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Calf Note #51 - Colostrum from Johne's positive cows

Introduction

Mycobacterium paratuberculosis, the organism responsible for Johne's disease is a difficult organism to eliminate from dairy herds. However, many producers have initiated programs in an attempt to eradicate the organism from their farms. Below are several questions that have been posed regarding feeding colostrum and the importance of feeding colostrum.

Why shouldn't I feed colostrum from Johne's positive cows?

One of the methods that *M. paratuberculosis* is spread throughout the herd is by the consumption of infected colostrum. Johne's organisms may be shed into the colostrum of infected cows. Research has shown that this is one important vectors of disease transmission. Therefore, it is important to discard the colostrum (and milk) from Johne's positive cows.

Can I feed colostrum from Johne's positive cows if it has been frozen?

It is unlikely that freezing will kill *M. paratuberculosis* - particularly if the freezing is not at low temperatures or for an extended period. Therefore, it is probably *NOT* safe to feed colostrum from Johne's positive cows - even if it has been frozen.

Can I feed colostrum from Johne's positive cows if it is pasteurized?

Pasteurizing milk or colostrum increases the temperature of the colostrum to very high temperatures (71 C) for a short period of time. Research on whether pasteurizing is completely effective in killing all *M. paratuberculosis* is still unclear, although it appears likely that commercial pasteurization is effective in killing all *M. paratuberculosis* in milk. Colostrum is another matter, however. There are several reasons that pasteurization is not recommended for colostrum:

- colostrum is much thicker and denser than milk. This makes it more difficult to raise the temperature sufficiently to ensure that all *M. paratuberculosis* organisms are killed.
- there a large number of leukocytes (white blood cells) in colostrum. These cells carry the organisms, so it is likely that colostrum will effectively concentrate the organism. Again this makes pasteurization less effective.
- Many on-farm pasteurizes are not as effective as commercial firms, therefore, the risk of leaving viable organisms is significant. It is important to remember that pasteurization is **not** sterilization - pasteurization reduces microbial load - it does not completely eliminate it.
- Some on-farm pasteurization methods - especially batch pasteurization (elevated temperatures for 30 min or more) can have a destroy the IgG that are so important to providing the calf with passive transfer. For these reasons, have recommended against feeding pasteurized colostrum from Johne's positive cows.

What are my options?

You have a few:

- First, you can use colostrum collected and banked from cows that have been tested and are Johne's free. You may have to collect two or more milkings from these cows to have sufficient colostrum for all your calves. This will necessarily mean that the overall colostrum will not be as high quality (IgG concentration) as if you could feed only first milking colostrum to all calves.
- Use a colostrum supplement. Supplementing colostrum with commercial supplement products to increase the IgG concentration can help you stretch your colostrum supply. Be sure the product you choose contains sufficient IgG, and the absorption kinetics of the product are acceptable. For more information on colostrum supplements, see Calf Note #18 - Using colostral supplements. Supplements may be used to increase the IgG concentration of second milking colostrum, or may be used to completely replace colostrum if necessary. If you feed no colostrum, be sure to feed sufficient amount of supplement to provide calves with approximately 100 g of IgG in the first 24 hours of life (preferably, the first 12 hours).
- Do not pool colostrum. If you have a cow that is shedding the organism but is not showing clinical signs and has not been tested, you may infect many calves if you feed that colostrum.
- A comprehensive testing and eradication program for Johne's can is important to identify those cows that are contributing to the overall Johne's problem on the farm. As the cost of testing declines and the reliability of testing increases, the problem of *M. paratuberculosis* should decline on most dairy farms.