



MICHIGAN STATE
UNIVERSITY
EXTENSION

Outcomes for Michigan's Future

Ensuring the Safety of Michigan's Citizens through Research and Education

In Brief

Today's Successes

- In the past two years, MSUE provided **more than 700 Michigan food producers and processors** with intense training on agricultural security.
- Hazardous Analysis and Critical Control Points (HACCP) training is provided by MSUE and **required for all 500 Michigan food processors**.
- MSUE educators provide food safety basics as part of the Expanded Food and Nutrition Education Program (EFNEP). In 2004, Michigan EFNEP provided in-depth education to **4,198 adults** with children, representing more than **15,000 family members**, as well as more than **4,500 youth**.
- MAES conducted the research that led to the **development of test kits that detect mold toxins in grain**.

Tomorrow's Results

- MSUE will offer disaster education programs to more than **500 first responders, teachers, local officials, farmers, homeowners, business operators and private citizens**.
- **More than 3,000 rural homeowners, farmers and local officials** throughout the state will learn how to protect their families, homes and outbuildings from wildfires, thanks to MSUE.
- My Health to Better Living: The 4-H Health Challenge will **teach 8,000 5- to 19-year-olds about nutrition and physical fitness**, tobacco use prevention, seat belt safety and sun safety to prevent skin cancer.
- MSUE educators will work to reduce the incidence of lead poisoning in children by **educating 170 at-risk families**.

Michigan's priorities for ensuring the safety of citizens

Protect Michigan's population from food-borne illness: The Centers for Disease Control and Prevention report that an estimated 76 million illnesses, 5,000 deaths and 325,000 food safety-related hospitalizations occur in this country each year. Those numbers translate to one out of every four people affected by food-borne illness each year, with more than three million cases in Michigan. According to the Michigan Department of Agriculture, the number of the state's citizens reporting food-related illnesses has increased each year since 1997.

Preventing and controlling injury and personal property loss during disaster: Michigan has approximately 10,000 wildfires each year and experiences flooding, tornadoes and other natural disasters that destroy or damage homes, buildings and businesses. Ensuring the safety of Michigan people and their property is one of the primary responsibilities of government officials.

Keeping Michigianians safe: Because 43 percent of Michigan residents use groundwater as their source of drinking water, keeping our water supply safe is a priority for the state. Michigan's families face many other at-home threats, including lead poisoning, especially for residents of older homes, and radon poisoning, a cause of lung damage and cancer. Needless death and injury occur as a result of lack of seat-belt use, sun exposure and tobacco use.

MSU Capacity

- **Reach:** MSUE provides health and safety, disaster preparedness and food safety education to citizens in all 83 Michigan counties.
- **Experience:** Many years of MAES research has shown that education and prevention are more cost-effective than responding when disaster strikes. Creating best practices to be followed by food processing businesses reduces the financial burden of regulation.
- **Expertise:** MAES and MSUE employ experts at MSU and have global connections to additional expertise in areas related to food safety and disaster preparedness.
- **Track record:** Proven methods quickly move peer-reviewed research to recommendations, program development and implementation in cost-efficient ways to achieve documented results.
- **"Feet on the street":** In times of natural disaster such as tornadoes, floods and winter storms, or man-made disasters such as hazardous material spills or acts of terrorism, Extension is on the ground, in the community to educate and inform citizens. MSUE's network can quickly develop supportive educational responses in times of need.
- **Trust:** MAES and MSUE provide unbiased research and education to help ensure that Michigan citizens can make educated decisions at local, regional and state levels to improve Michigan's future.
- **Content:** MAES provides science-based research that forms the foundation for curriculum used by MSUE educators throughout the state. These educational programs help prevent food safety outbreaks and prepare people to deal with disasters, save tax dollars, and offer state residents better quality of life and personal safety.

Sampler of Success

Many MAES and MSUE initiatives address food safety and disaster preparedness in Michigan. Here are a few examples of MSU's successes and capacity to produce desirable outcomes:

- In the past two years, MSUE provided **more than 700 Michigan food producers and processors** with intense training on agricultural security. MSUE is helping prepare the industry for a variety of scenarios, including contamination of the food supply and potential pathogens.

- Recognizing the need for education on the basics of food safety, MSUE educators provide food safety basics with the Expanded Food and Nutrition Education Program (EFNEP). In 2004, Michigan EFNEP provided in-depth education to **4,198 adults** with children, representing more than **15,000 family members**, as well as **more than 4,500 youth**.
- **More than 58,000 Michigan food service establishments** need training in safe food handling and may need to comply with increased regulations in this area. MSUE offers them access to training through the ServSafe program. It is especially useful in rural areas with limited access to other training sources.
- Hazardous Analysis and Critical Control Points (HACCP) training is provided by MSUE and **required for all 500 Michigan food processors**. MSU faculty members and MSUE educators ensure that micro-processors with limited resources have access to this training, along with the major food manufacturers. Sixty-five completed the training last year.
- In 2003, a scientist with MAES and one of his graduate students created a Web site that allows the public to **report possible food-borne illnesses** and check if others are reporting similar illness. Michigan county health departments use this electronic bulletin board to pinpoint problem areas and track trends.
- A scientist with MAES **pioneered the studies of perfluorinated chemicals** (PFSOs), which have been banned in many food products (including microwave popcorn and some plastic food containers). The scientist was the first to discover perfluorinated compounds in the environment, an important new class of environmental contaminants.
- MSUE created a series of educational bulletins on wildfires and security in English and in Spanish. **Thousands of people have been educated about wildfire prevention using these publications.**
- MAES conducted research that led to the development of test kits to detect mold toxins in grain. Quick and accurate, these kits are used across the country to **keep toxins out of the food supply** (cooking and processing do not kill the toxins), **saving millions of dollars** in health and food processing costs.
- The MAES- and MSUE-supported Institute of Water Research helped craft the state's Wellhead Protection Program (WHPP). The goal of the WHPP is to **safeguard public groundwater supply systems** from potential sources of contamination through wise land use planning and management.

Outcomes for Michigan's Future

MAES and MSUE will research and educate citizens on emerging food safety threats, natural disasters, disaster preparedness and food preparation. In addition, MSUE will involve trained volunteers through community-based networks to help prevent health risks.

MAES research initiatives over the next year will focus on:

- Developing quick, inexpensive sensors to detect a number of pathogens in the food supply.
- Enhancing the protection of Michigan's food supply through involvement in the Department of Homeland Security's National Center for Food Protection and Defense.
- Identifying and tracking emerging and reemerging diseases and food pathogens.
- Improving recommendations for medical professionals and veterinarians to manage infectious diseases.
- Developing recommendations to reduce metal toxicity and hypoxia because of metal contamination in the food supply.
- Formulating food safety recommendations to reduce food contamination by Listeria, a bacterium that kills more people than any other food-borne illness.
- Identifying food processing weak points to improve federal Hazard Analysis and Critical Control Points (HACCP) system recommendations, which help food processors pinpoint potential problems during food processing.

Ensuring the Safety of Michigan's Citizens through Research and Education

- Investigating new ways to reduce microbial contamination of fresh produce.
- Adapting nanotechnology in food safety protection devices.
- Creating meat processing models that will improve the safety of Michigan-produced meat products.
- Developing sensors to detect pathogens in water.

MSUE educational priorities and outcomes for 2005-06 will focus on:

- MSUE educators will work to reduce the incidence of lead poisoning in children by **educating 170 families**. About 50 percent of the families in the Home Safe Kids program will test their children for blood lead levels to identify any problems early, which will reduce treatment costs and additional expenses.
- My Health to Better Living: The 4-H Health Challenge will **teach 8,000 5- to 19-year-olds about nutrition and physical fitness**, tobacco use prevention, seat belt safety and sun safety to prevent skin cancer during 2005.
- **More than 3,000 rural homeowners, farmers and local officials** throughout the state will learn to protect their families, homes and buildings from wildfires through MSUE educational efforts. Two new publications will be released, printed in Spanish and English. In Michigan, there are approximately **10,000 wildfires each year**.
- MSUE has a leadership role in the national **Extension Disaster Education Network (EDEN)**. Through its presence in every county and use of MAES research-based expertise, MSUE will offer a number of disaster education programs to 500 first responders, teachers, local officials, farmers, homeowners, business operators and private citizens.
- MSUE will **provide a youth farm safety curriculum** to all secondary education agriscience instructors and 4-H youth educators in the state.
- Michigan Sea Grant will provide HACCP food safety training to about **200 state agency representatives** and commercial **fishermen**, including **50 tribal fishermen** in Michigan's Upper Peninsula.
- By developing the **"Clean Hands — Be Well"** campaign, Wayne County MSUE will encourage more frequent and proper hand washing by Wayne County school children and their families. Through partnership with the Wayne County Health Department and the Wayne County Public Schools, the campaign will **provide more than 60,000 children** and their families with in-school and take-home information.
- MSUE specialists and educators offer Pork Quality Assurance (PQA) certification to Michigan swine producers. The National Pork Board's PQA program helps producers learn management practices that help them produce safe, wholesome and high-quality pork products. MSUE educators will train **2,500 large-scale pork producers** over a three-year period. In addition, they trained veterinarians, agriscience educators and other leaders to educate more than 3,000 youth swine project members through the 4-H Youth Program.

Spotlight on Success

"MSU work includes validation studies on new equipment and issues of sanitary design. We value our relationship with Michigan State and actively seek to strengthen it to meet the needs of our consumers."

Bob Swackhamer, manager of the food processing and training center for Frigoscandia Equipment and Stein-DSI, a company that manufactures food processing equipment, including machines that make chicken nuggets.

MSU is an affirmative-action, equal-opportunity institution.

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