



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

*[www.buiatrics.com](http://www.buiatrics.com)*

## **Newsletter 1 – 2015**

### **Can the use antimicrobials to prevent disease in food animals be considered “judicious”?**

#### **AABP Newsletter**

In 2012, the U.S Food and Drug Administration (FDA) issued Guidance for Industry #209 – *The Judicious Use of Medically Important Antimicrobial Drugs in Food-Producing Animals* to address the increasing threat of antimicrobial resistance. In this document, one of the principles recommended by FDA was to limit the use of medically important antimicrobials in food-producing animals “to those uses that are considered necessary for assuring animal health”<sup>1</sup>. Specifically, production label claims – growth promotion or improved feed efficiency – represented an injudicious use of antimicrobials. However, the FDA also recognized in Guidance #209 that there are important uses of antimicrobials that are necessary for assuring animal health. Among these uses are the treatment, control and prevention of specific diseases.

The FDA specifically addresses prevention in Guidance #209 and concerns with the appropriateness of these uses. A recent report by the Pew Charitable Trusts has drawn into question the use of antibiotics for prevention purposes as “judicious”<sup>2</sup>. Therefore, it is important for veterinarians, producers and consumers to understand how antimicrobials are used to prevent disease in food animals in a judicious manner.

To begin with, it is necessary to define “disease prevention”. Disease prevention uses of antimicrobials occur in situations where disease is likely to occur in a group of animals, but before any of the animals show signs of disease. Obviously, determining important risk factors for when disease is “likely to occur” requires professional judgment; thus, the FDA has deemed prevention uses to be “judicious” when veterinarians are involved and the following factors are considered:

- A. Prevention is targeted at a specific [bacterial] agent
- B. There is evidence that the drug will be effective in treating the particular disease
- C. The specific preventive use is consistent with accepted veterinary practice
- D. Preventive use is targeted to animals at risk for developing the specific disease
- E. No reasonable alternate interventions exist

Guidance #209 also gives examples of what would and would not constitute judicious preventive use of antimicrobials. For example, a veterinarian, based on a client’s production practices and health history of that herd, may appropriately authorize antimicrobials for prevention of a specific bacterial disease in cattle experiencing known stressors (transport). Another example given by FDA is the situation where concurrent disease increases the risk of bacterial infection, as is seen when broiler flocks experience *Clostridium perfringens* (necrotic enteritis) in the face of concurrent coccidiosis. To be considered judicious preventive use, the veterinarian should have: 1) information related to a specific bacterial disease and/or specific risk factors for that particular group of animals and 2) a defined duration of administration (the period of time when the animals are “at risk”). Following these guidelines will assure that veterinarians and producers are using antimicrobials in the most appropriate manner for the particular clinical situation.

[1] FDA Guidance for Industry #209 – *The Judicious Use of Medically Important Antimicrobial Drugs in Food-Producing Animals*. Accessed 8 Dec 2014 at:

<http://www.fda.gov/downloads/AnimalVeterinary/GuidanceComplianceEnforcement/GuidanceforIndustry/UCM216936.pdf>

[2] *The Pew Charitable Trusts – Gaps in FDA’s Antibiotics Policy*. Accessed 8 Dec 2014 at:

<http://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2014/11/gaps-in-fdas-antibiotics-policy>

\*\*\*      \*\*\*      \*\*\*



## **Veterinary Continuous Education in Europe Bovine Health Management**

The VETCEE has officially invited the ECBHM (European College for Bovine Health Management) to supervise the development of standards for middle-tier training programs for veterinarians working in the field of bovine health management in Europe.

A working group (VETCEE subcommittee) was formed to draft a dossier of competences and module descriptors for VETCEE accredited bovine health management programs.

Veterinary Continuous Education in Europe (VETCEE) is a joint initiative of EAEVE, EBVS, FVE and UEVP.

VETCEE has developed a standard for structured continuing professional development and mutual recognition across Europe. It has been developing separate dossier of competences for the different species based on the VETCEE standard and in collaboration with European associations. Dossiers of competences on Companion Animal Medicine and Porcine Health Management are already available, while more dossiers are expected soon in Equine Medicine, Laboratory Animal Science and Medicine & on Bovine Health Management.

VETCEE appoints independent panels of experts to evaluate programs in the European countries according to the VETCEE Standard and the respective Dossier of Competencies. Programs that successfully pass the evaluation are approved by the VETCEE Board and granted the VETCEE logo.

The following is the composition of the working group on programs related to bovine health management:

**Arcangelo Gentile**, chairperson (Italy – Academia – Past president ECBHM - Member of the board of the World Buiatrics Association)

**Borut Zemljic** (Slovenia – Practitioner – ECOVE - FVE – ECBHM)

**Carl-Christian Gelfert** (Austria – Industry - ECBHM)

**David Black** (United Kingdom – Practitioner – Member of the board of the World Buiatrics Association - Managing director of XLVets)

**George Stilwell** (Portugal – Academia - Practitioners – ECBHM)

**Luis Miguel Ortega Mora** (Spain, Academia – EVPC)

\*\*\* \*\*

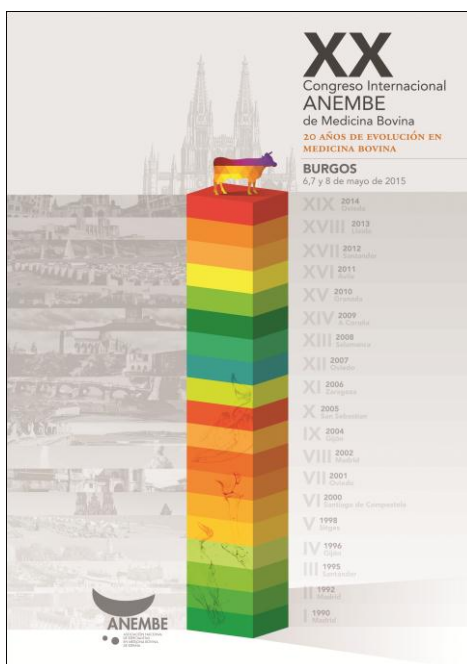
## International Congresses and symposiums

### XX ANEMBE International Congress Burgos

Burgos, Spain

May 6-8, 2015

[www.anembe.com](http://www.anembe.com)



\*\*\* \*\*



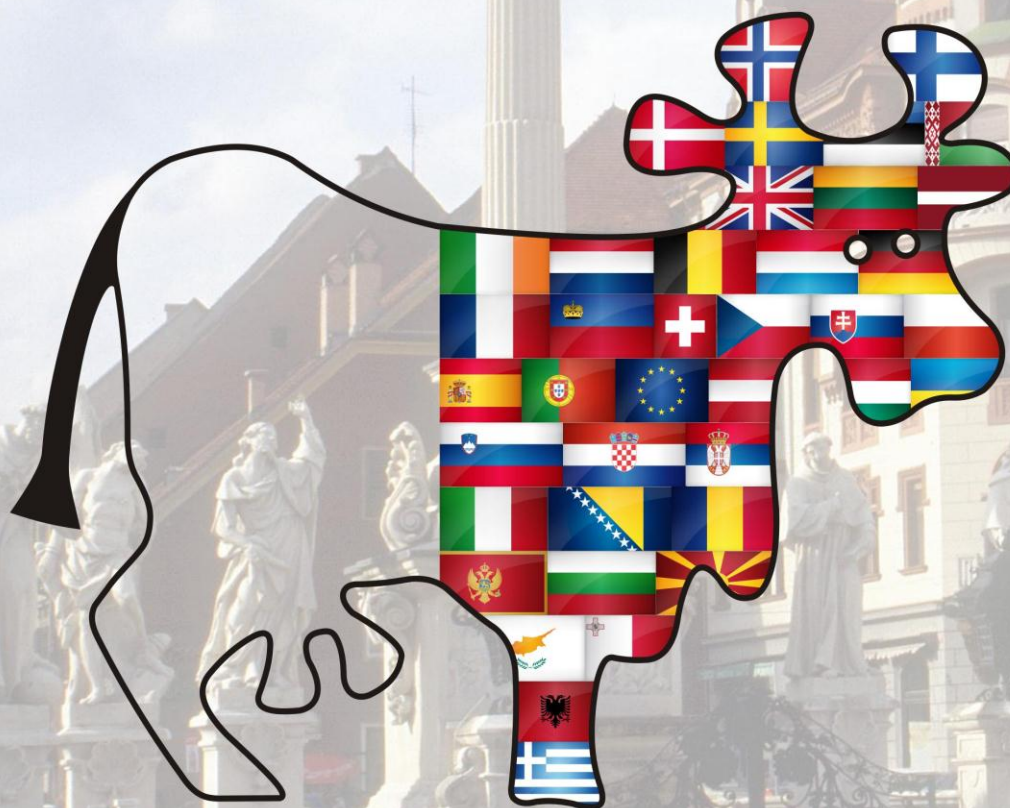
**17° International congress of the Large Animal Med Vet Italian  
Association  
Cremona, Italy,  
May 13 to 15, 2015**

\*\*\*      \*\*\*      \*\*\*





# **XV Middle European Buiatric Congress 10<sup>th</sup> ECBHM Symposium XXV Slovenian Buiatric Association Conference**



**10<sup>th</sup>-13<sup>th</sup> JUNE 2015  
CONVENTION CENTRE HABAKUK MARIBOR, SLOVENIA**

[www.mebc-ecbhm-2015.si](http://www.mebc-ecbhm-2015.si)

Dear colleagues  
We have a pleasure to invite you to the

**XV Middle European Buiatric Congress**  
**10<sup>th</sup> ECBHM Symposium**  
**XXV Slovenian Buiatric Association Conference**

This will be organised by Slovenian Buiatric Association from 10th to 13th June 2015 in Convention Centre Habakuk, Maribor, Slovenia.

On the event will participate leading specialist on field of buiatria from Europe and USA. Following scientific topics concerning ruminants will be included:

Nutrition and metabolic diseases

Reproduction

Udder health

Infectious diseases and immunology

Surgery and lameness

Herd health and economics

Food hygiene and public health

Diagnostics

Small ruminant diseases

Animal welfare

Registration and all important information will be open from 1st June 2014 on

[www.mebc-ecbhm-2015.si](http://www.mebc-ecbhm-2015.si)

Registration fee for participants:

"early" bird (till 19th April 2015)	300 € (+22% VAT)
Registration after 20th April 2015	360 € (+22% VAT)
One day registration (gala dinner not included)	180 € (+22% VAT)
Student registration	150 € (+22% VAT)

Reservation of hotel capacities will be possible after 1st June 2014 in Hotel and Spa Centre Habakuk (5 stars) and surroundings hotels in the range of 500 m - walking distance (between 3 to 4 stars) for a price between 65 and 90 € (single bed) and in UNI youth hostel for 40 € on

[booking@termemb.si](mailto:booking@termemb.si)

First announcement and call for abstracts will be available on web site after 1st June 2014

Organising committee



## **Preliminary programme of the XV. Middle European Buiatric Conference and 10th Symposium of European College of Bovine Health Management**

### **Wednesday 10<sup>th</sup>**

---

11.00	ECBHM Board meeting (Diplomatic Club room)
16.00	Opening ceremony of Conference and Symposium, Congress Centre Habakuk Maribor, Turner Hall
16.45	<b>Why do we need specialisation in buiatrics and why on different levels</b> (Speakers: Mireille Meylan, Arcangelo Gentile, representative of European board of veterinary specialisation, representative of national specialisation Programme)
17.45	Open discussion
19.00	<b>Welcome party</b> –visit of nearby vine cellar (transport with the buses)

---

### **Thursday 11th**

Congress Centre Habakuk, Turner Hall

---

09.00	<b>Infectious diseases and immunology</b> Key note speaker: <b>Amelia Wooloms</b>
09.40	Oral presentations
11.00	Coffee break
11.30	<b>Udder health</b> Key note speaker: <b>Hans Ulrich Graber</b>
12.10	Oral presentations
13.30	Lunch break
15.00	<b>Reproduction</b> Key note speakers: <b>Geert Opsomer, Árpád Csaba Bajcsy</b>
16.20	Oral presentations
18.00	<b>ECBHM AGM</b> (Minařik Hall)

---

### **Friday 12th**

Congress Centre Habakuk, Turner Hall

---

08.00	<b>Metabolic diseases</b>
-------	---------------------------

---



	Key note speakers: <b>Danijela Kirovski, Pavol Mudron</b>
09.20	Oral Presentations
11.00	Coffee break
11.30	<b>Diagnostics</b> Key note speaker: <b>Thomas Wittek</b>
12.10	Oral presentations
13.30	Lunch Break
15.00	<b>Surgery and lameness</b> Key note speakers: <b>Dörte Döpfer, Alexander Starke</b>
16.20	Oral Presentations
17.40	Coffee break
18.10	<b>Animal welfare</b> Key note speaker: <b>Christoph Winckler</b>
18.50	Oral Presentations
20.30	Gala dinner with dance music

## Saturday 13th

Congress Centre Habakuk, Turner Hall

09.00	<b>Herd health and economics</b> Key note speakers: <b>Miel Hostens, Boony Van Ranst</b>
09.40	Oral presentations
11.00	Coffee break
11.30	<b>Small ruminants diseases</b> Key note speaker: <b>Vasia S. Mavrogianni</b>
12.10	Oral Presentations
13.30	Lunch break
15.00	<b>Food hygiene and public health</b> Key note speaker: <b>Geoffrey Willson Smith</b>
15.40	Oral presentations
<b>17.00</b>	<b>Closing ceremony</b>

Welcome to

# Ruminant Veterinary Association of South Africa (RuVASA)

a Group of the South African Veterinary Association

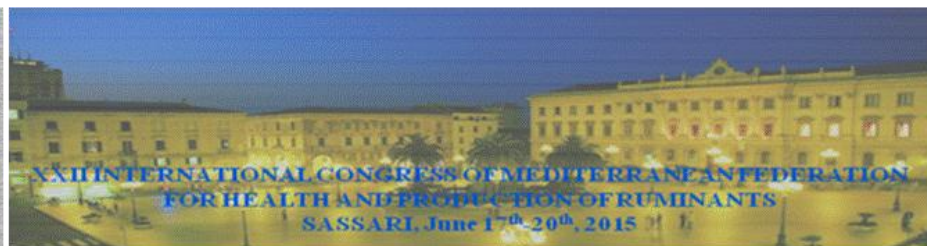
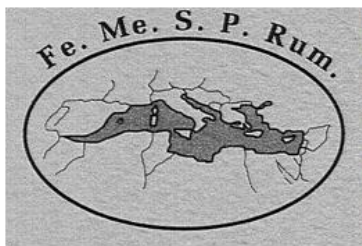


## **Annual Congress of the Ruminant Veterinary Association Goudini Spa, Western Cape of South Africa June 8 to 10, 2015**

The Ruminant Veterinary Association of South Africa Annual Congress will be held from 8-10 June 2015 in the Scenic Western Cape of South Africa (Goudini Spa - see <http://www.atkvoorde.co.za/>). For more information visit [www.lhpg.co.za](http://www.lhpg.co.za) or [www.vetlink.co.za](http://www.vetlink.co.za).

Please contact the conference coordinator for more information: Madaleen Schultheiss  
[admin@vetlink.co.za](mailto:admin@vetlink.co.za)

\*\*\*      \*\*\*      \*\*\*



## **XXII International Congress of the Mediterranean Federation for Health and Production of Ruminants (FeMeSPRum) Sassari, Italy, June 17 to 20, 2015**

The organizing committee of the XXII congress of the FeMeSPRum has presented the final scientific program, that can be directly requested to [endvet@uniss.it](mailto:endvet@uniss.it).

Venue: Department of Veterinary Medicine, University of Sassari

Call for abstract: deadline – February 20, 2015


Registration: deadline – March 15, 2015

\*\*\*      \*\*\*      \*\*\*

**XVII Latin-American Buiatrics Conference and  
XI Brazilian Buiatrics Conference  
Sao Paulo, Brazil  
July 22 to 24, 2015**



**buiatrics2015**  
XI BRAZILIAN CONGRESS AND  
XVII LATIN AMERICAN BUIATRICS CONGRESS  
JULY 22 - 24, 2015 | SAO PAULO



**SAVE THE DATE**

The Brazilian Association for Buiatrics have the honour to invite you to the **XVII Latinamerican Buiatrics Congress and XI Brazilian Buiatrics Congress** that will take place in São Paulo, Brazil, July 2015.

We will have events covering: Animal Welfare, Buffaloes, Clinical Practice, Imaging Diagnostics, Reproductive Diseases, Nutritional and Metabolic Diseases, Vesicular Diseases, Encephalitis and Encephalopathies, Mastitis, Neonatology, Parasitology, Small Ruminants, National Plan for the Control and Eradication of Brucellosis and Tuberculosis (PNCEBT), Podology, Public Policies, Breeding, Therapeutics and Vaccinology.

VISIT OUR WEBSITE FOR MORE INFORMATION:  
**BUIATRIA2015.COM.BR**



\*\*\*      \*\*\*      \*\*\*



Congress on Controversies & Consensus in  
**Bovine Health, Industry & Economics (CoBo)**  
Berlin, Germany, August 27 - 30, 2015



**Congress on controversies and consensus in bovine health, industry and economics**  
**Berlin, Germany,**  
**August 27 to 30, 2015**

The aim of CoBo is to bring together international experts and participants from different professional groups - veterinarians, farmers, scientists, dairy food producers, technology providers - representing the entire production chain to collectively address the controversial issues in their fields.

The congress will focus on controversial topics in reproduction, mastitis and milk quality, infectious diseases, herd health, cattle production, feeding & nutrition, communication & management, and more.

Call for Abstracts: deadline - May 10, 2015

Registration: deadline – May 31, 2015

Link for information: <http://www.congressmed.com/bovine/>

---

\*\*\*      \*\*\*      \*\*\*

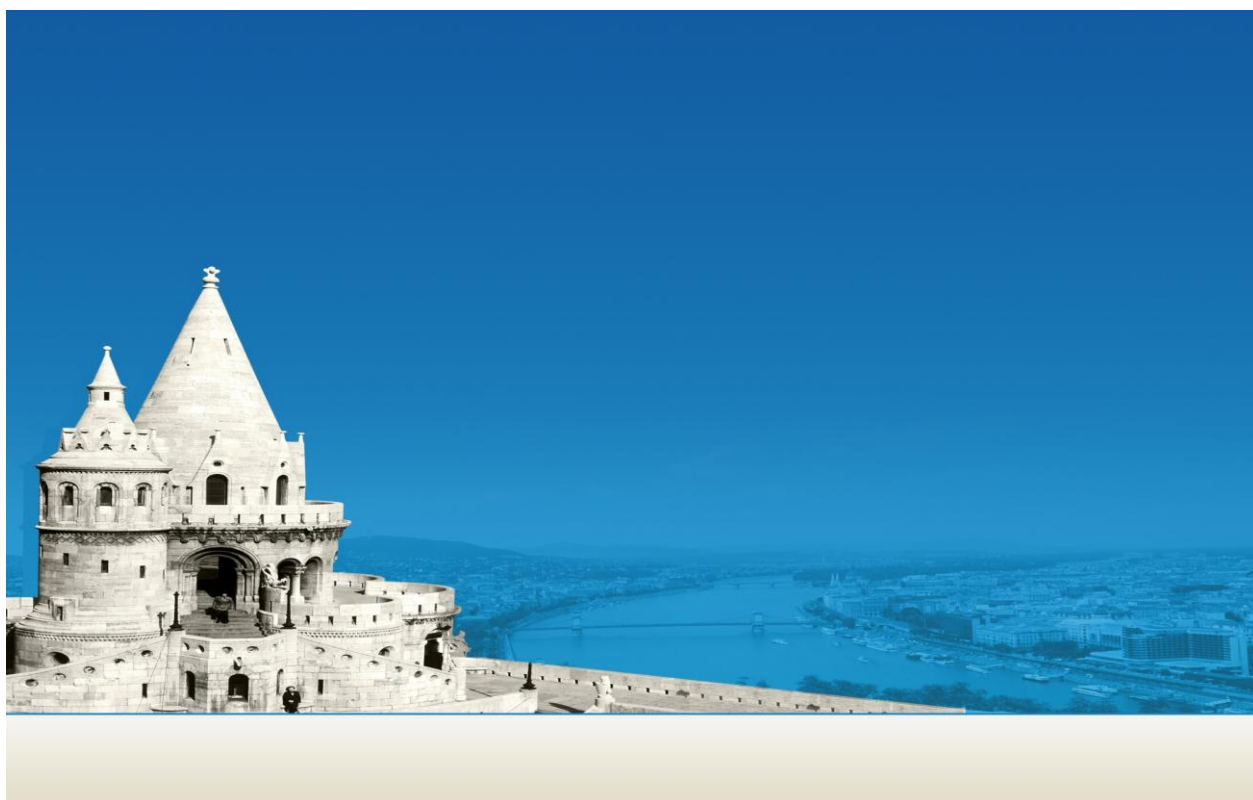


**XLVII Congress of the Italian Association for Buiatrics**  
**Piacenza, Italy,**  
**September 11 to 12, 2015**

Information on scientific program and deadlines soon in the webpage of the SIVAR ([www.buiatria.it](http://www.buiatria.it))

\*\*\*      \*\*\*      \*\*\*





*Budapest, Hungary*

**XXV Jubilee International Congress of the Hungarian Association for  
Buiatrics  
Budapest, Hungary  
September 13 to 16, 2015**

**Call for abstracts**

The organisers of the XXV Jubilee International Congress of the Hungarian Association for Buiatrics in co-operation with the Austrian Association for Buiatrics invite you to contribute to achieve the original goal in updating the scientific knowledge and professional skills of veterinary surgeons in bovine, ovine and caprine practice by presenting papers related to the subjects aforementioned and/or by an active participation in the scientific programme.

If you intend to present a contribution to the congress please indicate on the reply card and send an abstract of your paper, with maximum of 300 words, to the Congress Secretariat before **May 15, 2015**.

The abstract should be as informative as possible. It should contain the specific objectives, experimental methods and statistical analyses employed, together with a synthesis of results and conclusions.

The text should be single space with double space between paragraphs. A blank line should be inserted between title and author(s) and affiliations(s), and between affiliation(s) and the text. Title and author(s) should be in 14-point font in bold, centred on the page. The type face should be in Times New Roman. The presenting author's name should be underlined. Affiliation(s) and text should be in 12-point font.

Contributors will be notified shortly after submission about the acceptance of their abstract, but not later than **June 15, 2015**. The text should be sent by e-mail.

Abstracts must be submitted in English. It is planned to publish the accepted abstracts in the Proceedings. Publishing is conditional upon at least one author registering at the congress.

**To get more information please visit: [www.mbuiatrikus.org](http://www.mbuiatrikus.org)**

\*\*\*      \*\*\*      \*\*\*

**2015 AABP Annual Conference in New Orleans**  
**New Orleans, Louisiana, USA**  
**September 17 to 19, 2015**



The 48<sup>th</sup> Annual Conference of the American Association of Bovine Practitioners will be held September 17-19 in New Orleans, Louisiana. The conference will feature the latest continuing education for beef and dairy veterinarians. Also included will be joint sessions with the American Association of Small Ruminant Practitioners. Additional events will include practice tips, poster sessions, preconference seminars, research summaries, sessions for students, entertainment and a large trade show. Registration will open May 1, 2015.

Visit [www.aabp.org](http://www.aabp.org) for more information.

\*\*\*      \*\*\*      \*\*\*

## Scientific abstracts

*J. Dairy Sci.* 2015.98.229-239.

### **Factors associated with early cyclicity in postpartum dairy cows**

M. Vercouteren, J. Bittar, P. Pinedo, C. Risco, J. Santos, A. Vieira-Neto, K. Galvão

The objective of this study was to evaluate factors associated with resumption of ovarian cyclicity within 21 days in milk (DIM) in dairy cows. Cows ( $n = 768$ ) from 2 herds in north Florida had their ovaries scanned at  $17 \pm 3$ ,  $21 \pm 3$ , and  $24 \pm 3$  DIM. Cows that had a corpus luteum  $\geq 20$  mm at  $17 \pm 3$  or at  $21 \pm 3$  DIM or that had a corpus luteum  $< 20$  mm in 2 consecutive examinations were determined to be cyclic by  $21 \pm 3$  DIM. The following information was collected for up to 14 DIM: calving season, parity, calving problems, metabolic problems, metritis, mastitis, digestive problems, lameness, body weight loss, dry period length, and average daily milk yield. Body condition was scored at  $17 \pm 3$  DIM. Multivariable mixed logistic regression analysis was performed using the GLIMMIX procedure of SAS. Variables with  $P \leq 0.2$  were considered in each model. Herd was included as a random variable. Three models were constructed: model 1 included all cows, model 2 included only cows from dairy 1 that had daily body weights available, and model 3 included only multiparous cows with a previous dry period length recorded. In model 1, variables associated with greater cyclicity by  $21 \pm 3$  DIM were calving in the summer and fall rather than in the winter or spring, being multiparous rather than primiparous, and not having metabolic or digestive problems. In model 2, variables associated with greater cyclicity by  $21 \pm 3$  DIM were calving in the summer and fall, not having metritis or digestive problems and not losing  $> 28$  kg of BW within 14 DIM. In model 3, variables associated with greater cyclicity by  $21 \pm 3$  DIM were absence of metabolic problems and dry period  $\leq 76$  d.

In summary, cyclicity by  $21 \pm 3$  DIM was negatively associated with calving in winter or spring, primiparity, metritis, metabolic or digestive problems, loss of  $> 28$  kg of body weight, and a dry period  $> 76$  d. Strategies preventing extended dry period length and loss of BW, together with reductions in the incidence of metritis as well as metabolic and digestive problems should improve early cyclicity postpartum.

### **The effect of digital dermatitis on hoof conformation**

A. Gomez\*, N. Cook, J. Rieman, K. Dunbar, K. Cooley, M. Socha, D. Döpfer

Digital dermatitis (DD) is the most prevalent cause of lameness of infectious origin in cattle. However, little is known about the effects of DD on hoof conformation (HC) during the clinical disease. The objectives of the present study were to (1) evaluate the changes in HC observed in feet affected with clinical DD lesions and (2) investigate the temporal relationship between DD and heel horn erosion (HHE). A longitudinal study was carried out including a cohort of 644 Holstein heifers. Digital dermatitis, HC, and presence of HHE in the rear feet of each heifer were assessed during a period of 6 mo. A total of 1,979 feet evaluations were included in the data set, of which 157 corresponded to feet presenting DD lesions >20 mm [mean (SD) size of 27.2 (8.2) mm]. Age, days of pregnancy, hip height, and girth circumference were also recorded at cow level. Significant HC changes were observed in DD-affected feet. Results standardized to a period of 90 d of follow-up showed an increase in heel height [mean (95% CI) 3.4 (2.5, 4.4) and 2.8 (2.0, 3.7) mm] and claw angle [0.8 (0.2, 1.4) and 1.4 (0.7, 2.0) degrees] of the medial and lateral claws, respectively. In addition, an increase in depth of the interdigital cleft [3.2 (2.7, 3.7) mm] and on debris accumulation [14% (7, 21) of feet] was also observed. Feet affected with clinical DD lesions also experienced a 46% point increase in the presence of severe HHE. In the short term, HC changes returned to normal levels when clinical cure of DD was achieved after topical treatment. In conclusion, significant HC changes occur in heifers affected by clinical DD before lameness symptoms are detected. The transformation of the heel area in feet affected by DD likely promotes the creation of a local environment that favors the persistence of the disease and the occurrence of severe HHE. To avoid further hoof damage, active surveillance and early intervention to reduce HC changes are recommended to improve DD control programs. Successful restoration of HC can be achieved upon clinical cure of DD. The long-term effects in lifetime performance of the HC changes due to DD remain to be further investigated.

*Anim. Sci.* 2015. 93. 377-385.

### **Feeding behavior as an early predictor of bovine respiratory disease in North American feedlot systems**

B. Wolfger, K. Schwartzkopf-Genswein, H. Barkema, E. Pajor, M. Levy, K. Orsel

Bovine respiratory disease (BRD), which can cause substantial losses for feedlot operations, is often difficult to detect based solely on visual observations. The objectives of the current study were to determine a BRD case identification based on clinical and laboratory parameters and assess the value of feeding behavior for early detection of BRD. Auction-derived, mixed-breed beef steers ( $n = 213$ ) with an average arrival weight of 294 kg were placed at a southern Alberta commercial feedlot equipped with an automated feed bunk monitoring system. Feeding behavior was recorded continuously (1-s intervals) for 5 wk after arrival and summarized into meals. Meals were defined as feeding events that were interrupted by less than 300 s nonfeeding. Meal intake (g) and meal time (min) were further summarized into daily mean, minimum, maximum, and sum and, together with frequency

of meals per day, were fit into a discrete survival time analysis with a conditional log–log link. Feedlot staff visually evaluated (pen-checked) health status twice daily. Within 35 d after arrival, 76% ( $n = 165$ ) of the steers had 1 or more clinical signs of BRD (reluctance to move, crusted nose, nasal or ocular discharge, drooped ears or head, and gaunt appearance). Whereas 41 blood samples could not be processed due to immediate freezing, for 124 of these steers, complete and differential blood cell count, total serum protein, plasma fibrinogen, serum concentration of haptoglobin (HP), and serum amyloid A (SAA) were determined. The disease definition for BRD was a rectal temperature  $\geq 40.0^{\circ}\text{C}$ , at least 2 clinical signs of BRD, and HP  $> 0.15$  mg/mL. It was noteworthy that 94% of the 124 steers identified by the feedlot staff with clinical signs of BRD had HP  $> 0.15$  mg/mL. An increase in mean meal intake, frequency, and mean inter-meal interval was associated with a decreased hazard for developing BRD 7 d before visual identification ( $P < 0.001$ ). Furthermore, increased mean mealtime, frequency, and mean inter-meal interval were associated with a decreased BRD hazard up to 7 d before feedlot staff noticed clinical symptoms ( $P < 0.001$ ). In conclusion, mean intake per meal as well as mean meal time and frequency of meals could be used to predict the hazard of BRD in feedlot cattle 7 d before visual detection and could be considered in commercial feedlot settings once a predictive algorithm has been developed.

*Physiology & Behavior* 2015.139.281–289.

### **Heart rate and heart rate variability in multiparous dairy cows with unassisted calvings in the periparturient period**

L. Kovács, J. Tőzsér, F.L. Kézér, F. Ruff, M. Aubin-Wodala, E. Albert, A. Choukeir, Z. Szelényi, O. Szenci

Behavioural changes before calving can be monitored on farms; however, predicting the onset of calving is sometimes difficult based only on clinical signs. Heart rate (HR) and heart rate variability (HRV) as noninvasive measures of autonomic nervous system (ANS) activity were investigated in Holstein–Friesian cows ( $n=20$ ) with unassisted calvings in the periparturient period to predict the onset of calving and assess the stress associated with calving. R–R-intervals were analysed in 5-min time windows during the following three main periods of measurement: 1) between 0 and 96 h before the onset of calving restlessness (prepartum period); 2) during four stages of calving: (I) early first stage; between the onset of calving restlessness and the first abdominal contractions; (II) late first stage (between the first abdominal contractions and the appearance of the amniotic sac); (III) early second stage (between the appearance of the amniotic sac and the appearance of the foetal hooves); (IV) late second stage (between the appearance of the foetal hooves and delivery of the calf), and 3) over 48 h following calving (postpartum period). Data collected between 72 and 96 h before calving restlessness was used as baseline. Besides HR, Poincaré measures [standard deviation 1 (SD1) and 2 (SD2) and SD2/SD1 ratio], the root mean square of successive differences (RMSSD) in R–R intervals, the high-frequency (HF) component of HRV and the ratio between the low-frequency (LF) and the HF components (LF/HF ratio) were calculated.

Heart rate increased only following the onset of the behavioural signs, peaked before delivery of the calf, then decreased immediately after calving. Parasympathetic indices of HRV (RMSSD, HF<sub>norm</sub> and SD1) decreased, whereas sympathovagal indices (LF/HF ratio and SD2/SD1 ratio) increased significantly from baseline between 12 and 24 h before the onset of calving restlessness. The same pattern was observed between 0 and 1 h before calving restlessness.



Following the onset of behavioural signs, parasympathetic activity increased gradually with a parallel shift in sympathovagal balance towards parasympathetic tone, which was possibly a consequence of oxytocin release, which induces an increase in vagus nerve activity. Parasympathetic activity decreased rapidly between 0 and 0.5 h following calving and was lower than measured during all other stages of the study, while sympathetic activity peaked during this stage and was higher than measured during any other stages. Between 0 and 4 h after calving vagal tone was lower than baseline, whereas sympathovagal balance was higher, reflecting a prolonged physiological challenge caused by calving. Vagal activity decreased, whereas sympathovagal balance shifted towards sympathetic tone with increased live body weight of the calf during the late second stage of calving,

*Reproduction in Domestic Animals* Article first published online: 21 FEB 2015,  
DOI: 10.1111/rda.12507

### **The concentrations of inflammatory cytokines and acute-phase proteins in the peripheral blood and uterine washings in cows with pyometra**

P. Brodzki, K. Kostro, A. Brodzki, J. Ziętek

The development of pyometra in cows depends largely on the state of local immunity of the uterus. The objective of the study was to evaluate the concentration of the following proinflammatory cytokines: tumour necrosis factor (TNF- $\alpha$ ) and interleukin-6 (IL-6); anti-inflammatory cytokine: interleukin-10 (IL-10); and acute-phase proteins (APPs): haptoglobin (Hp) and serum amyloid A (SAA), in serum and uterine washings in cows with pyometra and healthy animals. The study was performed on 20 cows divided into two groups based on the results of cytological and ultrasonographic tests: a pyometra and a healthy group (10 cows per group). Experimental material consisted of blood serum and uterine washings. The levels of the following cytokines, TNF- $\alpha$ , IL-6, IL-10 and APPs – Hp and SAA, in the study material were determined by ELISA. The results showed that the values of TNF- $\alpha$ , IL-6, IL-10 as well as SAA and Hp were significantly higher in serum of cows with pyometra compared to controls ( $p < 0.001$ ). The uterine washings had significantly higher levels of IL-6, IL-10, and Hp in pyometra cows compared to the control ( $p < 0.001$ ). Our results indicate that it is possible to monitor the course of pyometra in cows based on the evaluation of the concentration of cytokines and Hp in the serum and uterine washings. Simultaneous evaluation of selected indicators of antagonistic interaction can be helpful in determining the current status of local immunity of the uterus. On this basis, it could be possible to properly select an adjunctive therapy in the form of immunomodulating preparations.

*Reproduction in Domestic Animals* 2014.49.1028-1033.

### **Epidemiological description of cystic ovarian disease in argentine dairy herds: risk factors and effects on the reproductive performance of lactating cows**

L. Cattaneo, M.L. Signorini, J. Bertoli, J.A. Bartolomé, N.C. Gareis, P.U. Díaz, G.A. Bó, H.H. Ortega

To describe the epidemiology of cystic ovarian disease (COD), to find possible risk factors associated with the incidence of cysts and to analyse the impact of COD on the reproductive performance of dairy cows, databases from 22 dairy herds from the main dairy region in Argentina were retrospectively evaluated throughout a 3-year period (2009–2011). A total of 248 COD cases over 9156 parturitions were recorded, resulting in a cumulative incidence rate of 2.7%. Cystic ovarian disease incidence density was lower during the first 100 days post-partum (DPP) than during later stages of lactation. Seasonality had a significant influence on the disease presentation with higher incidence rates during winter and spring. Cows with a previous diagnosis of clinical mastitis showed 2.72 times more chances of developing ovarian cysts. Cystic cows had longer calving to first service and calving to conception intervals and lower conception rate than controls.