WORLD ASSOCIATION FOR BUIATRICS
WELT-GESELLSCHAFT FÜR BUIATRIK
ASSOCIATION MONDIALE DE BUIATRIE
ASOCIACIÓN MUNDIAL DE BUIATRIA

WWW.BUIATRICS.COM

Newsletter 1 – 2016

World Association for Buiatrics and Boehringer Ingelheim Animal Health announce "Ruminant Well-being Award"

Boehringer Ingelheim

Ingelheim, Germany, 11 January 2015 - Boehringer Ingelheim Animal Health and the World Association for Buiatrics (WAB) have signed a long-term cooperative agreement to foster research related to animal welfare in ruminants. The "Ruminant Well-being Award" will be presented at each WBC (World Buiatrics Congress) for at least the next six years. By doing so, the WAB and Boehringer Ingelheim intend to raise public awareness of the important role veterinarians play in continuous improvement of animal welfare in food-producing ruminants. This is an additional component of Boehringer Ingelheim´s long-term commitment to improving the health and well-being of farm animals.

WAB President Professor Walter Baumgartner said: "It is of the utmost importance to us to constantly improve animal welfare. By doing so, we can additionally guarantee the production of high-quality food of animal origin for humans. As an internationally acknowledged association for vets working in the field of ruminants, we therefore strongly recommend that farm animals be provided with good animal welfare conditions."

The "Ruminant Well-being Award" will comprise € 15,000 in cash, plus the invitation to the World Buiatrics Congress, where the Award Ceremony will be held. Veterinarians from around the world working in the field of bovine/ruminant health gather at the WBC in alternate years. The next scheduled venue is to be Dublin, Ireland, from 3 to 8 July 2016.
The award will be open to practicing veterinary surgeons, researchers, or graduate students in veterinary (or animal) science. The award aims to recognise improvements in understanding and assessing pain or well-being in ruminants. It is hoped that candidates may have invented or validated methods to assess ruminant well-being on farm or have worked out strategies related to improvement of ruminant welfare on working farms. Educational efforts may also be recognised, such as raising awareness of issues of concern and changing human attitudes and behaviour to ensure proper stewardship of ruminants.

The winner of the award will be selected by an independent expert panel under the supervision of Xavier Manteca, Professor in Applied Ethology at the University of Barcelona and founder of the Farm Animal

Welfare Education Centre (www.fawec.org). Professor Manteca commented on the award: "Animal welfare has become fundamentally important, not only for ethical reasons but also to guarantee the sustainability of the livestock industry. I am sure this award will make a significant contribution to ruminant welfare all over the world,"

A "Call for applications" will soon be published on the WAB website (www.buiatrics.com) and communicated to veterinarians globally through the WAB newsletter.

About Boehringer Ingelheim Animal Health

Boehringer Ingelheim Animal Health is committed to providing leading solutions to prevent, treat and cure animal diseases. Every year, we invest more than 10 percent of our net sales in Animal Health to do research at the highest level.

At Boehringer Ingelheim Animal Health, more than 3,500 employees worldwide work on the research and development of new medicines and procedures to keep our animal patients healthy. We are driven by the wish to improve animal welfare as an integral part of a healthy future for mankind.

About the World Association for Buiatrics

The World Association for Buiatrics (WAB) is an independent international association and legal entity. Its objectives are to organise meetings on diseases and production of cattle (buiatrics) in order to report the results of research work and other practical experiences in buiatrics and to discuss these topics in an international forum and thus promote all aspects of buiatrics in both science and practice. The WAB issues occasional and regular publications (circulars, conference proceedings, reminders, periodicals, newsletters) including materials on the topics outlined above. The Association promotes international research on ruminant animals and keeps veterinary practitioners and all interested agricultural specialists informed about the results achieved around the world. For more information about the WAB visit: www.buiatrics.com

Boehringer Ingelheim

The Boehringer Ingelheim group is one of the world's 20 leading pharmaceutical companies. Headquartered in Ingelheim, Germany, Boehringer Ingelheim operates globally with 146 affiliates and a total of more than 47,700 employees. The focus of the family-owned company, founded in 1885, is researching, developing, manufacturing and marketing new medications of high therapeutic value for human and veterinary medicine.

Social responsibility is an important element of the corporate culture at Boehringer Ingelheim. This includes worldwide involvement in social projects, such as the initiative "Making more Health" and caring for its employees. Respect, equal opportunities and reconciling career and family form the foundation of this mutual cooperation. In everything it does, the company focuses on environmental protection and sustainability.

In 2014, Boehringer Ingelheim achieved net sales of about 13.3 billion euros. R&D expenditure corresponds to 19.9 percent of its net sales.

For more information please visit www.boehringer-ingelheim.com

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Further Media Channels:

www.newshome.com
www.facebook.com/boehringeringelheim
www.twitter.com/Boehringer
www.youtube.com/user/boehringeringelheim
www.pinterest.com/biglobal/
www.instagram.com/boehringer_ingelheim

Intended audiences:

This press release is issued from our Corporate Headquarters in Ingelheim, Germany, and is intended to provide information about our global business. Please be aware that information relating to the approval status and labels of approved products may vary from country to country, and a country-specific press release on this topic may have been issued in the countries where we operate.

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News from American Association for Bovine Practitioners

AABP Looks at Opportunities for 2016

There are a lot of changes coming to the beef and dairy industries such as the Veterinary Feed Directive (VFD), and the American Association of Bovine Practitioners is working to stay ahead of the curve and helps its members navigate these changes.

"Cattle veterinarians, working with their clients, are proud of the progress we have made in the past while at the same time look forward to the changing landscape of the future," says AABP President Fred Gingrich, DVM, Ashland, Ohio. "AABP will continue to lead our industry on the issues that face our profession which include antimicrobial use, animal welfare, economic viability and assisting cattle producers in providing a sustainable beef and dairy supply for consumers."

Veterinary Feed Directive

The VFD rules went into effect on October 1, 2015. For cattle, this means Pulmotil® is currently under the new rules. All other products will transition to VFD status around January 2017. "I challenge our members to start having discussions with current clients as well as use local resources to reach non-clients who do not have a veterinarian," Gingrich says. "I also suggest that we educate ourselves on these rules."

AABP members can find a list of VFD resources at www.AABP.org.

Next Generation Practice Analysis Workshops

Last year, AABP's Veterinary Practice Sustainability Committee developed small-group practice analysis workshops for veterinarians interested in analyzing the financial and marketing aspects of their practices. In March, AABP will hold two more of these workshops, one in conjunction with the Northeast Dairy Production Medicine Symposium in Syracuse, N.Y. (March 17-18), and the other in conjunction with Academy of Veterinary Consultants meeting in Irving, Texas (March 30-31). Find out about the Syracuse workshop at http://nedpms.org/ and the Irving workshop at http://avc-beef.org/.

Routine Tail Docking

Recently, routine tail docking of dairy cattle has come back to the forefront with the announcement by the National Milk Producers Federation that it has accelerated its deadline to phase out routine tail docking for dairy farmers in its Farmers Assuring Responsible Management Animal Care Program from 2022 to January 1, 2017. AABP reminds veterinarians that the organization developed routine tail docking position statements in the past, and the AABP Board of Directors approved a revised position statement in 2010 opposing routine tail docking, which reads, "The AABP opposes the routine tail docking of cattle. Current scientific literature indicates that routine tail docking provides no benefit to the animal."

2016 Annual Conference

The 2016 49th AABP Annual Conference will be held in Charlotte, N.C., Sept. 15-17. The 2016 theme is "Facing the Future Together". Sessions will include human resource management, VFD and antimicrobial issues, environmental sustainability, communication, nutrition, dry lot management, veterinary practice topics and more. Preconference seminars, clinical forums, practice tips and sessions for students and recent graduates will also be offered. Once again the American Association of Small Ruminant Practitioners will hold a joint meeting with AABP.

An exciting trade show with the latest in products and services will be a must-see in the Charlotte Convention Center. Entertainment, awards, the Amstutz auction and the chance to explore Charlotte night life and restaurants await attendees.

"The annual AABP conference provides relevant and timely continuing education for cattle veterinarians to take home and apply to their daily professional lives," Gingrich says. "Professional networking, quality continuing education and social events with fellow cattle veterinarians make this an event we all look forward to each year."

Registration for the conference will open May 1st and more information can be found at www.aabp.org.

AABP Foundation

The AABP Foundation continues to fund scholarships and relevant industry research. Support from members and industry partners is critical for the Foundation to continue its important work. Find out more about Foundation activities and how to support it at http://foundation.aabp.org/.

AABP Drug Use Guidelines

Last April an AABP task force created "Drug Use Guidelines for Bovine Practice". These guidelines serve to assist the veterinarian in ensuring that drugs used in cattle are used in a safe and responsible manner. Information in the guidelines include the importance of a VCPR, using scientific knowledge, providing oversight for drug use on cattle operations, prescribing in a legal and ethical manner, preventing residues, and avoiding compounding from bulk substances. The guidelines also include a list of prohibited/illegal drugs in cattle. See these and other AABP guidelines at http://aabp.org/about/AABP_Guidelines.asp.

AABP Ethics Task Force Formed

In late 2015 AABP established an Ethics in Cattle Practice Task Force to provide a recommendation to the Board regarding issues and ethics in cattle practice. The task force will review the AVMA Principles of Veterinary Medical Ethics and determine if additional guidance is needed, and make a recommendation to the AABP Board of Directors on topics/areas of veterinary medical ethics that pertain to bovine practice to develop a bovine-specific Veterinary Medical Ethics guideline.

Join AABP

AABP is a membership-based, not-for-profit organization serving cattle veterinary medicine professionals (and bovine-interested veterinary students) across the United States, Canada and other countries. AABP is affiliated with the American Veterinary Medical Association and the World Association for Buiatrics.

"If you are a veterinarian working with cattle, I personally invite you to join our organization," Gingrich says. "The CE, networking opportunities, and advocacy support that the AABP provides to the practicing veterinarian make membership a wise investment for every cattle veterinarian in your practice. Join today and ask us what we can do for you!"

Find out more about AABP and how to join the organization at www.AABP.org.

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Ruminant Veterinary Association
CONGRESS 2016,
Protea Ranch Hotel,
Polokwane, 10-12 March 2016

ruvasa 2016 nutrition

• production • health • profit •

10 - 12 march 2016, ranch hotel, polokwane

DAY ONE - 10 March 2016

08:00	Opening & Welcome Dr Stephen Hughes
08:15	Keynote address. The National Veterinary Strategy Dr Bothle Modisane
09:05	The impact of the Consumer Protection Act on services and goods supplied by veterinarians Mr Janusz Luterek
09:35	Introducing the exhibitors and pharmaceutical trade Dr Francois Malan
10:00	TEA
10:45	Practical evaluation of pastures Prof Robin Meeske
11:20	Components of a feed analysis C Harrington
11:55	Practical Silage Evaluation for the Herd Veterinarian Prof Robin Meeske
12:30	Product Promotion (15 min)
12:45	LUNCH
13:35	Successful Management of Heifer Rearing in Dairy Herds – An Opportunity for Veterinary Involvement in Dairy Herds Dr Will Gratwick
14:20	Once a day calf feeding – myth or reality? Dr Roger Blowey
14:55	Health Benefits from feeding acidified milk to calves Dr Roger Blowey
15:30	Product Promotion (15 min)
15:45	TEA
16:30	Nutrition and Lameness – Are they linked? Dr Roger Blowey
17:05	Grazing strategies for dairy cow health and sustainable milk yield on Rye grass irrigated pastures: What to evaluate and how to evaluate? Prof Kevin Kirkman
17:40	Round table - Nutrition and the dairy management team Moderated by Dr Martin van der Leek
18:15	Student poster presentation (15 min)

DAY TWO - 11 March 2016

08:00	Veterinary Geology Drs Jan Myburgh & Anthony Davis
08:40	Cereal Based Dietary Effects on Rumen Development and Performance of lamb Francois van de Vyver
09:20	Background information when using bodily fluid and tissue analyses to assess the mineral nutritional status of livestock Prof J van Ryssen
10:00	TEA
10:45	Management and principles of drought nutrition in small stock Prof Willie v Niekerk
11:20	The Role of Veld and Annual Pastures and Other Sources of Roughage in the Fodder Flow Programme of Livestock Production Dr Erika van Zyl
11:55	Fodder flow planning for sheep flocks where maize stover lands come into play: How to apply cover crops correctly to add value to flock production & health Prof Kevin Kirkman
12:30	Product Promotion (15 min)
12:45	LUNCH
13:45	Drug residues and withdrawal times: a perspective from Act 36 of 1947 Dr Ernest Mokantla
14:20	Rising concerns and current actions with antimicrobial resistance: Act 101 of 1965 Dr Alice Sigobodhla
14:55	Jaagsiekte Sheep Retrovirus (JSRV) – an update on this most interesting virus Dr FD York
15:30	Product Promotion (15 min)
15:45	TEA
16:30	AGM RuVASA (Members only)

DAY THREE - 12 March 2016

08:00	Management, Evaluation and Optimum Utilization of Veld (sour and sweet) in Extensive Beef Cow-Calf Herds Prof Kevin Kirkman
08:40	The Role of Perennial Planted Pastures in the Summer Rainfall Areas Prof Chris Dannhauser
09:20	The Effect of Feeding Calves a Creep Feed or Cows a Production Lick on the Herd Performance Parameters Dr Vlok Ferreira
10:00	TEA
10:45	Stillbirths, Perinatal Weakness and Mortality in Calves from Se Deficiency Dr Anthony Davis
11:20	Effects of Protein and Energy Mismatches on Beef Cow Reproduction Prof Dietmar Holm
11:55	Nutritional Principles to implement in drought conditions Prof Kevin Kirkman
12:30	Product Promotion (15 min)
12:45	LUNCH
13:45	Biosecurity imperatives for rural veterinarians Dr Thireshni Chetty
14:20	Proposed Pathogenesis of Osteochondrosis in Cattle Dr Gerjan van der Veen
14:55	Feeding of Bulls on a Low or High Roughage Diet Dr Vlok Ferreira
15:30	Product Promotion (15 min)
15:45	TEA
16:30	Conclusions, Announcements & Recommendations Dr Stephen Hughes

REGISTRATION FEES FOR 2016 CONGRESS:
Early bird price is only valid until 31 January 2016

	Early Bird	Standard
Full Scientific programme	R6327	R7079.40
2 day attendance	R4845	R5312.40
Single day attendance	R3340.20	R3830.40
Pre Graduate Student	R1938	R2074.80
Speaker: full congress	R3853.20	R4343.40
Speaker: 2 day congress	R2257.20	R2485.20

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Registration and enquiries, call 012 346 1590
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Provisional program subject to amendments

RuVASA
Ruminant Veterinary Association of South Africa

TOP NOTCH SPEAKERS

Best Value For Money Congress!

ruvasa 2016 nutrition

• production • health • profit •

10 - 12 march 2016, ranch hotel, polokwane

Roger Blowey
BSc, BVSc, FRCVS, FRAgS, RCVS Specialist in Cattle (dairy)

Roger Blowey trained at Bristol University where he gained honours degrees in veterinary science and biochemistry. After a period at the Central Veterinary Laboratory, Weybridge, studying metabolic profiles, he returned to Gloucester where he is a partner in a mixed practice, the Wood Veterinary Group.

Roger's special interests are preventive medicine and the interaction of nutrition, disease and environment on the productivity of livestock units. He has lectured extensively on these subjects in Britain and overseas, featured in educational programmes on radio and television and has written numerous original papers and books on a wide range of topics. He is an RCVS Specilaist in cattle Health and Production, and has been awarded a Fellowship of the Royal College of Veterinary Surgeons for meritorious contributions to learning, the RASE Bledisloe Veterinary Award for outstanding achievements in the veterinary field, and the BVA Dalrymple-Champneys medal for work of outstanding merit in the advancement of veterinary science.

Kevin Kirkman
PhD, MSc Agric, BSc Agric

Professor Kirkman's research interests focused on grassland vegetation and herbivore/vegetation interactions within grassland and savannas, with a focus on developing an understanding of the mechanisms of system function and applying this knowledge to management and restoration of of conservation and agricultural systems.

His current focus areas includes: a combination of long-term ecological research and short term manipulative experiments to investigate plant community responses to environmental influences such as type, timing and frequency of grazing or burning.

Research Areas: Biotechnology, Ethnobotany, Medicinal plants, Ethnoveterinary medicine, Botany, Plant Physiology, Science education, Hormone physiology, Plant tissue culture

The Ruminant Veterinary Association of South Africa (RuVASA) will be hosting its annual conference from 10-12 March 2016, at The Ranch Protea Hotel in Limpopo.

As always, the RuVASA Congress will prove to be a memorable experience, combining top science and a fine social programme.

Since feeding costs for a farming operation amount to 65-75% total costs, and keeping in mind the crucial role that is cost-effective adequate nutrition plays in all production and reproduction as well as its effects on many diseases, this theme is targeted at making ruminant livestock veterinararians proficient in guiding farmers/clients to achieve optimum production and profit.

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CONTACT

SCIENTIFIC COMMITTEE: Prof Gareth Bath, Prof Dietmar Holm, Dr Willem Schultheiss, Dr Trish Oglesby, Dr Ariena Shepherd, Dr Stephen Hughes, Dr Faffa Malan, State Veterinary representative (TBA)

CONGRESS ORGANISER CONTACT DETAILS: Vetlink Conferences, Tel 012 346 1590, www.RuVASA.co.za/ www.vetlink.co.za

CONGRESS WEBSITE: www.vetlink.co.za

FACILITIES

Protea Hotel Ranch Resort is situated within a 1000 hectare malaria free nature conservancy, just 25 kilometres south of Polokwane, and 2 hours north of Pretoria on the N1.

Protea Hotel Ranch Resort is Limpopo's most highly acclaimed superior 4 star Hotel, and easy access to the property is from both the N1 highway and the R101 main road.

The most talked about activity at Protea Hotel Ranch Resort is no doubt the 'Walk With Lions' experience. Guests have the opportunity to encounter free roaming African lions in their natural habitat for up to an hour and a half, an experience that is both unique and memorable.

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See more at: http://www.proteahotels.com




ACCOMMODATION

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HOTEL ROOMS

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The hotel offers 150 rooms are all designed with large cottage style windows (with mosquito netting) to ensure natural light, and the opportunity to see the expansive views onto the tranquil surrounding gardens.

Single	R1 212.50
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We are proud to offer unequalled hospitality and an in-depth understanding of every GUESTS needs. With an impressive range of facilities to suit everyone. Comfortable and cottage style.

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It is designed totally appropriately to its bush surroundings and includes a fully equipped sharing kitchen and canteen facilities, ablution block, camp fire Lapa area and ample space to enjoy outdoor activities. The tents are built on raised cement slabs, with their own groundsheets and natural airflow design for maximum comfort and protection from the elements.
R275 per person per night 2/4 bed sleeping configuration

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THE VETERINARY EPIDEMIOLOGY UNIT OF THE DEPARTMENT OF REPRODUCTION, OBSTETRICS AND HERD HEALTH OF THE FACULTY OF VETERINARY MEDICINE, GHENT UNIVERSITY,
ORGANIZES

8TH SUMMER COURSE ON VETERINARY EPIDEMIOLOGY
12 SEPTEMBER – 23 SEPTEMBER 2016

http://www.rohh.ugent.be/vetepisummercourse

INTRODUCTION AND AIMS

Epidemiology in veterinary medicine is becoming increasingly important for many people active in veterinary practice, research, consultancy and organization and regulation of animal production.
The aim of this summer course is to make all participants familiar with the **key aspects of veterinary epidemiology** in a **practical and applied** manner. Upon completion of this course all participants should be familiar with all basic concepts of veterinary epidemiology, be capable of critically reading and understanding scientific literature and performing basic statistical and epidemiological analyses. Moreover the participants should be ready to design surveillance, analytical or clinical studies and to critically analyze the results. Furthermore the participants will be introduced to several aspects of more advanced epidemiological tools.
The course will be organized as **a two week summer course** (12 September – 23 September 2016) consisting of 10 course days. Every day will be filled with a mixture of theoretical training and practical applications. At the end of the course there will be the possibility to participate in a "take-home" exam.
The course will be thought by not less than **7 different experienced lecturers** with ample theoretical and practical knowledge.

PARTICIPANTS

The course is intended for everybody who is confronted with epidemiological questions in their professional activities (such as practice, disease control, scientific research and legislation) and is open to veterinarians as well as any other master degree in the field of biomedical sciences or bioengineering. No specific prior epidemiological or statistical knowledge is required. Although the majority of examples are from the field of veterinary medicine the course touches on all general principles of epidemiology and is therefore equally interesting to participants facing epidemiological questions in non-veterinary domains (e.g. human medicine, plant diseases, food safety,…).

LOCATION

Unit for Veterinary Epidemiology
Department of Reproduction, Obstetrics and Herd Health
Faculty of Veterinary Medicine
Ghent University
Salisburylaan 133
B-9820 MERELBEKE

ADDITIONAL INFORMATION

http://www.rohh.ugent.be/vetepisummercourse
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Scientific abstracts

J Dairy Sci 2016.99.672-679.

Early postpartum treatment of commercial dairy cows with nonsteroidal anti-inflammatory drugs increases whole-lactation milk yield

A. Carpenter, C. Ylioja, C. Vargas, L. Mamedova, L. Mendonça, J. Coetzee, L. Hollis, R. Gehring, B. Bradford

Previous research has shown that postpartum administration of the nonsteroidal anti-inflammatory drug (NSAID) sodium salicylate can increase 305-d milk yield in older dairy cattle (parity 3 and greater). However, in this prior work, sodium salicylate was delivered to cows via the drinking water, a method that does not align well with current grouping strategies on commercial dairy farms. The objective of the current study was to replicate these results on a commercial dairy farm with a simplified treatment protocol and to compare sodium salicylate with another NSAID, meloxicam. Dairy cattle in their second lactation and greater (n = 51/treatment) were alternately assigned to 1 of 3 treatments at parturition, with treatments lasting for 3 d. Experimental treatments began 12 to 36 h after parturition and were (1) 1 placebo bolus on the first day and 3 consecutive daily drenches of sodium salicylate (125 g/cow per day; SAL); (2) 1 bolus of meloxicam (675 mg/cow) and 3 drenches of an equal volume of water (MEL); or (3) 1 placebo bolus and 3 drenches of water (CON). Blood samples were collected on the first day of treatment, immediately following the last day of treatment, and 7 d after the last day of treatment; plasma was analyzed for glucose, β-hydroxybutyrate (BHB), free fatty acids, haptoglobin, and paraoxonase. Milk production, body condition score, reproductive status, and retention in the herd were monitored for 365 d posttreatment, and effects of treatment, parity, days in milk, and interactions were evaluated in mixed effects models. Significance was declared at $P < 0.05$. Whole-lactation milk

and protein yields were greater in NSAID-treated cows, although 305-d fat production was not affected. There was a significant interaction of treatment and parity for plasma glucose concentration; MEL increased plasma glucose concentrations compared with CON and SAL in older cows. Sodium salicylate decreased plasma BHB concentration compared with MEL at 7 d posttreatment, although no difference was detected immediately following treatment. Haptoglobin concentrations were elevated in SAL cows compared with CON. There was a tendency for CON cows to be removed from the herd more quickly than MEL cows (42 vs. 26% at 365 d posttreatment). Body condition score, concentrations of plasma free fatty acids and paraoxonase, and time to pregnancy were not affected by treatment. These results indicate that NSAID administration in postpartum cows has the potential to be a viable way to improve productivity and potentially longevity in commercial dairies, although further research is necessary to optimize recommendations for producers.

J Dairy Sci 2016.99.505-514.

Altered plasma pharmacokinetics of ceftiofur hydrochloride in cows affected with severe clinical mastitis

P. Gorden, M. Kleinhenz, L.W. Wulf, B. KuKanich, C. Lee, C. Wang, J. Coetzee

Mastitis is a frequent problem among dairy cows, reducing milk yield and increasing cull rates. Systemic therapy with the cephalosporin antimicrobial ceftiofur hydrochloride (CEF) may improve therapeutic outcomes, but the incidence of CEF violative residues has increased annually since 2011. One potential explanation is that disease status may alter the pharmacokinetics (PK) of CEF. To test this hypothesis, we compared the plasma PK of CEF in healthy cows with those with severe endotoxic mastitis. Eight cows with naturally occurring mastitis and 8 clinically healthy cows were treated with 2.2 mg of CEF per kilogram of body weight once daily for 5 d via the intramuscular route. Blood was collected at 0, 0.33, 0.67, 1, 1.5, 2, 3, 4, 8, 16, and 24 h after the first CEF administration and every 8 h thereafter until 120 h after the final dose. Plasma samples were analyzed for CEF concentrations using liquid chromatography coupled with mass spectrometry. With the exception of time 0, CEF was detected at all time points. The disease group had a significantly higher plasma CEF concentration at t = 3 h after the first injection and a significantly lower plasma concentration from 40 to 152 h following the first injection, with the exception of the t = 64 h time point. Data following the first injection (time 0–24 h) were fit to a single-dose, noncompartmental PK model. This model indicated that the disease group had a shorter plasma half-life. A multidose, noncompartmental model was used to determine steady-state PK. Compared with control cows, the disease group had an initially higher peak concentration and a higher volume of distribution and drug clearance rates. The disease group also had a lower area under the curve per dosing interval, steady-state concentration maximum, and dose-adjusted peak steady-state concentration. All other PK parameters were not different between the 2 groups. Altered PK, as suggested by this trial, may contribute to an increased risk for the development

of a violative residue in meat. Further research is needed to more completely characterize drug distribution in diseased cattle and to study the effect of coadministration of other drugs on drug distribution. cattle.

J Dairy Sci 2016.99.680-700.

Associations between the degree of early lactation inflammation and performance, metabolism, and immune function in dairy cows

M. McCarthy, T. Yasui, M. Felippe, T. Overton

The objective of the current study was to determine associations between the severity of systemic inflammation during the early postpartum period and performance, energy metabolism, and immune function in dairy cows. Cows were assigned to categorical quartiles (Q; Q1 = 0.18–0.59, Q2 = 0.60–1.14, Q3 = 1.15–2.05, and Q4 = 2.06–2.50 g of haptoglobin/L) based on the highest plasma haptoglobin (Hp) concentration measured during wk 1 postpartum. Although cows were assigned to different categories of inflammation during the postpartum period, we detected a quadratic relationship of inflammation on prepartum dry matter intake (DMI) and body weight (BW) such that cows in Q2 had lower prepartum DMI and cows in Q2 and Q3 had lower prepartum BW compared with cows in the other quartiles. We also detected a quadratic association of inflammation with postpartum DMI and BW such that cows in Q2 and Q3 also had generally lower postpartum DMI and BW compared with cows in Q1. There was a tendency for a Q × time interaction for milk yield and Q × time interactions for 3.5% fat-corrected milk and energy-corrected milk yields; quadratic relationships suggested decreased milk yield for Q2 and Q3 cows. We also found Q × parity and Q × time interactions for plasma glucose and insulin concentrations, suggesting alterations with differing degrees of inflammation. There was also a Q × time interaction for plasma nonesterified fatty acids concentration. In addition, alterations in liver triglyceride and glycogen contents for cows with inflammation as well as alterations in [1-14C] propionate oxidation in vitro were observed. Although we observed limited effects of inflammation on neutrophil and monocyte phagocytosis at d 7 postpartum, inflammation appeared to alter neutrophil and monocyte oxidative burst. Overall, cows with any degree of elevated haptoglobin in the first week after calving had alterations in both pre- and postpartum intake and postpartum metabolism.

Theriogenology 2016.85.173-179.

Detection of genes encoding multidrug resistance and biofilm virulence factor in uterine pathogenic bacteria in postpartum dairy cows

V. Kasimanickam, K. Owen, R. Kasimanickam

Reckless use of antibiotics and/or development of biofilm are the rationale for the development of multidrug resistance (MDR) of pathogenic bacteria. The objective of the present study was to detect MDR genes in *Trueperella pyogenes* and to detect biofilm virulence factor (VF) genes in *Escherichia coli* isolated from the uterus of postpartum dairy cows. Uterine secretions from different parity postpartum Holstein cows (n = 40) were collected using cytobrush technique after a sterile procedure from cows with varying degree of uterine inflammatory conditions. The cytobrush was stored in a specimen collector, placed in a cooler with ice, and transported to the laboratory within 2 hours. The pathogens were isolated and were identified initially by their colony morphology and biochemical characteristics. To further identify and classify the single species, and to determine the presence of MDR and VF genes, the genes fragments were amplified using the respective primers by either singleplex or multiplex polymerase chain reaction protocol, and amplicons were detected by electrophoresis method. *T pyogenes* was isolated in 17 of 40 (42.5%) cows in the study population as recognized by the *16S rRNA* gene. Of the positive *T pyogenes* samples, 8 of 17 (42.1%) were positive for integron type 1 (*intI I*), and none were positive for integron type 2 (*intI II*). Of those 8 positive for *intI I*, six of eight (66.7%) were positive for amplicons *aadA5* and *aadA24-ORF1* at 1048 and 1608 bp, respectively, associated with specific drug resistance. Presence of *addA5* indicated resistance to sulfadiazine, bacitracin, florfenicol, and ceftiofur. Presence of *addA24-ORF1* indicated resistant to sulfadiazine, bacitracin, penicillin, clindamycin, and erythromycin. *E coli* was isolated in 18 of 40 (45.0%) cows in the study population. The genes for VF, *Agn43a*, and *Agn43 b*, associated with biofilm production, were found in 6 of 18 (33.3%) of the positive isolates. Both *T pyogenes* MDR gene and *E coli* biofilm VF existed in more severe form of uterine diseases than subclinical endometritis. In conclusion, 35% of *T pyogenes* isolates found were positive for a gene cassette associated with antibiotic resistance, and 33% of the *E coli* isolates contained genes for the VF associated with biofilm production.

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Co-infection with bovine Herpesvirus 4 and Histophilus somni significantly extends the service period in dairy cattle with purulent vaginal discharge.

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The aim of the study was to investigate the effect of bovine Herpesvirus 4 (BoHV-4) and Histophilus (H.) somni on fertility rate of cows in a Hungarian Holstein-Friesian dairy herd with purulent vaginal discharge (PVD). Non-pregnant cows (n = 188) with mature corpus luteum were treated with cloprostenol and 3 days later if they did not show oestrus, were examined by rectal palpation. Animals showing PVD (n = 60/31.9%/) and 14 controls with normal vaginal discharge (Score 0) were randomly selected and further examined by ultrasonography and blood samples were collected for detecting BoHV-4 DNA and transcervical guarded swabs were collected from the uterus for bacteriological examination. Although the majority of the examined animals were infected with BoHV-4 and H. somni including the control animals as well, in group of animals with PVD score 3, fewer animals became

pregnant and the duration between the first treatment to pregnancy was significantly extended. Based on these clinical and comparative data, our results confirm that these two microorganisms together may impair important reproductive parameters which may cause large economic losses to dairy farms.

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Comparing ELISA test-positive prevalence, risk factors and management recommendations for Johne's disease prevention between organic and conventional dairy farms in Ontario, Canada

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Johne's disease (JD) is a chronic, infectious disease in cattle. Between 2010 and 2013, a voluntary JD control program was successfully launched in Ontario, Canada, including a Risk Assessment and Management Plan (RAMP) and JD ELISA testing of the entire milking herd. Over the last decade, the organic dairy sector has been growing. However, organic farming regulations and philosophies may influence the risk for JD transmission on Ontario organic dairy farms. The aim of this cross-sectional study was to investigate differences in JD ELISA test positive prevalence, risk factors for JD and recommendations for JD prevention between organic and conventional dairy herds in Ontario. RAMP results (i.e. RAMP scores and recommendations) and ELISA results were available for 2103 dairy herds, including 42 organic herds. If available, additional data on milk production, milk quality, and herd characteristics were gathered. Organic and conventional herds had a similar herd-level JD ELISA test-positive prevalence (26.2% and 27.2%, respectively). Organic herds (4.2%) had a higher within-herd JD ELISA test-positive prevalence compared to conventional herds (2.3%) if they had at least one JD test-positive animal on the farm. Organic farms had lower risk scores for biosecurity (9 points lower), and higher scores in the calving (7 points higher) and the calf-rearing management areas (4 points higher). After accounting for RAMP score, organic farms received fewer recommendations for the calving management area (Odds Ratio = 0.41) and more recommendations in the adult cow management area (Odds Ratio = 2.70). A zero-inflated negative binomial model was built with purchase of animals and the herd size included in the logistic portion of the model. Herd type (organic or conventional), colostrum and milk feeding practices, average bulk tank somatic cell count, and presence of non-Holstein breeds were included in the negative binomial portion of the model. Organic farms had a higher number of test positive animals (Count Ratio = 2.02). Further research is necessary to investigate the apparent disconnect between risk factors and recommendations on organic dairy farms.