

# SCIENCE & EDUCATION Impact

Benefits from USDA/Land-Grant Partnership

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## Fast Tracking Biosecurity

Get ready, get set, stop!

*Security. Safeguard. Stability. These words are more than mantras for Americans in the short time since Sept. 11, 2001. The USDA and land-grant university research and extension network is racing ahead with programs which, if put to the test, will enable the public to prepare for, quickly respond to, diagnose, and target areas of likely terrorist attacks. Emerging from these educational efforts is a generation of better protected people.*

### Payoff

- **Found zero.** **Nebraska** researchers have identified some genetic differences among different strains of *Francisella tularensis*, a leading bioterrorism agent which, if inhaled, kills up to 60 percent of infected people. The discovery points the way for medicines to prevent or treat an outbreak. **Utah State** researchers developed a cell-based, speedy test that can screen large numbers of unknown anti-viral agents to defend people and animals from effects of viruses that might be used in a bioterror attack. An **Illinois** packaging expert is studying how large a defect in a food seal must be for it to be a contamination problem. Efforts to develop more tamper-resistant packaging make the U.S. food supply safer. **Florida** researchers tested sensitivity of anthrax spores in walls, computers, and file cabinets to methyl bromide. Materials were disinfected by methyl bromide, which won't damage equipment, and is faster and cheaper than the chlorine dioxide used in 2001 following anthrax exposure incidents. **Tennessee** scientists developed a pathogen killer that can be sprayed on or mixed in food to counteract contamination after processing.
- **Generation next.** **Purdue** developed three forensic science courses where combined enrollment exceeded 500 students the first time the classes were offered. A heightened awareness of terrorism and homeland security issues has increased demand for trained professionals in this field. **Florida's** plant medicine students will be in high demand in homeland security agencies and businesses. These students' expertise in diagnosing plant health problems and offering control recommendations quickly and accurately may help protect the economy and save lives.

**RESEARCH,  
EXTENSION AND  
EDUCATION  
AT WORK**

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- **Responders undercover.** A multistate endeavor involving **California, Colorado, Iowa, Maryland, Michigan, Nebraska, New York, Oklahoma,** and **Texas** has helped set the standard on Personal Protective Equipment textile quality. That work helps improve the health, safety, and effective performance of first responders in disasters.
- **Keep the lines open.** New Jersey can't let its three-day supply of food imported over a network of roads, bridges, and warehouses be interrupted. The **Rutgers'** research and extension partnership is the state's best-equipped network capable of thorough communication with communities and residents, and it can disseminate agricultural and emergency information quickly. Greater awareness because of this system, which also exists through research and extension in most states, may protect lives and the economy.
- **Plant detectives.** **Illinois** Extension specialists, as front-line diagnosticians linked to the USDA National Plant Diagnostic Network, have trained the statewide extension staff, are installing digital components of the program, and are conducting additional awareness training for first responders. This multistate effort will help protect the health and economic well-being of our citizens, state, and nation under attack.
- **Punch the clock.** Information can be a calming factor in disaster, yet emergencies don't happen when it's convenient. Well-documented facts on the Internet, available 24/7 from extension and research components of land-grant universities, help ease public anxiety. **Illinois'** Technology and Research: Allied and Integrated for Livestock Linkages (IL-TRAILL) Web site helps the livestock industry and producers get quick information for timely management decisions. **Purdue** Extension's site answers farmers' biosecurity questions. Disaster gurus from the State Emergency Management Agency and Federal Emergency Management Agency called **Missouri** Extension's site a model for public information. Easily accessible information such as this leads to a more educated public.
- **Not in my back yard.** Louisiana producers now know that bioterrorism can happen in their backyard. Every **Louisiana State** Extension meeting provides instructions to immediately contact the agency if anything strange or unfamiliar is noticed. They also routinely teach disaster prevention practices such as isolating new animals or cleaning shoes to reduce the risk of pathogen spread among fields and production facilities.
- **Which way did it go?** To help state and national animal health officials better prepare for and monitor livestock disease outbreaks, **Nebraska** experts devised a sophisticated Geographic Information System (GIS)-based mapping system that's adaptable nationwide.
- **Teacher mill.** Churning out people to teach others is an effective way to spread information quickly. **Nebraska, Iowa State,** and **Kansas State** trained veterinarians and extension specialists to help livestock producers use biosecurity production practices. **Nebraska** Extension also coordinated training for 1,500 livestock producers and food processors on preventive measures to minimize risks to the food supply from potential bioterrorism acts. **California** Extension veterinary specialists provided biosecurity training to more than 500 county and state agency personnel who work with poultry farms to minimize the likelihood of spreading disease. **Purdue** Extension trained more than 50 county teams on how to improve response in animal disasters so that local teams could move quickly to assist in an emergency.



**Cooperative State Research, Education,  
and Extension Service**  
United States Department of Agriculture

Cooperative State Research, Education, and Extension Service in cooperation with the Extension Committee on Organization and Policy, the Experiment Station Committee on Organization and Policy, the Academic Programs Committee on Organization and Policy, the International Programs Committee on Organization and Policy, and the Louisiana State University Agricultural Center.

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