

# Foot-and-mouth vaccine offers benefits

WASHINGTON, D.C. — The development of the new vaccine for foot-and-mouth disease, announced recently by the U.S. Department of Agriculture, doesn't mean much to livestock producers in this country in the short-run.

"But, it offers tremendous benefits over the long-range, if it lives up to its potential," said John K. Atwell, deputy administrator of USDA's Animal and Plant Health Inspection Service.

The new vaccine, created by genetic engineering from one of the major proteins in the coat of the foot-and-mouth virus, was developed under a cooperative agreement between USDA's Agricultural Research Service and Genetech, Inc., a San Francisco-based research firm. Because the new, experimental vaccine is not made from the whole virus, it may offer safe, effective and inexpensive protection from one of the most serious animal diseases.

"Foot-and-mouth disease exists throughout most of the rest of the world," Atwell said. "Fortunately, the United States is free of this debilitating disease — has been since 1929."

Where it is endemic — occurs frequently — foot-and-mouth disease causes heavy losses in cattle, sheep, goat and swine production. Continuous vaccination is necessary to enable livestock producers in infected countries to cope with the disease.

The breakthrough in the new vaccine was in the application of recombinant DNA technology, "a form of genetic engineering whereby a single gene or small series of genes from one organism are inserted into the DNA of

another organism. Because only a segment of the virus is used, the vaccine cannot produce the disease in a vaccinated animal.

Because of the DNA technology, greater quantities can be produced over a shorter period of time than was possible with previous methods of production, and the vaccine can be stored for long periods of time without refrigeration. The new vaccine, which is expected to be more economical to produce, is effective against only one of the seven major types — and over 60 sub-types — of virus. When similar vaccines are developed to cover these other types, there could be a combination into one application.

"USDA is committed to eradicating foot-and-mouth if the disease should enter this country," Atwell said. We'd use the standard techniques of quarantine along with slaughter of infected and exposed animals.

"We recognize, however, that agriculture and society have changed drastically since 1929 when we last wiped out an outbreak of this disease. Today, economic, environmental and political factors dictate a more flexible approach to eradication.

"For example, we now have many large feedlots and dairy operations—each containing thousands of animals—that might make a slaughter-only policy difficult and extremely expensive.

Thus, in the face of a rapidly spreading outbreak, we would consider using vaccine to help slow the disease until more conventional eradication tools could be applied. To that end, for the past two years, USDA has been establishing a foot-and-mouth

disease vaccine bank' by buying antigen from Bayer Laboratories in West Germany. Antigen for this 'bank' is also being produced at USDA's high security facility at the Plum Island Animal Disease Center off the coast of Long Island, N.Y."

The antigen, the basic element in the production of vaccine, which can be stored much longer than the vaccine itself—is being stored in West Germany and at Plum Island.

If the new vaccine proves to be as good as it looks, this might cut our costs of an FMD 'vaccine bank' considerably," Atwell said.

But Atwell, says he believes the new vaccine's greatest potential lies in its long-range benefits.

Again, if it proves as good as it looks, this would be a tremendous help to other nations throughout the world to reduce—and possibly even eliminate—this costly disease," he said. And, of course, the less disease that exists throughout the world, the less chance for it to invade this country."

Currently, foot-and-mouth disease is considered to exist in all countries of the world except for North and Central America and Panama, Australia and New Zealand, Japan, the Scandinavian countries, Ireland and Northern Ireland in Europe.

Foot-and-mouth is a virus disease that affects all cloven-hoofed animals, including cattle, swine, sheep, goats and deer. It produces blisters on the feet, mouth and teats of affected animals. While rarely fatal, the disease drastically reduces meat and milk production.

"If there were a disease out-

break of foot-and-mouth in the United States, it could cost as much as \$10 billion in direct and indirect costs the first year alone," Atwell said. "Meat and milk production could be reduced by as much as 20 per cent."

"We take great pains to keep the disease out by restricting the import of livestock, meat and meat products from infected countries," Atwell said. "Similarly, USDA would not license production of conventional whole virus vaccine for foot-and-mouth disease."

the United States—for fear the virus might escape from the production facility. For that reason, all of the work with the foot-and-mouth disease virus is confined to biocontainment facilities at the Plum Island Animal Disease Center.

"We would help infected countries produce and test the vaccine to help reduce the possibility of foot-and-mouth disease invading our livestock and wildlife populations," Atwell said.

## With firewood come pests

LANCASTER — As the cool temperatures of winter approach, many homeowners will be firing up their fireplaces and wood burning stoves. However, along with the comfort and warmth the fire brings to the home on a cold night, certain uninvited insect guests may intrude.

Firewood stacked in the home ready for use harbors many species of insects. Several different types of beetles, carpenter ants, wasp parasites of insects, horn-tails, earwigs, and spiders will often overwinter in logs. Firewood brought indoors and stored for several weeks becomes warm. Insect life within is awakened from its winter hibernation by the warm temperatures and, thinking it's spring, leave the logs and wander aimlessly about the house. They're

often found migrating to sunlit windows.

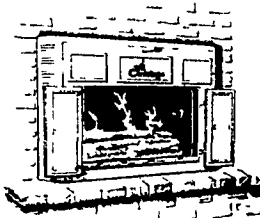
To keep this pest problem to a minimum, stack firewood out-of-doors until just before using. The cold temperatures will keep the insect life dormant. Always stack wood at least 2' away from a building (15-20' is recommended) and at least 9" above ground. This allows for aeration of the wood and visual inspection and maintenance of the building behind the pile.

According to James J. McKeehen, Delaware County Extension agricultural agent, never use chemical pesticides on firewood. The insects in the wood can be kept in check by proper storage out-of-doors, therefore making the use of chemicals unnecessary. Once in the home, these "guests" are considered nuisance pests.



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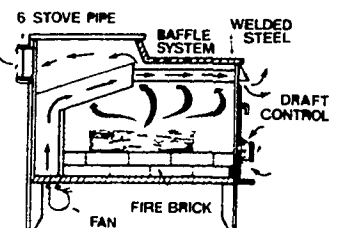
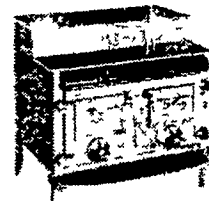
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