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COLORADO STATE UNIVERSITY EXTENSION SERVICE

African swine fever

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Quick Facts

- African swine fever is a highly contagious disease of swine caused by a virus.
- The disease is characterized in animals by high fever, reluctance to move and hemorrhaging of internal organs; high death losses result.
- The most dangerous characteristic of the disease is that once it becomes established in a swine population, those swine that recover serve as reservoirs of infection, continuing to be threats to other animals.
- The virus is extremely hardy; it can survive for long periods of time under certain circumstances.
- Importation of swine and pork products is under strict supervision of the U.S. Department of Agriculture, but circumvention of this program could lead to the introduction of the disease in this country.
- Management procedures that prevent introduction of disease into herds are essential.
- Eradication and containment of an outbreak of African swine fever is dependent primarily on the alertness of producers and veterinarians and their immediate reporting of any cases.

African swine fever (ASF) is a highly contagious disease of swine, characterized by high fever and hemorrhaging of internal organs. The disease causes death losses of more than 90 percent of afflicted animals.

Once introduced into the United States, African swine fever could cost the pork industry millions of dollars. The appearance of ASF in 1978 in Brazil and the Dominican Republic represents the second occurrence of the disease in the western hemisphere. It was first reported in Cuba in 1971. In that country, 400,000 swine were destroyed in an effort to eradicate the disease. (It may be interesting to note that Colorado's total annual pork production is 300,000 to 600,000 head.) The current world distribution of ASF includes Africa, Spain, Portugal, Italy, Malta, Brazil and the Dominican Republic.

Clinically, the disease may appear identical to hog cholera, characterized in the animal by high fever, reluctance to move and stiffness in the hindquarters when forced to move. Reddened patches may appear on the skin due to subcutaneous and capillary hemorrhaging. Distinguishing diagnostic features may be apparent on post-mortem examination. However, for positive diagnosis, an attending veterinarian may receive assistance from specially trained federal veterinarians who will send appropriate tissue samples to the National Animal Disease Laboratory for final confirmation.

Causes

African swine fever is caused by a virus, which makes the disease a constant threat to the pork industry. The most dangerous characteristic of the disease is that once it becomes established in a swine population, those swine that recover serve as reservoirs of infection. These cases may appear as unhealthy animals that continue to shed the virus and remain a constant threat to other swine.

Wart hogs and bush pigs of Africa are inapparent carriers of the disease, showing no clinical signs, but serving as reservoirs that pass the virus throughout their lives.

Unlike most viruses that survive only for a short period outside the host, the ASF virus is extremely hardy. In blood stored at room temperature, for example, it can survive for more than 500 days and at ±10°C (14°-50°F) it can survive up to six years. The virus also can withstand drying for long periods of time. It remains viable in some cured hams and sausages and is resistant to strong alkalis and acids. The virus is killed in meat that has been heated to 60°C (140°F) for 10 minutes. Other characteristics of the virus have prevented scientists from developing a vaccine.

Each year 200 million persons enter the United States from traveling or living in foreign countries, increasing the possibility of introducing the virus via clothing, footwear, instruments, equipment and garbage. During the outbreak in the Dominican Republic, losses first occurred in a herd that was fed garbage from the international airport in Santo Domingo.

Importation of swine and pork products is under strict supervision of the U.S. Department of Agriculture and all garbage from ships and planes arriving from international travel is incinerated. However, any circumvention of this program could lead to the introduction of African swine fever in this country.

Many travelers enter the United States with sausages and various other pork products concealed in their luggage, presenting another potential mode of

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introduction. At ports of entry, 200 tons of illegal products are confiscated annually. With all the precautions being taken to prevent the introduction of foreign animal diseases, they still appear in American livestock. Examples of recently introduced diseases include Exotic Newcastle virus, Venezuelan equine encephalomyelitis and contagious equine metritis, all of which have cost the livestock industry and the taxpayer millions of dollars in loss of production and eradication expenses.

Management of Herds

Fifty percent of all pork produced is finished on a premise other than where the animals were farrowed. This movement contributes significantly to the spread of disease. Figure 1 demonstrates the extensive movement of livestock from three major markets over a 24-hour period. For a producer to maintain healthy animals, strict principles of sanitation must be followed. First and foremost is to start with healthy animals, then a concentrated effort should be made to keep them healthy.

Management procedures that prevent introduction of disease are essential. Such management practices include:

- Isolation of new animals for at least 30 days before introducing them to an established herd. A producer should be certain that foot and vehicular traffic does not spread material that could contain disease organisms from the new arrivals to the established herd.
- Discouraging visitors from walking or driving through a swine operation. If a producer sells breeding stock and must have animals available for viewing, protective clothing and footwear should be provided for prospective buyers. A foot bath of 2-percent cresylic acid can be used to disinfect footwear.
- Maintenance of sanitation that is as strict as is economically feasible within an individual operation. Remember, the order in which a person feeds and transports animals to and from the area and disposes of carcasses and wastes, all should be carefully planned to eliminate the possibility of disease introduction. Assistance for planning a prevention program can be provided through the Colorado State University Extension Service and a local veterinarian.

Through the cooperative effort of pork producers, USDA, the CSU Extension Service and veterinarians, hog cholera has been eradicated and the entry of other diseases into swine populations has been prevented in Colorado. If African swine fever enters the United States, containment and eradication will depend primarily on the alertness of producers and veterinarians and their immediate reporting of any disease outbreak characteristic of the disease.

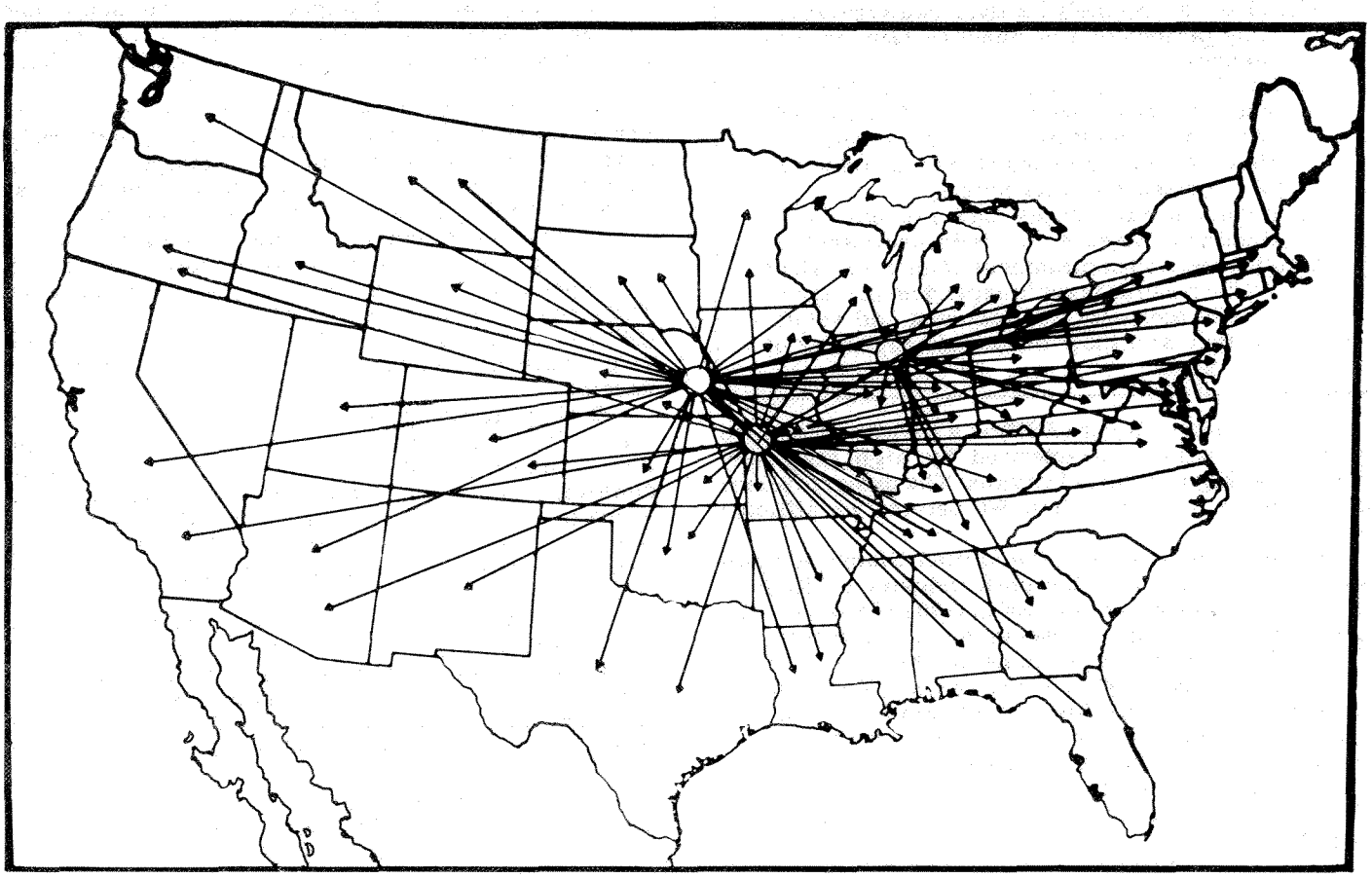

Figure 1: Livestock shipments from three major stockyards in a 24-hour period.