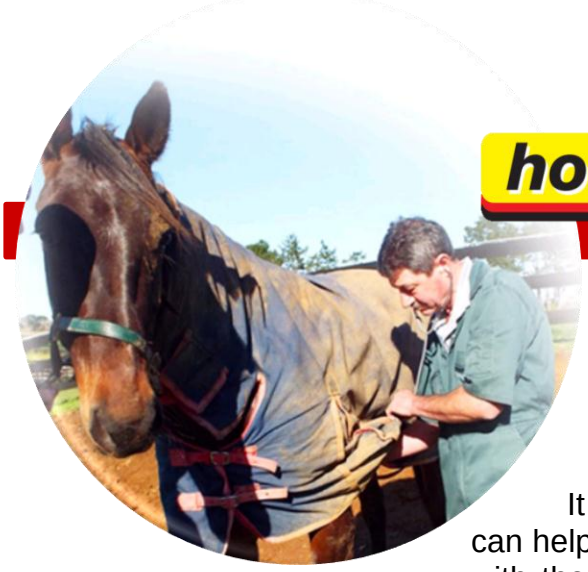

horseVets

Newsletter

JULY 2018

RECENT RESEARCH AROUND BEHAVIOURS AND LEARNING

It has long been acknowledged that music (not just any) can help the mental state of animals. Cows milk better in a shed with the radio on, and now some good concrete research has been done on a large group of Arabs.

Their mental state was assessed with heart rate variability, which demonstrates the balance between the sympathetic and parasympathetic nervous system. When the heart rate is more variable between individual beats the horse is seen as more relaxed, and in a better frame of mind.

The effect of heart rate variability in the human athlete is well proven. Less stressed athletes perform better.

Music was played to one group for 5 hours a day, and the control group had none. The group that had the music were more relaxed and amenable with better interactions.

Murdoch University did a similar study some years back, presented as an abstract at conference whereby the type of music also had an effect. Much as it pains me to say so, rap and hard rock (just noise...) don't work nearly as well. So just nice gentle music and no opera, at least when I'm in the building. That drives me mad.

Another recent bit of research looking at how separating yearlings from their cohorts affected learning and horse/human interactions is very interesting.

If separated for a set period of 11 days, and handled well, and taught some simple things, with exposure to novel stimuli the horses that had been separated were better adapted to learning, and the interactions were generally better.

References;
Konig v Borstel, Visser EK and Hall C. Indicators of stress in equitation.
Lansade L, Neveux C, Levy F. Afew days of social separation affects yearling horses' response to emotional reactivity tests and enhances learning performance.

Kind regards,

Tim Montgomery BVMS

Please let us know what topics you would like to know about!

farmVets

Newsletter

JULY 2018

DAIRY NEWSLETTER JULY 2018 OR MATT AVERY'S BRUSH WITH MYCOPLASMA BOVIS.

Long, long ago in the country of champions, a young(er) vet was getting ready to bring his wife & new born daughter to a new job in the Shaky Isles…….

I was doing the fortnightly pen walk through the calf pens for FarmX. FarmX had two all year calving herds totalling just over 3000 Friesian cows. At any time they could have 100 to 300 calves in the rearing pens. Any treatment given to the calves was marked with colour coded electrical tape on the rail of their pen. The tapes stayed on the pens until the calf was moved out onto grass. It meant the treatment history could be assessed at a glance, no matter who was checking. Each calf had an individual pen. Fresh water & meal were always available. They were fed pooled waste milk once daily. Calves age ranged from 1-3 weeks of age. If a calf died, the pen remained empty so losses could be assessed at a glance, no matter who was checking.

This day there were lots of blue tapes (joint ill) & a few empty pens. In a glance you could see spots of blue all down the row. What's the problem here Maria? I asked their Croatian calf rearer. "Joints swollen darling" Are you still dipping the navels? "Look, look come to the calfeteria" (the area where calves were batched in pens according to the day they were born for their 1st week of life & fed colostrum). Every navel & half the calf were thoroughly covered with iodine.

I took samples from the joints. Nothing grew. A week later we took more samples. Nothing grew. We started getting horrible pneumonias in the calves. Contaminants only grew. At the same time mastitis was seen in the herd & had been difficult to control. There had been abortions. FarmX were desperate. We were desperate.

Christmas came & went. The samples sat in the lab for longer than normal. A tech came in to throw out the cultures & noticed something funny growing & let the head pathologist know.
No one normally looks for Mycoplasma bovis. It takes special conditions to grow it quickly in a lab. By pure luck we caught a break & had found Mycoplasma Bovis. It had never been in the area before. We left on New Year's Day to come to NZ. From then on samples from many areas: bulk milk, joints & lungs confirmed the diagnosis of mycoplasma. My old boss, Bob, filled me in on the rest……..

Once the calves had either the joint problems or the pneumonia it was difficult to treat successfully. They tried to circumvent the problem by treating with antibiotics. They found that treatment of all calves on day 1 was the best at control. Mycoplasma could still be in the colostrum but it was deemed more important to protect against most diseases than just one.

They found mycoplasma in the bulk milk but were told it would be taken out with the pasteurisation. Treatment was difficult but with an extended course of antibiotics we reduced the culls from chronic mastitis.

All in all about 30% of 240 calves developed severe joint ill in multiple joints between 2 & 3 weeks of age. Multiple abortions occurred on these farms. Mycoplasma sp bovine group 7 was recovered from two aborted foetuses, from 14/21 bulk milk & 4/10 mastitis quarters. Three bulk colostrum samples cultured during the outbreak were negative for mycoplasma. This was the first report in Australia of cow abortion resulting from Mycoplasma sp infection.

Recently I asked Bob some more questions.

Where did it come from?

The outbreak we went through at FarmX had an unknown port of entry.

Any ongoing problems due to M bovis in the FarmX herds?

We looked for further problems especially as a consultant said we would not be able to eliminate the problem. We saw only a small number of mastitis cases but we did see swollen joints in some of the R2 heifers as they came back into the dairy.

Did feeding powdered milk stop the calves getting it?

We used powdered milk as soon as we realised the problems but still kept on with the colostrum. We therefore continued the antibiotic treatment for the calves for some time & had fairly good success. The problem gradually subsided over a couple of months.

How was testing done? Was the rest of the testing done this way?

We monitored the bulk milk regularly. When we had a number of samples clear of mycoplasma, we were happy to assume that the outbreak was finished & resumed normal feeding etc. We certainly kept our eyes open for further problems. Initially we cultured the lung tissue & joint fluid of the affected calves. This lead to us culturing the mastitis cows & was followed by culturing the bulk milk tank. One problem was that the odd person was taking fresh milk from the vat; we refused all contact with the bulk vat for everyone.

Any other herds affected in the area or where dry stock was sent?

The number of affected calves exploded initially. There was no pasteurisation of the calf milk & as it was all mixed, it was the perfect environment to sustain an outbreak. The first signs were lameness, followed by respiratory issues. The mastitis cows were very hard to cure & the cure rate diminished dramatically.

How contagious is it?
FarmX was the only herd affected as far as I know.

So that was what we went through in Australia. Now our suggestions here in NZ.

The best way to prevent M bovis is to maintain a closed herd or to screen & quarantine purchased animals. This is not as easy as it sounds because the testing isn't great.

Sourcing stock should be done from low risk areas where mobs of more than 50 animals were tested & found to be M bovis 'not infected'. The trouble is that small numbers of tests just don't have the power to call an animal 'M bovis free' or a herd 'negative'.

Some recent studies have reported that on-farm batch pasteurization at 60C for 30 minutes eliminated viable M bovis while colostrum consistency were not significantly affected.

Usually on-farm batch pasteurization of waste milk takes a consistent 65C for 1 hour.

Pasteurisation using higher temperatures have resulted in reduced colostrum quality & unacceptable feeding characteristics. If colostrum is not pasteurised, it has been recommended that it should not be pooled to minimize potential exposure of calves to M bovis. It is easiest to find M bovis in calves. Calf rearing should be a priority (not that it isn't always.

Proposed strategies for the control of Mb in pre-weaned calves

Reduce the level of exposure to Mycoplasma bovis

1. Reduce exposure in milk (no mastitis cows in calf supply)
    a. Pasteurise whole milk
    b. Feed milk replacer

2. Reduce potential exposure in colostrum
    a. Avoid pooling
    b. Consider pasteurisation

3. Reduce potential airborne exposure
    a. Provide adequate ventilation in calf housing
    b. Consider the impact of pen design on air quality
    c. Consider ways to reduce stocking density

4. Reduce exposure to sick calves
    a. Segregation of sick calves
    b. Promptly treat clinical cases

5. Prevent transmission via objects
    a. Sanitise pens, feeders, buckets, & other equipment between uses
    b. Wear gloves when handling sick calves & change them between calves. Wear gloves when assisting calves to drink
    c. Handle the youngest calves first

6. Consider ‘‘all-in, all-out’’ practices, or segregate older & younger calves at the earliest possible opportunity. Don’t reuse calf pens unless a 60 day stand down in between mobs.

7. Use biosecurity practices & monitor for signs of M bovis

Maximize calf defenses against M bovis

1. Maximize respiratory & immune system health
    a. Provide good air quality
    b. Control other pathogens, in particular address any deficiencies in the vaccination & monitoring programs for respiratory viruses & BVD.
    c. Provide good nutrition
    d. Address any colostrum management issues
    e. Minimize other sources of stress such as transport, heat/cold stress & overcrowding

In NZ what did the BMSCC look like in M bovis infected herds?

One of the herds in Canterbury had an average BMSCC of only 60000 for the season & only 35 cases of mastitis in 850 cows leading up to the discovery of M bovis.

What does M bovis mastitis look like?

Melted butter or split butter. When kept in a specimen jar yellow clear on top with thickened sediment on the bottom. The udder has a rubbery appearance. The vet who diagnosed the first case in NZ & made the one billion dollar phone call to MPI found the udders were rubbery & the first cases appeared in a dry mob. These animals aborted close to full term. There were also a bunch of cows with a swollen front fetlock joint.

What does M bovis calf disease look like?

Calves are aborted or born weak & not quite right. When they get joint ill, it can be in multiple joints. Look for lameness or swelling with an infection. The pneumonias are severe. All treatments have a poor response. They are commonly infected with other disease, eg BVD or lungworm. No cases have been proven to have spread by over the fence contact.

Extras for calf health

Dip navels using Tincture of iodine rather than plain iodine to reduce the risk of joint ill from other sources & mislead farmers that they have M bovis infections. Inject 1ml Multi-min to all day old calves this has worked in NZ conditions to decrease disease rates in the 1st 35 days of life. Collect calves twice daily from the calving mob to decrease exposure to bugs (Johnes disease is especially reduced this way) & ensure colostrum feeding to maximise calf immunity. Remember the second best thing to knowing something; is knowing where to find it. If in doubt, act promptly & ask for help.

Good luck & best wishes for the oncoming season.