Western Canadian Association of
BOVINE PRACTITIONERS
NEWSLETTER VOLUME 7 NO. 1 MARCH, 2002

President's Message - Bob Ruckman

As this is my first President's Message to our membership, I will open with a personal introduction. I am Bob Ruckman (Colorado State, 1992) of Medicine Hat, Alberta. My mixed-species practice is in the "desert of Canada" – southeastern Alberta. My bovine focus is mainly beef: cow-calf with an active backgrounding clientele. My wife, Jan, and I are raising three wonderful children (Jesse – ten, Kelly – eight, and Natalie – four). Sounds like the typical "cow vet" scenario; too dry, lots of calves and bulls, but ALL WORTHWHILE because of your beautiful family and their support.

I welcome our new (and renewed) Board Members – Drs. Craig Dorin and John Campbell. John served on the Board in the early years of WCABP and has graciously accepted the role of President Elect. John will Chair our 2003 Conference to be held at an Alberta venue. We welcome members' input to continue providing a quality CE event.

Many thanks go to Ray Butler and Erika Rauser for organization and efforts that nurtured the success of our recent tenth annual Conference in Saskatoon. The Conference was enlightening and informative, peaking our awareness of our ever-changing industry and our clients' wants and needs. Personally, the Conference continues to foster meeting and interacting among colleagues and friends, both old and new. This opportunity develops an indescribable benefit amongst our membership and profession.

Our industry friends from animal health and cattle organizations deserve a HUGE THANK YOU for the success of our auction to support the CARD grant. Our friends' gracious donations of items enabled us to exceed our challenge of raising $10,000 to assist the CARD grant monies WCABP received. This initiative allows us to begin the next step: the promotion of the bovine veterinary career to prospective students. Thanks to all bidders and buyers!

Speaking of auctions, it is with great pleasure that I inform you of the success of the Canadian Bull Congress of Camrose, Alberta in raising over $24,000 for the Dr. Dwayne Elaschuk memorial scholarship on January 18. This fund will be managed by a private trust allowing an award, in memory of Dwayne, to be given annually to a WCVM student with bovine practice interests. This fund-raising endeavor accented our recognition of Dwayne, our founding WCABP President, as 2001 Boehringer Ingelheim WCABP Practitioner of the Year, posthumously.

I have goals to continue along Dr. Elaschuk's path of leadership. Our Board of Directors' focus and initiatives continue toward involvement of the bovine veterinarian on industry issues such as food safety, animal welfare, trade, and environment. I strive to continue to "raise the bar" for our members by increasing the value and standards of Bovine veterinary services and lifestyle, thus making the profession of being a "cow vet" even more WORTHWHILE.

MORE INSIDE...

WCABP Board of Directors 2002

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From the Secretary-Treasurer's Desk

The year 2001 was one of growth for our organization. Our current membership stands at 247 regular members, four life members, and 70 students. The increased membership dues from last year have resulted in a budget that has, for all purposes, broken even to cover the administration costs of the organization. As well, your membership dues covered the Ray Butler bursary scholarships that went to three first-year vet students. In subsequent years, we hope that each of you will donate a few extra dollars when you renew your annual membership to cover these bursaries. As well, we will look into fundraising activities that will help pay for these bursaries.

Another initiative the Board has undertaken to entice young people into veterinary medicine and a career in bovine practice has been to secure funds to develop some communication tools. These tools will include a video, Powerpoint presentation, and brochure on being a "cow vet" and could be used by you, as practitioners, when making presentations in your local communities to 4H clubs, junior, and senior high school students. We are encouraging you to help us promote bovine practice in your local communities. The Board was successful in securing $40,000 from the four western provincial Ag and Food Councils and raised $10,750 through the convention auction to match the grant funding as required. I wish to thank all of those who generously donated items for the auction.

The Board continues to provide to you updated bull forms, BSE software, and Dr. Barth's manuals. Dr. Barth is currently working on a new scrotal tape to replace the Coulter tape, which is no longer in production. An example of the tape was presented during industry presentations at the convention. We will keep you posted on this effort in our newsletter, which we will continue to send to you on a quarterly basis. Please check out our website as well at www.cattle.ca/wcabp/. The site contains useful links, information on WCABP, newsletters,

Continued on page 3...

Conference 2002 – A Recap

The tenth annual WCABP Conference was held at the Saskatoon Inn from Wednesday to Sunday, January 16 – 20, 2002. This was the first year that an annual meeting was held more than four days. This year's conference also differed in other ways; notably absent was a beef in-depth seminar and 'practice tips'.

The dairy post conference seminar held on Saturday and Sunday was an intensive interactive workshop led by Dr. Oded Nir, Director of Veterinary Services and Animal Health for the Israeli Ministry of Agriculture and Rural Development.

Oded's participation unearthed a surprising discovery about air travel pricing. The cost of a return flight (Tel Aviv to Saskatoon) is a fraction of the same service (New York to Saskatoon). Perhaps this should be kept in mind when planning future meetings. Planners should explore the feasibility of inviting speakers from distant lands, notably Scandinavia, Australia, and Europe.

Although the Internet workshop suffered from technical difficulties due to connection issues, those in attendance still got a taste of the wealth of veterinary url sites that are currently available.

The Board is carrying through on a commitment to publish proceedings of the conference to be distributed to the membership, an innovation that is made possible by last year's fee increase.

The interest and support of our colleagues in industry was, once again, in evidence and is very much appreciated.

With completion of the 2002 meeting comes the planning for WCABP '03. Dr. John Campbell, recently installed as President Elect of the Association, has accepted the challenge of coordinating next year's conference. He invites comments and suggestions from all WCABP members. John's email address is john.campbell@usask.ca.

Ray Butler

From the Secretary-Treasurer's Desk
continued from page 2

Vet Advice columns, weekly news updates, and information on new issues, such as Johnes, Foot and Mouth Disease, and Anthrax.

This year, the Board has been involved in various political issues on your behalf. Probably the most notable has been Dr. Ken Linde's lead in developing a CVMA electronic task force to discuss veterinarian's role in on-farm food safety programs. The hope is to identify areas where veterinarians may provide service to the industry-led on-farm food safety programs and to communicate that to the national commodity groups as well as the Canada On-Farm Food Safety Program (COFFSP). Related to this, the Board wrote a letter to the national and provincial cattle associations indicating our interest in participating in the beef on-farm food safety program. WCABP has also written letters on your behalf to Bureau of Veterinary Drugs on improving its efficiencies for licensing of new products and trying to develop equivalency in licensing and labeling of products between the US and Canada. We have also written a letter to the Pest Management Branch in regards to KRS Spray, which is expected to be removed from the market shortly. Currently, we are looking into writing a letter to Ducks Unlimited, a US organization, regarding their motion to purchase and take out of production large tracts of agriculture land in the western provinces.

For new services in 2002, we are looking at providing conference proceedings to all members and posting all the presentations on our website. As well, we are looking into developing a membership directory for members, which will be available on our website under a password protection. If we can provide any other services to you, please give our office a call at 1-866-269-8387 or email us at wcabp@incentre.net.

Joyce Van Donkersgoed, DVM, MVS

Alberta's Johne's Disease Control Program

Introduction

Alberta Agriculture Food and Rural Development (AAFRD) has worked for the past five years to design and implement an integrated, comprehensive Johne's disease research and control program. In conjunction with the Alberta Johne's Working Group (AJWG), a committee comprised of government, ruminant livestock industries, and veterinary representatives, AAFRD has developed a Johne's disease control program for multiple ruminant species geared specifically to the needs of Alberta's livestock industries.

Alberta's Johne's disease control program is comprised of four integrated components:

1. awareness and education;
2. veterinary accreditation;
3. the Voluntary Herd Status Program; and
4. collaborative research.

Awareness and Education

Awareness is the first step in any major undertaking but takes on significant implications in a project such as the Johne's disease control program. In 2001, AAFRD, together with industry sponsors, launched a traveling road show to bring information to the producers and practitioners of rural Alberta. The purpose of the road show was multi-faceted in that it provided a means to update producers on the latest Johne's research findings at the Food Safety Division (FSD), to inform and receive feedback on proposed Johne's disease control programs, and to improve awareness of departmental activities.

AAFRD is also in the midst of an awareness and education program to provide producers and practitioners with applicable resources on the topic of Johne's disease. AAFRD has established a website devoted to the Alberta Johne's control program that provides information as well as links to related sites (http://www.agric.gov.ab.ca/livestock/johnes-control/). Additionally, AAFRD is in the process of developing printed materials directed to producers as well as manuals designed for use by veterinarians.

Veterinary Accreditation

The FSD of AAFRD established the provincial Veterinary Accreditation Program in conjunction with the Alberta Johne's Working Group to support the international standing of Alberta's Johne's Herd Status Program. Under the program, private veterinary practitioners are accredited by the Alberta Johne's Working Group for a period of three years to work with producers to manage Johne's disease. The end result is a team of specialized veterinarians who provide an added layer of confidence to government, producers, and trading partners alike.

The accreditation process is designed to provide private veterinarians with information specific to Johne's disease, the Voluntary Cattle Johne's Herd Status Program, program logistics, the protocol of sampling, and issues relevant to control of Johne's disease. After training is complete, the accredited veterinarian is better equipped to provide background information to producers, collect and submit samples, interpret lab results, and to petition for certification of herd status.

AAFRD and the Alberta Johne's Working Group have jointly conducted Johne's Herd Status Accreditation training sessions across Alberta during fall of 2001 and during the Alberta Veterinary Medical Association mid-winter conference in January 2002. Currently, 103 Alberta veterinarians have been accredited for the Voluntary Johne's Herd Status Program.

Voluntary Cattle Johne's Herd Status Program

It is critical to establish and increase the probability of a livestock herd's freedom from Johne's disease. The Voluntary Cattle Johne's Herd Status Program is an Alberta initiative to improve public confidence in the industry's commitment to reduce the likelihood of Johne's disease in cattle. At this time, the concept of a national Johne's disease control program is also under consideration.

The Alberta Johne's Working Group oversees and manages the Voluntary Johne's Herd Status Program with audit and certification services provided by AAFRD. The program requires the voluntary participation of the producers from across the province. Herd veterinarians who elect to work with producers wanting to enroll in the Alberta's Voluntary Cattle Johne's Herd Status Program to manage Johne's disease must receive accreditation from the Alberta Johne's Working Group.

Initially, interested cattle producers must contact an Alberta Johne's Working Group-accredited veterinarian to enroll in the herd status program. The accredited veterinarian responds with specific information on Johne's disease and the Voluntary Cattle Johne's Herd Status Program to assist each producer with the decision of whether to participate in the program.

Once the herd is enrolled and has been assigned its confidential coding number, random samples are collected by the accredited veterinarian and submitted to a USDA certified laboratory for testing to determine the presence or absence of Johne's disease. If the disease is present, an accredited veterinarian tailors a control program to the herd. Where the disease is absent from the herd, the producer and practitioner work to maintain this status and to market it. The veterinarian applies to the Alberta Johne's Working Group, with supporting documentation, for certification of the herd status level by AAFRD (see Fig. 1).

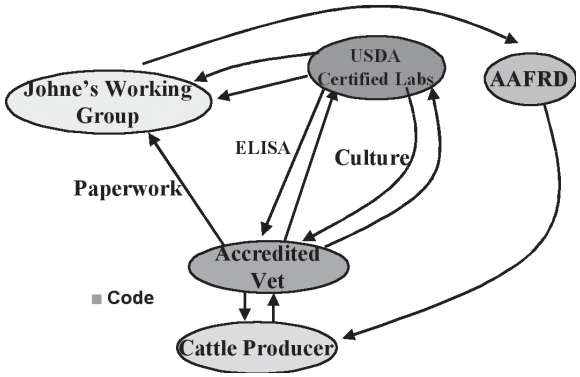
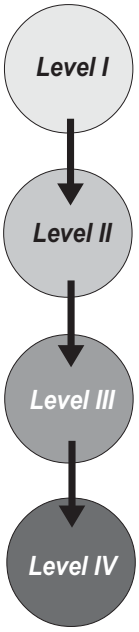


Figure 1. Schematic of Voluntary Cattle Johne's Herd Status Program: Organizational Control

Simply stated, Alberta certifies four levels of herd status, each with increasing degrees of confidence that the herd is free from Johne's disease (see Fig. 2). It is essential that Alberta's program be economical, valid, and not subject producers to concerns about false positive results (likelihood of positive results in animals known to be free of the disease). The Voluntary Cattle Johne's Herd Status Program provides all producers, regardless of the size of their herd, a means to initially assess their status with minimal investment. Although modeled after the United States Animal Health Association (USAHA) protocol for the preliminary stage, Alberta's Voluntary Johne's Herd Status Program differs substantially in the subsequent levels in that they are based on the length of time and number of times the producer subjects the herd to testing.

Unknown Herd Status



Submit 30 randomly selected ≥ 2nd lactation cattle for ELISA to a USDA certified lab → all negative on ELISA or confirmed negative on culture by AAFRD lab to achieve level I.

Six to 18 month delay
Submit strategically pooled fecal samples on all ≥ 2nd lactation cattle (groups of 5/ container) for culture → all pools must be confirmed negative on culture to achieve level II.

One-year delay
Repeat strategic pooling of cultures, as for Level II, to achieve level III.

One-year delay
Repeat strategic pooling of cultures, as for Levels II and III, to achieve level IV

Herd owners can maintain any level with annual ELISA testing of 30 randomly sampled ≥ 2nd lactation cattle → all negative on ELISA or confirmed negative on culture by AAFRD lab.

(ELISA: Blood/ serum test, which will detect antibodies in blood)

Figure 2. Schematic of Voluntary Johne's Herd Status Program: Levels

While the Voluntary Cattle Johne's Herd Status Program does not certify freedom of the herd from Johne's disease, it does certify a lowered risk of infection for the herd compared to a herd of untested animals. Through the combined efforts of producers, practitioners, government and industry, the Voluntary Cattle Johne's Herd Status Program streams test positive herds into educational and control programs. This process is assisted through a herd coding system that maintains confidentiality and prevents labeling the herd

Continued on page 6...

2001 Boehringer Ingelheim Veterinarian of the Year

On Friday, January 18, 2002, WCABP awarded the Bovine Practitioner of the Year Award posthumously to Dwayne Elaschuk. This award is bestowed in recognition of outstanding contributions to the field of bovine medicine in western Canada.

Dwayne Elaschuk was born in Smoky Lake, Alberta on July 19, 1952. He died tragically in a car accident near the home of his youth in Smoky Lake on July 14, 2002.

Dwayne was the founding president of Western Canadian Association of Bovine Practitioners. Dwayne was an active participant in the Alberta Dairy Congress and the Milk Quality Board of the Alberta government. He was an active member of the American Animal Hospital Association, American Association of Bovine Practitioners, Society of Theriogenology, Alberta Veterinary Medical Association, and the Canadian Veterinary Medical Association. Dwayne was the post-chairman of the Camrose Regional Exhibition Board and was actively working with the Johne's Control Group in Alberta at the time of his death. Under his ownership, the Camrose Veterinary Group was the Small Business of the Year in 1997.

Dwayne enjoyed life to the fullest and is dearly missed by the staff of the Camrose Veterinary Group, his family, and colleagues. Dwayne was a compassionate veterinarian, an exceptional boss, friend, mentor, husband, and father. His special interests in veterinary medicine were dairy herd health and production medicine. His hobbies included fishing, camping, and traveling. Dwayne will always be remembered for his compassionate care and warm personality. He will be sadly missed and lovingly remembered by all of us who knew him well.

"...compassionate veterinarian, an exceptional boss, friend, mentor, husband, and father."

(Submitted by Dr. Bruce H. Grohn, Western College of Veterinary Medicine, University of Saskatchewan, Saskatoon, Saskatchewan)

Alberta's Johne's Disease Control Program

continued from page 5...

positive. Voluntary vigilance, changes in management and biosecurity, on the part of the principals in the program, provide improved confidence of disease status to buyers and sellers of livestock.

Collaborative Research

Upcoming research in Alberta explores the prevalence and risk factors for Johne's disease in provincial dairy and beef herds (100 herds of each) and will validate strategically pooled fecal cultures in infected herds. Research for the dairy component of Johne's disease started in winter 2002 and the beef component will follow later in the year.

Research results will be used to develop producer and practitioner information packages, promote the program, update website and communication material, and to advertise herd status accomplishments as well as to provide information to interested parties.

Note: An earlier version of this document, appeared in the Proceedings of the Western Canadian Dairy Seminar, Red Deer, Alberta, March, 2002

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WCABP Life Membership Awarded to Dr. Len Martin

One of WCABP's extensively experienced members was honoured at the 2002 Conference. Dr. Len Martin, a mixed practitioner from Outlook, Saskatchewan was awarded a life membership in the Association.

Len was born and raised on a mixed farm at Asquith, Saskatchewan where he received his early education. He received the DVM Degree from the Ontario Veterinary College then entered solo practice at Wynyard for two years before joining forces with his brother, Dr. Murray Martin (OVC '56) in mixed practice at Brandon, Manitoba.

From 1968 to 1973 he was employed as a pathologist at MacDonald College while pursuing graduate studies and the award of a Masters Degree in Parasitology from the University of Montreal.

He joined the Saskatchewan Department of Agriculture in 1973 and served as a dairy consultant for thirteen years before moving to Missouri and a year of private practice with special interests in dairy nutrition.

Len accepted a two-year appointment with the Canadian International Development Agency with a dairy project in Lesotho before returning to Canada and a brief appointment with the Health of Animals Branch, Canada Department of Agriculture.

He later taught veterinary technology at the Saskatchewan Institute of Applied Arts and Science in Saskatoon before resuming practice, this time in Outlook, Saskatchewan, where he has been for the last ten years.

Len is a founding member of WCABP and continues to be an active supporter. He participated in the dairy seminar at the 2002 Conference where instructor, Dr. Oded Nir, Director of Agriculture and Rural Development for the State of Israel, presented him with his life membership plaque.

Offstream Water and Trace Mineral Salt as Management Strategies for Improved Cattle Distribution

J. Anim. Sci. 2002. 80:346-356

ABSTRACT

The objective of this study was to test the combined effect of offstream water and trace mineral salt on cattle distribution in a riparian meadow and its adjacent uplands. From July 15 to August 26, 1996 and 1997, three treatments were each randomly assigned to one pasture in each of three blocks. Sixty cow/calf pairs were then randomly allotted to the grazed pastures. The treatments included:

1) stream access and access to offstream water and trace-mineral salt (offstream);
2) stream access and no access to offstream water or trace-mineral salt (no-offstream); and
3) ungrazed control.

The response of cattle was measured through visual observations of cattle distribution, grazing activity and travel distance, cow/calf performance, and fecal deposit distribution. Distribution patterns of the cattle, measured as the distance of cattle from the stream, was characterized by a time of day x treatment x time in grazing period x year interaction ($P < 0.05$). No-offstream cattle began the day further from the stream than offstream cattle but consistently moved closer to the stream after the morning grazing period (0600 to 0900). Differences in distribution patterns between the two treatments were more pronounced early in the grazing period than late in the grazing period. Grazing activity, fecal deposit distribution, and travel distance of cattle were not affected by the presence of offstream water and trace-mineral salt. Cows and calves with offstream water and trace-mineral salt gained 11.5 kg and 0.14 kg/d more, respectively, than no-offstream cows and calves averaged across years ($P < 0.05$). Overall, cattle distribution patterns and cow/calf performance were influenced by the presence of offstream water and trace-mineral salt. Changes in distribution were most pronounced early in the grazing season.

Implications

Implementing offstream water and trace-mineral salt into a grazing system can be effective in altering distribution patterns of cattle grazing a riparian meadow and its adjacent uplands and also can result in increased weight gain. The success of this and other management strategies can be tied to the behavioral patterns of the cattle and to the characteristics of the rangeland. Results from this study indicate that offstream water and trace-mineral salt are most effective in decreasing riparian grazing pressure during the beginning of the rotation when forage is plentiful and during the afternoon hours when temperatures are warmer and water availability is crucial. Although these patterns were apparent during this study, each situation is unique and management should be implemented accordingly. Grazing management is complex and should consider location and availability of water, shade, and trace-mineral salt; season; time of day; temperature; and vegetation type and abundance.

OABP News

I am very pleased to announce that OABP is in the process of constructing a website. Our address is www.oabp.ca and we would encourage all to visit the site. Most of it is still under construction, but there is already some useful information in it – please bookmark the site and visit often. We are also pleased to announce that our spring meeting is set for April 11, 2002. The OABP spring event is held in conjunction with the Ontario Agri Business Association and therefore it is a meeting centered around nutrition of cattle. This year we are concentrating on heifer nutrition. It should be a good meeting and we are looking forward to it.

Here at OABP we have had problems attracting members of the eastern part of the province to join our executive. Our executive meetings are generally held around Guelph and this makes for long journeys for those residing east of Toronto. We are very pleased to have three new eastern members in our executive and have decided to involve them in the meetings via speakerphone. We are looking forward to their input and fresh ideas.

In the meantime, we continue to be involved in many different facets of veterinary medicine. We are currently discussing the role of auxiliaries in large animal practice. A questionnaire was sent out to our membership a few months ago. It appears that large animal practitioners see real value in employment of auxiliaries to perform duties such as castration/dehornings, milk and blood sample collections, as well as data entry in computers. We believe that the parameters of who should perform such tasks and under what supervision should be well defined, and we are working with the College of Veterinarians of Ontario to come up with satisfactory guidelines. The issue of employment of auxiliaries to perform tasks on the farm only works within a valid client patient relationship, and the Ontario Veterinary Medical Association has put together a task force to redefine and refine the proper definition of a VCPR. The final draft has been made and it should be made public in the next few weeks.

Lastly, I would like to thank our executive for all the work they do. When I became president of this organization, just a few months ago, I thought this would be a very challenging position. What I didn't know is how much work the members of the executive perform in silence, making my job rather easy and enjoyable. Hats off to them!

Clarice Lulai, DVM, MS

Effects of Water Sulfate Concentration on Performance, Water Intake, and Carcass Characteristics of Feedlot Steers

J. Anim. Sci. 2001. 79:2941-2948

ABSTRACT

Two hundred forty single-source, crossbred steers (304 kg) were used to evaluate the effects of various water sulfate concentrations on performance, water intake, and carcass characteristics of feedlot steers. Cattle were stratified by weight and assigned within weight blocks to five water treatments. Averaged over time, actual water sulfate concentrations (± SEM) were 136.1 (± 6.3), 291.2 (± 15.3), 582.6 (± 16.9), 1,219.2 (± 23.7), and 2,360.4 (± 68.2) mg/L, respectively. Weather-related data were recorded. Increasing water sulfate concentration resulted in linear decreases in ADG ($P < 0.01$) and gain:feed ratio ($P < 0.01$) and a quadratic effect on water intake ($P = 0.02$) and tended to quadratically increase then decrease DMI ($P = 0.13$). Sulfate x period interactions were evident for DMI ($P = 0.01$), ADG ($P < 0.01$), and feed efficiency ($P < 0.01$). Time had quadratic effects on DMI, water intake, ADG, and feed efficiency ($P < 0.01$ for all models). Increasing water sulfate concentration resulted in linear decreases in final weight, hot carcass weight, and dressing percentage, a linear increase in longissimus muscle area, and a quadratic effect on fat thickness over the 12th rib and predicted yield grade ($P < 0.05$ for all dependent variables). Mean daily temperature explained 25.7% of the observed variation in water intake. Other factors that explained a significant ($P < 0.01$) amount of variation in water intake were BW, DMI, water sulfate concentration, barometric pressure, wind speed, and humidity. High water sulfate concentrations had a significant and deleterious effect on performance and carcass characteristics of feedlot steers. Increasing the sulfate concentration in water may have resulted in a functional water restriction early in the trial when ambient temperatures were greatest. However, toward the latter stages of the trial, cattle supplied higher-sulfate water had higher ADG and FE. These improvements later in the trial may represent compensatory gain associated with decreased ambient temperature and water requirements. Averaged over time, a water sulfate concentration of greater than 583 mg/L, equivalent to 0.22% of the diet, decreased feedlot performance.

Implications

Water, particularly during periods of high ambient temperatures, can provide substantial quantities of sulfur to finishing steers. Excessive sulfur consumption has deleterious effects on performance of feedlot steers. On high-concentrate and high-nonprotein-N diets, it would seem that a total sulfur intake of approximately 0.22% on a dry matter basis is optimal and that higher concentrations (0.29% and greater) are detrimental. Adverse effects of high concentrations of sulfate in water were more extreme for younger cattle and with high ambient temperatures.

G. H. Loneragan, J. J. Wagner, D. H. Gould, F. B. Garry, and M. A. Thoren

A Dynamic Model of N Metabolism in the Lactating Dairy Cow and an Assessment of Impact of N Excretion on the Environment

J. Anim. Sci. 2002. 80:248-259

ABSTRACT

Improving N utilization in dairy cows and especially reducing N output in excreta is desirable due to global concerns of agricultural contribution of N to environmental pollution, particularly as ammonia. Data from five N balance experiments were used to develop a dynamic model that was evaluated with independent data. Model predictions of feces, urine, and milk outputs were close to observed values. Statistical analysis showed that 96% of mean square prediction error for feces and urine N output predictions was due to random variation. However, the model tends to overpredict milk N output, especially at higher N intake levels. Evaluation of model predictions for independent experimental observations from Agricultural Development Advisory Service at Bridgets (UK) showed good agreement between predicted and observed urine N output (95% due to random variation). However, there was a slight underprediction for fecal N output (14% mean square prediction error due to bias) and overprediction of milk N output (22% of mean square prediction error due to bias). The model predictions of N outputs in excreta were sensitive to changes in energy concentration of the diet. Dietary protein degradability had only a small influence on predicted fecal N output. However, the model was sensitive in its predictions of urine N when protein degradability was varied. Application of the model to assess reduction in ammonia emissions from dairy cows showed that increasing the energy concentration could potentially reduce ammonia emissions by up to 25% per cow. Similarly, reducing CP concentration in the diet to about 16% could reduce ammonia production by 20% and lower degradability of CP to match microbial requirement by 19% per cow. The model is a first step toward a mechanistic approach of nutrient modeling, and it is a valuable method for predicting N excretions and estimating N emissions from dairy systems.

Implications

The whole-animal model of N utilization in dairy cows simulated the effects of energy concentration and level and degradability of protein in the diet on N output. The study showed that the model could be used to investigate methods to reduce N output in excreta without compromising milk yield. Manipulation of diet can be used to reduce the amount of N excreted and particularly, the form in which it is excreted because, in terms of pollution, urine N has a greater impact than does fecal N. Model predictions show that availability of energy is crucial to the efficiency of N utilization and will influence the proportion of N excreted in urine and feces. Similarly, degradability of protein can be manipulated to affect N release in the rumen and provide additional N to be absorbed by the animal postruminally.

The Effects of Cognitive Behavioral Intervention on the Attitude and Behavior of Stock Persons and the Behavior and Productivity of Commercial Dairy Cows

J. Anim. Sci. 2002. 80:68-78

ABSTRACT

Two experiments, one involving 29 commercial farms and the other involving 94 commercial farms, were conducted to examine the effects of a training program targeting a number of attitudinal and behavioral variables in stock people. These stock person variables had been previously shown to be related to fear of humans and productivity of commercial cows. In both experiments, two treatments were imposed: an Intervention treatment, consisting of a cognitive-behavioral intervention procedure designed to improve the attitude and behavior of stock people toward cows, and a Control treatment, in which no intervention was attempted. In Exp. 1, an analysis of covariance, using previous lactation variables as the covariate, revealed effects of the Intervention treatment on the attitude and behavior of the stock people and the behavior of cows. Stock people at Intervention farms showed more ($P < 0.01$) positive beliefs about handling cows and used a lower ($P < 0.05$) number and percentage of negative tactile interactions in handling cows than stock people at the Control farms. Cows at the Intervention farms showed a shorter ($P < 0.05$) flight distance to humans, indicating a lower level of fear of humans by these cows. However, 36% of the Intervention farms failed to show a reduction in average flight distance over the two lactations. Although there was no significant treatment effect on milk yield, the Intervention farms in which fear levels declined following the intervention had a higher ($P < 0.05$) milk yield than the other farms. In Exp. 2, a significant ($P < 0.05$) increase was found in the milk yield of cows following the Intervention treatment. Similar treatment effects were observed on both milk protein and milk fat. These results indicate that cognitive-behavioral interventions that successfully target the key attitudes and behavior of stock people that regulate the cow's fear of humans offer the industry good opportunities to improve the productivity of cows.

Implications

The results from these two experiments and previous studies on human-animal interactions indicate that high fear of humans may limit cow productivity. These results also have important practical implications because they indicate that practical and inexpensive opportunities exist, in the form of a training program targeting the key characteristics of stock people, to manipulate these human-animal interactions to improve the productivity of dairy cows. It should be recognized that the unusual nature of the topic, in which attitudes and behavior are targeted, together with its personal nature and sensitivity, requires a carefully considered communication plan to promote its recognition and uptake in the dairy industry.

Country of Origin Labeling

On November 15, 2002 the United States Senate Agriculture Committee approved an amendment to the proposed US Farm Bill that could have a big impact on Canadian beef and cattle exports, should it become law.

The proposed amendment would require mandatory country of origin labeling on beef, lamb, pork, fish, agricultural commodities, and peanuts. If passed, beef from cattle not born, raised, and slaughtered in the US would have to be labeled with the country of its origin. This has the potential to negatively impact Canadian beef sales to the United States as retailers aren't set up to handle imported products separately.

Debate on the Farm Bill is expected to resume later this month. CCA is working with the Canadian Embassy and a coalition of US retailers and food producers, including the American Meat Institute, to lobby against this amendment.

Fast Food Animal Welfare Audits

Third Party, Unannounced and Measurable
AFAC January 2002 Newsletter

Animal welfare is now an integral component of the quality assurance schemes for McDonald's, Burger King, and Wendy's. The companies have developed protocols, and objective, measurable animal welfare audits for suppliers. Suppliers must adhere to standards for animal housing, handling, transport, and humane killing or be terminated as an approved supplier. Dr. Temple Grandin has been a key consultant for the fast food industry and has developed auditing systems for abattoirs. The audits use welfare performance standards, which can be objectively scored to measure animal well-being. Scores are assigned to each of the following criteria:

- percentage of animals inappropriately stunned;
- percentage of cattle shot more than once with captive bolt stunner;
- percentage of sensible and partially sensible animals on the bleed rail;
- percentage of animals falling or slipping;
- percentage of animals vocalizing;
- percentage of animals prodded with electric prod; and
- percentage animal procedures.

"An acceptable level of animal welfare can be maintained if scores at the **critical control points** for [the above criteria] are in the acceptable range," says Grandin. While the three fast food giants presently have independent auditing systems, Dr. Janice Swanson says, "McDonald's and some of the other food retailers are starting to talk to each other about industry-wide initiatives." A third party audit system could be the best option, she said.

In 1996, when Grandin and the USDA conducted audits on ten beef plants, only three were in compliance with the American Meat Institute's guidelines for stunning animals. In 2000, when McDonald's got involved, she conducted audits on nineteen plants. The compliance rate rose to 74% and continues to improve. The Canadian federal government and Canadian Meat Council had Grandin do similar audits at Canadian abbatoirs. However, the results of these audits have not been widely circulated.

The Dehorning Debate

Individual differences in quality do occur, whether polled or horned, but the polled state is not related to productivity.

Largely Centres on the Issue of Pain
AFAC January 2002 Newsletter

The Expert Committee on Farm Animal Welfare and Behaviour (ECFAWB) has endorsed the use of polled cattle as a means of dehorning, except in the dairy industry where the population of quality-polled genetics is limited. When dehorning is necessary the ECFAWB, "having reviewed present research, support the recommendation that a combination of (1) a sedative, (2) a local anesthetic, and (3) a non-steroidal anti-inflammatory be used under the guidance of a veterinarian." The debate on dehorning largely centers on the issue of pain. Studies of the pain response in calves to dehorning indicate that there is significant pain felt for several hours post dehorning. In adult animals the procedure is painful enough to affect weight gain for up to 106 days post dehorning. Research involving Herefords, Charolais, Simmental, Limousin, and crossbred lines have consistently shown that polled beef cattle are equal to horned counterparts with regard to productivity related characteristics. Individual differences in quality do

Please note:

WCABP is looking for volunteer writers for the monthly "Vet Advice" Column which appears in the Cattlemen's Magazine. If you are interested in this opportunity, please contact the office at 1-866-269-8387 for details.

Effect of Inoculants on Whole-crop Barley Silage Fermentation and Dry Matter Disappearance in Situ

J. Anim. Sci. 2002. 80:510-516

ABSTRACT

Whole-crop barley harvested at the mid-dough stage was ensiled in 3-L laboratory silos either directly (at 30.7% DM) or after wilting (37.8% DM), and with or without application of Inoculant A, B, or D. Each inoculant contained multiple strains of *Lactobacillus plantarum* and *Enterococcus faecium.* Two silos per treatment were opened on d 1, 3, 7, 15, and 47 for silage analysis. Wilted silages had higher ($P < 0.05$) pH than unwilted silages, and Inoculant B (unwilted crop) and Inoculants A, B, and D (wilted crop) decreased ($P < 0.05$) silage pH compared to the controls. Reducing sugars concentration was 36% lower ($P < 0.05$), on average, in the wilted than in the unwilted silages. Silages prepared with Inoculants B or D had lower ($P < 0.05$) concentrations of reducing sugars than the control. Wilting of the barley crop further increased the difference between inoculated and control silages (wilting → inoculation $P < 0.05$). Neither wilting nor silage inoculants affected concentrations of nonprotein N, ammonia N, or free amino acid N in silage. Wilting did not affect the concentration of lactic acid bacteria (LAB) in the silages. Across DM levels, inoculant-treated silages had larger ($P < 0.01$) populations of LAB than did the uninoculated controls (7.1×10^9 versus 2.3×10^9 cfu/g silage DM). Wilting resulted in lesser ($P < 0.05$) silage lactic acid concentration than the directly ensiled crop. At both DM levels, lactic acid concentration was higher ($P < 0.001$) in inoculated silages than in controls. The in situ soluble and potentially degradable fractions of silage DM were not affected by wilting or inoculant treatment. The rate of degradation of the potentially degradable silage DM was 35% lower ($P < 0.05$) in wilted than in unwilted silage. As a result, the calculated effective degradability of silage DM was lower ($P < 0.001$) in wilted than in unwilted silage. Inoculants did not influence the rate of degradation or effective degradability of silage DM in the rumen. Whole-crop barley ensiled at approximately 30% DM (without wilting) contained higher concentrations of soluble sugars and lactic acid and had higher ruminal degradability of DM than wilted silage (38% DM). Although inoculants did not improve DM degradability of barley silage, lower terminal pH and increased concentrations of lactic acid may improve aerobic stability upon feed-out.

Implications

From a silage fermentation standpoint, ensiling whole-crop barley at approximately 30% DM (without wilting) offers the advantage of better-preserved silage with a higher concentration of soluble sugars and lactic acid, and correspondingly higher ruminal degradability of DM, compared with wilting (38% DM). In this study, selected lactic acid bacteria-based inoculants reduced silage pH and reducing sugars concentration and enhanced lactic acid production in barley silage. This effect appeared to be even more pronounced for wilted than for unwilted whole-crop barley silage. Although these alterations in silage composition did not improve the in situ degradability of silage dry matter, they may improve the aerobic stability of the silage upon feed-out.

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occur, whether polled or horned, but the polled state is not related to productivity. Some polled cattle producers are gaining markets in Europe for their superior polled genes according to Dr. Joseph Stookey, Professor at Western College of Veterinary Medicine. As the polled gene is dominant to the horned gene, the removal of horns via genetic selection is relatively easy. However, cattle can still carry the genes for scurs, which are inherited independently from horns. Scurs are horn-like protrusions that can vary in size from small nubs to almost the size of horns. In dairy cattle, horned animals make up 99% of the Holstein population according to Peter Blodgett of Alta Genetics, a global live stock genetics company. Horned animals have been intensely selected for and therefore are superior in productivity to the polled population. However, it is not the polled state that reduces productivity and attempts are being made to improve the polled population. “Alta Genetics is testing polled genetics to be able to provide proven polled genetics to our customers,” says Mr. Blodgett. Frank A. Bouie, a dairy producer in Ohio is dedicated to the promotion and improvement of polled dairy cattle. He writes, “The resources and tools exist to develop polled Holsteins without making major sacrifices in production or type traits… it is important that we not just breed polled cattle but good polled cattle.” Joseph Stookey has been an advocate of dehorning via genetic selection. It concerns him that some beef producers have viewed the ECFAWB endorsement with suspicion. “Our motive is to help the beef industries… to promote animal welfare and maintain a healthy welfare friendly livestock industry in the eyes of the public and for our animals… we are not the enemies of the cattle industry. I want [producers] to understand that they have choices and they can have superior cattle that are also polled.” Producers know they have a responsibility to be current in livestock management practices, based on the best science that is available. There is no doubt that dehorning causes significant pain, so mitigative measures should be used to eliminate or reduce that pain. Polled genetics offer one option. Alternatively, dehorning should be done at an early age with appropriate pain suppressants. It is unacceptable to leave horns on cattle destined for the feedlot.

Website Resources:

Frank A. Bouie - www.midohio.net/~fabouic/polled.htm

Cindy McCreath, CCA Communications Manager

Genetic Parameters for Ultrasound and Carcass Measures of Yield and Quality Among Replacement and Slaughter Beef Cattle

J. Anim. Sci. 2001. 79:3008-3020

ABSTRACT

Real-time ultrasound (RTU) measures of longissimus muscle area and fat depth were taken at 12 and 14 months of age on composite bulls (n = 404) and heifers (n = 514). Carcass longissimus muscle area and fat depth, hot carcass weight, estimated percentage lean yield, marbling score, Warner-Bratzler shear force, and 7-rib dissectable seam fat and lean percentages were measured on steers (n = 235). Additive genetic variances for longissimus muscle area were 76 and 77% larger in bulls at 12 and 14 months than the corresponding estimates for heifers. Heritability estimates for longissimus muscle area were 0.61 and 0.52 in bulls and 0.49 and 0.47 in heifers at 12 and 14 months, respectively. The genetic correlations of longissimus muscle area of bulls versus heifers were 0.61 and 0.84 at 12 and 14 months, respectively. Genetic correlations of longissimus muscle area measured in steer carcasses were 0.71 and 0.67 with the longissimus muscle areas in bulls and heifers at 12 months and 0.73 and 0.79 at 14 months. Heritability estimates for fat depth were 0.50 and 0.35 in bulls and 0.44 and 0.49 in heifers at 12 and 14 months, respectively. The genetic correlation of fat depth in bulls versus heifers at 12 months was 0.65 and was 0.49 at 14 months. Genetic correlations of fat depth measured in bulls at 12 and 14 months with fat depth measured in steers at slaughter were 0.23 and 0.21, and the corresponding correlations of between heifers and steers were 0.66 and 0.86, respectively. Live weights at 12 and 14 months were genetically equivalent (r_g = 0.98). Genetic correlations between live weights of bulls and heifers with hot carcass weight of the steers were also high (r_g > 0.80). Longissimus muscle area measured using RTU was positively correlated with carcass measures of longissimus muscle area, estimated percentage lean yield, and percentage lean in a 7-rib section from steers. Measures of backfat obtained using RTU were positively correlated with fat depth and dissectable seam fat from the 7-rib section of steer carcasses. Genetic correlations between measures of backfat obtained using RTU and marbling were negative but low. These results indicate that longissimus muscle area and backfat may be under sufficiently different genetic control in bulls versus heifers to warrant being treated as separate traits in genetic evaluation models. Further, traits measured using RTU in potential replacement bulls and heifers at 12 and 14 months of age may be considered different from the corresponding carcass traits of steers.

Implications

Real-time ultrasound is an objective method to increase relative amounts of data and also a more direct tool for making selection decisions regarding potential replacement bulls and heifers for the improvement of carcass merit. Genetic evaluation models can be fit that treat ultrasound traits as unique but correlated between sex to account for genetic correlations of less than one among similar traits. This approach potentially makes more efficient use of ultrasound data from bulls and heifers that have measurements from yearling through to the beginning of the yearling breeding season. Selection to improve carcass merit of slaughter animals using ultrasound measurements from breeding cattle would be successful, although live animal and carcass traits may be considered separate but correlated traits.

Early Conception Factor (ECF™) Dipstick Test: Can It Really Detect "Open" Cattle?

Any technology that allows the accurate identification of nonpregnant cattle less than three weeks after insemination would be a welcome addition to the existing tools for reproductive management, particularly of dairy cattle. The Early Conception Factor (ECF™) dipstick test (Concepto Diagnostics, Knoxville, TN) is currently in market as a tool that allows the identification of open cattle with 94% accuracy[2] by testing serum or milk from six days after breeding. The ECF test for cattle is reportedly designed to detect the presence of a glycoprotein designated Early Conception Factor that becomes detectable in blood of conceived cows as early as 48 hours after mating[8] and remains detectable throughout gestation[8, 9]. While many dairy producers have expressed an interest in the ECF dipstick test, there are conflicting reports[1, 4, 8, 9] on the efficacy of this product in reliable identification of open cows. In a field trial that was recently completed in dairy herds within Alberta, the ECF test was evaluated for its efficacy to accurately determine nonconception in dairy cattle.

The trial involved 163 dairy cows from five commercial herds. Ovarian status of cows were synchronized using the Ovsynch protocol[6] and inseminated (Day 0) at an appointed time. Milk and blood samples were obtained 14 days after insemination, and at the time of pregnancy confirmation by palpation per rectum (approximately 45 days after insemination). Samples were handled and tested as per manufacturer's instructions. Test results were used to determine negative predictive value (NPV), positive predictive value (PPV), test specificity, test sensitivity, and accuracy as described by Smith[7] and presented in Table 1.

As the test is being marketed as a diagnostic aid to determine nonconception in cattle, it was expected that the test will have very high specificity and NPV. However, the specificity of the test on milk and blood samples collected 14 days after insemination were only 37% and 7%, and the NPV of the test were 58% and 50%, for milk and blood respectively. The poor specificity of the ECF test has been reported by others[3, 5]. The poor accuracy and NPV of the tests obtained in the present study are also in agreement with recent findings[3, 5].

Table 1. Sensitivity, specificity, positive predictive value, negative predictive value, and accuracy of ECF test results.

Day of gestation	n	Material	Sensitivity[a]	Specificity[b]	PPV[c]	NPV[d]	Accuracy[e]
14	163	Milk	67%	37%	47%	58%	51%
45	131	Milk	76%	29%	48%	59%	61%
14	163	Blood	92%	7%	45%	50%	45%
45	131	Blood	95%	7%	48%	63%	48%

[a] proportion of pregnant cows with a positive ECF result.
[b] proportion of nonpregnant cows with a negative ECF result.
[c] probability that a positive ECF result is from a pregnant cow.
[d] probability that a negative ECF result is from a nonpregnant cow.
[e] probability of identifying pregnancy status correctly using ECF results.

Results indicate that the ECF test offers no reliable information about the true pregnancy status of cows tested. Based on the findings, it is concluded that the ECF dipstick test cannot be used to accurately identify open (nonconceived) cattle. In its presently marketed form, the ECF dipstick test is unreliable for early determination of non-conception in dairy cattle and is NOT RECOMMENDED for use as a reproductive management tool.

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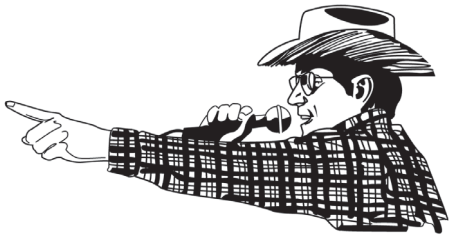
Thank you to the following companies/individual provided donations or items for the auction. Thanks to all participants, WCABP raised $10,750 for continuing education material.



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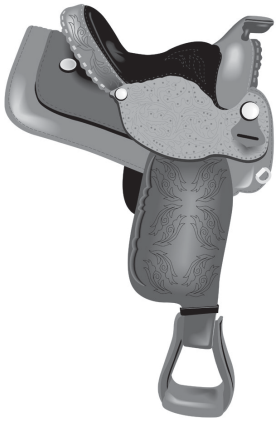

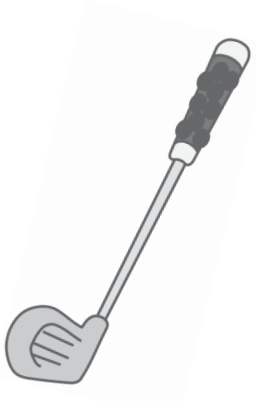

Atlantic Bovine Practitioner Association Update

From Concept to Reality

We would like announce the creation of the Atlantic Bovine Practitioners Association. ABPA is a relatively young organization, having been founded in 2000 as a result of discussions between various private practitioners, the faculty at the Atlantic Veterinary College, and people from Boehringer-Ingelheim, Canada. At the first organizational meeting at the CVMA 2000 in St. John, New Brunswick, an interim executive was appointed with its first responsibility of arranging a CE meeting during the winter.

Winter came to the Maritimes and with it came *Bovine Pharmacology – Making Therapeutic Decisions* – a one-day and a half interactive CE session featuring Dr. Trish Dowling as the lead speaker and J. McClure and the AVC people leading the break-out sessions, which hotly debated different therapeutic protocols. It was a fantastic CE session and the opportunity to interact with the "local" vets was great.

The objectives of ABPA were discussed and adopted at this first meeting in Moncton. They are:

- to develop and support high quality, local CE opportunities;
- to support the interest of bovine practitioners and promote their image among the public and the cattle industries; and
- to enhance opportunities for interaction with other local bovine vets and to effectively and actively communicate and cooperate with academia, governments, and industry in support of the objectives of the Association.

Lofty ideals indeed!

The second Annual Conference was again held in Moncton during January of this year with a two-day session on bovine reproduction. Dr. Bill Thatcher (University of Florida) and Dr. Stephen Le Blanc (University of Guelph) were the headline speakers and another great CE session and social interaction transpired. A constitution was adopted and a new slate of directors were elected. The new executive has not yet been decided at this time.

In the short time that ABPA has existed it has been able to accomplish two of its stated goals – CE and vet interaction – with stellar results. Our other goals will prove more difficult to reach. It is our hope that through interaction with other bovine practitioner groups (WCABP, AMVPQ, OABP) we can reach our goals. We are a small group (40 members) existing in provinces where bovine agriculture is not necessarily perceived by the public or government as being a top priority. By interacting with your groups, we can avoid reinventing the wheel (hopefully) and tap into your experiences to make good suggestions to industry and government and avoid the pitfalls.

It has been an exciting year for our group. Watch for information on the next conference that will take place in Moncton in January 2003. The topic will be calf and heifer rearing.

You can contact ABPA through its current Secretary-Treasurer Dr. Shawn McKenna by phone (902) 566-0993 or email slmckenna@upei.ca.

Dr. Frank Schenkels – Past President
Dr. Rob Tremblay

Surfing the Web

The computer revolution continues unabated. At this year's conference, WCABP provided attendees with a list of websites useful for bovine practitioners. Here are some of the sites visited during the "Surfing the Web" presentation:

American Association of Bovine Practitioners
http://aabp.org/HomePage/aabp.htm

Canada Agriculture Online
http://www.agcanada.com

Canadian Animal Health Institute
http://www.cahi-icsa.ca

Canadian Animal Health Network
http://www.cahnet.org

Canadian Bacterial Diseases Network
http://www.cbdn.ca

Canadian Food Inspection Agency
http://www.cfia-acia.agr.ca

Center of Disease Control
http://www.cdc.gov/

Great Plains Veterinary Education Center
http://gpvec.unl.edu/

Information on Johne's Disease
http://www.vetmed.wisc.edu/pbs/johnes/

National Animal Health Monitoring System (NAHMS)
http://www.aphis.usda.gov/vs/ceah/cahm/

PubMed
http://www.ncbi.nlm.nih.gov/PubMed/

Veterinary Infectious Disease Organization
http://www.usask.ca/vido

To visit these sites, and many more, go to the WCABP website at **www.cattle.ca/wcabp**, and go to links.

The interest and support of the following organizations in our Tenth Annual Conference is gratefully acknowledged.

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