



# DAIRY SOLUTIONS

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E-Newsletter

December 2015

## Managing Salmonella in the Dairy Herd

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Salmonellosis has been increasing in prevalence on today's dairies carrying with it a broad spectrum of clinical signs that are economically devastating. The most common being fever and diarrhea, but it also can cause abortions, respiratory disease, reduced milk production, systemic shock and sudden death. Learning how this bacteria survives on farm and what steps can be taken to prevent a herd outbreak is increasingly important.

Salmonella is a gram negative, rod shaped bacteria typically found in the intestine. It can also survive and multiply outside of the animal for 4-5 years in water, soil, dust, and moist areas out of direct sunlight. A report done in 2005 by Fossler et. al. found that 113/129 dairies (87.6%) had at least one positive cow and 5% of the 20,000 cows sampled cultured positive. However it is important to understand that a negative culture for salmonella does not mean the animal is not harboring the bacteria, it only tells us she is not actively shedding it at the time the sample was taken. These asymptomatic animals make Salmonella a tough disease to control as they show no signs of the disease but may be actively spreading it throughout their environment. The most common form of transfer is fecal-oral but aerosol transmission is possible in confinement operations.

### Controlling the disease:

- Break the fecal-oral cycle through facility cleanliness, and isolating sick animals.
  - It can be transferred around the farm on machinery, dirty hands, nose tongs, medication equipment, calf nipples and buckets so proper farm hygiene is essential. Bleach or Chlorhexidine are effective disinfectants. Waterers should be bleached daily. Boot washes, such as shallow tubs with diluted bleach in areas of high foot traffic are effective.
- Find the source!
  - Use cultures to find the source of infection. Culture feces, feed, and environment. Contact someone who has experience in this area to help.
- Promote healthy normal gut flora and a functional immune system.
  - Animals around the time of calving are at the highest risk due to increased stress, decreased DMI and decreased immune function. Decrease stress by focusing on proper stocking density and bunk space along with factors contributing to rumen health.
- Control rodent, fly, wild bird, and feral cat problems which can spread the bacteria.
- Vaccination will not stop the spread but will contribute to developing immunity thereby decreasing severity of the disease and death loss.
  - Using an SRP technology (siderophore receptor protein) Salmonella vaccines have been shown to reduce shedding and have some cross-protection to various strains. Cows should be vaccinated twice during the dry period for the first time and once a year thereafter. Vaccinating dry cows allows for colostral antibodies to be passed to calves who can then acquire an effective level of immunity.

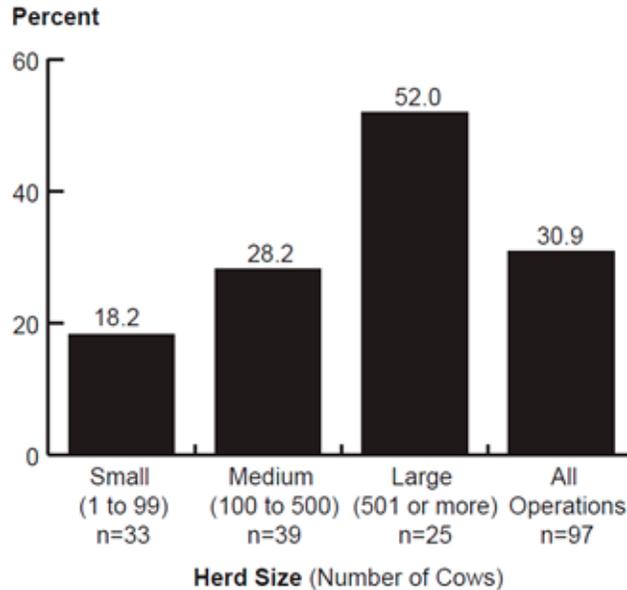
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**Figure 1. Percentage of Herds Positive for *Salmonella*, by Herd Size**



This figure is taken from a 2002 national US dairy study done by the USDA National Animal Health Monitoring System (NAHMS). Larger operations (500 or more cows) are more likely to have at least one positive animal. Another study in 2009 showed the same trend for dairies over 400 cows. (APHIS info sheet. Veterinary Services. Salmonella on U.S. Dairy operations prevalence and antimicrobial drug susceptibility. Oct 2005)

**Safety Message:** Salmonella on farm can be easily contracted by employees causing severe diarrhea. Be sure to educate them of this potential and stress hygiene for both their safety and that of the animals they care for.

**References:**

Fossler CP, et al. Herd-level factors associated with isolation of Salmonella in a multi-state study of conventional and organic dairy farms. *Prev Vet Med* 2005;70:257-277

