	220,474	255,892	9,183	265,075
2001	353,634	376,750	58.80	109.00	204,736	227,930	7,467	235,397
2002	363,562	363,540	54.20	104.00	191,624	204,628	6,894	211,522

[1] Adjustments made for changes in inventory and for inshipments.
[2] Excludes custom slaughter for use on farms where produced and inter-farm sales within the State.
[3] Combined price for "Cows" and "Steers and Heifers".
[4] Receipts from marketings and sale of farm slaughter.

Cattle and calves: Balance sheet, 1998-2002

Year	All cattle and calves on hand January 1	Calf crop	Inshipments	Marketings [1]		Farm slaughter cattle and calves [2]	Deaths		All cattle and calves on hand following January 1
				Cattle	Calves		Cattle	Calves	
	1,000 head	*1,000 head*	*1,000 head*	*1,000 head*	*1,000 head*	*1,000 head*	*1,000 head*	*1,000 head*	*1,000 head*
1998	1,050	365	65	308	37	5	25	55	1,050
1999	1,050	355	70	338	47	5	25	50	1,010
2000	1,010	345	55	318	38	5	22	47	980
2001	980	335	50	266	36	4	24	45	990
2002	990	340	41	264	40	4	25	48	990

[1] Includes custom slaughter and state outshipments, but excludes inter-farm sales within the State.
[2] Excludes custom slaughter for farmers at commercial establishments.



Poultry

The total value of poultry production in Michigan from eggs, turkeys, and other chickens (primarily culled layers) during 2002 was $122 million, 4 percent more than a year earlier. The value of egg production totaled $59.5 million, down 3 percent from 2001. Egg production totaled 1.77 billion eggs, up 6 percent from last year. The market egg price averaged 40 cents per dozen, down 8 percent from 2001. The value of turkey production during 2002 was $62.8 million, up 11 percent. The total pounds of turkey produced was 180 million, up 11 percent. The average price per pound was 35 cents, the same as last year. Other chicken production, at 3.62 million birds, was up 1 percent. Other chicken production was valued at $13,000, down 90 percent from 2001.

Chickens: Layers on hand, December 1, 1998-2002

Class	1998	1999	2000	2001	2002
	1,000 head	*1,000 head*	*1,000 head*	*1,000 head*	*1,000 head*
Layers, 1 year old and older	3,310	2,174	3,480	4,491	5,149
Layers, 20 weeks old but less than 1 year	2,441	4,013	2,825	2,243	1,682
Pullets, 13-20 weeks old	286	537	569	285	606
Pullets, less than 13 weeks	704	1,060	721	985	664
Other chickens	3	3	1	1	
All chickens (excluding broilers)	6,744	7,787	7,596	8,005	8,101

Turkeys: Production and value, 2000-2002 [1]

Year	Number raised [2]	Pounds produced	Price per pound [3]	Value of production
	Thousands	*1,000 pounds*	*Cents*	*1,000 dollars*
1999	2,700	85,590	41.1	35,092
2000	3,500	119,000	34.0	40,460
2001	4,500	162,000	35.0	56,700
2002	4,800	179,520	35.0	62,832

[1] December 1 previous year through November 30.
[2] Based on turkeys placed Sep 1 through Aug 31. Excludes young turkeys lost.
[3] Equivalent live weight returns to producers.

All eggs: Production and value, 1998-2002

Year	Eggs produced	Price per dozen	Value of production
	Million	*Dollars*	*1,000 dollars*
1998	1,395	0.496	57,639
1999	1,533	0.420	53,655
2000	1,617	0.419	56,464
2001	1,677	0.437	61,063
2002	1,771	0.403	59,459

All egg production, by month, 1998-2002

Month	1998	1999	2000	2001	2002
	Million eggs	*Million eggs*	*Million eggs*	*Million eggs*	*Million eggs*
December	115	132	140	142	147
January	111	130	134	139	139
February	102	115	122	127	130
March	120	129	143	149	149
April	110	122	135	144	148
May	111	121	130	142	153
June	111	117	131	139	147
July	118	130	142	141	155
August	124	137	137	133	156
September	120	129	131	129	146
October	126	134	136	143	150
November	125	136	135	148	150
Total [1]	1,395	1,533	1,617	1,677	1,771

[1] Sum of months may not add to total due to rounding.

All layers: Average number on hand during the month, 1998-2002

Month	1998	1999	2000	2001	2002
	1,000 head	*1,000 head*	*1,000 head*	*1,000 head*	*1,000 head*
December	5,796	5,763	6,206	6,155	6,641
January	5,058	5,770	6,178	6,114	6,483
February	5,098	5,898	6,271	6,315	6,438
March	5,282	5,923	6,484	6,700	6,488
April	5,202	5,656	6,321	6,802	6,846
May	5,128	5,659	6,136	6,643	7,002
June	5,097	5,799	6,325	6,537	6,786
July	5,291	5,863	6,379	6,370	6,815
August	5,541	5,827	6,168	6,369	6,793
September	5,586	5,847	6,073	6,473	6,656
October	5,621	6,089	6,110	6,567	6,589
November	5,704	6,189	6,209	6,659	6,698
Annual [1]	5,318	5,856	6,238	6,475	6,686

[1] December 1 previous year through November 30.

Hogs and Pigs

Michigan hog production totaled 503.5 million pounds in 2002, up 2.5 percent from 2001. Based on the December 1, 2002 inventory of 860,000 hogs and pigs, Michigan ranked 13th in the nation in terms of inventory.

Breeding inventory accounted for 11.5 percent of the total inventory, while market hogs made up the remaining 88.5 percent. Historically, Cass, Allegan, Ottawa, Branch and Huron have been the top five hog producing counties.

The annual average price for all hogs was $30.70 per cwt for 2002, compared with the 2001 average price of $41.70 per cwt.

Marketings of all hogs and pigs totaled 522.9 million pounds in 2002, up 4 percent from 2001. Cash receipts decreased 22 percent from the previous year to $166 million.

Hogs and pigs: Number of operations, by size group, 1998-2002 [1]

Year	Operations						
	1-99	100-499	500-999	1,000-1,999	2,000-4,999	5,000+	Total
	Number	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
1998	1,900	500	100	150	120	30	2,800
1999	1,200	500	100	130	130	40	2,100
2000	1,700	390	110	140	120	40	2,500
2001	1,700	430	90	110	130	40	2,500
2002	1,500	450	90	100	115	45	2,300

[1] An operation is any place having one or more head on hand at any time during the year.

Hogs and pigs: Sows farrowing and pig crop, 1998-2003

Year	December-February [1]			March-May		
	Sows farrowing	Pigs per litter	Pig crop	Sows farrowing	Pigs per litter	Pig crop
	1,000 head	*head*	*1,000 head*	*1,000 head*	*head*	*1,000 head*
1999	37	9.00	333	55	8.90	490
2000	44	8.80	387	50	9.00	450
2001	46	8.75	403	50	8.90	445
2002	50	9.00	450	50	8.85	443
2003	43	8.80	378	44	9.00	396
	June-August			September-November		
1998	52	8.90	463	52	8.50	442
1999	51	9.00	459	49	9.00	441
2000	50	8.90	445	48	9.05	434
2001	52	9.10	473	46	9.15	421
2002	55	9.05	498	42	9.10	382

[1] December of previous year.

Hogs and pigs: Inventory, 1999-2003

Month and year	Market hogs and pigs					Breeding stock	Total hogs and pigs
	Under 60 pounds	60-119 pounds	120-179 pounds	180 lbs and over	Total market		
	1,000 head	*1,000 head*	*1,000 head*	*1,000 head*	*1,000 head*	*1,000 head*	*1,000 head*
March 1							
1999	280	225	190	185	880	110	990
2000	295	215	170	160	840	120	960
2001	310	185	160	125	780	120	900
2002	310	215	165	150	840	120	960
2003	270	190	165	145	770	100	870
June 1							
1999	430	220	200	130	980	120	1,100
2000	390	200	160	130	880	110	990
2001	315	215	155	125	810	110	920
2002	310	205	155	140	810	110	920
September 1							
1999	310	260	190	160	920	110	1,030
2000	360	230	180	140	910	110	1,020
2001	330	225	175	130	860	110	970
2002	315	210	160	135	820	120	940
December 1							
1999	330	205	170	155	860	120	980
2000	320	200	170	150	840	110	950
2001	315	205	170	160	850	110	960
2002	285	180	145	150	760	100	860

Hogs and pigs: Production and income, 1998-2002

Year	Production [1]	Marketings [2]	Average price per cwt	Value of production	Cash receipts [3]	Value of home consumption	Gross income
	1,000 pounds	*1,000 pounds*	*Dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
1998	402,708	403,550	33.90	132,639	138,347	1,393	139,740
1999	466,637	494,787	29.80	136,678	149,937	1,229	151,166
2000	464,577	483,775	40.70	184,575	200,485	1,662	202,147
2001	491,070	499,800	41.70	200,748	212,599	1,695	214,294
2002	503,473	522,925	30.70	154,926	165,928	1,171	167,099

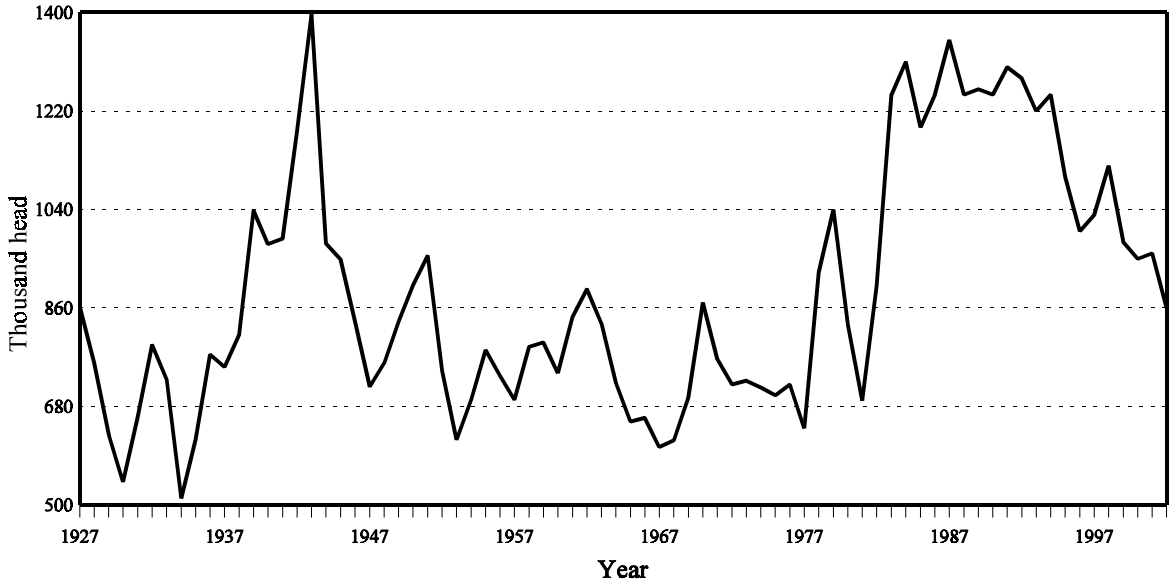
[1] Adjustments made for changes in inventory and for inshipments.
[2] Excludes custom slaughter for use on farms where produced and inter-farm sales within the state.
[3] Receipts from marketing and sales of farm slaughter. Includes allowance for higher average price of outshipments of feeder pigs.

Hogs and pigs: Balance sheet, 1998-2002

Year	Beginning inventory	Dec-Nov pig crop	Inshipments	Marketings [1]	Farm slaughter [2]	Deaths	Number on hand December 1
	1,000 head	*1,000 head*	*1,000 head*	*1,000 head*	*1,000 head*	*1,000 head*	*1,000 head*
1998	1,030	1,729	125	1,683	6	75	1,120
1999	1,120	1,723	225	1,999	4	85	980
2000	980	1,716	275	1,937	4	80	950
2001	950	1,742	280	1,930	4	78	960
2002	960	1,773	235	2,030	4	74	860

[1] Includes custom slaughter and state outshipments, but excludes sales within Michigan.
[2] Excludes custom slaughter for farmers at commercial establishments.

December 1 Hog Inventory, 1927-2002



Honey

Honey production in Michigan during 2002 totaled 5.54 million pounds, 21 percent more than a year ago. This estimate included honey from producers with 5 or more colonies. Michigan ranked 11th in honey production in 2002 compared to12th in 2001. There were 72,000 colonies in production during 2002, down 4,000 colonies from 2001. Yield per colony averaged 77 pounds, up 17 pounds from 60 pounds in 2001.

Michigan honey prices averaged $1.34 per pound, up 53 cents from last year. Value of production totaled $3.69 million, up 4 percent from 2001. Honey stocks on hand for sale, as of December 15, totaled 1.89 million pounds, down 33 percent from 2001.

Honey: Production and value, 1998-2002 [1]

Year	Honey producing colonies	Yield per colony	Production	Price per pound	Value of production	Stocks Dec 15 [2]
	Thousands	*Pounds*	*1,000 pounds*	*Cents*	*1,000 dollars*	*1,000 pounds*
1998	80	85	6,800	66	4,488	3,672
1999	73	85	6,205	66	4,095	3,475
2000	72	75	5,400	60	3,240	2,970
2001	76	60	4,560	81	3,694	2,827
2002	72	77	5,544	134	7,429	1,885

[1] Includes only producers with 5 or more colonies.
[2] Stocks held by producers.

Dairy

Milk production in Michigan during 2002 was 5,945 million pounds, up 1.3 percent from 2001. Michigan ranked eighth nationally in milk production in 2002, accounting for 3.5 percent of U.S. production.

The annual average number of milk cows on Michigan farms during 2002 was 299,000 head, down 4,000 from the previous year. The number of operations with milk cows fell to 3,200 from 3,300 in 2001. Milk production per cow was 19,883 pounds in 2002, compared with 19,373 pounds during 2001. The average butterfat content was 3.62 percent compared with 3.63 percent in 2001.

Milk prices during the year averaged $12.10 per cwt, down $3.10 from the previous year. Cash receipts from milk sales totaled $712 million, down 19.0 percent from 2001. Milk continued as the top ranked Michigan commodity in cash receipts.

Milk: Production, utilization, marketings, and value, 1998-2002

Item	Unit	1998	1999	2000	2001	2002
		Production				
Production						
Total milk produced on farms	Million pounds	5,365	5,455	5,705	5,870	5,945
Milkfat produced	Million pounds	194.7	201.3	208.8	213.1	215.2
Milkfat	Percent	3.63	3.69	3.66	3.63	3.62
Utilization						
Milk used where produced						
Fed to calves	Million pounds	40	37	45	55	55
Used for milk, cream, and butter	Million pounds	5	3	5	5	5
Milk marketed by producers	Million pounds	5,320	5,415	5,655	5,810	5,885
Average return per 100 pounds of milk	Dollars	15.30	14.80	12.90	15.20	12.10
Average return per pound milkfat	Dollars	4.21	4.01	3.52	4.19	3.34
Fluid grade	Percent	99	99	99	99	99
Total cash receipts	1,000 dollars	813,960	801,420	729,495	883,120	712,085
Value						
Value of milk used where produced [1]	1,000 dollars	6,885	5,920	6,450	9,120	7,260
Total value of milk produced	1,000 dollars	820,845	807,340	735,945	892,240	719,345

[1] Includes value of milk fed to calves and milk used by farm households.

Milk cows: Number of operations, by size group, 1998-2002 [1]

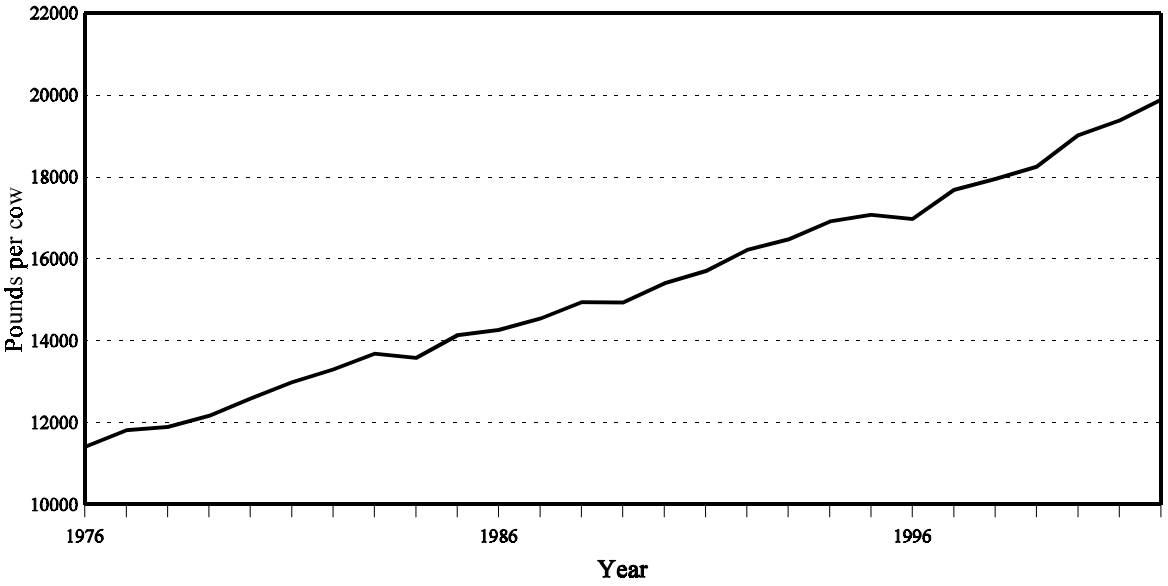
Size group by head	1998	1999	2000	2001	2002
	Number of operations	*Number of operations*	*Number of operations*	*Number of operations*	*Number of operations*
1-29	950	1,000	1,000	1,050	1,050
30-49	900	700	630	550	500
50-99	1,100	1,000	900	800	750
100-199	810	750	700	620	590
200-499	205	200	215	215	240
500+	35	50	55	65	70
Total	4,000	3,700	3,500	3,300	3,200

[1] An operation is any place having one or more milk cows on hand at any time during the year.

Milk cows: Number by month, 1998-2002

Month	1998	1999	2000	2001	2002
	1,000 head	*1,000 head*	*1,000 head*	*1,000 head*	*1,000 head*
January	297	291	298	303	297
February	296	292	296	303	295
March	297	296	296	304	295
April	298	298	299	304	296
May	299	303	301	304	298
June	301	304	304	305	300
July	305	306	302	303	301
August	302	302	302	303	301
September	299	299	300	303	300
October	297	299	302	302	300
November	297	298	299	301	301
December	299	297	300	299	301
Annual	299	299	300	303	299

Annual Milk per Cow, 1976-2002



Milk production: Total by month, 1998-2002

Month	1998	1999	2000	2001	2002
	Million pounds	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*
January	441	442	474	482	490
February	406	410	447	447	456
March	454	463	485	505	510
April	446	454	481	492	496
May	468	486	494	518	520
June	456	465	485	505	500
July	471	474	489	498	501
August	459	462	485	489	506
September	438	444	455	476	482
October	441	454	477	483	495
November	431	441	457	474	485
December	454	460	476	501	504
Annual	5,365	5,455	5,705	5,870	5,945

Milk: Production per cow, by month, 1998-2002

Month	1998	1999	2000	2001	2002
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*
January	1,485	1,520	1,590	1,590	1,650
February	1,370	1,405	1,510	1,475	1,545
March	1,530	1,565	1,640	1,660	1,730
April	1,495	1,525	1,610	1,620	1,675
May	1,565	1,605	1,640	1,705	1,745
June	1,515	1,530	1,595	1,655	1,665
July	1,545	1,550	1,620	1,645	1,665
August	1,520	1,530	1,605	1,615	1,680
September	1,465	1,485	1,515	1,570	1,605
October	1,485	1,520	1,580	1,600	1,650
November	1,450	1,480	1,530	1,575	1,610
December	1,520	1,550	1,585	1,675	1,675
Annual	17,943	18,244	19,017	19,373	19,883

Dairy products: Annual production totals, 1998-2002

Product	1998	1999	2000	2001	2002
	1,000 gallons	*1,000 gallons*	*1,000 gallons*	*1,000 gallons*	*1,000 gallons*
Michigan					
Ice cream, fullfat, total	24,198	19,572	22,781	22,415	27,218
Ice cream, lowfat, total	18,583	17,812	16,079		7,639
Sherbet, total	2,016	1,369	1,696		1,140
Ice cream mix, fullfat	12,161	10,317	11,678	11,599	15,555
Ice cream mix, lowfat	8,729	8,117	8,220	8,263	5,728
Sherbet mix	1,019	722	1,010		727
	Million pounds	*Million pounds*	*Million pounds*	*Million pounds*	*Million pounds*
East North Central Region [1]					
Cheese, total	2,484.4	2,538.5	2,606.4	2,545.3	2,656.2
Cheese, American type [2]	982.9	989.0	952.2	876.3	907.7
Cheese, Italian	1,025.4	1,031.9	1,101.1	1,123.7	1,149.2
Cottage cheese, curd	115,604	110,954	112,892	111,863	105,284
Cottage cheese, creamed	110,229	96,311	102,329	102,140	95,174
Cottage cheese, low fat	78,354	74,009	77,612	81,190	81,735
Condensed skim milk, unsweetened, bulk	119.2	146.6	161.1	122.6	169.5
Dried milk, nonfat for human food	57.0	58.4	57.2	48.5	52.9
Butter	373.3	349.8	327.2	368.2	388.2
Water & juice ices	8,136	7,521	8,098	8,769	8,612
Yogurt, plain and flavored	592.9	624.3	720.7	818.9	816.8

[1] Illinois, Indiana, Michigan, Ohio, and Wisconsin.
[2] Cheddar, Colby, washed curd, stirred curd, Monterey, and Jack.

Dairy products: Ice cream, fullfat, total, by month, 1998-2002

Month	1998	1999	2000	2001	2002
	1,000 gallons	*1,000 gallons*	*1,000 gallons*	*1,000 gallons*	*1,000 gallons*
January	1,644	1,010	1,744	1,472	2,018
February	1,765	1,317	1,724	1,543	2,083
March	2,007	1,652	1,967	1,752	2,109
April	2,271	1,933	1,907	2,352	2,294
May	2,319	1,791	1,771	2,072	2,336
June	2,807	2,283	1,945	2,071	2,436
July	2,643	2,194	1,999	2,397	2,509
August	2,502	2,164	2,084	2,270	2,340
September	2,159	1,626	1,793	1,977	2,208
October	1,591	1,314	1,791	1,840	2,006
November	1,168	990	1,637	1,318	1,477
December	1,322	1,298	1,246	1,430	3,402
Total	24,198	19,572	[1] 22,781	[1] 22,415	27,218

[1] Revised; monthly data are not revised and do not add to the total.

Mink

Mink: Farms, pelts produced and females bred to produce kits, 1999-2003

Year	1999	2000	2001	2002	2003
	Number	*Number*	*Number*	*Number*	*Number*
Farms	12	12	11	9	([1])
Pelts produced	51,000	42,500	54,000	57,000	([1])
Females bred to produce kits	15,500	11,000	11,800	12,700	12,700

[1] Published in July 2004.

Sheep and Lambs

Michigan sheep operations in 2002 numbered 1,900, up 100 operations from 2001. All sheep and lamb inventory in Michigan on January 1, 2002 was estimated at 72,000 head, up 1,000 head from a year ago. The breeding sheep inventory was 52,000 head. Market sheep and lambs totaled 20,000 head, unchanged from a year earlier. The 2002 Michigan lamb crop (lambs born October 1, 2000 through September 30, 2002) was 55,000 head, up 3,000 head from the previous year.

Sheep and lamb value of production was $2.97 million. Cash receipts totaled $2.55 million for 2002. All sheep and lambs were valued at $120 per head, up $10 from the previous year.

Sheep shorn in 2002 totaled 76,000 head. The weight per fleece was 6.1 pounds, compared with 6.2 pounds in 2001. Total wool production in Michigan was 460,000 pounds. Wool production was valued at $64,000. The average price per pound was $0.14., up $0.02 from 2001.

Sheep and lambs: Number on farms by class, January 1, 1999-2003

Class	1999	2000	2001	2002	2003
	1,000 Head	*1,000 Head*	*1,000 Head*	*1,000 Head*	*1,000 Head*
Breeding sheep 1 year and older					
Ewes	34	38	40	40	41
Rams	3	3	2	2	2
Replacement lambs	7	10	9	10	11
Total market sheep and lambs	18	17	20	20	21
All sheep and lambs	62	68	71	72	75

Sheep and lambs: Number of operations, 1998-2002 [1]

Year	Number
1998	1,600
1999	1,700
2000	1,800
2001	1,800
2002	1,900

[1] An operation is any place having one or more head on hand at any one time during the year.

Sheep and lambs: Lamb crop, 1998-2002

Year	Breeding ewes [1]	Lambs per 100 ewes [1]	Lamb crop
	1,000 Head	*Number*	*1,000 Head*
1998	38	121	46
1999	34	132	45
2000	38	121	46
2001	40	125	50
2002	40	133	53

[1] Ewes 1 year and older January 1.

Sheep and lambs: Balance sheet, 1998-2002

Year	All sheep and lambs on hand January 1	Lamb crop	Inshipments	Marketings [1]		Farm slaughter [2]	Deaths		All sheep and lambs on hand following January 1
				Sheep	Lambs		Sheep	Lambs	
	1,000 Head	*1,000 Head*	*1,000 Head*	*1,000 Head*	*1,000 Head*	*1,000 Head*	*1,000 Head*	*1,000 Head*	*1,000 Head*
1998	72	46	8.0	16.0	36.0	2.0	1.0	9.0	62
1999	62	45	5.0	4.0	28.5	2.0	2.5	7.0	68
2000	68	46	2.0	7.5	26.5	2.0	3.0	6.0	71
2001	71	50	1.5	6.5	31.5	2.0	3.5	7.0	72
2002	72	53	3.0	7.0	33.0	2.0	4.0	7.0	75

[1] Includes custom slaughter and state outshipments, but excludes sales within Michigan.
[2] Excludes custom slaughter for farmers at commercial establishments.

Sheep and lambs: Production and income, 1998-2002

Year	Production [1]	Marketings [2]	Average price per cwt		Value of production	Cash receipts [3]	Value of home consumption	Gross income
			Sheep	Lambs				
	1,000 pounds	*1,000 pounds*	*Dollars*	*Dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*	*1,000 dollars*
1998	4,270	5,715	32.00	69.00	2,710	3,233	397	3,630
1999	3,982	3,225	30.00	69.00	2,579	2,111	397	2,508
2000	3,848	3,250	31.00	75.00	2,654	2,197	431	2,628
2001	4,245	3,752	31.00	70.00	2,833	2,441	403	2,844
2002	4,501	3,961	26.00	70.00	2,970	2,548	403	2,951

[1] Adjustments made for changes in inventory and for inshipments.
[2] Excludes custom slaughter for use on farms where produced and inter-farm sales within the state.
[3] Receipts from marketings and sale of farm slaughter.

Sheep and lambs: Wool production and value, 1998-2002

Year	Sheep shorn	Weight per fleece	Production	Price per pound	Value of production [1]
	1,000 Head	*Pounds*	*1,000 Pounds*	*Cents*	*1,000 Dollars*
1998	58	7.4	430	31	133
1999	66	7.0	465	14	65
2000	72	6.4	460	14	64
2001	77	6.2	480	12	58
2002	76	6.1	460	14	64

[1] Production multiplied by marketing year average price.

Trout

Michigan's 22 commercial trout operations sold 248,000 pounds of trout in 2002. This was a decrease of 34 percent from last season. Sales were valued at $663,000 and included sales of foodsize trout (12 inches or longer), stockers (6 to 12 inches), fingerlings (1 to 6 inches) and eggs.

Foodsize trout had sales of 215,000 pounds with an average liveweight of 1.2 pounds per fish. Foodsize sales totaled $553,000 for an average value of $2.57 per pound. The major sales outlets were fee fishing at 60 percent of total, 8 percent to processors, and 5 percent direct to consumers. Stocker trout sales totaled 30,000 pounds with an average liveweight of 0.3 pounds per trout. The value of sales, at $83,000, decreased from $116,000 and averaged $2.77 per pound. Live haulers at 26 percent and other producers at 26 percent accounted for the majority of sales followed by fee fishing at 20 percent. Number of fingerlings sold was 100,000, down 41 percent from last year. The value of sales decreased to $27,000 and averaged $266.00 per 1,000 fish.

Losses of trout in Michigan amounted to 93,000 fish, weighing 83,000 pounds. Predators accounted for 55 percent of all fish lost.

Trout: Sales by size category, 1998-2002

Size category	Number of fish	Live weight	Sales	
			Total	Average per pound [1]
	1,000	*1,000*	*1,000 dollars*	*Dollars*
Foodsize (12 inches long or more):				
1998	340	350	777	2.22
1999	320	352	859	2.44
2000	330	388	776	2.00
2001	275	330	660	2.00
2002	180	215	553	2.57
Stockers (6-12 inches long):				
1998	320	109	302	2.77
1999	200	65	174	2.67
2000	210	78	207	2.65
2001	110	42	116	2.75
2002	90	30	83	2.77
Fingerlings (1-6 inches long):				
1998	320	17	72	226.00
1999	310	10	80	259.00
2000	250	8	54	215.00
2001	170	4	47	275.00
2002	100	3	27	266.00

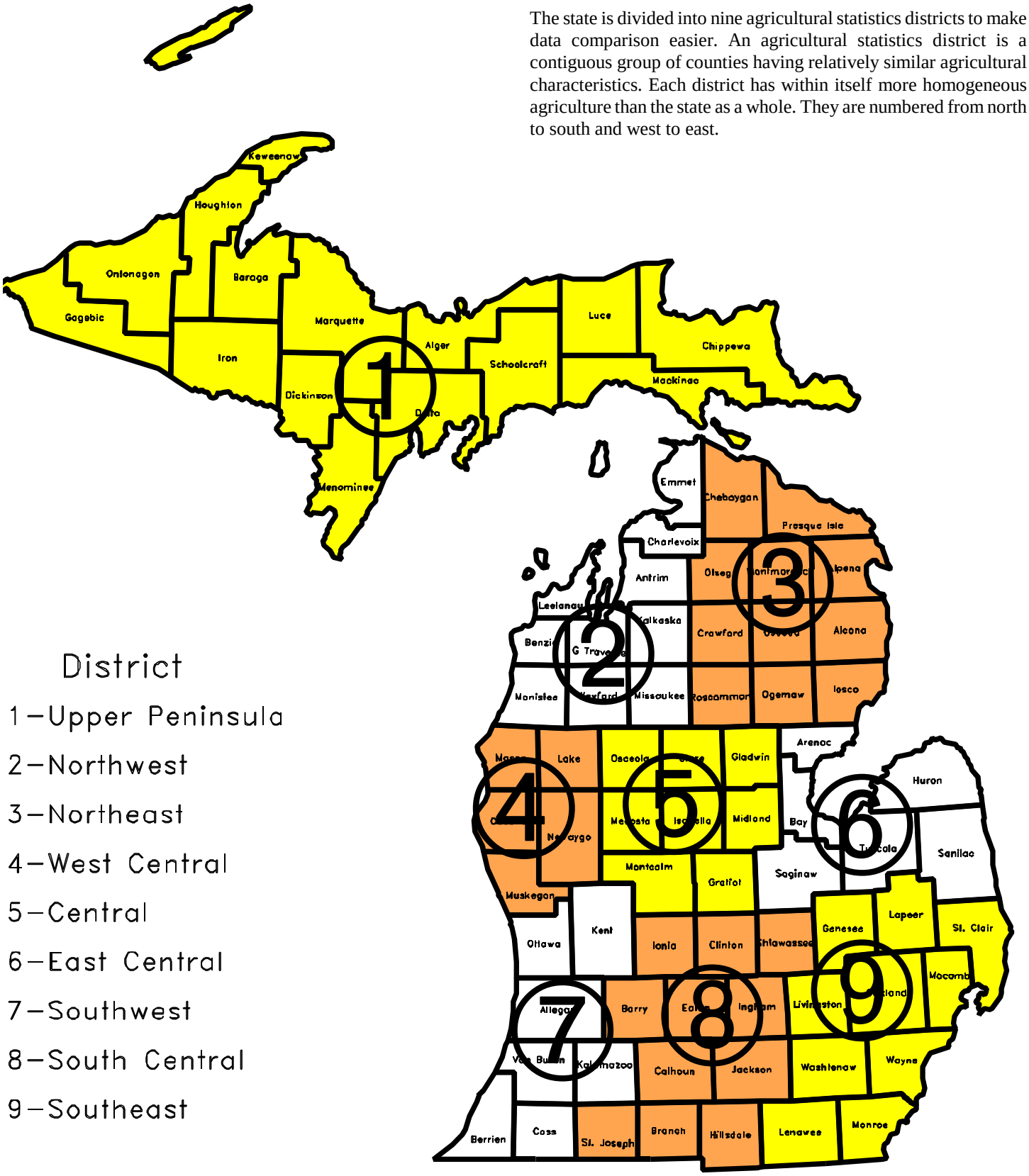
[1] Average per thousand fish for fingerlings after 1997.

Trout: Number of operations, 1999-2003

Year	Operations
	Number
1999	39
2000	30
2001	33
2002	33
2003	22

Agricultural Statistics Districts

The state is divided into nine agricultural statistics districts to make data comparison easier. An agricultural statistics district is a contiguous group of counties having relatively similar agricultural characteristics. Each district has within itself more homogeneous agriculture than the state as a whole. They are numbered from north to south and west to east.



District

1—Upper Peninsula

2—Northwest

3—Northeast

4—West Central

5—Central

6—East Central

7—Southwest

8—South Central

9—Southeast

Principal counties for field crops, 2002 [1]

Rank	Corn	Dry beans	Hay	Oats	Soybeans	Sugarbeets	Wheat
1	Huron	Huron	Sanilac	Sanilac	Sanilac	Huron	Sanilac
2	Sanilac	Tuscola	Huron	Huron	Saginaw	Tuscola	Huron
3	Tuscola	Bay	Isabella	Shiawassee	Lenawee	Saginaw	Lenawee
4	Saginaw	Gratiot	Osceola	Presque Isle	Gratiot	Sanilac	Saginaw
5	Allegan, St Joseph	Sanilac	Barry	Tuscola	Monroe	Gratiot	Tuscola

[1] Based on total production.

Principal counties for livestock, 2002 [1]

Rank	Cattle and calves	Hogs	Milk cows	Sheep
1	Huron	Allegan	Sanilac	Washtenaw
2	Sanilac	Cass	Clinton	Jackson
3	Clinton	Ottawa	Huron	Kalamazoo
4	Allegan	Branch	Allegan	St Joseph
5	Ionia	Calhoun, Huron	Ottawa	Eaton

[1] Based on number of head.

Principal counties for fruit and vegetables, 2002 [1]

Rank	Apples	Blueberries	Grapes	Tart cherries	Asparagus	Cucumbers, processing	Snap beans, processing
1	Kent	Van Buren	Berrien	Leelanau	Oceana	Van Buren	St Joseph
2	Berrien	Ottawa	Van Buren	Oceana	Mason	Gratiot	Kalamazoo
3	Van Buren	Allegan	Cass	Grand Traverse	Van Buren	St Joseph	Montcalm
4	Ottawa	Berrien	Kalamazoo	Antrim	Manistee	Allegan	Branch
5	Oceana	Muskegon	Leelanau	Berrien	Berrien	Arenac	Mason

[1] Based on acres from rotational surveys.

Barley: Acreage, yield, and production, by county, 2001-2002 [1]

County and district	2001				2002			
	Planted	Harvested	Yield	Production	Planted	Harvested	Yield	Production
	Acres	*Acres*	*Bushels*	*1,000 Bu*	*Acres*	*Acres*	*Bushels*	*1,000 Bu*
Delta	1,600	1,400	54	75	1,550	1,500	40	60
Menominee	3,000	2,800	52	146	2,100	2,000	42	83
Other counties [2]	3,400	2,600	65	169	2,550	2,500	47	117
Upper Peninsula	8,000	6,800	57	390	6,200	6,000	43	260
Alpena	800	750	44	33				
Iosco	700	500	64	32				
Montmorency	600	500	46	23	500	500	50	25
Ogemaw	550	550	60	33				
Other counties [2]	1,550	1,300	60	78	2,900	2,700	57	155
Northeast	4,200	3,600	55	199	3,400	3,200	56	180
Isabella	750	750	32	24	700	700	53	37
Other counties [2]	1,050	950	44	42	1,100	1,000	53	53
Central	1,800	1,700	39	66	1,800	1,700	53	90
Huron	900	500	92	46	1,200	1,150	75	86
Sanilac	900	900	58	52	550	550	60	33
Other counties [2]	900	800	73	58	650	600	68	41
East Central	2,700	2,200	71	156	2,400	2,300	70	160
Southwest	1,000	900	32	29	1,600	1,500	50	75
South Central	1,200	900	62	56	1,500	1,450	60	87
Lapeer					550	500	34	17
Other counties [2]					1,150	1,100	48	53
Southeast	1,000	900	58	52	1,700	1,600	44	70
Other districts [2]	1,100	1,000	60	60	1,400	1,250	53	66
Michigan	21,000	18,000	56	1,008	20,000	19,000	52	988

[1] Estimates not published for counties with less than 500 acres.
[2] Estimates not published separately because of insufficient data or to avoid disclosure of individual operations.

Corn: Acreage, yield, and production, by county, 2001 [1]

County and district	Planted for all purposes	Grain			Silage		
		Harvested	Yield	Production	Harvested	Yield	Production
	Acres	*Acres*	*Bushels*	*1,000 Bu*	*Acres*	*Tons*	*Tons*
Delta	3,400				2,100	8.6	18,000
Menominee	13,400	2,700	85	230	10,500	9.3	98,000
Other counties [2]	3,200	1,800	78	140	2,400	10.0	24,000
Upper Peninsula	20,000	4,500	82	370	15,000	9.3	140,000
Antrim	4,000	2,800	89	250			
Emmet	1,900	900	84	76	1,000	11.0	11,000
Grand Traverse	7,000	5,300	45	238	1,600	8.8	14,000
Leelanau	3,500	2,600	33	87			
Missaukee	15,000	6,100	91	555	8,800	10.3	91,000
Wexford	3,300	2,100	85	178			
Other counties [2]	7,300	4,700	46	216	5,600	9.6	54,000
Northwest	42,000	24,500	65	1,600	17,000	10.0	170,000
Alpena	5,700	4,400	48	210			
Iosco	7,300	4,300	81	350	2,800	9.6	27,000
Montmorency	2,000	1,450	59	85			
Ogemaw	8,400	3,800	79	300	4,400	10.2	45,000
Otsego	1,100	650	108	70			
Presque Isle	5,000	4,100	98	402			
Other counties [2]	3,500	1,300	64	83	4,800	7.9	38,000
Northeast	33,000	20,000	75	1,500	12,000	9.2	110,000
Mason	10,500	7,500	64	480	2,900	8.6	25,000
Muskegon	18,000	12,000	77	925	5,700	8.9	51,000
Newaygo	27,000	17,000	75	1,280	9,500	10.5	100,000
Other counties [2]	9,500	6,500	45	295	2,900	8.3	24,000
West Central	65,000	43,000	69	2,980	21,000	9.5	200,000
Gladwin	6,000	4,900	98	480			
Gratiot	83,000	75,300	111	8,370	7,100	15.5	110,000
Isabella	37,500	29,700	85	2,520	7,600	7.4	56,000
Mecosta	16,800	12,700	100	1,270	4,000	9.5	38,000
Midland	20,000	19,200	110	2,110			
Montcalm	51,000	42,800	99	4,250	7,700	13.5	104,000
Osceola					4,700	10.2	48,000
Other counties [2]	10,700	3,400	59	200	3,900	6.2	24,000
Central	225,000	188,000	102	19,200	35,000	10.9	380,000
Arenac	16,000	13,700	71	970			
Bay	44,000	41,900	84	3,500			
Huron	116,000	82,900	85	7,070	32,500	13.4	435,000
Saginaw	88,000	83,200	99	8,250	3,500	15.7	55,000
Sanilac	91,000	70,700	105	7,390	19,500	13.8	270,000
Tuscola	80,000	74,600	77	5,720	4,500	13.3	60,000
Other counties [2]					4,000	15.0	60,000
East Central	435,000	367,000	90	32,900	64,000	13.8	880,000

See footnote(s) at end of table.

--continued

Corn: Acreage, yield, and production, by county, 2001 [1] (continued)

County and district	Planted for all purposes	Grain			Silage		
		Harvested	Yield	Production	Harvested	Yield	Production
	Acres	*Acres*	*Bushels*	*1,000 Bu*	*Acres*	*Tons*	*Tons*
Allegan	76,000	67,400	127	8,550	8,300	16.7	139,000
Berrien	46,000	45,200	125	5,670			
Cass	68,000	66,500	115	7,650			
Kalamazoo	52,000	48,200	111	5,330			
Kent	43,000	34,700	115	4,000	8,100	18.3	148,000
Ottawa	44,000	32,000	113	3,600	11,500	13.4	154,000
Van Buren	36,000	34,000	100	3,400			
Other counties [2]					6,100	17.9	109,000
Southwest	365,000	328,000	116	38,200	34,000	16.2	550,000
Barry	38,000	29,300	113	3,300	8,600	18.8	162,000
Branch	78,000	75,500	135	10,200			
Calhoun	68,000	63,300	112	7,110	4,300	16.5	71,000
Clinton	70,000	53,100	106	5,620	16,500	15.5	255,000
Eaton	60,000	57,700	123	7,110	1,600	14.4	23,000
Hillsdale	64,000	59,100	104	6,150	4,600	16.1	74,000
Ingham	52,000	48,100	101	4,850	3,500	11.4	40,000
Ionia	73,000	64,100	127	8,150	8,300	12.0	100,000
Jackson	52,000	46,300	89	4,110	5,500	11.6	64,000
St Joseph	85,000	83,700	125	10,450			
Shiawassee	50,000	44,800	98	4,400	4,200	12.6	53,000
Other counties [2]					2,900	16.6	48,000
South Central	690,000	625,000	114	71,450	60,000	14.8	890,000
Genesee	28,000	26,700	75	1,990			
Lapeer	36,000	31,000	84	2,600	4,800	16.7	80,000
Lenawee	96,000	88,000	124	10,900	7,300	15.8	115,000
Livingston	22,000	20,500	101	2,070			
Macomb	11,000	9,800	100	980			
Monroe	58,000	56,800	115	6,530			
St Clair	26,000	24,300	100	2,420	1,300	9.2	12,000
Washtenaw	42,000	37,300	94	3,500	4,200	13.3	56,000
Other counties [2]	6,000	5,600	55	310	4,400	13.0	57,000
Southeast	325,000	300,000	104	31,300	22,000	14.5	320,000
Michigan	2,200,000	1,900,000	105	199,500	280,000	13.0	3,640,000

[1] Estimates not published for counties with less than 500 acres.
[2] Estimates not published separately because of insufficient data or to avoid disclosure of individual operations.

Corn: Acreage, yield, and production, by county, 2002 [1]

County and district	Planted for all purposes	Grain			Silage		
		Harvested	Yield	Production	Harvested	Yield	Production
	Acres	*Acres*	*Bushels*	*1,000 Bu*	*Acres*	*Tons*	*Tons*
Delta	3,300	2,100	100	210			
Menominee	13,300	4,800	107	515	8,400	13.7	115,000
Other counties [2]	3,400	1,000	105	105	3,600	12.5	45,000
Upper Peninsula	20,000	7,900	105	830	12,000	13.3	160,000
Antrim	3,900	3,200	119	380			
Charlevoix	2,000	1,400	114	160			
Grand Traverse	6,600	5,300	105	555	1,300	14.6	19,000
Leelanau	3,600	2,900	69	200			
Missaukee	15,500	9,400	127	1,195	6,000	15.0	90,000
Other counties [2]	9,400	6,700	93	620	4,700	13.0	61,000
Northwest	41,000	28,900	108	3,110	12,000	14.2	170,000
Alpena	5,400	4,700	85	400			
Iosco	7,400	5,600	118	660			
Ogemaw	8,700	6,300	113	710	2,300	13.0	30,000
Presque Isle	4,700	4,100	98	400			
Other counties [2]	5,800	4,200	105	440	4,700	14.9	70,000
Northeast	32,000	24,900	105	2,610	7,000	14.3	100,000
Muskegon	18,500	13,200	102	1,350			
Newaygo	28,000	19,900	103	2,050	8,000	13.8	110,000
Oceana	9,500	8,500	115	980			
Other counties [2]	11,000	8,200	82	670	9,000	15.6	140,000
West Central	67,000	49,800	101	5,050	17,000	14.7	250,000
Clare	4,000	2,400	117	280			
Gladwin	6,300	5,500	113	620			
Gratiot	81,000	72,100	127	9,150	8,500	16.5	140,000
Isabella	36,000	29,600	110	3,250	6,300	15.9	100,000
Mecosta	17,500	15,500	112	1,730			
Midland	20,000	18,900	119	2,250			
Montcalm	53,000	48,700	113	5,500	4,000	17.5	70,000
Osceola	7,200	3,300	127	420	3,800	13.2	50,000
Other counties [2]					5,400	14.8	80,000
Central	225,000	196,000	118	23,200	28,000	15.7	440,000
Arenac	16,000	13,100	128	1,680			
Bay	42,000	39,600	131	5,170			
Huron	124,000	101,500	149	15,100	22,000	18.6	410,000
Saginaw	84,000	80,300	126	10,100			
Sanilac	97,000	78,800	131	10,300	18,000	15.6	280,000
Tuscola	82,000	78,200	130	10,150			
Other counties [2]					12,000	16.7	200,000
East Central	445,000	391,500	134	52,500	52,000	17.1	890,000

See footnote(s) at end of table.

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Corn: Acreage, yield, and production, by county, 2002 [1] (continued)

County and district	Planted for all purposes	Grain			Silage		
		Harvested	Yield	Production	Harvested	Yield	Production
	Acres	*Acres*	*Bushels*	*1,000 Bu*	*Acres*	*Tons*	*Tons*
Allegan	81,000	74,500	128	9,500	6,000	15.0	90,000
Berrien	43,000	42,000	110	4,600			
Cass	68,000	66,900	119	7,950			
Kalamazoo	50,000	47,400	107	5,050			
Kent	44,000	37,900	116	4,400	5,900	13.6	80,000
Ottawa	45,000	33,800	121	4,100	11,000	15.5	170,000
Van Buren	34,000	31,500	92	2,900			
Other counties [2]					6,100	11.5	70,000
Southwest	365,000	334,000	115	38,500	29,000	14.1	410,000
Barry	39,000	31,900	107	3,400			
Branch	84,000	81,700	107	8,750			
Calhoun	74,000	71,100	102	7,250	2,700	13.3	36,000
Clinton	72,000	63,300	112	7,100	8,500	18.8	160,000
Eaton	61,000	59,300	126	7,450			
Hillsdale	71,000	66,800	97	6,450			
Ingham	52,000	48,900	110	5,400	3,000	13.3	40,000
Ionia	75,000	69,500	135	9,350	5,300	15.5	82,000
Jackson	54,000	51,300	96	4,950	2,500	12.8	32,000
St Joseph	80,000	79,200	120	9,500			
Shiawassee	53,000	49,000	100	4,900	3,800	10.0	38,000
Other counties [2]					15,200	15.3	232,000
South Central	715,000	672,000	111	74,500	41,000	15.1	620,000
Genesee	28,000	26,500	89	2,350			
Lapeer	36,000	32,800	104	3,410			
Lenawee	103,000	92,200	95	8,800			
Livingston	23,000	21,700	104	2,250			
Macomb	12,000	10,800	117	1,260			
Monroe	61,000	60,000	105	6,300			
St Clair	28,000	26,700	105	2,800			
Washtenaw	44,000	39,700	113	4,500			
Other counties [2]	5,000	4,600	72	330			
Southeast	340,000	315,000	102	32,000	22,000	11.8	260,000
Michigan	2,250,000	2,020,000	115	232,300	220,000	15.0	3,300,000

[1] Estimates are not published for counties with less than 500 acres.
[2] Estimates not published separately because of insufficient data or to avoid disclosure of individual operations.

Dry edible beans, all: Acreage, yield, and production, by county, 2001-2002 [1]

County and district	2001				2002			
	Planted	Harvested	Yield	Production	Planted	Harvested	Yield	Production
	Acres	*Acres*	*Pounds*	*1,000 cwt*	*Acres*	*Acres*	*Pounds*	*1,000 cwt*
Alpena					1,900	1,800	2,000	36
Presque Isle					1,100	1,000	1,600	16
Other counties [2]					1,000	1,000	1,500	15
Northeast	4,500	3,400	940	32	4,000	3,800	1,760	67
Gladwin					1,000	1,000	1,500	15
Gratiot	20,300	13,400	720	96	23,000	22,000	1,680	370
Isabella	5,400	3,400	620	21	7,000	6,900	1,740	120
Mecosta					2,300	2,100	1,670	35
Midland	4,500	3,400	880	30	5,200	5,000	1,700	85
Montcalm	15,600	11,600	570	66	15,500	15,000	1,600	240
Other counties [2]	3,300	1,800	500	9				
Central	49,100	33,600	660	222	54,000	52,000	1,660	865
Arenac	6,400	3,800	550	21	7,000	6,900	1,880	130
Bay	23,200	9,200	500	46	27,500	27,000	1,850	500
Huron	70,000	44,200	570	251	91,000	90,500	2,020	1,830
Saginaw	10,500	7,600	570	43	15,000	14,800	1,930	285
Sanilac	13,400	5,700	720	41	19,500	19,300	1,790	345
Tuscola	29,500	16,000	460	73	42,000	41,500	1,730	720
East Central	153,000	86,500	550	475	202,000	200,000	1,910	3,810
Kent					3,500	3,300	1,880	62
Other counties [2]					1,000	900	1,780	16
Southwest	4,300	3,900	900	35	4,500	4,200	1,860	78
South Central	1,400	800	750	6	2,500	2,300	1,960	45
Other districts [2]	2,700	1,800	560	10	3,000	2,700	1,410	38
Michigan	215,000	130,000	600	780	270,000	265,000	1,850	4,903

[1] Estimates not published for counties with less than 500 acres.
[2] Estimates not published separately because of insufficient data or to avoid disclosure of individual operations.

Dry edible beans, navy: Acreage, yield, and production, by county, 2001-2002 [1]

County and district	2001				2002			
	Planted	Harvested	Yield	Production	Planted	Harvested	Yield	Production
	Acres	*Acres*	*Pounds*	*1,000 cwt*	*Acres*	*Acres*	*Pounds*	*1,000 cwt*
Gratiot	4,100	2,900	760	22	5,600	5,400	1,390	75
Midland					1,000	1,000	1,300	13
Montcalm	700	600	500	3				
Other counties [2]	1,800	1,100	640	7	1,100	1,100	1,550	17
Central	6,600	4,600	700	32	7,700	7,500	1,400	105
Arenac					1,600	1,600	1,880	30
Bay	6,700	2,200	410	9	8,500	8,400	1,960	165
Huron	32,000	14,200	570	81	40,000	39,700	2,020	800
Saginaw	2,800	1,600	750	12	4,600	4,600	1,850	85
Sanilac					5,300	5,300	1,980	105
Tuscola	11,000	5,500	350	19	16,000	15,900	1,980	315
Other counties [2]	4,500	1,000	900	9				
East Central	57,000	24,500	530	130	76,000	75,500	1,990	1,500
Other districts [2]	1,400	900	890	8	1,300	1,000	1,500	15
Michigan	65,000	30,000	570	170	85,000	84,000	1,930	1,620

[1] Estimates not published for counties with less than 500 acres.
[2] Estimates not published separately because of insufficient data or to avoid disclosure of individual operations.

Dry edible beans, other: Acreage, yield, and production, by county, 2001-2002 [1]

County and district	2001				2002			
	Planted	Harvested	Yield	Production	Planted	Harvested	Yield	Production
	Acres	*Acres*	*Pounds*	*1,000 cwt*	*Acres*	*Acres*	*Pounds*	*1,000 cwt*
Gratiot	16,200	10,500	700	74	17,400	16,600	1,780	295
Isabella					6,500	6,400	1,750	112
Midland					4,200	4,000	1,800	72
Montcalm	14,900	11,000	570	63	15,100	14,600	1,600	234
Other counties [2]	11,400	7,500	710	53	3,100	2,900	1,620	47
Central	42,500	29,000	660	190	46,300	44,500	1,710	760
Arenac					5,400	5,300	1,890	100
Bay	16,500	7,000	530	37	19,000	18,600	1,800	335
Huron	38,000	30,000	570	170	51,000	50,800	2,030	1,030
Saginaw	7,700	6,000	520	31	10,400	10,200	1,960	200
Sanilac					14,200	14,000	1,710	240
Tuscola	18,500	10,500	510	54	26,000	25,600	1,580	405
Other counties [2]	15,300	8,500	620	53				
East Central	96,000	62,000	560	345	126,000	124,500	1,860	2,310
Southwest	4,300	3,900	900	35				
Other districts [2]	7,200	5,100	780	40	12,700	12,000	1,780	213
Michigan	150,000	100,000	610	610	185,000	181,000	1,810	3,283

[1] Estimates not published for counties with less than 500 acres.
[2] Estimates not published separately because of insufficient data or to avoid disclosure of individual operations.

Hay: Acreage, yield, and production, by county, 2001-2002 [1]

County and district	2001			2002		
	Harvested	Yield	Production	Harvested	Yield	Production
	Acres	*Tons*	*1,000 Tons*	*Acres*	*Tons*	*1,000 Tons*
Alger	4,500	2.2	10	4,300	2.3	10
Baraga	4,500	1.6	7	4,500	1.6	7
Chippewa	42,000	1.8	77	39,500	1.8	73
Delta	17,000	2.1	36	18,200	2.5	45
Dickinson	5,500	3.3	18	5,900	2.9	17
Houghton	6,000	1.5	9	6,600	1.5	10
Iron	6,000	1.7	10	6,000	1.8	11
Luce				3,400	1.8	6
Mackinac	8,500	2.6	22	8,100	2.3	19
Marquette	4,000	2.8	11	4,400	2.0	9
Menominee	29,000	2.8	82	28,500	3.1	89
Ontonagon	9,000	1.8	16	10,100	2.3	23
Schoolcraft	4,000	2.8	11	4,000	2.3	9
Other counties [2]	5,000	2.2	11	1,500	1.3	2
Upper Peninsula	145,000	2.2	320	145,000	2.3	330
Antrim	10,000	2.3	23	9,700	2.4	23
Benzie	2,000	2.0	4	2,000	2.0	4
Charlevoix	9,000	2.2	20	9,300	2.6	24
Emmet	14,000	3.0	42	14,000	2.2	31
Grand Traverse	10,000	2.3	23	10,100	2.7	27
Kalkaska	3,500	3.1	11	3,500	1.7	6
Leelanau	8,500	3.6	31	6,800	2.9	20
Manistee	7,000	2.0	14	6,900	1.7	12
Missaukee	30,000	3.1	93	23,000	3.2	73
Wexford	11,000	2.6	29	9,700	2.1	20
Northwest	105,000	2.8	290	95,000	2.5	240
Alcona	17,500	2.2	38	16,700	2.5	42
Alpena	21,500	2.8	60	21,500	3.0	65
Cheboygan	15,000	2.3	35	13,500	2.2	30
Crawford				500	2.0	1
Iosco	11,500	2.6	30	11,000	3.3	36
Montmorency	5,000	2.6	13	5,400	2.0	11
Ogemaw	22,000	3.0	67	20,000	3.2	64
Oscoda	3,800	3.7	14	3,200	3.4	11
Otsego	7,500	2.8	21	8,100	2.2	18
Presque Isle	14,000	2.6	36	13,500	2.4	33
Roscommon				1,600	2.5	4
Other counties [2]	2,200	2.7	6			
Northeast	120,000	2.7	320	115,000	2.7	315
Lake				6,100	2.5	15
Mason	14,500	3.2	47	15,000	3.3	49
Muskegon				9,500	3.4	32
Newaygo	27,000	3.7	100	25,500	2.9	75
Oceana	12,500	3.4	43	13,900	2.8	39
Other counties [2]	16,000	4.4	70			
West Central	70,000	3.7	260	70,000	3.0	210
Clare	20,000	2.3	46	20,500	2.4	50
Gladwin	18,000	2.4	44	16,900	2.7	45
Gratiot	10,000	4.0	40	11,700	4.6	54
Isabella	38,000	3.5	134	35,500	3.8	135
Mecosta	28,000	2.9	81	29,500	2.5	75
Midland	5,000	2.6	13	5,400	3.0	16
Montcalm	21,000	3.9	82	20,000	3.8	75
Osceola	40,000	2.8	110	40,500	3.0	120
Central	180,000	3.1	550	180,000	3.2	570

See footnote(s) at end of table.

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Hay: Acreage, yield, and production, by county, 2001-2002 [1] (continued)

County and district	2001			2002		
	Harvested	Yield	Production	Harvested	Yield	Production
	Acres	*Tons*	*1,000 Tons*	*Acres*	*Tons*	*1,000 Tons*
Arenac	8,000	2.4	19	7,800	4.1	32
Bay	7,000	3.1	22	7,400	4.9	36
Huron	28,000	4.1	115	38,000	4.9	188
Saginaw	7,000	3.9	27	8,900	5.4	48
Sanilac	48,000	5.5	266	49,500	4.6	226
Tuscola	17,000	4.2	71	18,400	4.3	80
East Central	115,000	4.5	520	130,000	4.7	610
Allegan	22,000	4.0	87	19,500	4.0	78
Berrien	6,500	2.9	19	6,200	4.4	27
Cass	10,000	3.0	30	12,300	3.3	41
Kalamazoo	8,000	2.9	23	7,500	3.2	24
Kent	27,000	4.2	114	24,500	3.6	88
Ottawa	23,000	4.0	91	19,700	3.7	73
Van Buren	13,500	3.4	46	15,300	3.2	49
Southwest	110,000	3.7	410	105,000	3.6	380
Barry	26,000	3.2	83	30,000	3.0	90
Branch	10,000	5.2	52	11,000	3.0	33
Calhoun	15,000	3.0	45	14,000	3.4	48
Clinton	21,000	4.6	97	20,500	3.9	80
Eaton	15,000	3.2	48	16,500	3.5	57
Hillsdale	18,000	5.1	91	17,000	3.9	67
Ingham	18,000	4.7	85	19,000	3.4	64
Ionia	20,000	4.6	91	18,500	3.9	72
Jackson	22,000	3.9	85	21,000	3.1	65
St Joseph	11,000	4.0	44	12,500	3.9	49
Shiawassee	14,000	3.5	49	15,000	3.7	55
South Central	190,000	4.1	770	195,000	3.5	680
Genesee	10,000	3.1	31	10,000	3.2	32
Lapeer	29,000	2.6	76	29,000	2.9	85
Lenawee	10,000	3.4	34	10,500	4.8	50
Livingston	10,000	3.3	33	10,000	3.2	32
Macomb	4,000	2.0	8	3,500	2.6	9
Monroe	4,500	3.8	17	5,900	3.4	20
Oakland	7,000	4.6	32	7,000	2.6	18
St Clair	18,000	2.7	49	17,000	2.9	50
Washtenaw	21,000	3.2	67	20,500	3.2	65
Wayne	1,500	2.0	3	1,600	2.5	4
Southeast	115,000	3.0	350	115,000	3.2	365
Michigan	1,150,000	3.30	3,790	1,150,000	3.22	3,700

[1] Estimates not published for counties with less than 500 acres.
[2] Estimates not published separately because of insufficient data or to avoid disclosure of individual operations.

Oats: Acreage, yield, and production, by county, 2001-2002 [1]

County and district	2001				2002			
	Planted	Harvested	Yield	Production	Planted	Harvested	Yield	Production
	Acres	*Acres*	*Bushels*	*1,000 Bu*	*Acres*	*Acres*	*Bushels*	*1,000 Bu*
Chippewa	1,700	1,200	37	44	650	600	37	22
Delta	1,300	1,000	67	67	1,350	1,300	55	72
Menominee	1,700	1,400	52	73	1,250	850	54	46
Ontonagon	500	300	67	20	500	500	30	15
Other counties [2]	2,800	2,100	55	116	2,750	2,350	45	105
Upper Peninsula	8,000	6,000	53	320	6,500	5,600	46	260
Emmet	600	500	62	31				
Grand Traverse	2,400	1,900	52	98	1,500	1,300	48	63
Leelanau	500	400	55	22				
Missaukee					1,050	1,000	37	37
Wexford	700	500	48	24				
Other counties [2]	2,800	2,200	61	135	2,950	2,600	42	110
Northwest	7,000	5,500	56	310	5,500	4,900	43	210
Alcona	800	700	61	43				
Alpena	2,800	2,500	61	152	2,000	1,750	57	100
Iosco	1,300	1,000	60	60	1,100	1,050	56	59
Ogemaw	1,800	1,400	49	69	1,600	1,000	32	32
Presque Isle	2,600	2,200	38	84	2,800	2,500	64	159
Other counties [2]	1,700	1,200	43	52	2,500	1,000	50	50
Northeast	11,000	9,000	51	460	10,000	7,300	55	400
Mason	1,100	900	48	43	1,200	900	49	44
Newaygo	900	600	55	33	1,000	1,000	58	58
Oceana					1,000	300	43	13
Other counties [2]	1,000	500	48	24	800	800	81	65
West Central	3,000	2,000	50	100	4,000	3,000	60	180
Gladwin	700	600	70	42				
Gratiot					950	800	71	57
Isabella	1,200	1,000	62	62	2,100	1,800	67	120
Mecosta	1,100	900	48	43	1,200	700	50	35
Montcalm	2,000	1,700	62	105	2,600	1,800	52	93
Osceola	1,100	900	43	39				
Other counties [2]	1,900	1,400	64	89	3,150	2,300	59	135
Central	8,000	6,500	58	380	10,000	7,400	59	440
Arenac					1,150	1,100	57	63
Bay	600	500	84	42				
Huron					3,300	2,800	88	245
Saginaw	800	700	61	43	1,000	850	80	68
Sanilac	4,200	3,500	84	295	7,000	5,600	93	522
Tuscola	1,500	1,300	96	125	2,100	1,750	79	139
Other counties [2]	2,900	2,000	78	155	450	400	83	33
East Central	10,000	8,000	83	660	15,000	12,500	86	1,070

See footnote(s) at end of table.

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Oats: Acreage, yield, and production, by county, 2001-2002 [1] (continued)

County and district	2001				2002			
	Planted	Harvested	Yield	Production	Planted	Harvested	Yield	Production
	Acres	*Acres*	*Bushels*	*1,000 Bu*	*Acres*	*Acres*	*Bushels*	*1,000 Bu*
Allegan	1,000	800	71	57	1,300	1,200	56	67
Kalamazoo	700	600	78	47	800	800	55	44
Kent					1,300	1,300	52	68
Ottawa	1,100	700	61	43	1,500	1,400	60	84
Other counties [2]	2,200	1,400	66	93	1,100	500	34	17
Southwest	5,000	3,500	69	240	6,000	5,200	54	280
Barry					1,500	1,500	69	103
Calhoun	1,700	1,400	71	100	1,200	1,100	59	65
Clinton	800	700	71	50	1,400	1,100	75	82
Eaton	650	500	76	38	1,100	900	76	68
Hillsdale	800	700	64	45	1,400	1,100	56	62
Ionia	1,150	900	89	80	1,400	1,200	96	115
Jackson	1,400	1,200	56	67	1,100	700	61	43
Shiawassee	1,600	1,400	79	110	2,300	1,900	98	186
Other counties [2]	1,900	1,200	75	90	1,600	1,000	46	46
South Central	10,000	8,000	73	580	13,000	10,500	73	770
Genesee					800	750	33	25
Lapeer	2,400	1,800	61	110	2,400	2,000	58	115
Macomb	500	400	65	26	700	650	63	41
Monroe	900	800	100	80	1,050	950	84	80
St Clair	900	800	75	60	1,750	1,600	59	95
Other counties [2]	3,300	2,700	72	194	3,300	2,650	73	194
Southeast	8,000	6,500	72	470	10,000	8,600	64	550
Michigan	70,000	55,000	64	3,520	80,000	65,000	64	4,160

[1] Estimates not published for counties with less than 500 acres.
[2] Estimates not published separately because of insufficient data or to avoid disclosure of individual operations.

Potatoes: Acreage, yield, and production, by county, 2001-2002 [1]

County and district	2001				2002			
	Planted	Harvested	Yield	Production	Planted	Harvested	Yield	Production
	Acres	*Acres*	*Cwt*	*1,000 cwt*	*Acres*	*Acres*	*Cwt*	*1,000 cwt*
Delta	900	900	220	200	950	850	245	210
Dickinson	700	700	185	130	700	700	245	170
Other counties [2]	1,200	1,200	190	230	1,050	1,050	250	260
Upper Peninsula	2,800	2,800	200	560	2,700	2,600	245	640
Presque Isle	2,200	2,150	190	410	1,850	1,750	240	420
Other counties [2]	500	500	240	120	650	650	275	180
Northeast	2,700	2,650	200	530	2,500	2,400	250	600
Mecosta					4,250	4,150	325	1,350
Montcalm	13,000	12,900	330	4,230	13,000	12,900	340	4,400
Other counties [2]	5,000	5,000	335	1,680	1,250	1,250	305	380
Central	18,000	17,900	330	5,910	18,500	18,300	335	6,130
Arenac	700	250	280	70				
Bay	2,600	2,450	270	660	3,000	2,900	260	750
Tuscola	1,200	1,200	250	300	600	600	285	170
Other counties [2]	1,900	1,900	280	536	2,600	2,600	220	570
East Central	6,400	5,800	270	1,566	6,200	6,100	245	1,490
Allegan	1,000	950	305	290	900	850	355	300
Other counties [2]	2,100	2,100	285	595	1,900	1,850	305	560
Southwest	3,100	3,050	290	885	2,800	2,700	320	860
St Joseph	5,300	5,250	390	2,050	5,800	5,600	330	1,850
Other counties [2]	2,200	2,200	325	710	2,200	2,200	260	570
South Central	7,500	7,450	370	2,760	8,000	7,800	310	2,420
Monroe	1,200	1,150	235	270	1,250	1,150	260	300
Other counties [2]	1,100	1,050	290	302	1,350	1,350	295	400
Southeast	2,300	2,200	260	572	2,600	2,500	280	700
Other districts [2]	3,200	3,150	370	1,167	3,200	3,100	335	1,038
Michigan	46,000	45,000	310	13,950	46,500	45,500	305	13,878

[1] Estimates not published for counties with less than 500 acres.
[2] Estimates not published separately because of insufficient data or to avoid disclosure of individual operations.

Soybeans: Acreage, yield, and production, by county, 2001-2002 [1]

County and district	2001				2002			
	Planted	Harvested	Yield	Production	Planted	Harvested	Yield	Production
	Acres	*Acres*	*Bushels*	*1,000 Bu*	*Acres*	*Acres*	*Bushels*	*1,000 Bu*
Alpena	900	800	16	13				
Iosco	2,300	2,000	26	52				
Montmorency	900	900	21	19				
Ogemaw	1,000	1,000	20	20				
Presque Isle	2,200	1,900	26	50				
Other counties [2]	700	400	15	6				
Northeast	8,000	7,000	23	160	5,300	5,100	43	220
Muskegon	6,200	6,000	27	160	3,700	3,700	41	150
Newaygo	5,500	5,200	22	115	4,500	4,400	40	175
Oceana	3,000	2,700	24	65				
Other counties [2]	2,300	2,100	19	40	5,000	4,900	35	170
West Central	17,000	16,000	24	380	13,200	13,000	38	495
Gladwin	4,000	4,000	23	90				
Gratiot	84,000	82,000	36	2,980	83,000	82,200	46	3,750
Isabella	48,000	47,000	30	1,400	45,000	44,600	41	1,850
Mecosta	1,500	1,500	15	22				
Midland	23,000	23,000	25	565	20,000	19,800	44	870
Montcalm	18,000	18,000	31	560	17,000	16,900	43	735
Other counties [2]	1,500	1,500	15	23	5,000	5,000	39	195
Central	180,000	177,000	32	5,640	170,000	168,500	44	7,400
Arenac	18,000	17,000	17	290	14,000	13,900	47	650
Bay	44,000	43,000	23	990	40,000	39,600	42	1,650
Huron	73,000	72,000	23	1,650	49,000	48,900	49	2,400
Saginaw	108,000	106,000	22	2,360	105,000	104,000	39	4,050
Sanilac	139,000	136,000	23	3,150	125,000	123,000	41	5,100
Tuscola	98,000	96,000	20	1,960	77,000	76,600	39	2,950
East Central	480,000	470,000	22	10,400	410,000	406,000	41	16,800
Allegan	41,000	41,000	42	1,720	45,000	44,700	45	2,000
Berrien	49,000	49,000	41	2,030	48,000	47,700	39	1,850
Cass	52,000	52,000	38	2,000	52,000	51,600	39	2,000
Kalamazoo	38,000	38,000	38	1,430	37,000	36,700	41	1,500
Kent	22,000	22,000	36	790	20,000	19,800	43	850
Ottawa	21,000	21,000	38	800	23,000	22,800	46	1,050
Van Buren	22,000	22,000	33	730	25,000	24,700	34	850
Southwest	245,000	245,000	39	9,500	250,000	248,000	41	10,100
Barry	27,000	27,000	37	990	31,000	30,700	41	1,250
Branch	77,000	77,000	40	3,090	74,000	73,500	35	2,600
Calhoun	73,000	73,000	35	2,550	71,000	70,500	40	2,800
Clinton	83,000	83,000	33	2,780	83,000	82,200	38	3,150
Eaton	68,000	68,000	38	2,600	73,000	72,300	41	3,000
Hillsdale	77,000	77,000	32	2,470	70,000	69,000	33	2,300
Ingham	56,000	56,000	29	1,650	58,000	57,500	39	2,250
Ionia	61,000	61,000	41	2,500	60,000	59,500	43	2,550
Jackson	44,000	44,000	24	1,060	43,000	42,600	36	1,550
St Joseph	52,000	52,000	40	2,100	55,000	54,200	42	2,300
Shiawassee	87,000	87,000	32	2,810	92,000	91,000	30	2,750
South Central	705,000	705,000	35	24,600	710,000	703,000	38	26,500

See footnote(s) at end of table.

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Soybeans: Acreage, yield, and production, by county, 2001-2002 [1] (continued)

County and district	2001				2002			
	Planted	Harvested	Yield	Production	Planted	Harvested	Yield	Production
	Acres	*Acres*	*Bushels*	*1,000 Bu*	*Acres*	*Acres*	*Bushels*	*1,000 Bu*
Genesee	45,000	44,000	19	845	42,000	41,700	31	1,300
Lapeer	52,000	51,000	24	1,230	50,000	49,700	36	1,800
Lenawee	134,000	133,000	30	4,000	128,000	126,500	31	3,900
Livingston	23,000	23,000	29	660	21,000	20,800	41	850
Macomb	26,000	26,000	22	580	25,000	24,800	36	900
Monroe	94,000	94,000	27	2,550	94,000	93,000	34	3,200
St Clair	75,000	74,000	23	1,680	73,000	72,300	37	2,650
Washtenaw	50,000	49,000	28	1,350	48,000	47,500	37	1,750
Other counties [2]	11,000	11,000	19	205	9,000	8,700	29	250
Southeast	510,000	505,000	26	13,100	490,000	485,000	34	16,600
Other districts [2]	5,000	5,000	24	120	1,500	1,400	29	40
Michigan	2,150,000	2,130,000	30	63,900	2,050,000	2,030,000	38.5	78,155

[1] Estimates not published for counties with less than 500 acres.
[2] Estimates not published separately because of insufficient data or to avoid disclosure of individual operations.

Sugarbeets: Acreage, yield, and production, by county, 2001-2002 [1]

County and district	2001				2002			
	Planted	Harvested	Yield	Production	Planted	Harvested	Yield	Production
	Acres	*Acres*	*Tons*	*1,000 Tons*	*Acres*	*Acres*	*Tons*	*1,000 Tons*
Gladwin	1,400	1,200	16.7	20				
Gratiot	20,800	18,500	18.9	349	18,700	18,700	17.1	319
Isabella	2,300	2,000	14.0	28	1,200	1,200	15.0	18
Midland	3,900	3,500	18.0	63	3,900	3,900	15.4	60
Montcalm					1,700	1,700	18.8	32
Other counties [2]	1,600	1,300	19.2	25	1,500	1,500	15.3	23
Central	30,000	26,500	18.3	485	27,000	27,000	16.7	452
Arenac	4,900	4,500	18.9	85	4,500	4,400	16.4	72
Bay	20,200	19,500	18.2	355	20,500	20,500	15.6	320
Huron	57,000	52,000	20.2	1,050	57,500	57,500	19.9	1,145
Saginaw	19,300	18,000	20.0	360	20,000	19,800	17.3	343
Sanilac	19,600	18,000	19.4	350	20,500	20,250	17.5	355
Tuscola	25,000	24,000	19.2	460	25,000	23,550	18.9	445
East Central	146,000	136,000	19.6	2,660	148,000	146,000	18.4	2,680
Genesee	700	700	21.4	15	800	800	21.3	17
Lapeer					700	700	25.7	18
St Clair	900	800	21.3	17	600	600	13.3	8
Other counties [2]	1,400	1,100	21.8	24	900	900	13.3	12
Southeast	3,000	2,600	21.5	56	3,000	3,000	18.3	55
Other districts [2]	1,000	900	21.1	19	1,000	1,000	17.0	17
Michigan	180,000	166,000	19.4	3,220	179,000	177,000	18.1	3,204

[1] Estimates not published for counties with less than 500 acres.
[2] Estimates not published separately because of insufficient data or to avoid disclosure of individual operations.

Wheat: Acreage, yield, and production, by county, 2001-2002 [1]

County and district	2001				2002			
	Planted	Harvested	Yield	Production	Planted	Harvested	Yield	Production
	Acres	*Acres*	*Bushels*	*1,000 Bu*	*Acres*	*Acres*	*Bushels*	*1,000 Bu*
Alcona					800	700	50	35
Alpena	3,400	3,300	70	230	3,800	3,700	53	195
Iosco					1,900	1,900	73	139
Montmorency					1,200	1,100	50	55
Ogemaw	700	700	57	40	1,000	1,000	75	75
Presque Isle	2,300	2,300	54	125	2,700	2,600	56	145
Other counties [2]	3,600	3,500	56	195	600	500	52	26
Northeast	10,000	9,800	60	590	12,000	11,500	58	670
Mason	4,100	3,900	58	225	3,900	3,800	61	230
Muskegon	1,900	1,800	53	95				
Newaygo	1,400	1,400	54	76				
Oceana					1,900	1,800	44	80
Other counties [2]	1,600	1,600	46	74	4,200	3,800	55	210
West Central	9,000	8,700	54	470	10,000	9,400	55	520
Gladwin	2,000	1,900	58	110				
Gratiot	18,000	17,900	70	1,250	15,000	14,500	58	845
Isabella	15,500	15,400	59	910	14,000	13,700	70	955
Mecosta	1,400	1,300	50	65				
Midland	3,700	3,700	81	300	3,900	3,900	62	240
Montcalm	18,000	17,900	56	1,000	15,500	15,300	65	1,000
Other counties [2]	1,400	1,400	46	65	4,600	4,600	57	260
Central	60,000	59,500	62	3,700	53,000	52,000	63	3,300
Arenac	6,500	6,300	62	390	6,000	5,900	79	465
Bay	8,000	7,900	79	625	8,000	7,900	73	580
Huron	46,000	45,800	72	3,310	38,000	37,700	79	2,965
Saginaw	29,000	28,900	70	2,010	26,500	25,700	78	2,015
Sanilac	52,000	51,700	66	3,425	39,000	38,700	73	2,835
Tuscola	23,500	23,400	68	1,590	22,500	22,100	77	1,710
East Central	165,000	164,000	69	11,350	140,000	138,000	77	10,570
Allegan	9,500	8,100	64	520	8,000	7,700	65	500
Berrien	4,800	4,700	51	240				
Cass					5,200	5,200	44	230
Kalamazoo	5,100	5,000	54	270	6,400	6,300	53	335
Kent	6,600	6,400	56	360	6,300	6,200	60	370
Ottawa	6,000	5,600	57	320	4,500	4,500	59	265
Other counties [2]	8,000	4,700	47	220	6,600	6,600	50	330
Southwest	40,000	34,500	56	1,930	37,000	36,500	56	2,030

See footnote(s) at end of table.

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Wheat: Acreage, yield, and production, by county, 2001-2002 [1] (continued)

County and district	2001				2002			
	Planted	Harvested	Yield	Production	Planted	Harvested	Yield	Production
	Acres	*Acres*	*Bushels*	*1,000 Bu*	*Acres*	*Acres*	*Bushels*	*1,000 Bu*
Barry	8,300	8,200	65	530	7,900	7,900	62	490
Branch	7,700	7,700	51	390	6,500	6,400	56	360
Calhoun	13,000	13,000	55	720	13,300	13,100	59	775
Clinton	23,500	23,400	62	1,450	22,000	21,500	77	1,650
Eaton	19,000	18,900	66	1,250	15,700	15,500	66	1,025
Hillsdale	15,500	15,200	56	850	13,500	13,300	53	700
Ingham	16,000	15,900	72	1,150	15,100	15,000	66	990
Ionia	17,000	16,900	60	1,010	14,500	14,400	73	1,045
Jackson	9,800	9,800	52	510	10,000	9,900	54	530
St Joseph	2,700	2,700	59	160	3,000	3,000	53	160
Shiawassee	32,500	32,300	55	1,780	23,500	23,000	62	1,425
South Central	165,000	164,000	60	9,800	145,000	143,000	64	9,150
Genesee	10,300	10,200	64	650	9,400	9,100	65	590
Lapeer	6,900	6,900	59	410	6,500	6,400	64	410
Lenawee	33,000	32,900	74	2,420	29,500	28,700	73	2,100
Livingston	7,400	7,400	65	480	7,000	6,900	61	420
Macomb	3,700	3,600	58	210	3,900	3,700	65	240
Monroe	25,000	24,900	75	1,870	19,000	18,000	67	1,200
St Clair	11,600	11,500	63	730	8,000	7,900	63	495
Washtenaw	15,500	15,500	61	950	12,300	12,000	67	805
Other counties [2]	1,600	1,600	50	80	1,400	1,300	69	90
Southeast	115,000	114,500	68	7,800	97,000	94,000	68	6,350
Other districts [2]	6,000	5,000	40	200	6,000	5,600	43	240
Michigan	570,000	560,000	64	35,840	500,000	490,000	67	32,830

[1] Estimates not published for counties with less than 500 acres.
[2] Estimates not published separately because of insufficient data or to avoid disclosure of individual operations.

Cattle: January 1, by county, 2002-2003 [1]

County and district	All cattle and calves		All cows that have calved		Milk cows		Beef cows	
	2002	2003	2002	2003	2002	2003	2002	2003
	Head	*Head*	*Head*	*Head*	*Head*	*Head*	*Head*	*Head*
Alger	2,500	1,800	600	600				
Baraga	800	900	550	600				
Chippewa	8,600	8,100	2,300	3,100	1,000	1,000	1,300	2,100
Delta	9,200	7,500	3,600	3,800	1,800	1,600	1,800	2,200
Dickinson	2,100	2,300	1,000	1,200		700		500
Houghton	2,200	1,700	700	850				
Iron	2,000	1,500	800	650				
Luce	700	500						
Mackinac	2,400	2,200	1,050	1,000				
Marquette	1,700	1,600	900	900				
Menominee	17,500	15,500	7,600	7,900	6,600	6,600	1,000	1,300
Ontonagon	2,800	2,900	1,100	1,100	600	600	500	
Schoolcraft	1,200	1,200						
Other counties [2]	300	300	800	800	3,500	2,800	2,900	3,100
Upper Peninsula	54,000	48,000	21,000	22,500	13,500	13,300	7,500	9,200
Antrim	5,500	5,000	1,300	1,400	800	700	500	700
Benzie	1,200	900						
Charlevoix	3,200	2,900	800	950				
Emmet	5,100	4,600	1,800	1,600	800	700	1,000	900
Grand Traverse	5,500	5,200	1,500	1,400				
Kalkaska	1,300	1,400						
Leelanau	4,000	3,400	550	900				
Manistee	2,100	2,500	550	800				
Missaukee	22,500	21,000	10,000	9,800	9,400	9,200	600	600
Wexford	3,600	3,100	1,400	1,150	900		500	
Other counties [2]			600	900	1,700	2,600	2,300	3,500
Northwest	54,000	50,000	18,500	18,900	13,600	13,200	4,900	5,700
Alcona	4,700	5,200	1,800	2,000	600	600	1,200	1,400
Alpena	10,700	11,700	4,300	4,600	2,800	2,900	1,500	1,700
Cheboygan	5,000	4,500	2,100	2,200	1,400	1,200	700	1,000
Iosco	9,000	8,600	2,500	2,800	1,800	1,800	700	1,000
Montmorency	2,700	2,700	1,000	1,100				
Ogemaw	15,000	15,000	6,600	6,800	5,500	5,400	1,100	1,400
Oscoda	2,300	2,300	850	1,000				
Otsego	2,100	2,000	650					
Presque Isle	8,000	7,500	2,600	2,600	1,800	1,600	800	1,000
Other counties [2]	500	500	100	800	1,500	1,500	1,100	1,400
Northeast	60,000	60,000	22,500	23,900	15,400	15,000	7,100	8,900
Lake	2,700	1,800	750	1,100				
Mason	8,600	8,200	3,050	3,000				
Muskegon	14,500	13,500	8,300	9,000	7,700	8,400	600	600
Newaygo	22,500	24,500	9,400	10,600	8,000	9,100	1,400	1,500
Oceana	9,700	9,000	3,100	3,300	2,600	2,700	500	600
Other counties [2]					2,700	2,800	1,100	1,300
West Central	58,000	57,000	24,600	27,000	21,000	23,000	3,600	4,000
Clare	13,000	13,000	4,200	4,200	2,700	2,600	1,500	1,600
Gladwin	7,000	7,000	2,800	3,000	1,300	1,300	1,500	1,700
Gratiot	25,000	24,000	8,500	8,900	7,500	7,800	1,000	1,100
Isabella	28,000	29,000	10,500	9,600	8,200	7,100	2,300	2,500
Mecosta	16,500	15,500	6,000	6,300	4,600	4,200	1,400	2,100
Midland	4,500	4,500	1,300	2,400	600	1,600	700	800
Montcalm	21,000	22,000	11,700	11,700	10,300	10,100	1,400	1,600
Osceola	20,000	20,000	8,000	8,400	5,300	5,300	2,700	3,100
Central	135,000	135,000	53,000	54,500	40,500	40,000	12,500	14,500

See footnote(s) at end of table.

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Cattle: January 1, by county, 2002-2003 [1] (continued)

County and district	All cattle and calves		All cows that have calved		Milk cows		Beef cows	
	2002	2003	2002	2003	2002	2003	2002	2003
	Head	*Head*	*Head*	*Head*	*Head*	*Head*	*Head*	*Head*
Arenac	7,000	7,000	2,300	2,500				
Bay	4,500	5,000	1,700	1,900				
Huron	71,000	73,000	16,400	19,200	15,500	18,400	900	800
Saginaw	6,000	6,000	2,900	2,900				
Sanilac	55,000	57,000	21,300	22,400	19,300	19,700	2,000	2,700
Tuscola	16,500	17,000	6,200	6,500	4,900	4,600	1,300	1,900
Other counties [2]					6,300	6,300	600	1,000
East Central	160,000	165,000	50,800	55,400	46,000	49,000	4,800	6,400
Allegan	38,000	40,000	18,000	18,700	16,600	17,100	1,400	1,600
Berrien	4,500	4,000	2,200	2,400	1,500	1,500	700	900
Cass	5,500	6,500	2,000	2,300	900	900	1,100	1,400
Kalamazoo	14,500	14,500	6,100	6,100	5,600	4,400	500	1,700
Kent	26,500	27,000	12,300	12,500	10,300	10,500	2,000	2,000
Ottawa	28,000	30,000	13,600	14,500	12,500	13,200	1,100	1,300
Van Buren	8,000	8,000	2,300	3,000	1,600	1,900	700	1,100
Southwest	125,000	130,000	56,500	59,500	49,000	49,500	7,500	10,000
Barry	24,000	23,000	9,200	9,300	7,500	7,100	1,700	2,200
Branch	18,000	19,000	4,500	5,100	3,500	2,800	1,000	2,300
Calhoun	20,000	21,000	6,900	7,000	4,400	4,700	2,500	2,300
Clinton	47,000	47,000	19,400	19,900	18,700	18,900	700	1,000
Eaton	14,500	14,500	4,300	4,400	2,200	1,900	2,100	2,500
Hillsdale	24,500	24,500	11,100	13,300	9,200	11,500	1,900	1,800
Ingham	16,000	16,000	6,700	5,800	5,600	4,600	1,100	1,200
Ionia	35,000	33,000	12,700	12,900	11,000	11,000	1,700	1,900
Jackson	25,000	25,000	7,000	7,100	4,000	4,100	3,000	3,000
St Joseph	10,000	10,000	2,900	2,100	1,900	1,000	1,000	1,100
Shiawassee	13,000	14,000	4,800	5,600	4,000	4,400	800	1,200
South Central	247,000	247,000	89,500	92,500	72,000	72,000	17,500	20,500
Genesee	7,300	6,500	2,400	2,400	1,700	1,700	700	700
Lapeer	22,500	22,000	6,400	6,300	4,900	4,600	1,500	1,700
Lenawee	19,500	19,000	11,000	11,900	9,500	10,200	1,500	1,700
Livingston	9,300	9,800	3,800	3,600	2,800	2,700	1,000	900
Macomb	4,500	5,000	950	1,150		650		500
Monroe	5,800	5,900	1,000	1,150				
Oakland	1,600							
St Clair	10,500	11,000	3,200	3,550	1,800	1,850	1,400	1,700
Washtenaw	16,000	17,000	4,600	5,100	3,800	3,400	800	1,700
Other counties [2]	1,600	1,800	250	650	1,500	900	700	900
Southeast	97,000	98,000	33,600	35,800	26,000	26,000	7,600	9,800
Michigan	990,000	990,000	370,000	390,000	297,000	301,000	73,000	89,000

[1] Estimates are not published for counties with less than 500 head.
[2] Not published separately because of insufficient data or to avoid disclosure of individual operations.

Hogs and pigs: December 1, by county, 2001-2002 [1]

County and district	All hogs and pigs	
	2001	2002
	Head	*Head*
Chippewa	1,100	650
Menominee	600	
Other counties [2]	400	850
Upper Peninsula	2,100	1,500
Antrim	600	500
Benzie	1,100	1,000
Emmet	500	
Grand Traverse	3,000	3,000
Kalkaska	1,300	1,200
Missaukee	1,900	2,500
Other counties [2]	400	800
Northwest	8,800	9,000
Northeast	1,600	1,500
Mason		4,000
Muskegon	3,200	4,000
Newaygo	22,500	
Oceana	2,000	20,000
Other counties [2]	800	4,000
West Central	28,500	32,000
Clare		3,300
Gladwin	2,100	1,700
Gratiot	41,000	34,000
Isabella	7,500	6,700
Mecosta	14,300	14,000
Midland	3,000	3,000
Montcalm	12,000	14,400
Osceola		900
Other counties [2]	4,100	
Central	84,000	78,000
Arenac	900	
Bay	500	
Huron	79,000	45,000
Saginaw	4,000	4,300
Sanilac	4,000	4,400
Tuscola	13,600	13,000
Other counties [2]		1,300
East Central	102,000	68,000

County and district	All hogs and pigs	
	2001	2002
	Head	*Head*
Allegan	160,000	150,000
Berrien	16,000	8,500
Cass	160,000	140,000
Kalamazoo	15,500	33,000
Kent	7,500	5,500
Ottawa	85,000	90,000
Van Buren	26,000	18,000
Southwest	470,000	445,000
Barry	10,000	8,500
Branch	67,000	58,000
Calhoun	48,000	45,000
Clinton	11,000	9,000
Eaton	9,000	9,000
Hillsdale	30,000	18,000
Ingham	8,000	8,500
Ionia	20,000	17,500
Jackson	3,000	2,500
St Joseph	21,500	22,000
Shiawassee	2,500	2,000
South Central	230,000	200,000
Genesee	2,800	4,000
Lapeer	2,200	2,000
Lenawee	8,000	8,000
Livingston	500	
Macomb	1,000	
Monroe	7,000	2,700
St Clair	6,200	3,000
Washtenaw	5,000	4,500
Other counties [2]	300	800
Southeast	33,000	25,000
Michigan	960,000	860,000

[1] Estimates are not published for counties with less than 500 hogs.
[2] Not published separately because of insufficient data or to avoid disclosure of individual operations.

Hens and pullets of laying age: December 1, by county, 2001-2002 [1]

County and district	Hens and pullets of laying age		County and district	Hens and pullets of laying age	
	2001	2002		2001	2002
	Head	*Head*		*Head*	*Head*
Delta	3,000	2,500	Allegan	2,170,000	1,875,000
Houghton	6,300	4,000	Berrien	1,000	
Menominee	1,000		Cass	1,000	
Other counties [2]	2,700	3,500	Kalamazoo		280,000
Upper Peninsula	13,000	10,000	Kent	2,000	1,500
			Van Buren	56,000	32,000
Leelanau	1,100		Other counties [2]	2,086,000	1,886,500
Other counties [2]	3,900		**Southwest**	4,316,000	4,075,000
Northwest	5,000	4,000			
			Calhoun	4,000	5,000
Alpena	1,000		Eaton	2,500	3,000
Other counties [2]	4,000		Hillsdale	52,000	65,000
Northeast	5,000	4,000	Ingham	3,000	4,000
			Ionia	1,458,000	1,857,000
West Central	3,000	2,000	Jackson	1,000	1,000
			St Joseph	20,000	30,000
Clare	1,000	1,000	Shiawassee	2,600	3,000
Gladwin	3,000	2,500	Other counties [2]	1,900	2,000
Gratiot	55,000	43,500	**South Central**	1,545,000	1,970,000
Isabella	1,500	1,500			
Mecosta	2,300	2,200	Genesee	2,000	1,400
Midland	1,900	1,500	Lapeer	2,700	1,800
Montcalm	1,800	1,300	Lenawee	7,000	5,000
Osceola	1,500	1,500	Livingston	1,400	1,000
Central	68,000	55,000	Monroe	1,700	1,300
			St Clair	2,700	1,600
Bay	1,300	1,000	Washtenaw	2,500	1,800
Saginaw	1,000		Wayne	1,300	
Sanilac	3,400	2,400	Other counties [2]	1,700	2,100
Tuscola	160,000	89,500	**Southeast**	23,000	16,000
Other counties [2]	590,300	457,100			
East Central	756,000	550,000	**Michgan**	6,734,000	6,686,000

[1] Estimates are not published for counties with less than 1,000 hens and pullets of laying age.
[2] Not published separately because of insufficient data or to avoid disclosure of individual operations.

Dairy: Number of operations and total milk produced, by county, 2001-2002 [1]

County and district	2001		2002	
	Operations	Total milk produced	Operations	Total milk produced
	Number	*1,000 pounds*	*Number*	*1,000 pounds*
Alger	9	5,900	9	5,800
Baraga	5	7,600	4	
Chippewa	20	15,300	20	15,400
Delta	29	31,500	27	28,400
Dickinson	11	13,600	11	13,000
Houghton	8		8	
Iron	3		3	
Mackinac	9	16,300	9	15,800
Marquette	4		4	
Menominee	78	119,000	77	122,000
Ontonagon	12	9,800	12	8,900
Schoolcraft	2		1	
Other counties [2]		6,000		10,700
Upper Peninsula	190	225,000	185	220,000
Antrim	14	13,000	12	11,900
Charlevoix	9	12,200	9	11,400
Emmet	12	16,800	11	15,500
Grand Traverse	10	10,300	9	7,100
Kalkaska	4		3	
Leelanau	9		9	
Manistee	8		8	
Missaukee	75	190,000	75	162,000
Wexford	19	15,800	19	11,100
Other counties [2]		11,900		6,000
Northwest	160	270,000	155	225,000
Alcona	9	15,000	10	12,900
Alpena	47	53,200	46	54,500
Cheboygan	10	22,200	10	19,400
Iosco	21	33,400	21	36,200
Montmorency	13	15,000	13	14,100
Ogemaw	44	105,000	44	103,000
Oscoda	19		20	
Otsego	3		3	
Presque Isle	24	28,300	23	26,200
Other counties [2]		12,900		13,700
Northeast	190	285,000	190	280,000
Lake	5		5	
Mason	37	45,000	35	44,000
Muskegon	30		29	
Newaygo	102	167,000	101	173,000
Oceana	36	32,000	35	30,000
Other counties [2]		151,000		158,000
West Central	210	395,000	205	405,000
Clare	50	59,000	51	57,500
Gladwin	70	19,500	67	17,600
Gratiot	53	199,000	51	215,000
Isabella	98	152,000	95	148,000
Mecosta	112	68,400	116	70,100
Midland	7	15,100	6	16,800
Montcalm	110	196,000	106	210,000
Osceola	70	126,000	68	120,000
Central	570	835,000	560	855,000
Arenac	24	53,700	23	55,300
Bay	15	18,700	16	19,100
Huron	175	374,000	167	393,000
Saginaw	37	52,100	36	47,200
Sanilac	255	337,000	248	335,000
Tuscola	64	89,500	60	85,400
East Central	570	925,000	550	935,000
Allegan	115	297,000	114	293,000
Berrien	13	47,400	13	48,100
Cass	18	13,500	18	10,900
Kalamazoo	13	105,000	14	106,000
Kent	70	156,000	70	169,000
Ottawa	103	237,000	95	279,000
Van Buren	23	34,100	21	34,000
Southwest	355	890,000	345	940,000
Barry	47	208,000	43	225,000
Branch	96	60,100	85	51,400
Calhoun	58	116,000	54	119,000
Clinton	92	385,000	92	419,000
Eaton	46	38,500	45	34,300
Hillsdale	175	151,000	175	137,000
Ingham	56	105,000	53	107,000
Ionia	85	213,000	83	224,000
Jackson	43	124,000	40	122,000
St Joseph	43	35,900	42	28,200
Shiawassee	49	73,500	48	73,100
South Central	790	1,510,000	760	1,540,000
Genesee	15	28,700	14	27,900
Lapeer	75	82,900	73	75,300
Lenawee	47	225,000	44	267,000
Livingston	25	63,400	21	61,200
Macomb	14	10,000	13	8,100
Monroe	8		8	
Oakland	3		2	
St Clair	33	31,900	33	31,400
Washtenaw	45	73,500	42	67,200
Other counties		4,600		6,900
Southeast	265	520,000	250	545,000
Michigan	3,300	5,870,000	3,200	5,945,000

[1] Production estimates are not published for counties with 5 or fewer farms or with less than 5 million pounds of annual production. An operation is any place having one or more head on hand at any time during the year.
[2] Not published separately because of insufficient data or to avoid disclosure of individual operations.

Sheep: January 1, by county, 2002-2003 [1]

County and district	All sheep and lambs	
	2002	2003
	Head	*Head*
Chippewa	1,200	1,400
Other counties [2]	1,400	1,300
Upper Peninsula	2,600	2,700
Antrim		500
Manistee		600
Other counties [2]		1,500
Northwest	2,400	2,600
Iosco	500	500
Ogemaw	550	600
Other counties [2]	1,950	1,600
Northeast	3,000	2,700
Lake	500	
Mason	500	700
Other counties [2]	1,700	2,300
West Central	2,700	3,000
Clare	800	
Gladwin	1,100	1,100
Gratiot	700	1,100
Isabella	1,000	1,100
Mecosta		1,900
Montcalm	700	500
Osceola	1,200	1,500
Other counties [2]	2,500	800
Central	8,000	8,000
Bay	500	600
Huron		500
Sanilac	600	800
Tuscola		1,100
Other counties [2]	2,200	500
East Central	3,300	3,500

County and district	All sheep and lambs	
	2002	2003
	Head	*Head*
Allegan	1,700	1,600
Berrien		500
Cass	1,300	1,800
Kalamazoo	4,800	4,600
Kent	800	900
Ottawa		700
Van Buren	1,300	1,400
Other counties [2]	1,100	
Southwest	11,000	11,500
Barry	1,400	1,500
Branch	1,400	1,600
Calhoun	1,400	2,000
Clinton	1,700	1,700
Eaton	2,300	2,100
Hillsdale	1,100	1,400
Ingham	1,400	1,400
Ionia	1,000	1,000
Jackson	5,000	5,500
St Joseph	2,100	2,400
Shiawassee	1,200	1,400
South Central	20,000	22,000
Genesee	1,200	1,300
Lapeer	1,500	1,500
Lenawee	1,600	1,200
Livingston	1,200	1,200
Monroe	1,400	1,150
Oakland	800	700
Washtenaw	10,500	11,000
Other counties [2]	800	950
Southeast	19,000	19,000
Michigan	72,000	75,000

[1] Estimates are not published for counties with less than 500 sheep.
[2] Not published separately because of insufficient data or to avoid disclosure of individual operations.

Useful Agriculture Internet Sites

State and Federal Agencies

MDA-Michigan Department of Agriculture	www.michigan.gov/mda
MASS-Michigan Agricultural Statistics Service	www.nass.usda.gov/mi
USDA-United States Department of Agriculture	www.usda.gov
NASS-National Agricultural Statistics Service	www.usda.gov/nass
AMS-Agricultural Marketing Service, Market News Service	www.ams.usda.gov/marketnews.htm
APHIS-Animal and Plant Health Inspection Service	www.aphis.usda.gov
ERS-Economic Research Service	www.ers.usda.gov
FSA-Farm Service Agency	www.fsa.usda.gov
NRCS-National Resources Conservation Service	www.nrcs.usda.gov
RD-Rural Development	www.rurdev.usda.gov
MSU Extension	www.msue.msu.edu

Commodity Groups

Apples-Michigan Apple Committee	www.michiganapples.com
Asparagus-Michigan Asparagus Advisory Board	www.asparagus.com
Bison-Michigan Bison Association	www.michiganbison.com
Blueberries-Michigan Blueberry Growers Association	www.blueberries.com
Cattle-Michigan Beef Industry Commission	www.mibeef.org
Celery-Michigan Celery Promotion Cooperative	www.michigancelery.com
Cherries-Cherry Industry Administrative Board (CIAB)	www.cherryboard.org
Cherries-Cherry Marketing Institute	www.cherrymkt.org
Christmas Trees-Michigan Christmas Tree Association	www.mcta.org
Corn-Michigan Corn Growers Association	www.micorn.org
Dairy-Michigan Milk Producers Association	www.mimilk.com
Dairy-United Dairy Industry of MI	www.udim.org
Dry Beans-Michigan Bean Commission	www.michiganbean.org
Dry Beans-Michigan Bean Shippers / Agri-Business Association	www.miagbiz.org
Deer and Elk-Michigan Deer and Elk Farmers Association	www.Michigan-deer.com/default.htm
Floriculture-Michigan Floral Association	www.michiganfloral.org
Floriculture-Allied Florist Association of Metro Detroit	www.alliedflorist.com
Grapes-Michigan Grape and Wine Industry Council	www.michiganwines.com
Horses-Michigan Horse Council	www.michiganhorsecouncil.com
Nursery-Michigan Nursery & Landscape Association	www.mnla.org
Pork-National Pork Board and Pork Producers Council	www.nppc.org
Potatoes-Michigan Potato Industry Commission	www.mipotato.com
Soybeans-Michigan Soybean Promotion Committee	www.michigansoybean.org
Turfgrass-Michigan Turfgrass Association	www.michiganturfgrass.org
Turkeys-Michigan Turkey Producers	www.miturkey.com

Other Related Sites

Implementation Working Group-IWG	www.fqpa-iwg.org
American Farm Bureau Federation	www.fb.org
Michigan Farm Bureau	www.michiganfarmbureau.com
Michigan Integrated Food and Farming Systems on-line directory	www.miffsmarketline.org
Michigan Bovine TB Eradication Project	www.bovinetb.com
MSU Agriculture Weather Office	www.agweather.geo.msu.edu

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- **Michigan Department of Agriculture (MDA)**

  MDA home page at: **http://www.michigan.gov/mda**

- **Michigan Agricultural Statistics Service (MASS)**

  MASS home page at: **http://www.nass.usda.gov/mi**

  Under the **MASS** home page you will find up-to-date data such as Crop-Weather releases, press releases, *Agriculture Across Michigan*, and county estimates.

- **National Agricultural Statistics Service (NASS)**

  NASS home page at: **http://www.usda.gov/nass**

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