

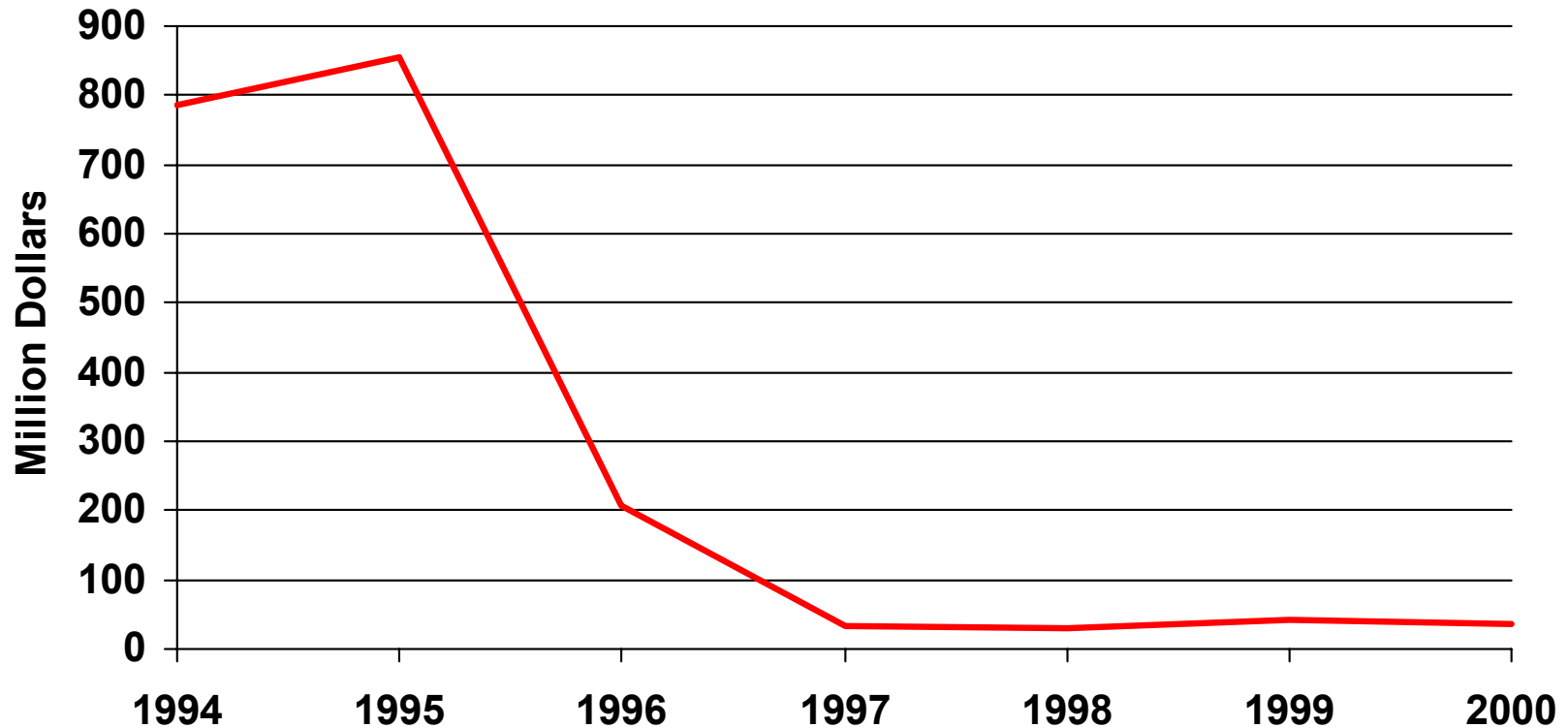
# Impacts of Bio-terrorism on the U.S. Agricultural Sector and Exports:

## A Hypothetical Case of FMD

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# Great Britain's Experience with B.S.E. – Mad Cow Disease



Source: FAO

The value of beef exports from Great Britain plunged following the determination that BSE possibly caused a variant of Creutzfeldt-Jakob Disease, a disease fatal in humans.

# Foot and Mouth Disease is a potential Bioterrorism agent

- Unlike some agents such as anthrax, foot and mouth disease is easy to obtain, spreads quickly and is difficult to control.
- The introduction of foot and mouth disease would have a significant psychological impact on the U.S. population which has not seen the disease since 1929.
- The **economic impact** of the disease on the livestock industry would be significant.
- The non-terrorist outbreak of foot and mouth disease in Great Britain provides a starting point to see possible consequences of a terrorist using this disease against the United States.

# Great Britain and Foot and Mouth Disease

- Most recent epidemic began February 20, 2001
- 43 farms were infected in the three weeks before it was detected
- 2030 outbreaks before the epidemic was contained
- Over 8 million animals killed
- Lengthened the dearth of meat exports
- Interfered with livestock movement and markets in Great Britain
- Additional impact on tourism and rural economy
- It was a year after the last outbreak that Great Britain was declared FMD-free

# Hypothetical target: Kansas, Oklahoma, and Texas



25.4 million head of cattle are raised in the three states of Kansas, Oklahoma and Texas

# Hypothetical target: Kansas, Oklahoma, and Texas

- As a case study, we will look at what might happen if a terrorist targeted feed lots and feeder operations in the three state area.



- The movement of cattle, trucks and people in that area is significant, greatly aiding the potential spread of the disease beyond the original infected sites before it is detected.

# First impact: U.S. Export markets

- Like the United States, many other nations only allow imports of meat and meat products from countries that are FMD-Free.
- The loss of export markets could exceed **\$5 Billion**.

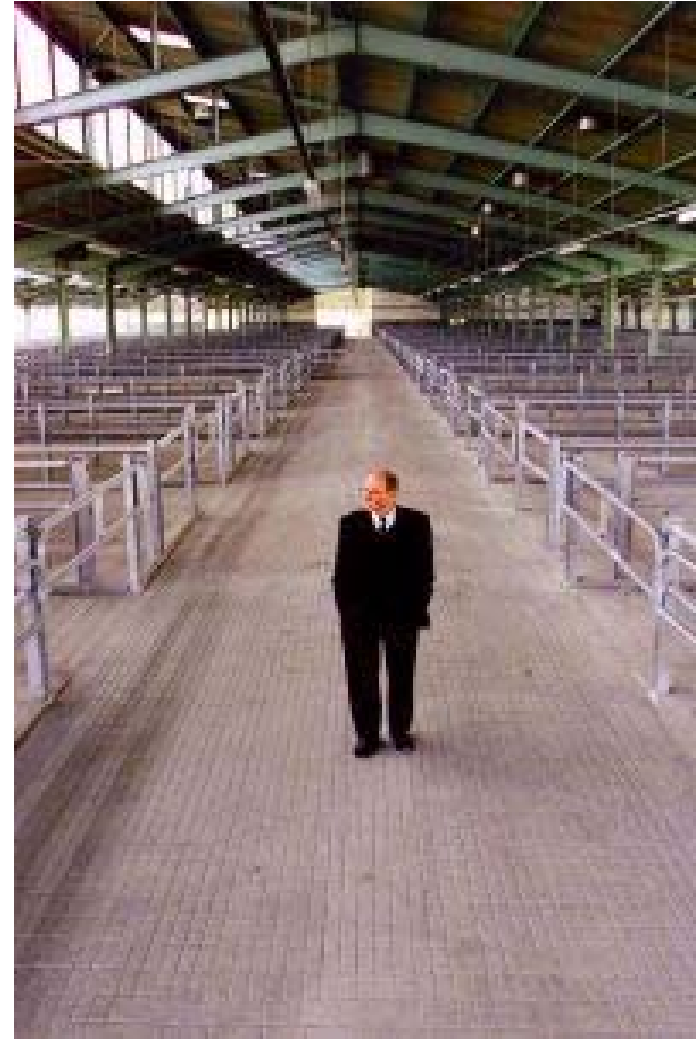


# Control Mechanisms for FMD

- Two choices: vaccination and slaughter
- Vaccination is effective but has potential impact on exports.
- Great Britain chose to slaughter infected and potentially infected animals.
- If the U.S. chose to slaughter animals the losses might run to  $\frac{1}{4}$  of the cattle inventories in the three state area.
- Not included is the slaughter of hogs, sheep and other potential targets of the disease.

# Impact on Producers

- Cattle inventory could be reduced by 6.35 million head
- Many producers would be left with empty barns for several weeks/months



# Impact of Slaughter on Livestock Sector

- At an indemnity of \$600 per head, the cost would be \$3.81 billion.
- Adding the \$5 billion loss of exports, total first year direct losses to livestock produces would total \$8.81 billion

# Impact of Slaughter on Livestock Sector

- Potential price drop as the result of reduced domestic demand
- Loss in marketing options and extra costs for non-affected producers
- Interfere with transportation and slaughter timing of non-infected cattle and possible pork and sheep as well.

# Impact of Slaughter on Livestock Sector

- The estimated economic impact on Kansas alone would be a reduction in output from the meatpacking industry of \$3.8 billion
- Total employment loss would be in the thousands in Kansas alone

# Impact of Slaughter on Corn Market

- 6.35 million cattle slaughtered.
- Assume 40 bushels of corn per head to finish
- A slaughter of that size would reduce demand by 250 million bushels.
- It would increase stocks-to-use ratio by 2.5%
- Resulting in a 7¢ decrease in season average corn price.
- Loss of \$670 million in value of corn production

# Impact of Slaughter on Consumer Sector

- Reduced beef/redmeat availability in the market
- Secondary impact on McDonald's, Wendys' and other restaurants
- Even though FMD is not contagious by humans, many consumers might refuse to purchase and eat “diseased meat” or even meat they thought might be diseased

# Summary

- One attack set on one portion of food supply in one part of country
- Immediate direct impact: approaching \$10 billion ( $\$3.8+0.7+5.0$ ; equivalent to losing one-fourth the value of all net farm income)
- Total direct and indirect impacts easily could be tens of billions of dollars (approach or exceed the equivalent of the total value of net farm income)