Polly’s Pink Eye
By: Toby Pinn (2008)

Two months after being moved to Bookhout, Polly was brought back to Charmany to determine the cause of corneal cloudiness in her right eye. Polly was approximately 3.5 months old at the time and had already been vaccinated against IBR, BVD, PI-3, BRSV and Leptospira harjo. On examination, following Polly’s arrival to Charmany, her right eye resembled a classical case of pink eye, which is a common symptom of infection by the bacterium Moraxella bovis. This bacterium causes a disease called Bovine Infectious Keratoconjunctivitis.

*M. bovis* primarily effects cattle and naturally resides in the eye of a chronic carrier animal. Infection with *Moraxella bovis* occurs following direct contact with this carrier, or can be transmitted via insect mechanical vectors. *M. bovis* infections typically occur in summer and early fall, when flies are numerous, however winter infection is not uncommon. Immunologically naïve animals, like our calf Polly, are at risk for *M. bovis* infection. In addition to keratoconjunctivitis and a hazy cornea, animals suffering from *M. bovis* infections may also present with photophobia, ulceration and rupture of the anterior chamber of the eye. This bacterium evades the animal’s immune response using a capsule, and adheres to the epithelium of the eye using its pili. Once adhered, *M. bovis* releases a pore-forming exotoxin that causes the characteristic corneal ulceration. Vaccine manufacturers have used the knowledge of these virulence factors to develop a vaccine that functions by inhibiting pilus adherence, therefore preventing infection.

Five days following the initial cloudiness in Polly’s right eye, a corneal ulcer did develop, along with a temperature of 105 degrees, a small amount of nasal discharge and an inducible cough. Polly was treated with 15cc intramuscular injections of tetracycline for five days. Fourteen days following the onset of Polly’s infection, a fluorescein stain produced no visible lesions, suggesting that the ulcer and bacterial infection had healed. Polly was thus sent back to Bookhout in excellent condition.
JUST A REMINDER......
We are endowing the teaching herd in Dr. Leland Allenstein’s name!!!! To help endow the Dr. Leland Allenstein Dairy Teaching Herd, please contact the veterinary school’s Office for Advancement at 608/265-9692 or e-mail them at giving@svm.vetmed.wisc.edu.

RED’S CORNER
By: Red (of course)

I hope all my new student fans enjoyed the last newsletter. As promised I will "share" (a word I do not use at the bunk) with you some "portions" (my portions may be a little bigger than most cows’) of my course, Efficiency of Eating. First, it has been such a relief to find grain in the green feed bunks when we come over to the BIG BARN. I have been so worried that my pregnant cowleagues wouldn’t get their mineral supplements because we’ve been on pasture. The extra grain solves that problem; the last time Dave showed me the formula I noted that minerals such as calcium and phosphorus are included.

At the feed bunk my tongue comes in quite handy. I am able to extend my tongue quite a ways in both directions, something I practiced a lot in the milking barn cleaning up the feed area around my stall and those adjacent. I was just being sanitary because wet feed when not swept up properly can get moldy. At the green bunk my prehensile tongue is nearly as useful an appendage as a monkey’s tail. In fact, I have now accelerated my tongue movement so it acts like a broom and actually sweeps the grain into my mouth. I realize this might take some grain (and thus minerals) away from my cowleagues. However, I have discovered that if we cows can reach the BIG BARN cow yard really fast and gobble up the grain quickly, the students (who are working oh so hard) might forget that they have already given us grain! And because they are so kind, a lot of them bring two more buckets of grain out to make sure!!!

To improve the efficiency of our prehensile tongues, I have developed a series of pilates-type exercises for my cowleagues to practice at the empty hay wagon on pasture. These workouts serve two purposes. First, they increase the tongue’s flexibility and strength. Second, they simulate the act of eating, which makes all of us ruminate better.

Would you look at the time! I have so much more to "share", but you will have to wait until the next issue for more "portions" from my course, Efficiency of Eating.
Hip-Hip-Hooray!


Clinical Insights:
Bovine Papilloma Virus (BPV)
By Keith Poulsen, DVM
Resident, Large Animal Internal Medicine

A recent addition to our teaching herd, Annie, was recently diagnosed with the freckle’s ugly cousin: warts caused by Bovine Papilloma Virus (BPV). In the dairy industry warts are the worry of owners before show and small animal surgeon-turned-dairyman herd managers. Most infections are self-limiting and cause little harm while some infections can lead to secondary infections, poor productive performance, and second prize at the local beauty contest.

Found almost anywhere on the body, six types of BPV have been identified. Each type has a specific site predilection. Annie mostly likely had BPV-2 or BPV-3, the cutaneous form of cattle warts. These warts tend to affect animals 2 years of age or less and are seen on the head, especially around the eyes, the neck, and on the shoulders. Their spread is from close contact with infected animals or communal equipment including stanchions. Other important forms of BPV are spread from infected bulls during natural breeding. Usually when being spread through a herd, BPV causes warts on the same general region of all infected animals. Differential diagnosis may include other viruses including herpes and poxviruses.
Surgical removal with or without cryosurgery is the treatment of choice. Also advocated is the crushing of warts during removal to induce a more effective immune response. Historically producers have removed warts from infected animals, crushed them up, and fed them back to the herd to induce an acquired immune response to decrease clinical signs. Control of outbreaks can include disinfection of contaminated housing or equipment and/or autogeneous vaccination with type-specific BPV. It has been the author’s experience that treatment with Immunoboost® (Bioniche), a mycobacterium cell wall immunostimulant, can have efficacy in refractory cases of BPV.

Real-life Case Study at Charmany
By: Kerry Hagen (2008)

Right around the same time the wood shavings were changed to sand, the bacterial plate count in the bulk tank samples at Charmany started to creep up. The Charmany farm has prided itself on having a notoriously low plate count (~1000 cfu) for at least the last five years. So, naturally there had to be a problem when the bacterial count started to steadily rise and reached its peak of 45,000 cfu on November 15th. Where do you start with a problem like this and how do you know what is causing it?

First, the type of bacteria causing this rise was identified to be a mixture of Streptococcus, Staphylococcus, and non-lactose fermenting Gram negative rods. This points towards a system cleaning problem and/or a sand problem, and away from an infectious disease problem. The first course of action was to invite the Boumatic equipment service technician out to the barn to check the milking system and unfortunately he found a few problems. First, there was a layer of Orbaseal® lining the receiver jar that could be providing nice growth medium. Second, the filter on the bulk tank cleaner inlet was entirely compacted with sand and could have been preventing thorough cleaning of the bulk tank. Third, about 70% of the milk inlet valves were leaking air. Lastly, there was a minor sloping issue in the milk line that could encourage pooling of water during the wash cycle. Wow, with all these things wrong fixing them has to solve the problem, right?

Wrong! These were all fixed in late October and the peak count of 45,000 wasn’t reached until November 15th. So, what else could be wrong? Maybe the water being used to wash the lines was not getting hot enough. Upon testing, it was hot but not as hot as recommended so both of the heat cells were replaced and a thermometer placed on the top of the water heater for further monitoring. The milk hauler also noticed that that bulk tank seemed to be growing a “film”, so one of Charmany’s oh, so lucky workers got to climb inside and clean it out. This combination of improvements finally got the plate count down in the thousands for three consecutive cultures until December 4th revealed a plate count back up to 13,000 cfu!
Ok, now what?? Just about everything that could possibly contribute has been checked, right? Well, they weren’t because on December 6th a helpful delivery man informed the Charmany staff that the hot water valve that supplied the bulk tank for cleaning had been turned off! So this entire time or at least for a while the bulk tank was being cleaned with nothing but cold water. Obviously, this couldn’t have been the only problem contributing to such an increase in bacterial grown but they think this should finally fix the problem, or at least for now 😊

**EMPLOYMENT OPPORTUNITIES**

Interested in gaining experience working with dairy cows? Then boy do we have the opportunity for you! You can join the milking crew at the Charmany Teaching Facility and work the AM or PM milking shifts. Weekday shifts are from 5:00 am to 7:00 am and from 4:30 pm to 8:30 pm. Weekend shifts are from 5:00 am to 12:00 pm and from 4:30 pm to 8:30 pm. Interested students should contact Dr. Bill Goodger at (608) 770-1448.

One further note on employment is that we can save 50% in student salary expenses (about $20,000 per year) if students apply for work study (about 90% of veterinary students are probably eligible). These added funds would not only allow more students access to the herd, but would also provide support for clinics, projects, and clinical upgrades to our facility which would enhance the experience for all students. Below is information about work study from the campus work study office in financial aid.

**The Work-Study Program** does not determine where you work. It is up to you to determine where you’d like to work and what type of work you’d be interested in. The Federal Work-Study Program (FWSP) employee’s will be glad to discuss with you what your interests are and what employment options are available to you but you will need to contact the employers directly to inquire about job availabilities.

Having accepted Work-Study will benefit you primarily in two ways: first, since employers only pay 50 cents of every dollar earned by a student, work-study students are highly sought after employees and second, any work-study monies earned are not counted and considered as earned income when you apply for next year’s financial aid. Normally a student's earnings are considered as earned income and your next year's financial aid award is reduced by that amount.

If you decide to work on campus, ANY job at the UW automatically qualifies as a work-study position. You should always let a UW-employer know that you have accepted a work-study award, because again, it makes you an even more desirable hire to them. Having said this, some UW employers require that you have work-study. These listing can be found under the “UWWR” section.

*If you need to contact someone at the UW-SVM Teaching Herd Barn, call (608) 265-3558.*

*Please direct correspondence regarding the Charmany Teaching Herd or the newsletter to:*
William J. Goodger, DVM, PhD
Cell: (608) 770-1448
Email: wgoodger@facstaff.wisc.edu

SEE THE CALENDAR OF EVENTS BELOW  !!!!!
<table>
<thead>
<tr>
<th>Sun</th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
<th>Sat</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Herd Health- PM</td>
<td>Herd Health- PM</td>
<td>Herd Health- PM</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>Herd Health- PM</td>
<td>Herd Health- PM</td>
<td>Theriogenology Rotation</td>
<td>Herd Health- PM</td>
<td>Herd Health- PM</td>
<td>Herd Health- PM</td>
<td>Herd Health- PM</td>
</tr>
<tr>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>Herd Health- PM</td>
<td>Herd Health- PM</td>
<td>Theriogenology Rotation</td>
<td>Last Day of Class 😊</td>
<td>Study Day</td>
<td>Finals Begin- Good luck everyone!</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Last day of finals- Have a great winter break!</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
<td>31</td>
</tr>
<tr>
<td>Merry Christmas and Happy Hanukkah</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. 4th year theriogenology rotation with either Dr. Momont or Dr. Bosu

2005