Cattle won’t be the only creatures enjoying fresh pasture this spring; so will the Rocky Mountain wood tick and the American dog tick, which can transmit anaplasmosis and other bloodborne diseases.

Anaplasmosis was removed from the Federally Reportable Disease list in 2014, so the government is no longer responsible for dealing with anaplasmosis outbreaks or compensating producers with affected herds. Understanding where these ticks are and what influences their population will help develop proactive strategies to avoid the spread of tickborne disease.

Ticks have a three-stage life cycle. Tick larvae emerge from the egg and feed once on blood from small mammals (mice, voles, squirrels, etc.). The engorged larvae then molt into nymphs that also feed once on small mammals. The engorged nymphs molt into adults that feed on larger animals, including dogs, sheep, deer, and cattle. If the adult ticks cannot find a host, they may overwinter under plant material on the ground and re-emerge in spring. Adult ticks begin looking for hosts after the snow melts, which can be from March to May, depending on the region. Wood tick activity generally peaks in May, while dog tick activity peaks in May or June, and fades in late June through July.

continued on page 22...
Mastitis is one of the largest costs to the dairy industry.

Mastitis leads to:
- Milk discarded due to residues
- Reduction in yields due to illness or damage to udder tissue
- Extra labour, veterinary care, and medicines
- Reduced longevity due to premature culling

It is therefore important to prevent mastitis and protect a cow's potential.

Experience Imrestor™.
Imrestor decreased the incidence of clinical mastitis by 31.9% in the first 30 days of lactation during clinical research trials.

Ask your veterinarian for Imrestor.

Visit imrestor.ca to learn more.

All the income and expenses have been tallied for our most recent conference and we managed to book a profit of $927. However, for the first time, we did use the OMR Fund to support a portion of the student meal costs. The cost for hosting the students, who pay a deeply discounted registration fee, was ~$16,000, of which the OMR Fund contributed 33%.

While some may view this line item as a ‘cost,” the Board sees it as an investment. It is noteworthy that we once again had an exceptionally high turnout of undergraduates to last year’s conference. This can be attributed to subsidizing the students’ registration, providing an excellent CE program, and of course, having Dr. Eric Behlke energize the students with a fund filled evening of “Bingo.” Furthermore, our year-to-date membership numbers have increased slightly, and student membership is the highest it has been in the last decade. If these new members remain within the Association for 5+ years, then we all realize a positive net present value on the investment we made in them as students.

Our Conference Chair, Dr. Collin Lawrence, has taken on his new role in earnest. Almost all the speakers for the split dairy/beef sessions have been confirmed; however, we have left two slots open in the beef just in case we want to cover a new or emerging topic.

The OMR Lecture series is starting to come together. Deb Wilson from BIXS has been invited to give an overview of the “Canadian Beef Sustainability Acceleration Pilot Project.” We will also be hosting what has become almost an annual event – the beef cattle market update. Then later in the day we have invited Dr. Jasmeet Kaler from Nottingham University (UK) to talk about the various theories that motivate agricultural producers to adopt new technologies and management practices – a point of frustration for many practitioners. Dr. Kaler also has some of her own unique field data generated from interactions with sheep farmers.

Saturday’s program is also nearing completion with the afternoon being dedicated to the business of veterinary medicine. We have invited a lawyer (Eric Dalke) as well as Terry Jackson a well-known accountant who specializes in veterinary practices. Eric will provide an overview of contracts (employment, partnership, purchase agreements, etc.), while Terry will cover practice evaluations. In short, the 2019 program is shaping up to be a great program.

At the time of the writing of this report, the electronic BSE program was near completion. The plan is to allow all practices to use the program, for free, for a set period of time or number of bulls. This will allow members to beta-test the program before we officially launch in time for the 2019 bull test season.

Respectfully submitted,
Murray Jelinski
The WCABP Newsletter is published by the association as a service to its members. The views expressed in this publication are not necessarily those of WCABP. Correspondence concerning the Newsletter should be directed to the WCABP Office.

**President**
Blake Balog
Bow Valley Veterinary Clinic
Box 1239
Brooks, AB T1R 1C1
Phone: 403-362-5114
Fax: 403-501-5609
Phone: 403-362-0826
Email: blake@bowvalleyvet.ca

**Past President**
Nathan Erickson
LACS, WCVM
52 Campus Drive
Saskatoon, SK S7N 5B4
Phone: 306-966-7179
Cell: 306-850-8292
Email: nathan.erickson@usask.ca

**President Elect**
Collin Lawrence
Westlock Veterinary Center
10004 - 94 A Avenue
Westlock, AB T7P 2M9
Office: 780-349-3663
Fax: 780-349-4323
Cell: 780-349-0391
Email: cjlvet2005@gmail.com

**Director**
David Dykshorn
Abbotsford Veterinary Clinic
Unit 200 - 33448 McDougall Avenue
Abbotsford, BC V2S 1W2
Cell: 604-850-4426
Email: ddykshorn@gmail.com

**Director**
Keith Immerkar
Swan Valley Veterinary Clinic
Box 388
Swan Valley, MB R0L 1Z0
Phone: 204-734-0720
Fax: 204-734-9530
Email: immerkarfarms@hotmail.com

**Director**
Eric Maguet
Beausejour Animal Hospital
Box 368
Beausejour, MB R0E 0C0
Phone: 204-268-2177
Fax: 204-268-4426
Cell: 204-268-5413
Email: em@beausejourvet.ca

**Director**
Anne Rogers
Edson Veterinary Clinic
4403 - 2nd Avenue
Edson, AB T7E 3P1
Phone: 780-723-3354
Fax: 780-723-5992
Cell: 780-725-2663
Email: edsonvet1@telus.net

**Director**
Tim Nickel
Bovine Technical Services Veterinarian
Boehringer Ingelheim
4514 - 45th Avenue
St. Paul, AB T0A 3A3
Phone: 780-646-3685
Email: tim.nickel@boehringer-ingelheim.com

**Ex-Officio Director**
District XIII, AABP
Eric Behlke
Feedlot Health Management Services
P.O. Box 140
Okotoks, AB T1S 2A2
Phone: 403-938-5151
Fax: 403-938-5175
Cell: 403-999-7185
Email: ericb@feedlothealth.com

**Secretary-Treasurer**
Murray Jelinski
310 Swan Lane
Saskatoon, SK S7J 5B5
Phone: 306-270-9118
Email: murray.jelinski@usask.ca

**Administrator**
Phyllis Mierau
226E Wheeler Street
Saskatoon, SK S7J 5B5
Phone: 1-866-269-8387
Fax: 306-956-0607
Email: info@wcabp.com

---

**Advertising Index**
Thank You for Supporting WCABP

<table>
<thead>
<tr>
<th>ADVERTISERS</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bayer Animal Health</td>
<td>3, 15, 20, 22</td>
</tr>
<tr>
<td>Boehringer Ingelheim</td>
<td>6, 10, 23</td>
</tr>
<tr>
<td>Elanco Animal Health</td>
<td>2</td>
</tr>
<tr>
<td>Grober Nutrition</td>
<td>17</td>
</tr>
<tr>
<td>IMV Imaging</td>
<td>15</td>
</tr>
<tr>
<td>Merck</td>
<td>24</td>
</tr>
<tr>
<td>Partner Animal Health</td>
<td>3, 22</td>
</tr>
<tr>
<td>ReproScan</td>
<td>8</td>
</tr>
<tr>
<td>Solvet</td>
<td>14</td>
</tr>
<tr>
<td>WDDC</td>
<td>12</td>
</tr>
</tbody>
</table>
Spring has finally arrived!

After a long cold winter and cold start to the spring, the warm weather of the last few days has been a fantastic change. It is quite calming to see the start of field work and the change of the brown prairie to a hint of green. However, we must not forget how many producers had a rough start to their calving season with many calves born into colder weather than what most producers are used to. Locally many of our producers typically calve on the prairie and had little infrastructure to help protect calves. It was heartbreaking seeing producers struggle to do their best and still fall short saving a calf.

One thing that I felt was really potentiated in this tough weather and even after was the importance of good cow and heifer nutrition. Notably cattle in better body condition and on good quality feed with adequate energy and protein fared much better and had fewer issues with dystocia and weak born calves. Even now we see the echoing out of our earlier tough weather with various conditions related to failure of passive transfer and cold exposure. I truly believe that much of the sick animal work we see can be alleviated with good nutrition. With our background and understanding of our producers’ operations I would challenge you to all engage with your producers and help advise them on nutrition and monitoring BCS at every visit.

The board has recently been busy with conference planning and scheduling a meeting with a local member of parliament to discuss some of the challenges producers and veterinarians may have had working with the CFIA. As for the conference, rest assured that our incoming president Collin Lawrence has already put together a great set of speakers and we really look forward to the program next year!

I can’t go without also mentioning where we are at with the electronic bull evaluation application. Progress has been slow since I last showed you the program at the AGM. Given the nature of the WCABP to deliver a high-quality product I have been very critical of the program and we are currently fine-tuning things to make sure you have a user-friendly and intuitive product once it comes out and is available to you. As soon as we have a final working product we will email you with signup instructions. I apologize for the delay.

Respectfully submitted,
Blake Balog

2019 Conference Dates . . .

Dates for the 2019 Conference have been set – Thursday, Friday and Saturday, January 17, 18, and 19 – at the Sheraton Cavalier Hotel in Saskatoon, SK.

Recognizing that one of the secrets to success of a conference is to contact speakers early, Conference Chair, Dr. Collin Lawrence is off and running to put together a first-rate program designed specifically for western Canadian cattle practitioners. A wide variety of current topics will be covered including: BVD, Robotic Milking, Surgery, Bovine Leukosis, Pathogen Based Treatment of Clinical Mastitis, Transition Cow Management, Post-Natal Colostrum Management, Antimicrobial and Vaccine Usage in Cow/Calf Herds, Partnership Agreements, Succession Planning, and much, much more!

Watch the website (www.wcabp.com) and September issue of the WCABP newsletter for further details.

This is the first call for WCABP/ Merck Animal Health Student Case Report/Research Presentation competition which has proven to be a popular feature at past conferences. The “Call for Abstracts” found on page 21 of this newsletter will provide further details.

All indications are for a first-rate educational program in 2019!

2018 Conference Audio Recordings Now Available

Audio and video recordings from the WCABP Annual Conference held in Calgary January 2018 are available in the Resource Library of the “Members Only” section on the website: http://www.wcabp.com/resource-library

Also included on this page is access to the PDF files of the PowerPoint presentations.

If you have not personalized your Member login information, then use the following to access:

- Username: your first initial and last name (e.g., jdoe)
- Password: wcabp8874
YOUR BRAND IS
YOUR REPUTATION.
THAT'S WHY OUR BRAND IS
GUARANTEED.*

THE EXPRESS® FP FAMILY** OF VACCINES IS THE ONLY FAMILY OF MLV VACCINES THAT PROVIDES THE HIGHEST LEVEL OF BVD PROTECTION AS ASSESSED BY THE GOVERNMENT OF CANADA.

When you choose Express FP as your Mother Cow vaccine, you get the highest level of protection available against BVD. And calves from Express FP vaccinated cows offer a PROVEN industry advantage in the feedlot***

- Fewer First Pulls
- Lower BRD Mortality
- Lower Overall Mortality

Learn more about these results from Feedlot Health Management Services, presented by Dr. Tye Perrett

EXPRESS®FP verified.ca

* If you find a BVD Pi cell from a cow or heifer that was vaccinated with any of our Express® FP products according to label directions, we’ll pay the fair market value in cash, plus the cost of testing.
** Express®, Express® FP/Somunogen, Express® FP VLS, Express® FP10, and Express® FP10/Somunogen.
*** Perrett et al. A retrospective analysis of feedlot morbidity and mortality outcomes in calves born to dams with known oral vaccination history. (In Press)

EXPRESS® FP is a registered trademark of Boehringer Ingelheim, used under license. ©2018 Boehringer Ingelheim (Canada) Ltd. All Rights Reserved.
A Vaccine that Saved an Industry

By Ron Clarke
Clarke Communication and Consulting

Dr. Ron Clarke is responsible for writing WCABP’s articles for the Vet Advice column which appears in each Cattlemen Magazine. Below is a recently published article.

Blackleg, a disease of many ruminants, is universal. It is most commonly seen in sheep, cattle and goats. Outbreaks have been reported in farmed bison and deer. The acute nature of the disease makes successful treatment difficult.

Although the efficacy of commonly used blackleg vaccines has been disputed by the occasional academic based on the lack of vigorous, randomized, controlled trials, few practitioners in Western Canada and across cattle states in the US would be comfortable convincing producers to stop using blackleg vaccine. Stories abound in rural veterinary clinics about investigations into sudden death losses on pasture due to clostridial disease, much of it caused by *Clostridium chauvoei* (blackleg). Early in the 1900s, blackleg vaccine saved an industry.

A paper published in the Journal of San Diego History (1965) describes the decimation of California’s range-cattle industry between 1870 and 1912. In the article, author Hazel Adele Pulling writes about the ranching industry of the times:

The forces detrimental to the rang-cattle industry after the 1860s were forces which developed momentum over a long period of years. To the cattleman with a long-time view of his business they were forces, which challenged his initiative and strength. To every man ranching, there were two ever-impending threats: drought and disease, against either of which there was little to do. Drought came, or it did not; disease came and for long years threatened in all its virulence to stay.

In California, before vaccines were available, blackleg killed an estimated 21 percent of young cattle. With the introduction of rudimentary vaccines around 1897, losses in vaccinated cattle by 1904 fell to less than 1 percent.

Although the efficacy of commonly used blackleg vaccines has been disputed by the occasional academic . . . few practitioners in Western Canada and across cattle states in the US would be comfortable convincing producers to stop using blackleg vaccine.

Two historical documents, one titled *Blackleg Vaccines: Their Production and Use*, and the second, *Blackleg and Vaccination*, both published in 1904 by the Kansas Agriculture Experimental Station provide a similar account of blackleg’s prevalence and clinical characteristics in Kansas and Colorado:

Cattle over two years of age may become affected; a few cases of old cattle dying from blackleg have been reported. Good, fat, beef calves are very susceptible, while poor, thin calves and calves of dairy breeds are more resistant.

Blackleg—also known as black quarter, quarter ill and symptomatic-anthrax—is an acute, infectious, but noncontagious disease of cattle, and occasionally of other ruminants. It has been reported to occur in swine. This disease is characterized by a sudden appearance of lameness, followed by a rapid development of muscular and subcutaneous swellings containing gas. These symptoms are followed by prostration and death in 12 to 48 hours.

Blackleg is found throughout the western half of the United States, especially in the Southwestern states and the eastern slopes of the Rocky Mountains. In Canada blackleg is found in the western provinces; in Europe, in the mountainous districts of Germany and Austria, and to a less extent in France, Switzerland, and England.

Losses from blackleg are greatest during the seasons of the year when calves are making their best gains—in the spring after the calves have been put on pasture and in the fall when they are taken off the dried pastures and put in the feedlot. It appears that blackleg causes greater losses in the Southern and Western states than all other diseases combined. The losses are placed at from 10 to 20 per cent of the young stock.

The same report outlined a study that incorporated 100,000 doses of improved vaccine. Blackleg losses in the population of vaccinated cattle were under 1 per cent. continued on page 8 . . .
A Vaccine that Saved an Industry

Prior to 1782, the scientists considered blackleg a particular form of anthrax, with both diseases being treated in various ways, many of which bordered on pure witchcraft. In 1782 Chabert (1790) clinically differentiated the two diseases and described blackleg as “symptomatic anthrax.” From 1782 until the isolation of the etiological agent by Bollinger in 1875, and Feser in 1876, the scientific community recorded little progress in blackleg control. Numerous methods of vaccination, crude compared to modern systems, were developed and slowly moved from the research bench to the field.

Airlong, Cornevin, and Thomas (1887), developed an attenuated muscle vaccine, used with moderate success in France. Nocard and Roux (1887) used attenuated pure cultures of *C. chauvoei*, and Roux (1888) used filtrates of broth cultures. Kitt (1894) developed a single muscle-powder vaccine and also used semi-virulent pure cultures. Kitt in 1900 used immune horse serum with varying success and became the first to develop a method of growing *C. chauvoei* aerobically (without air). Kitasato (1889) immunized guinea pigs by the use of pure cultures. Duenschmann (1894) used filtered muscle juices for the immunization of guinea pigs. Thomas of Verdun used threads impregnated in cultures of *C. chauvoei* inserted through the skin to stimulate immunity.

It became evident early in the vaccine story that timing of vaccine use accounted for success or failure of a protective immune response. Other than the labor involved, use of blackleg vaccine calmed the worries of unsustainable losses of pastured calves. Saving one calf paid for a large number of doses.

Many of the principles established to prevent blackleg through the early 1900s remain in veterinary textbooks today, basically unchanged, exceptions made for modifications of modern adjuvants (chemicals that stimulate immunity) and sterile killed vaccine production. Things like:

- Immunity produced by the use of blackleg vaccines did not develop for three to ten days after injection, but protective immunity existed for a significant duration
- Early vaccination minimized losses from blackleg
- Production issues meant the efficacy of some vaccines remained questionable
- Losses prior to routine vaccination of livestock ranged from 3 to 25 per cent of all young cattle in many districts in the West and Southwest. Losses following vaccination with even older blackleg vaccines were less than one in 10,000.

In the words of an early Kansas cattleman, “The course of the cattle industry has been long and difficult. With scourge of blackleg under control, its survival remains.”

Anatomy of a Real ‘Outbreak’” (following page) is the first of what I envision to be an ongoing “column” dedicated to interesting outbreak investigations. I am pleased that Dr. Eugene Janzen volunteered to provide the first article.

The impetus for this column came about from discussions with Drs. Janzen and Campbell regarding the interesting, unusual, and frustrating outbreaks that food animal practitioners encounter. Furthermore, the Newsletter provides the perfect opportunity to share this information with the membership.

It is hoped that over time practitioners will also contribute to the column.
The winter in Western Canada seemed abnormally long in 2018. The persistence of high snowfall, cold and a lack of a break created circumstances that on many ranches and farms resulted in significant neonatal calf losses.

The following example serves as an account of how that happened on a ranch with neonatal problems referred to the UCVM and probably on many others. The predominant agricultural operation on this property was a beef cattle herd, made up of mostly Hereford cattle.

The cropland produced feed for the herd, which over the year had been acclimatized almost exclusively to winter grazing in the average year. During the winter of 2017-2018, the deep snow prevented grazing and the cow herd was fed; no mean feat, in the coulee where the cows were wintered.

Over the years, the short grass in this environment had supported what had become a highly productive cow herd with almost 90% of the calves born during the first heat cycle this year. During the prolonged winter that impinged on spring, that intense accumulation newborn calves happened to coincide with the deepest snow and coldest of weather. The net result of this was an extreme workload to ensure passive transfer, to prevent hypothermia and to facilitate pair-bonding. In addition, 20% of the cow herd were first calves, which meant dystocia vigilance and management became a distraction from management of the neonate. At times the workload for two adults, one senior and two assistants still in public school, become overwhelming.

The initial clinical sign was often hypothermia, which ensured a “slow start” calf. Frequently so many calves were considered hypothermic that the “hot-box” and other warming methods could not keep up. A calf whose immediate post-partum vigor was compromised by hypothermia would fail to provoke the mothering instinct, especially in young cows. If not selected for neonatal supportive intervention, passive transfer of immunoglobulins was diminished and maybe even failed.

When the calves would reach 7-10 days of age, they would begin to sicken with neonatal diarrhea, dehydration and extreme weakness; with weakness being the predominant sign. The management procedure of the ranch had been to follow the Lacombe system of “turn out”; that is when the cow-calf bond was well established, and the calf could “travel”, that group of pairs would be removed from the maternity paddock into the first “kick out” field. The cold weather and deep snow so prevalent this spring prevented the classical movement of pairs out of a contaminated calving paddock into a “clean field.”

“Crashed” calves (those recumbent with dehydration and acidosis) were initially presented to the local veterinarian who instituted a treatment regime of supplemented immunoglobulins, antimicrobials, intestinal anti-diarrheic and intense intravenous fluid therapy. Eventually all of this was done on the ranch because time would not permit leaving the ranch and the calving cows for any length of time. Treatment was to take place “in the warm” but often ended up happening in the field or the cab of the pick-up.

continued on page 12 . . .
BRD can’t stop you now

Powerful against BRD-causing bacteria
Rapidly distributed in lungs
Leads to a fast recovery
Convenient one-shot product

Zactran
(gamithromycin) Injectable Solution

The speed and power to free your herd

Zactran.ca/cow-calf


Zactran® is a registered trademark of Merial (a member of the Boehringer Ingelheim group of companies), used under license. ©2017 Merial Canada Inc. (a member of the Boehringer Ingelheim group of companies) All Rights Reserved.
Shoulder Deep in Beef
What physiotherapy can do for bovine veterinarians

Presented by the School of Rehabilitation Science, University of Saskatchewan
in conjunction with the ErgoVet Research Team

Pain on the job

A recent study by the ErgoVet Research Team showed that almost 97% of Western Canadian bovine practitioners will experience musculoskeletal disorders (MSD) within their lifetime. MSD can arise from awkward posture, repetition, and strenuous physical activity. Tasks that may lead to MSD in bovine veterinarians include lifting, surgical procedures, rectal examinations and animal handling.

ErgoVet study findings

Several participants in the ErgoVet study described successfully managing their symptoms with physiotherapy:

“Had trouble with my neck 10 years after starting practice, physiotherapist got me doing exercise stretches to prevent neck pain and pushups daily to build up shoulder muscles. I am okay as long as I keep doing them!”

~ ErgoVet study participant

“A physiotherapist took me from nearly unable to do the basic tasks of my job to nearly normal”

~ ErgoVet participant

“[My body] responded well to physiotherapy. The more active I stay and the more exercise I get the better I feel”

~ ErgoVet participant

“[I] use physio to help from interrupting work life. No time off needed to be taken”

~ ErgoVet participant

Options for treatment

Physiotherapists (PT) can assist with the management and treatment of MSD by providing education and treatment for altered muscular activity or strength. Much of MSD treatment involves self-management in the form of stretching or strengthening exercises.

What to expect from a visit to a Physiotherapist

PT works to help you reach and maintain your maximum functional capacity, while working to prevent future injuries. Your individualized treatment consists of:

- A biomechanical analysis
- Assessment of tissues and structures related to symptoms
- Treatment (adjustment/relief) for painful or affected structures
- Personalized exercise programs that fit your lifestyle, clearly and thoroughly explained

In person follow-up is ideal, but by no means required. Alternatives include: phone consultations, email updates, and emailed exercise programs.

Accessing physiotherapy near you

Many small centers have physiotherapy services available through community health clinics and private practices. A number of rural physiotherapists will do house calls and/or have flexible hours to accommodate veterinarians’ busy schedules.

To find a physiotherapist near you, use the Find a Physiotherapist link on the Canadian Physiotherapy Association webpage at: http://physiocanhelp.ca/find-a-physiotherapist/

For more information on the ErgoVet Study, visit http://ergovet.ca

This research was supported in part by the Canada Research Chairs Program [#228136].
With the number of calves getting sick or relapsing and concurrently managing the dystocia’s, it was easy to fall behind in this highly productive 300-cow herd. Many calves died (estimated >80). Typically, calves in early stages of the syndrome would need considerable encouragement to get up, only appearing weak and ataxic once up. Sick calves were not observing suckling with any vigor. Diarrhea was often present, but not obvious and dehydration was not severe. In the midst of the outbreak, affected calves in these early stages were often triaged to receive attention later. The addition of halofuginone lactate in the treatment regime was only made late in the outbreak and calves appeared to respond favorably, although its use was also associated with a significant break in the inclement weather.

A diagnosis of Cryptosporidium parvum enteritis was not definitive until the outbreak was well underway, Table 1. In addition to the many sick and dead calves, those attending to these calves were not spared the exposure to the putative pathogen. Indeed, the two public school attendees that helped and the two animal health assistants at the clinic fell ill with an enteropathy. Even with the extreme biosecurity precautions inherent in a diagnostic lab, two diagnostic lab attendants were absent due to an intestinal illness shortly after presentation of the calves to the UCVM’s diagnostic lab.

This collection of extreme neonatal disease illustrates that despite the best management, a “wreck” can still occur to create havoc in the cow herd and the people looking after that herd.

Table 1: Laboratory Supported Microbiology and Pathology of four Selected Calf Mortalities.

<table>
<thead>
<tr>
<th>ID</th>
<th>E.coli</th>
<th>Crypto</th>
<th>Corona</th>
<th>Rota</th>
<th>Vit. A</th>
<th>Vit. E</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calf #1</td>
<td>3+</td>
<td>4+</td>
<td>Positive</td>
<td>Negative</td>
<td>Deficient</td>
<td>Deficient</td>
<td>Navel ill, dehydration, enteritis</td>
</tr>
<tr>
<td>Calf #2</td>
<td>3+</td>
<td>Negative</td>
<td>Negative</td>
<td>Negative</td>
<td>Deficient</td>
<td>Deficient</td>
<td>Dehydration, enteritis</td>
</tr>
<tr>
<td>Calf #3</td>
<td>1+</td>
<td>Negative</td>
<td>Negative</td>
<td>Negative</td>
<td>Deficient</td>
<td>Marginally</td>
<td>Dehydration, enteritis</td>
</tr>
<tr>
<td>Calf #4</td>
<td>3+</td>
<td>Negative</td>
<td>Negative</td>
<td>Negative</td>
<td>Deficient</td>
<td>Marginally</td>
<td>Dehydration, enteritis</td>
</tr>
</tbody>
</table>
After undergoing intensive review in 2017, the Western College of Veterinary Medicine (WCVM) at the University of Saskatchewan has successfully maintained its accreditation with the American Veterinary Medical Association’s (AVMA) Council on Education.

“Accreditation is the ideal opportunity to demonstrate everything that we do very well at the WCVM, and these results confirm what our outstanding outcomes are already demonstrating: we have a high calibre veterinary college that meets and exceeds international standards,” said WCVM Dean Douglas Freeman.

Accreditation with the AVMA council represents the highest standard of achievement for veterinary medical education globally. In mid-April, the council confirmed the WCVM’s status of “accredited with minor deficiencies,” referring to items that have minimal or no effect on student learning or safety and are typically resolved within one year.

Examples included having adequate signage in patient isolation areas and a clarification of admission requirements on the college’s web site. Freeman said much of the work in resolving these minor issues has already been done or is close to completion.

“Our team works very hard to maintain the high quality of our veterinary college’s academic programs, facilities and clinical services, so it’s gratifying to receive this international confirmation that our efforts are successful,” said Freeman.

Statistics collected since the last accreditation site visit in 2010 show that the WCVM is succeeding in its mission to serve as a western Canadian centre of veterinary education, research and clinical expertise. Examples include the following:

- WCVM students have consistently scored in the top 22 percentile of all students globally taking the North American Veterinary Licensing Examination (NAVLE) — the test written by veterinary graduates from AVMA-accredited schools
- Ninety-eight per cent of WCVM alumni who were surveyed two years after graduation felt prepared for their careers
- Based on employer survey results, 85 per cent of respondents are either satisfied or very satisfied with their WCVM-educated employees

The WCVM submitted a comprehensive self-study in August 2017. Two months later, a council-appointed team conducted a five-day site visit that included meetings

continued on page 14...
A COMMITMENT TO CARING STARTS ON THE FARM

I was born and raised in Radville, Saskatchewan on a mixed livestock farm. That’s when I first started thinking about ways to advance the humane treatment of cattle. One idea was to produce long-lasting, effective pain control for routine procedures in livestock management. This vision came to life as Meloxicam Oral Suspension — an effective, affordable solution for pain control in Cattle.

My name is Dr. Merle Olson. I am the founder and Director of Research at Solvet and I CARE FOR CATTLE.
For a variety of reasons, recent graduates involved with bovine medicine are sometimes not afforded the opportunity to take advantage of AABP’s Annual Conference, and thus miss out on valuable bovine-oriented continuing education and networking opportunities. In response to a demand from the aforementioned demographics, in February the AABP piloted a “Recent Graduate Conference” in St. Louis, Missouri, USA. Registrants were limited to: 1) members that graduated veterinary school between 2010–2017, and 2) the first 300 members to register. The two-day conference was well attended, and the enthusiasm in the atmosphere was second-to-none! Given the overwhelmingly positive responses received from attendees and their employers, the decision has been made to support an additional “Recent Graduate Conference” in 2019.

At the annual Spring Board of Directors (BOD) meeting, the Nominations Committee presented two candidates for the position of AABP Vice President, Drs. Carie Telgen and Sarah Wagner. AABP members are able to vote online or by using a hard-copy ballot. To view the candidate’s biographies and to vote online, visit www.aabp.org/ballot/. A hard copy can be requested by contacting the AABP office at 1-800-COW-AABP. Voting closes 30-May-2018.

Registration for the 51st AABP Annual Conference in Phoenix, Arizona, USA is now open and can be accessed online at http://aabp.org/register.asp. This year’s conference will be held 13- to 15-Sep-2018 with Preconference Seminars available earlier that same week. The theme for this year’s conference is “Become Indispensable” and content will focus on strategies to increase the utilization of bovine veterinary services to provide for the health, productivity and welfare of cattle. For the Preconference Seminars, schedule is filled with 17 courses to provide members with a variety of opportunities to focus their continued education in a specific area. In addition to “back by popular demand” seminars, there are new offerings in 2018. Seminars, which are one to three days in length, will provide beef and dairy veterinarians with expert instruction. We look forward to seeing everyone in Arizona!

Notice of CABV/ACVB Annual General Meeting

CABV/ACVB’s 11th Annual General Meeting will be held on Thursday, September 13, 2018 at 12:30 pm in Phoenix, Arizona (in conjunction with the AABP Conference). AGM material will be emailed to WCABP members at least two weeks in advance.

CABV/ACVB members from across the country will once again have an opportunity to mingle at a social on Friday, September 14th (8:00 to 10:00 pm), generously sponsored by Vetoquinol.

Watch for further details!

Maureen Donnelly
Senior Sales Representative
Bayer Inc., Animal Health
Mobile: 431-336-4256
maureen.donnelly@bayer.com
www.animalhealth.bayer.ca
It’s possible you’ve never heard of leafy spurge. But if you live in the Prairies, you’ve likely seen its lanky stalks and mustard-yellow buds standing out amongst the endless fields of green along the highway.

This seemingly innocuous plant carries with it a menacing reputation. Leafy spurge is prone to rooting deep into ranchlands and snuffing out vitally important local flora in the process — an unwanted pest that’s unpalatable or even toxic to livestock and borderline impossible to eradicate.

“It goes in and it’ll dominate an area, or at least parts of an area, and then you’ll lose a lot of native species and there will not be nearly as much available forage for ranchers,” says Jonathan Bennett, an assistant professor at the University of Saskatchewan (U of S).

“You can go out and spray it with an herbicide, and that herbicide will stay there in the soil for five years and keep suppressing the plant for that amount of time. But what you’ll often find is that it just pops up on the edges of the area that you’re spraying.”

Bennett, a recent addition to the Department of Plant Sciences at the University of Saskatchewan College of Agriculture and Bioresources, has targeted leafy spurge through his work in plant community ecology. This area of study explores the complex relationships among different species of plants as well as between those plants and the people or animals that inhabit the same environment or rely on plants for food.

Aside from sweeping, potentially-catastrophic issues such as climate change or drought, Bennett says invasive species such as leafy spurge can be among the most substantive concerns faced by producers.

“These plants, once they get established, can have pretty tremendous impacts on how all of these plant systems function, and we really need better ways of controlling them,” he says. “If we can understand how these non-native plants interact with the species that are already there, we can use that knowledge to manage these systems a little bit better.”

Bennett has always been fascinated with the natural world. His interest in plant community ecology grew during his master’s work in insect ecology at the University of Windsor where he conducted research in tomato greenhouses. It’s where he also realized that to gain a fuller understanding of his six-legged subjects, he needed to learn all he could about the plant life on which they rely for habitat and sustenance.

The health of those tomato plants, as well as the other plants we had in there, really determined how well the insects were doing,” Bennett says. “In the end, I felt like I couldn’t explain anything that was happening with the insects unless I could explain what was happening with the plants first.”

That important revelation took Bennett to the University of Alberta where he worked on grasslands plant communities at the Roy Berg Kinsella Research Ranch as the focus of his PhD degree.

Now that he’s connected with the U of S, Bennett is looking forward to working with the Livestock and Forage Centre of Excellence (LFCE), a unique complex of field laboratories that will...
WCVM Production Animal Club Report

Hope everyone is having a great start to the spring! To wrap up the school year, we had our annual general meeting and elected a new executive board! I will announce those newly elected in the new school year when the executive list is complete. We had Battle of the Beasts and that was a successful event with lots of great food and people. We also had successful labs like the camelid handling and dehorning labs that took place at the end of the year. There will be plenty more in the new year that I look forward to telling you all about.

Stay tuned for the great year the PAC will have once again in the new school year!

Have a great start to the summer!

Thanks everyone,
Will Lillico
WCABP/CABV Representative

model all aspects of raising livestock on the Prairies.

He describes one such project that he’s excited to begin with the LFCE: a long-term study exploring the dynamics of plant-soil interaction. The goal, Bennett says, would be to monitor a select few forage species over a decade or more, noting how soil disease develops and potentially discovering new ways of staving off disease in the process.

“What happens when you only grow one plant in a spot at a time is it tends to increase the disease in the soil — essentially there’s no patch that’s not that plant, and it makes it easier for disease to get everywhere,” Bennett says.

“What I’d like to see,” he explains “is if we can develop ways of growing different forage plants together that minimizes disease presence in the soil or that we could rotate different species to accomplish the same goal.”

Bennett was quick to point out, however, that interactions with soil microorganisms can be good for the plant. “Mycorrhizal fungi, for example, are found in the roots of most plants. These fungi get sugars and fats from the plant, but in exchange, they help the plant increase nutrient uptake, tolerate drought and even resist disease.”

Even these relationships can be erratic, says Bennett. “Mycorrhizal fungi fulfil a lot of important functions in healthy soils, but some problematic invasive weeds like knapweed and leafy spurge can manipulate these associations to gain an advantage. This may be one of the reasons why these plants are so challenging in rangelands.”

It’s a complicated task, trying to balance interactions between living beings — regardless of whether they’re plant, animal or human — but it’s an idea that strikes at the heart of why Bennett finds his work so vitally important.

“What it really comes down to is being able to understand these complex systems and maybe being able to use that understanding to manage them more effectively and maintain biodiversity,” says Bennett.

“If there’s anything we can’t make more of, it’s land. We can’t go out and create a new environment.”
Mastitis is estimated to cost >$600 annually per cow in Canada, with subclinical mastitis and preventive measures having the biggest effects. Despite the impact and cost of subclinical mastitis, preventive measures tend to target lactating cows, with limited attention given to udder health in heifers. As that latter have never been milked, they are generally assumed to not be at risk for mastitis. However, in other countries, in the early post-calving period, rates of mastitis are higher in heifers than in older cows, with more severe outcomes. Differences in outcomes may be attributed to the pathogens involved. In general, whereas mastitis in older cows is frequently caused by contagious pathogens transferred during milking, mastitis in heifers is frequently caused by environmental pathogens.

Using data collected by the Canadian Bovine Mastitis and Milk Quality Research Network from 91 herds across 4 regions in Canada in 2007 and 2008, we determined rates of clinical mastitis, udder infections, and elevated SCC (>200,000 cells/mL) in heifers during the first 30 days in milk (DIM) and compared these parameters to those in older cows. We chose to focus on the first month of lactation, as those infections are more likely to reflect pre-calving exposures. During the first 2 DIM, clinical mastitis occurred more frequently in heifers than in older cows, but after 4 DIM, rates of new clinical mastitis cases in heifers were lower than in older cows (Figure 1).

Over the first month, 4.1% of heifers were treated for clinical mastitis compared to 5.3% of older cows. In cases of clinical mastitis in heifers, non-

*aureus* staphylococci (NAS: a diverse group of bacteria) were the most commonly isolated bacteria (25% of cases), whereas in older cows, *Staphylococcus aureus* was most commonly isolated (18% of cases). Infections of the udder without clinical signs were more common in heifers than in older cows (33 versus 26% of quarters, respectively). Environmental pathogens were more common in older cows, whereas NAS was more common in heifers than older cows (26 vs 18%). Although these infections were not accompanied by clinical mastitis, they still affect milk production and increase susceptibility to more serious infections later in lactation.

Clearly, mastitis in heifers is as big a problem as in older cows. Differences between heifers and cows in the type of pathogen may indicate differences in source and highlight the importance of management. Measures to prevent mastitis in older cows may not work well in heifers. In 2012, the National Mastitis Council published a 10-point plan for effective mastitis management targeted at heifers, with a focus on pre-calving practices and nutrition.

We extended pre-calving therapy to also include non-antimicrobial treatments intended to improve post-calving udder health (e.g. internal teat-sealants, vaccines), and conducted a systematic search of published studies to determine effectiveness of these pre-calving treatments in heifers. Treatment of any sort prior to calving reduced rates of clinical and subclinical mastitis and udder infections by 40% on average. Effectiveness of treatment also varied by type of treatment. On average teat sealants and combinations of teat sealants and antimicrobials reduced rates of mastitis the most (69 and 66%, respectively; Figure 2). Antimicrobials alone and vaccines also reduced rates of post-calving mastitis (42 and 45%, respectively). An understanding of the types of pathogens causing mastitis is also very important for selecting a treatment type, as treatment effectiveness varies by pathogen type. For environmental pathogens, teat sealants and their combinations with antimicrobials were most effective at reducing mastitis rates (73 and 75%, respectively) whereas for contagious pathogens, antimicrobials and vaccines were most effective (59 and 44%, respectively). The prevalence of non-

*aureus* staphylococci (also known as coagulase-negative staphylococci) infections was most effectively reduced by teat sealants and antimicrobials (54 and 49%), reflecting their complex etiology which can be similar to environmental and contagious pathogens.
The winter semester wrapped up with a very busy schedule for all of us here at UCVM. We finished up finals in the last week of April and what a relief it is to be done. Although we didn’t have much of a spring, summer is upon us and that means we can escape the classroom for a while! The UCVM Production Animal Health Club kept busy until the end of the semester with a lunch seminar from UCVM alumni, Dr. Kelsey Gray, as well as Dr. Luke Nickel, about their clinical practice experience within the swine and poultry industries since graduation. We also had all of our executive busy fundraising to replenish our club account and support the student bursaries that were granted to our club members. They are used to cover travel and registration costs for varying production animal health conferences and seminars that our students attend throughout the year.

Looking ahead, the emails have been sent out about registration for the AABP conference in September down in Phoenix, Arizona. It’s looking like we will have a handful of students who are able to make the trip and take in this exciting conference! It’s great when there can be strong UCVM representation for an international event like this. We also have The Summit coming up in June with The International Symposium on Beef Cattle Welfare & The UCVM Beef Cattle Conference being combined this year. We hope to see you there!

For the summer, we have various club members who are working in rural mixed animal practices, performing research at UCVM, travelling abroad, or starting their 4th-year rotations.

Congratulations to the Class of 2018 who have recently graduated and are off to make their mark in the veterinary profession.

I would like to thank Alycia Webster for being a great president over the last year, and for providing me with her amazing guidance on how to lead this year. I would also like to recognize and thank the rest of our club executive (Brenden Hilgarter, Julia Case, Ryan Morgan, and Tamara Michalyk) who have been very supportive every step of the way and who are great at promoting production animal both in and out of the classroom.

I look forward to updating you about what we get up to over the next year.

Happy trails,
Rae-Leigh Pederzolli,
UCVM PAH Club President

Figure 2: Change in post-calving rates of clinical and subclinical mastitis and udder infections in heifers grouped by pre-calving treatment (review of 60 studies).

Recognizing differences between heifers and older cows is crucial in working towards improving udder health in heifers. Many questions about management of heifers remain unanswered. For example, data on housing of lactating cows in Canada are easily accessible, but similar data on heifers are difficult to access. In addition, pre-calving management of heifers varies considerably across Canada, although the scale of this variation is unquantified.

By paying more attention to heifer management, their disease rates and making this information more easily accessible, we will better be able to understand practices most effective at reducing mastitis in Canadian heifers. Choosing a pre-calving treatment to reduce heifer mastitis should be based on understanding the infectious pathogens involved, balanced with concerns to minimize antimicrobial resistance.

Visit www.wcabp.com to keep tabs on your association and your industry:

- Conference Information Updates on the 2019 conference and audio/video from the 2015 to 2018 conferences
- Vet Advice columns contributed by WCABP members, and published in the Canadian Cattlemen
- Online resources Numerous links to other useful and interesting websites
Welcome New WCABP Member!

Dr. Kane Christiuk
Warman Veterinary Services
Saskatoon, SK

Upcoming Events

The Summit! June 19-21, 2018, Calgary, AB This event combines the International Symposium on Beef Cattle Welfare and the UCVM Beef Cattle Conference. For details and registration, visit: www.vet.ucalgary.ca/thesummit.

2018 Canadian Veterinary Medical Association (CVMA) Annual Convention July 5-8, 2018, Vancouver, BC For more information, contact Sarah Cunningham by phone at (613) 236-1162, ext. 121, email scunningham@cvma-acmv.org, or visit www.canadianveterinarians.net/science-knowledge/annual-convention.

World Buiatrics Congresses August 28 - September 1, 2018, Sapporo, Japan For more information, visit www.wbc2018.com.

SVMA Conference and Trade Expo September 6-9, 2018, Saskatoon, SK. For more information, visit www.svma.sk.ca.

Canadian Association of Bovine Veterinarians (CABV) AGM and Member Social September 13-14, 2018, Phoenix, AZ


Member-to-Member Classifieds

Dawson Creek Veterinary Clinic looking for mixed animal or small animal veterinarians

Do you want the opportunity to practice high-quality medicine, make up to six figures and start with four weeks of holidays per year? The Dawson Creek Veterinary Clinic is looking to hire two full time or part time mixed animal or small animal veterinarians to join our team.

Dawson Creek is a beautiful area close to the Peace River Valley with incredible outdoor opportunities as well as a growing community with a strong economy. We are a client focused, community based practice that values quality of life.

Our clinic is a modern, progressive mixed animal practice. We have a very competent and enthusiastic team with 6 veterinarians. The practice is 50% small animal, 50% large animal with a good mix of equine and cow calf.

To learn more about our clinic, check out our website at www.dcvet.ca or find us on Facebook.

If you are interested in this position, please contact our human resources manager by email at info@dcvet.ca or fax (250)782-2426.

To place an ad, please contact:
Phyllis Mierau, Administrator
Phone: 1-866-269-8387
Email: info@wcabp.com

Mark your calendars!
2019 WCABP Conference

Thursday, January 17 to Saturday, January 19, 2019
Sheraton Cavalier Hotel
Saskatoon, SK

Bayer HealthCare

Eric A. Pasimio
Technical Sales Specialist
Bayer Inc., Animal Health
Mobile: 780-235-1591
eric.pasimio@bayer.com
www.animalhealth.bayer.ca
What’s the prize?
A total of $1,500 will be available in prize money.

Who is eligible?
Students enrolled in WCVM or UCVM undergraduate studies as well as 2018 graduates (only for work carried out prior to graduation).

What is the process?
Written summaries are limited to 250 words. Cases should include:
• the presenting complaint,
• case workup,
• laboratory results, and discussion.
Research presentations should incorporate background, methods and materials, results, and discussion.
The WCABP Board of Directors will choose 4 finalists to present at WCABP’s Annual Conference. You will be informed of this decision by November 30, 2018. Finalists must then provide a 10-minute PowerPoint presentation to conference attendees. Presentations will be judged on scientific merit and presentation skills.

What is the deadline?
Case/research summaries must be submitted by November 1, 2018, by email to info@wcabp.com.

Why?
This is a student competition to encourage development of scientific inquiry methods and communication abilities. We also value student involvement in WCABP and enjoy the networking opportunities.

Got Questions?
If you have questions, please feel free to contact Dr. Collin Lawrence (Conference Chair) at 1-866-269-8387.

Criteria to consider for nominees
The veterinarian must be a member in good standing with their respective association, or if retired, to have been a member in good standing at the time of retirement. The Boehringer Ingelheim WCABP Veterinarian of the Year Award nominee should be a WCABP member; however, the Board may choose to recognize a non-WCABP veterinarian who has made a significant contribution to bovine practice in Western Canada.

Deadlines for all nominations will be December 1st of each year.

What is the prize?
With this award, WCABP is attempting to honour (or recognize) a veterinarian who embodies some, but not necessarily all, of the following criteria:

• History of service and dedication to veterinary practice and the cattle industry.
• History of service to the veterinary profession, specifically to the WCABP and other Western Canadian provincial veterinary associations.
• Reputation for clinical competency or for being a pioneer or leader in bovine medicine, surgery, or herd health.
• (If the nominee is a non-member) a national or international reputation related to bovine medicine, surgery, and herd health, and accomplishments that have had a positive influence on bovine practice in Western Canada.

Notice
A call for nominations will be included in the two newsletters leading up to the deadline for nominations and posted on the website for at least 90 days prior to the nomination deadline. The secretary-treasurer may also elect to send an email to all members soliciting nominations.

Nomination Procedure
Each nomination must include a brief biography and a rationale for why you believe this person is deserving of the award. The letter of nomination will be published in the first newsletter following the award. The secretary-treasurer will collect all the nominations and present them to the board for review and selection. The secretary-treasurer will then contact the recipient at least two weeks before the meeting to advise him or her of the place and time of the award.
This Will Make Your Skin Crawl  

Once a suitable host is found, the adult ticks feed and mate on the animal. The engorged females drop to the ground, lay several thousand eggs a few weeks later, die, and the cycle continues. This life cycle can be completed in one year but usually takes two to three years.

Infected cattle are sources of infection for others in the herd. Male ticks may move from one host animal to another seeking mates. Any tick that picks up the anaplasmosis bacterium from an infected host, can transmit the pathogen when it feeds on uninfected cattle.

Surveys from a half century ago found that the Rocky Mountain wood tick occurred in B.C., Alberta, and western Saskatchewan, and the American dog tick occurred east of central Saskatchewan. An 80 km gap in south-central Saskatchewan separated the two species. Their ranges may have expanded or contracted since then due to movement on animals, changing farming practices, grassland acreage, or climate.

Shaun Dergousoff and Tim Lysyk (AAFC Lethbridge) and collaborators at the Universities of Saskatchewan (Neil Chilton) and Manitoba (Kateryn Rochon) carried out a study funded by the Beef Science Cluster to update these tick distribution maps.

What They Did

Over 200 sites from Western BC to the Manitoba-Ontario border were sampled for ticks in April through July in 2014, 2015 and 2016. Environmental conditions, such as vegetation, soil, temperature, and precipitation were recorded for each location.

What they Learned

The Rocky Mountain wood tick hasn’t moved very far over the past half century. It was found in all three years in 20% of the BC sites, 32% of the Alberta sites and 17% of the Saskatchewan sites.

It was never found in Manitoba. Tick density was slightly higher in Alberta than in BC or Saskatchewan and was fairly consistent from year to year. It wasn’t found north of a line drawn through Dundurn, SK and Didsbury, AB, and wasn’t found east of Foam Lake, SK. It was most likely to occur where average fall and winter temperatures were between -2 and -5°C, and where springs were moist, and summers were dry.

The American dog tick has expanded its range by at least 350 km to the north and 300 km to the west since the 1960’s. It was found all three years in 81% of the Manitoba and 70% of the Saskatchewan sites. Tick density was similar between Saskatchewan and Manitoba in all years. It was rarely found west of Lloydminster, occurring at only a few locations in Alberta and BC in 2016 and wasn’t found north of Nipawin, SK. It was most common where fall and winter temperatures averaged -6 to -10°C, and where spring precipitation levels were between 155 to 164 mm.

What it Means

The Rocky Mountain wood tick and American dog tick aren’t geographically isolated anymore. Their ranges overlap by more than 300 km in southern Saskatchewan. These ticks share the same hosts throughout their lifecycles, so the fact that their ranges overlap may increase the risk that bloodborne diseases may spread further or faster than they could have before.

Understanding the geographic range and the environmental conditions that ticks prefer helps to assess the risk of tick infestations in a particular year or region, and helps producers decide whether altered grazing management practices or the use of a permethrin or pyrethrin product for parasite control is something to discuss with their veterinarian.

The fires across Western Canada last summer and fall may pose a temporary setback to some tick infested areas, but as soon as there is enough vegetation to attract wild animals, the ticks will move back in with their hosts.
I AM A RANCHER

TAMARA CARTER

Lacadena, SK

Reputation is everything.
Even with generations of experience,
we’re still learning every day with
the advances in technology and
livestock husbandry.

I am a farmer. My farming is real.
I AmAFarmer.ca

Innovation in animal wellbeing means looking to the past to inspire the future. When you need to treat pain and inflammation,
injectable Metacam® 20* offers fast, accurate and long-lasting pain relief to help animals reach their full potential.

* Metacam® 20 mg/mL Solution for Injection

Metacam® is a registered trademark of Boehringer Ingelheim, used under license.
© 2018 Boehringer Ingelheim (Canada) Ltd. All Rights Reserved.
FROM POTENTIAL TO PERFORMANCE

Featuring the Revalor®-XR
delayed and extended release implant

A UNIQUE driver of optimal productivity
for FEEDLOT STEERS or HEIFERS

EXPERIENCE THE BENEFITS

- Increases the rate of weight gain and improves feed efficiency during 70 to 200 DAYS after implantation
- Equivalent production gains to an initial (day 1) or terminal (day 70) implant protocol

GET THE RESULTS OF A PERFORMANCE-BASED TERMINAL IMPLANT WITHOUT THE HASSLE OF RE-HANDLING

- Appropriate for feedlot steers or heifers
- Gives you the flexibility to handle cattle when you think the time is right

Want an implant that starts immediately and lasts for up to 200 days?

Try Revalor®-XS for steers or Revalor®-XH for heifers!

Merck Animal Health: Driven to enhance potential