

Mycoplasma in Veal

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That newly arrived calf with the tilted head and droopy ear--what's up with that? The sick mycoplasma calf is pretty common in every veal barn in Ontario, but we still are caught a little off-guard. This comes as a bit of a surprise in this age group. We knew about mastitis caused by *Mycoplasma* bacteria. We knew about mycoplasma infections in beef cattle--we've been seeing that for years. But mycoplasma in a Holstein calf that's only two weeks old? This is a problem that really seems to have pounced upon us in the last decade or so.

Yes, the same bacteria that cause mycoplasma mastitis also causes quite a list of difficult-to-pronounce terms, including caseo-necrotic bronchopneumonia (mycoplasma pneumonia), arthritis (mycoplasma swollen joints), tenosynovitis ("stiff" calves), and otitis media (droopy ears and tilted heads). Local data, both from University of Guelph and from our own clinic's studies, suggests that feedlot cattle don't arrive with high levels of mycoplasma bacteria. Our calves pick it up here locally, usually at their source farms. Unfortunately, mycoplasma in all its forms seems to be endemic here; it occurs regularly and predictably, and we don't have a way of eradicating it (yet). We're seeing the same level mycoplasma problems in dairy X beef calves as we do in Holstein veal calves. Whether these crosses are in veal or traditional beef feedlots, we see dropped ears, infected joints, and pneumonia in calves of all ages and all stages.

Considering that misery loves company, hey, we're not alone. Here are a few perspectives from outside Ontario. Dr Elad ben-Ezra from Zoetis has seen some calf ranches in US with up to 70% treatment rate for suspected mycoplasma, even though around 30% is the average treatment rate for suspected mycoplasma. (It depends on the producer's criteria for treating--these numbers are not all laboratory confirmed mycoplasma cases.) Our colleagues in Quebec find a lot of mycoplasma, as well! Even the "good" farms have 15-20% of otitis (droopy ears), which is the clinical sign on which we base our diagnosis of mycoplasma. Just like here, there is a very strong seasonal correlation. The mycoplasma peaks between January and April, and seems to melt away in the summer.

Here is some of the collected wisdom for dealing with mycoplasma, combining what we've learned from outside Ontario with what we see locally. First, the larger veal ranches will have it. Mycoplasma spreads extremely efficiently, within hours, not days; mycoplasma will be all over a calf barn in a day or two. To make this more frustrating, many calves have a low level (which doesn't seem to bother them) of mycoplasma naturally, as part of the normal bacteria they have in their nasal cavities and airways. Second, ventilation plays a big role--keep your barn's humidity below 65-70% in the winter months, and this will reduce the spread of mycoplasma. A downside to group housing is the increased risk of mycoplasma, so we need to aggressively reduce the risk in other areas such as excellent ventilation and feeding. We get some pros with group housing, but we need to "make up" for the cons. Third, be very conscious of stress events (weaning, vaccinating, housing changes, etc.). Mycoplasma problems generally show up soon after a stress event.

Therefore, plan for the problem; don't be surprised when you see it. Budget for the expense of keeping down the humidity during the winter months. Expect to separate the weaning time and any housing changes by two weeks. Get advice from Veal Farmers of Ontario and talk to your vet about protocols. And source farm does matter! We see veal farms with relatively high rates of mycoplasma, and others with quite low rates, depending on the source farm. (It pays to source your calves carefully!)

Another way to plan for the problem is to realize that viral pathogens will go through the entire nursery like clockwork in any crowded environment, probably between weeks 2-4, and you'll end up with a lot of pneumonia cases. Those cases will respond to antibiotic treatment, but the problem is greater than just the pneumonia--those calves now have some lung damage from the pneumonia. Mycoplasma just loves those damaged lungs in baby calves and starts its insidious growth at that point, before you ever see it. Only after several weeks, or even a month, do we see the typical mycoplasma problems. How can we plan ahead for this problem? By going back to the lung damage soon after the calves had arrived in the nursery. Treat the pneumonia aggressively, even if it's "just" a viral pneumonia spreading through the barn that doesn't kill any calves. Consider metaphylaxis for the entire group.

If you do see a droopy ear, how do you treat? The simple fact that there are so many options for treatment implies, no, outrightly acknowledges, that there is no one perfect treatment. We do know that mycoplasma won't respond to penicillin-type products, and there is very little success with trimethoprim-sulpha products, but other than that, most everything else may help! Long-lasting macrolides and quick-acting lincospectin, and everything in between. I refer

you to your local vet with veal experience to discuss what is a good treatment plan for mycoplasma cases. The good news is that if you have cared well for the very young calves, the mycoplasma cases will respond well (>90%) to treatment. Even though we use the best treatment available, we still end up treating for up to a week. Don't expect an immediate response.

Perhaps you've heard about promising vaccines for mycoplasma. Yes, there are mycoplasma vaccines available. (This article will not discuss specific brands.) There are several options: live vaccine, killed vaccine (bacterin), and autogenous vaccine. When I interviewed several vets in preparation for this article, no one vaccine stood out as a magic bullet that would cure the mycoplasma problem. Sorry for my poor punch line. Certain vaccines are very promising, though, and hopefully with a bit more work of figuring out the best time in the calf's life to give the mycoplasma vaccine, this mycoplasma problem will be less. Perhaps in a year or two, there will be a clear advantage to using a certain vaccine. Maybe veal ranches will develop their own effective autogenous vaccines, .

Whatever happens, mycoplasma is a real enemy and we will continue learning as much as we can about it. "Know thy enemy and know yourself" is certainly applicable to veal farms dealing with mycoplasma.