

CALVING EASE

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Salmonella is always a Challenge

- **Prevention works! Maximize resistance through excellent colostrum management and well-fed calves.**
- **Prevention works! Minimize exposure to salmonella at birth, in feed, housing and care givers.**
- **Consistent care encourages good gut motility and discourages salmonella attachment in the gut.**
- **All-in, all-out housing helps break infection cycles.**

Immunity Our first line of defense against salmonella infections in our calves is strong passive immunity from colostrum. Data from a salmonella case study showed that calves with blood serum total protein values less than 5.0 had odds of dying 2.3 times higher than calves with blood serum total protein readings of 5.0 and above (Gardner).

Remember that salmonella is transmitted through colostrum as well as manure. So, just like a cow known to have Johne's, if a cow is suspected to have had salmonella it is better to discard that colostrum.

The rule is feed colostrum to the newborn calf as soon as practical after birth. Give the calf an opportunity to stabilize – get breathing well, ideally get standing – then give that first feeding of good quality clean colostrum. We recommend four quarts of colostrum in the first four hours either in one or two feedings.

Exposure Reducing exposure to the salmonella organism does reduce risk of infection. The tough part in reducing exposure is not in knowing that we need to do it; rather, it is in actually making the reductions.

Checking our milk tanks periodically for salmonella is a practical way to check on the degree to which our adult animals have been exposed to the organism. A positive result should encourage us to start conversations with the herd veterinarian about a proactive program to close transmission routes within the herd. For example, not housing sick cows with fresh cows, removing calves promptly from calving pens.

If we are feeding whole waste milk then control of salmonella among preweaned calves depends on consistent and dependable pasteurization. Among older animals we have to be aware of preventing contamination of feed with manure. Just as we do to reduce the spread

of Johne's we have to use the same precautions for not spreading salmonella – for example, not driving on feed, separate loader buckets for feed and manure, not feeding bunk refusals to vulnerable animals.

Among preweaned calves studies have shown that one of the primary vectors of disease transmission is the care givers. If one or more calves are diagnosed with salmonella the most effective method of closing this transmission route is to isolate the sick calves. This can be done by placing them out-of-doors in hutches located away from other calves. Or, sick calves can be housing in a separate barn – often one not normally used for calves like a machine or storage barn. Remember that separate boots and clothing need to be left at that location – foot baths are ineffective control measures. Keep a supply of disposable gloves at that site as well.

Consistent Care

By consistent care we are talking about all aspects of care. Think about feeding – keeping consistent the person feeding, feeding times, volume of milk fed, temperature of milk, availability of water and starter grain. All of these elements encourage good gut motility – the contents of the gut move consistently and fairly rapidly through the gut. Interruptions and slow-downs in this motility create opportunities of the salmonella organisms to attach to the gut and multiply.

Housing

All-in, all-out housing is one of the most effective ways to break the transmission route to new animals. Whether in hutches, individual or group pens in barns the salmonella organism is not easy to control. There are instances of finding viable organisms as long as five years after a premise has been emptied. Thus cleaning is an essential step in control. Remove as much organic material as possible, spray with a disinfectant and leave empty to dry for as long as practical. I favor using chlorine dioxide as a disinfectant spray but other products can be effective as well. Remember, however, that care givers can easily transmit salmonella from one sick calf to a clean facility on their hands, clothing and boots.

Risk of Salmonella? You may want to look over this risk assessment tool:

<https://ahdc.vet.cornell.edu/programs/NYSCHAP/modules/salmonella/index.cfm>

References: Gardner, C.E. and Others, "Case Report – Management of an Outbreak of Salmonellosis on a Commercial Calf Raising Unit," The Bovine Practitioner 38:137-154. NYSCHAP Recommendations for the Control of Salmonella Dublin in Dairy Calf and Heifer Raising Operations. Many articles from The Bovine Veterinarian and Hoard's Dairyman.

If you know of someone that doesn't currently receive **Calving Ease** but would like to, tell them to **WRITE** to **Calving Ease**, 11047 River Road, Pavilion, NY 14525 or to **CALL** 585-591-2660 (Attica Vet Assoc. office) or **FAX** (585-591-2898) or **e-mail** calvingease@rochester.rr.com with Subscribe as the subject. Back issues may be accessed on the Internet at either www.atticacows.com or www.calfnotes.com and clicking on the link, Calving Ease.

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