

Tug of War Over Animal Health

Homeland Security wants to move research on foot-and-mouth and other diseases from Plum Island to the U.S. mainland.

by *Boyd Kidwell*

The U.S. has been free of foot-and-mouth disease (FMD) since 1929 when the last of nine outbreaks in this country was eradicated. But livestock producers will hear a lot about FMD and other highly infectious livestock diseases in coming months as the federal government decides on a location for its new \$500 million National Bio- and Agro-Defense Facility (NBAF).

The new facility will replace the nation's only research lab for highly infectious animal diseases on Plum Island, N.Y. Plum Island is a small piece of land near New York City that is separated from the mainland by a mile of ocean water. Department of Homeland Security (DHS) officials say the Plum Island facilities are outdated and difficult to secure. A new location will probably be chosen this fall, and six states are competing for the job opportunities and research grants the NBAF will provide. Each location has a unique set of advantages and disadvantages.

Rebuilding the animal disease research facility on Plum Island seems to rank low on the list of alternatives. Homeland Security officials say Plum Island is not a good choice because of security concerns, added

construction expense and the inconvenience of transporting researchers across a mile of ocean water to the facility. Federal law does not currently permit research on FMD on the U.S. mainland. In order to move the research from Plum Island, this policy would need to be changed, and two bills have been introduced to the 110th Congress to modify this policy (H.R. 1717 and H.R. 2419).

Eight nasty diseases

Eight highly infectious diseases will likely be researched at the NBAF. The four animal diseases for study are FMD, Classical Swine Fever (CSF), African Swine Fever (ASF) and Contagious Bovine Pleuropneumonia (CBPP), according to the NBAF web site. The four zoonotic diseases (those shared between humans and animals) for potential study are Hendra, Japanese Encephalitis, Nipah and Rift Valley Fever. Anthrax is not presently studied at Plum Island and won't be researched at the new facility.

Cattlemen are caught between a rock and a hard place on the idea of relocating the NBAF. On one hand, producers want top-notch research on highly infectious diseases

carried on in state-of-the-art facilities. On the other hand, it's somewhat disconcerting to have diseases such as FMD stored near cattle operations.

Opponents of moving the facility from Plum Island say it doesn't make sense to move infectious disease research from a remote island surrounded by ocean to an area where thousands of cattle would be exposed to a release of disease organisms caused by accident or terrorist attack. Kansas State University (K-State) economists, for example, have estimated that an FMD outbreak in the Sunflower State would mean a loss of up to \$945 million to the cattle industry.

"I'm in favor of a new research facility, and the new facility would be a tremendous economic boon to Kansas or Texas — whatever state lands it," says Matt Perrier of Dalebanks Angus Ranch in Eureka, Kan. "But my concern is the proximity of a highly infectious disease facility to our cattle operation. I'm pulled in two directions regarding the facility."

"As a cattleman, I would like to have the research on infectious diseases continued at the Plum Island facility where there is a natural buffer from being surrounded by water to keep any of the diseases from reaching cattle," says Angus breeder Bill Wallace of New Light Farm in Wake Forest, N.C. Wallace's farm is located in an adjoining county to a proposed NBAF site in Granville County, N.C.

Homeland Security says there is no cause for concern because the new facility will have the highest level of security. However, FMD outbreaks on British farms in 2007 were linked to an accidental release from a government research lab. A U.S. government report listed seven accidents with highly infectious disease organisms at the Plum Island lab throughout the last 30 years. A release of FMD in 1978 reached cattle in holding pens on Plum Island and triggered a safety response.

One of Perrier's bull customers, Brian Hind of Greenwood County, Kan., was visiting farms in England when FMD was released from a research facility there in 2007.

"We were visiting farms 10 to 15 miles from the government research facility just before the outbreak occurred, and we were in England during the outbreak. Some farmers ran out of feed for animals they planned to sell and the livestock markets tanked. Knowing people that have been under livestock movement restrictions and how much money they lost even if their animals



Dealing with FMD

Foot-and-mouth disease (FMD) can enter the U.S. either by accident or by intentional spread, according to Tim Carpenter, co-director of the Center for Animal Disease Modeling and Surveillance at the University of California–Davis. Carpenter is working on a producer survey that is being used to form models of animal movement that could help the U.S. livestock industry deal with an FMD outbreak.

If FMD enters the U.S., the point of entry goes a long way toward determining the speed of its spread. For example, if an overseas traveler carried FMD to a cow-calf herd on a farm and the disease showed up without exposure to another herd, the outbreak could be stopped. However, if an infected animal is sold through a livestock sale barn and exposed animals from that sale are loaded on trucks for shipment to several locations, the FMD outbreak can spread very rapidly around the country. The U.S. Department of Agriculture (USDA) has calculated that an FMD outbreak could spread to 25 states in five days.

"If truckers are driving in teams, exposed animals from a cattle sale can travel over 1,000 miles per day in different directions, and it could be seven days or more before we know any of the animals have FMD. The disease looks like four or five other diseases, and it could be several days before cattle producers notice a few salivating and lame animals," Carpenter says. "During the trip, if a truck carrying cattle with FMD parks next to another truckload of cattle at a rest stop, we could have an additional load of cattle with FMD headed in another direction and so on."

Animal Disease Research

weren't infected makes me wonder why we want to move highly infectious disease research to our part of the country with so many cattle. Are 500 jobs in a research facility worth jeopardizing the Kansas economy?" Hind asks.

"I've stayed in touch with the livestock producers we visited in England, and they are aghast that the U.S. wants to move FMD research from an isolated island to our mainland," the Kansas cattleman concludes.

'We love our Angus'

Bette and Doan Laursen have raised Angus cattle for 30 years at their Goose River Farm in Granville County, N.C. The Laursens' rural area near the Virginia border is one of the six locations under consideration for the new NBAF.

"I love my Angus cattle," Bette says. "After reading carefully about the high level of biosecurity that would be used at this research facility, the Granville County Cattlemen's Association has endorsed building the facility here, and I agree with the decision. We feel comfortable that the disease research lab can be located here and be safe. We also feel that the facility would be a good economic package for our county. If there's anything that gives us as cattle producers heartburn, it's those outbreaks of FMD in Britain in 2007, but we don't think the high security level at this facility will allow that to happen here."

Bette points out that the proposed NBAF site would be within 30 miles of Research Triangle Park near Raleigh, a leading area for biotech business development. The NBAF, with its 250 to 500 jobs for scientists and researchers, would be mutually beneficial to universities in the area, such as the University of North Carolina, Duke University, and N.C. State University with its College of Veterinary Medicine.

All roads lead to Kansas

When it comes to animal diseases, few

states can top Kansas in the need for research from the NBAF. Kansas produces 1.5 million calves, markets 5.5 million head of fed cattle and harvests 7.5 million head of cattle annually. A study by K-State economists in 2007 estimated that an outbreak of FMD in 14 southwestern counties (an area with large feedlots) would cost the state's cattle industry up to \$945 million.

If there were an FMD outbreak in the U.S., the government would shut down all exports of and movement of livestock. Herds would be quarantined and a controlled depopulation of livestock would be initiated.

Dependence on the cattle business is exactly why the state needs the NBAF and why Kansas is the right place to build the facility, according to state leaders. K-State is already home to a \$54 million Biosecurity Research Institute, and the school's animal science department produces well-educated researchers, many with farm and ranch backgrounds.

"We see imperative need to the beef industry for a modern state-of-the-art animal disease research facility such as is proposed. The KLA Board of Directors has expressed support for its location in Manhattan, Kan., conditional on 100% safety for the surrounding livestock industry," says Tracy Brunner, president of the Kansas Livestock Association (KLA).

The state's leaders emphasize that Kansas folks understand what's at stake if there's an outbreak of FMD in the U.S.

"If FMD happens anywhere, we'll probably get it in Kansas. Thousands of cattle are transported into this state weekly. Our feedlots are potential targets for terrorists, and we need to have the research available

to handle animal diseases based on the cattle industry in our state," says Larry Hollis, Kansas Extension beef veterinarian.

Animal ID is the best defense

Regardless of where an outbreak starts, individual animal identification (ID) will be the key to bringing this highly infectious disease under control, and the U.S. has yet to form a nationwide system.

In the event of an FMD outbreak, scientists hope that 10 years of epidemic simulations and models of animal movement will help the U.S. livestock industry cope with the disaster. The unfortunate experience of Great Britain and Western Europe during the FMD outbreak of

2001 demonstrates that most countries aren't prepared to deal with the rapid spread of infectious animal diseases.

In 2001, it took more than two weeks for British officials to realize they had an FMD outbreak on their hands, and by that time the disease was widespread. The British livestock industry was only slightly better prepared to deal with a much smaller FMD outbreak in 2007. In the event of an FMD outbreak in the U.S., our lack of a national animal ID system would make tracing infected cattle very difficult.

"The economic impact of any contagious animal disease hinges heavily upon our ability to rapidly discover, contain and eradicate the disease," says Ted Schroeder of K-State, one of the economists who worked on the K-State FMD outbreak study. "Having an effective national animal ID system enables us to rapidly trace cattle and their movements, which helps us to reduce the number of animals exposed and the duration of the outbreak. Being able to track cattle and their movements is the best way to get ahead of an FMD outbreak and reduce the number of animals that need to be destroyed and the number of ranches and feedlots quarantined."

Perrier notes, "One thing is certain, talk about FMD research has sparked a renewed interest in emergency preparedness around this area."

Six finalists

Locations still in the running for the \$500 million National Bio- and Agro-Defense Facility (NBAF) include:

- ▶ Athens, Ga.
- ▶ Manhattan, Kan.
- ▶ Madison County, Miss.
- ▶ Granville County, N.C.
- ▶ San Antonio, Texas
- ▶ Plum Island, N.Y.

For more information on NBAF see: www.dhs.gov/nbaf.

Fast Facts on FMD

Foot-and-mouth disease (FMD) is a fast-moving virus that is highly contagious for animals with cloven hooves, including cattle, swine, sheep, goats and deer. Animals can be infected within hours of exposure to the virus, but outward signs don't appear for days. Obvious signs of FMD are excessive slobbering, lack of appetite and lameness. Affected animals may develop a sudden rise in temperature followed by blisters in the mouth, nostrils, udders and feet.

The U.S. Department of Agriculture (USDA) and the Animal and Plant Health Inspection Service (APHIS) developed a fact sheet about FMD that is available online at www.aphis.usda.gov/publications/animal_health/content/printable_version/fs_foot_mouth_disease07.pdf.

