

The Behrend Beacon

# University hopes to head off attacks on crops, livestock

by Alexandra Witze  
The Dallas Morning News

Think about bioterrorism, and you probably picture anthrax, smallpox, or other horrible diseases ravaging humanity. But people aren't the only possible targets of bioterrorists.

So are the plants and livestock that feed the nation. As public-health experts scramble to prepare for deadly attacks on humans, agricultural experts have been bracing for the possibility of terrorism in the fields. Texas, with its \$12 billion agricultural industry, is helping lead the fight.

In particular, Texas A&M University hopes to become a national powerhouse in farmland defense. In December, the university's board of regents voted to approve the creation of a new, wide-ranging Institute for Countermeasures Against Agricultural Bioterrorism - an idea that took root two years ago.

If established, the institute would bring together experts in farming, research, and emergency management. It would coordinate responses to terrorist attacks with other states, with the U.S. Department of Agriculture, and with other government agencies.

The federal government may soon have a large pot of money to finance such work. Bills pending in both houses of Congress propose giving a total of \$50 million annually to three such institutes in the nation.

An extra \$30 million would go directly to basic research dealing with agricultural terrorism. A&M scientists are already involved with much of that basic science, says Neville Clarke, the administrator who is drawing up plans for the proposed new institute in College Station.

Researchers would be charged with finding ways to address the frightening "what-if" scenarios, he adds.

For instance, terrorists could release an animal disease inside an auction house, just before livestock is shipped all over the country. Or they might use crop dusts to spray the fungus that causes wheat smut disease over fields. Agroterrorists could even wreak havoc without entering the country, by contaminating imported fertilizer, straw, or animal feed with a biological weapon.

A&M wants to stop such disasters before they happen. Ideally, the new institute would develop broad solutions that could work for different agricultural attacks - solutions "that don't have to be changed every time the bad guy decides to change the bug," says

Clarke.

History shows that the bad guys have plenty of ways to attack.

During World War II, the Germans researched diseases and insects that could kill enemies' potato or wheat crops. During the 1980s, the Iraqis worked on wheat

dollars were lost when tourism dropped off.

Were foot-and-mouth disease to enter the United States, it could cost \$20 billion over 15 years, says A&M chemist Jim Wild. A crop disease such as soybean rust, an exotic fungus that attacks soybean plants, could cost \$8 million annually.

The best way to prevent such disaster is to spot outbreaks as early as possible, argues Garry Adams, associate dean of research and graduate studies at A&M.

For instance, researchers are working on hand-held devices that could diagnose foot-and-mouth disease in a matter of minutes in the field. (Currently, inspectors must ship tissue samples

to the USDA laboratory on Plum Island, N.Y., to diagnose an exotic animal disease - a process that can take days.)

"In the case of foot-and-mouth, 24 hours could make millions of dollars of difference," says Adams, who visited England to see the devastated farms.

A&M is already working on about \$10 million worth of such counterterrorism research. "There's a fairly large background for Texas A&M to be involved in something like this," Clarke says.

For instance, Wild has worked for years to develop chemicals that could be used to protect people - or animals - from nerve gas attacks. The chemicals work to break down the toxins of organophosphates, a class of chemicals used mainly as insecticides but sometimes as chemical weapons.

The research was started to help people such as soldiers on the front lines who might be exposed to nerve gas. But the research can also be applied to livestock, says Wild.

"A year ago, we would not have thought about the need to protect cattle from neurotoxins," he says. Other basic research includes the study of how destructive pathogens spread.

Microbiologist Suresh Pillai is developing ways to detect viruses and other possible biological weapons in the air. Scientists need better methods for testing the air around cropland or in buildings, he says.

*'Just one well-placed attack might be enough to render a country helpless - especially if it depends on one major food crop.'*

-Mark Wheelis,  
a microbiologist at the  
University of California, Davis.

smut as a weapon, possibly to be used on wheat in Iran, where it is a staple. Even the United States has developed agricultural weapons: herbicides designed to be sprayed on opium and coca crops.

Just one well-placed attack might be enough to render a country helpless - especially if it depends on one major food crop, says Mark Wheelis, a microbiologist at the University of California, Davis.

"There are many reasons why the agricultural sector is extremely vulnerable to an attack of biological weapons," says Wheelis.

A terrorist might find it safer to work with an animal disease than a contagious human disease. He might mask the attack as a natural outbreak of some exotic disease. And he might find it easier to attack an unprotected field than, say, a crowded shopping mall. (The USDA has stepped up security measures at border crossings and food-processing plants since the Sept. 11 terrorist attacks.)

Fortunately, scientists have a lot of experience fighting agricultural diseases. The same surveillance networks that detect naturally introduced disease could also be used to discover a terrorist attack, says Clarke.

Such an attack wouldn't kill civilians directly. But it could trigger an economic collapse, such as the United Kingdom experienced last year after an outbreak of foot-and-mouth disease among livestock. More than 4 million animals had to be slaughtered, and billions of

www.jupresents.com

ON SALE  
NOW!

Mani  
diFranco

special guest

Dan Bern

TUES, APRIL 2 - 7:30PM

WARNER  
BROS. THEATRE

Tickets available at the Erie Civic Center Box Office,  
all [ticketmaster](http://www.ticketmaster.com) locations, and CHARGE BY PHONE at (814) 452-4857  
[ticketmaster](http://www.ticketmaster.com) by phone (814) 456-7070

TOYOTA



## Celica - The Inside Story

On the outside, it's easy to see that Celica is race-track inspired. But the real excitement is on the inside...under the hood. Take the Celica GT-S...Toyota worked with Yamaha to build a 180 HP engine redlined at 7800 RPM...equipped it with Variable Valve Timing with intelligence...a computer that constantly monitors and retunes your engine for maximum performance...a cam with two sets of lobes to provide two ranges of valve lift and duration for more usable horsepower. There's direct ignition for greater reliability...iridium-tipped spark plugs for reduced maintenance...a stainless steel exhaust manifold...a water-cooled oil cooler. And mated with Toyota's 4-speed electronically-controlled automatic "Sportshift", you get transmission shift switches on the steering wheel...just like Formula 1 race cars. Sweet.

[www.gettoyota.com](http://www.gettoyota.com)

Driving a new Toyota is easier than ever -

because now your Toyota dealer has a special college graduate financing program available thru Toyota Financial Services that offers a lot of great advantages.

So if you're within 4 months of graduation...or if you graduated within the past two years...See your Toyota dealer for details.