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1971

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Recommended Citation

Lucas, Thomas E. and Bailey, James H., "Salmonella in Livestock" (1971). *SDSU Extension Fact Sheets*. 1218.
https://openprairie.sdstate.edu/extension_fact/1218

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FS 534

Salmonella in Livestock

Cooperative Extension Service: South Dakota State University and U. S. Department of Agriculture

Salmonella in Livestock

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What Are Salmonellae?

Salmonellae are a large group of bacteria capable of causing disease in man and animals. More than 1,300 different Salmonella have been isolated from wild and domestic animals, including birds, reptiles, insects, and man, and from their environment.

Why Are They Important?

All Salmonellae are considered potential pathogens (disease-producing organisms), causing illness (Salmonellosis) in man and animals. In man, infections with these bacteria cause moderate to severe symptoms, with recovery in a few days, or severe complications such as bloody diarrhea, dehydration and even death.

Salmonella gastroenteritis (scours or diarrhea), which causes dehydration and death, results in severe economic loss to livestock and poultry producers. These bacteria are especially important because of their public health significance. The disease can be transmitted to man through contaminated meat, fish, and other animal products such as eggs and milk. The National Communicable Disease Center refers to Salmonellosis as the most prevalent animal health-human health problem. There are an estimated 2 million human cases each year in the United States which cost the American economy an estimated $300 million. Although impossible to evaluate, the economic loss to the livestock industry is substantial.

Salmonellae in Swine

Salmonellosis is not a *major* disease in swine from a clinical standpoint. The usual sign of this disease is an enteritis (inflammation of the intestines) in young pigs 2-4 months of age. The incidence of Salmonella infection in swine is not known because pigs often are healthy carriers of the infectious agent and no disease signs are noticed. Salmonella infections in swine can cause disease in young animals and also be a source of contaminated pork products.

Salmonellae in Cattle

Increasing numbers of Salmonellae have been isolated from diseased animals as well as from apparently healthy ones in the past few years. Enteritis (scours, diarrhea) caused by Salmonellae is rather common in young calves. Disease also occurs occasionally in adult cattle as the result of these infections. The disease in young calves often leads to dehydration, septicemia (generalized infection) and death. As with swine, healthy carriers go to market and there constitute a reservoir of infection.

Salmonella in Poultry

Salmonella infections, other than pullorum and typhoid, are not major diseases of chickens. However, *chickens do harbor the organisms and can be a source of infection* to other livestock as well as to man. Salmonella infections in very young goslings and turkey poults cause high mortality. Salmonellae in these birds cause an enteritis and a fatal septecemia (blood-poisoning). As the birds reach 3 to 4 weeks of age, mortality is reduced considerably but the survivors remain carriers of the infection.

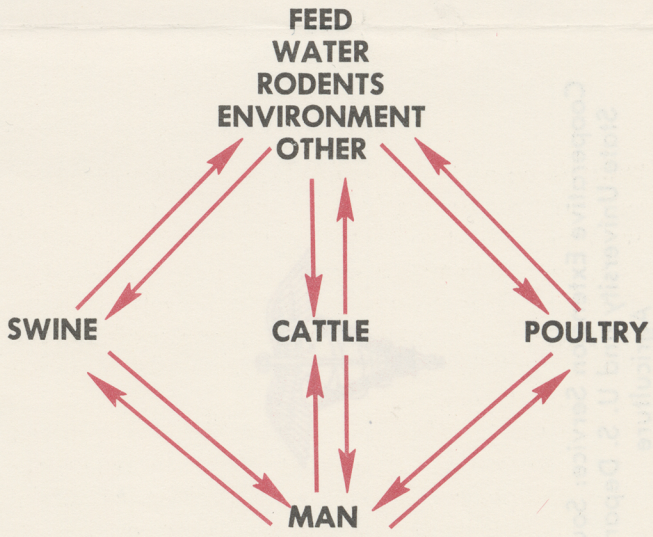
Salmonella in Other Animals

Sheep, dogs, rodents, birds, and turtles can all be infected with Salmonellae and may be a source of infection when they come in contact with other animals and humans.

Sources of Infection

Sources of infection for animals and poultry are many and varied. Salmonella organisms can survive outside the animal host for varying lengths of time and can contaminate the environment and infect other animals moving into this environment. With few exceptions, Salmonellae can infect many species of animals so that any infected animal can be the source of infection to another.

Salmonellae from infected animals often find their way into animal by-products (animal protein supplements) and then back into susceptible animals that consume feed containing these products. The accompanying diagram shows possible sources of infection and ways in which these infections can be transmitted.



What Is Being Done About Salmonellosis?

Under the Federal Food, Drug and Cosmetic Act, any food or feed containing Salmonellae is considered adulterated and is removed from the market. The Food and Drug Administration is actively checking samples of many products for the presence of Salmonellae and follow-up on any positive samples is carried out by FDA personnel.

The Animal Health Division of the USDA has an active, voluntary program with the processors of animal by-products. This program is designed to aid them in producing Salmonella-free products.

Prevention, Treatment of Salmonellosis

Preventive measures useful in controlling Salmonella infections revolve around good husbandry and management practices. These include thoroughly cleaning and disinfecting housing before new herds or flocks are placed in them, segregating ill animals, controlling rodents, providing clean, fresh water and preventing contamination of feed. These and other measures that would reduce the chances of acquiring an infection from any of the sources listed earlier would be helpful.

Treatment of Salmonellosis depends on the severity of the case and the sensitivity of the organisms to various antibiotics. The antibiotic sensitivity is quite variable and therefore treatment with these drugs is not always successful.

Human Food Products

Most cases of Salmonella food poisoning in people are due to inadequate cooking or by contamination of foods by food handlers that are carriers of the Salmonella organisms.

Precautions:

- Wash hands thoroughly before handling any food.
- Thoroughly wash all foods that are eaten raw, such as vegetables or fruits.
- Keep all cooking utensils washed and clean.
- Place meat, poultry and other perishables in the refrigerator immediately upon returning from the market.
- Cook poultry, pork and ground meat until done. A temperature of 165 degrees will destroy Salmonella. Steaks and roasts will have only surface contamination and could safely be served rare.
- To avoid contamination of cooked foods, promptly refrigerate at a temperature of 40 degrees or below.

CONSULT YOUR VETERINARIAN—
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Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the United States Department of Agriculture.
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3M—3-71—File: 4.11—1448

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