“Vista® Once is going right back into the cooler and then it goes right back in the calves.”

- Ray Pawlisch, DVM
Wisconsin

Vista® Once SQ is the most complete respiratory protection available, offering 5-way modified live viral protection in combination with the only avirulent-live culture Mannheimia haemolytica and Pasteurella multocida protection. And it’s backed by respiratory research validating:

- Respiratory duration of immunity of at least:
  - 182 days for Infectious Bovine Rhinotracheitis (IBR)
  - 206 days for Bovine Virus Diarrhea (BVD) Type 1
  - 200 days for BVD Type 2
- Three-day onset of immunity for IBR respiratory protection
- BVD Type 1b cross protection
- BVD Type 2 protection in the face of maternal antibodies

The five-way protection of Vista also is available in combination with the only single-dose Leptobordetella protection: Vista 5 L5 SQ.

For more information about Vista vaccines, talk to your veterinarian or animal health provider.
PROCEEDINGS

of the

FORTY-FOURTH ANNUAL CONFERENCE

AMERICAN ASSOCIATION OF BOVINE PRACTITIONERS

September 22-24, 2011

St. Louis, Missouri

Photo courtesy of Andy Atzenweiler, Missouri Beef Cattleman, Kansas City, MO.

Editor
Robert A. Smith, DVM
3404 Live Oak Lane
Stillwater, OK 74075
Tel: (405) 372-8666
Fax: (405) 743-8422

Advertising Representative
J. T. O'Brien & Assoc.
12118 Nieman Road
Overland Park, KS 66213
Tel: (913) 402-8383
Fax: (913) 402-8384

Executive Vice President
M. Gatz Riddell, Jr., DVM
P.O. Box 3610
Auburn, AL 36831-3610
Tel: (800) 269-2227
Fax: (334) 821-9532

Publisher
VM Publishing Company
205 W. 7th Ave., Suite 201G
Stillwater, OK 74074
Tel/Fax: (405) 533-1883

Cover photo of the skyline of St. Louis, Missouri, site of the 2011 AABP Conference, courtesy of Dr. Bob Smith, Stillwater, Oklahoma.

©American Association of Bovine Practitioners, 2011 • All Rights Reserved • Proceedings • ISSN 1079-9737
# Table of Contents

**GENERAL SESSIONS**
- Feeding the World through Improved Animal Health and Genetic Selection  
  Holly L. Neibergs ......................................................... 1
- Review of AMDUCA and Extra-Label Drug Use in Food Animals  
  Ronald E. Baynes .......................................................... 8
- Opportunities for Veterinarians in the Artisan Cheese Industry  
  Joseph J. Klopfenstein .................................................. 13
- Veterinary Services to Small and Moderate Sized Producers  
  Dan Goehl ................................................................. 16

**BEEF SESSIONS**
- Drivers of Income and Economic Growth in Mixed Animal Veterinary Practices  
  Brad White .............................................................. 21
- Economic Effects: Feeding Cattle Previously Treated for Bovine Respiratory Disease  
  DL. Step, Clint Krehbiel ................................................. 25
- Economic Considerations with Bovine Respiratory Disease Interventions  
  R.L. Larson ............................................................... 28
- Building Management Partner Relationships with Your Key Clients  
  John T. Groves ......................................................... 32
- Achieving Reproductive Efficiency in Beef Cow Herds  
  W. Mark Hilton ........................................................... 34

**FEEDLOT SESSIONS**
- The Business of Beef Feedlot Production  
  Dave Plett ..................................................................... 41
- Integrated Marketing Systems  
  Dan Goehl ................................................................. 43
- The Challenges and Rewards of Working with Stocker/Backgrounders  
  John T. Groves ........................................................... 46

**DAIRY SESSIONS**
- Immunity and Inflammation in Transition Cows  
  Barry J. Bradford ....................................................... 48
- Metabolic Health in the Transition Period and Fertility of Dairy Cows  
  R.S. Bisinotto, E.S. Ribeiro, F.S. Lima, N. Martinez,  
  L.F. Greco, J.E.P. Santos .............................................. 53
- Nutritional Management of Transition Dairy Cows  
  James K. Dräckley ........................................................ 64
- Feeding To Reduce your Carbon Footprint  
  Michael F. Hutjens ..................................................... 74
- Taking the Long View: Treat Them Nice as Babies and  
  They will be Better Adults  
  M. E. Van Amburgh, F. Soberon, E. Raffrenato, J. Karzses,  
  R.W. Everett ............................................................. 79
- Practical Aspects of Accelerated Feeding of Dairy Calves  
  N.G. Anderson .......................................................... 88

**AABP-AASRP JOINT SESSIONS**
- Practical Analgesic Techniques for Small Ruminants and Camelids  
  Michael J. Huber ....................................................... 101
- Simple Techniques for Managing Complicated Fractures in Camelids and Small Ruminants  
  Michael J. Huber ....................................................... 103
- Regional Perfusion of Antimicrobials as a Complementary Treatment for Soft Tissue, Bone, or Joint Infections in Sheep, Goats, and Camelids  
  Michael J. Huber ....................................................... 106
- Mastitis in Small Ruminants  
  Pamela L. Ruegg ....................................................... 111

**VETERINARY TECHNICIAN PROGRAM**
- Milk Quality and Udder Health  
  Sarah Wagner ............................................................ 120
- Monitoring the Quality of Colostrum and Pasteurized Waste Milk  
  Mary Ellen Charter, Brenda Moslock-Carter ................. 126
- Putting it All Together: Udder Health Programs in Private Practice  
  Brenda Moslock-Carter .............................................. 129
- Offering Beef Herd Consultations and Nutritional Guidance: the Veterinary Technician’s Role  
  Rachel Heitkamp ......................................................... 131

**RESEARCH SUMMARIES I**
- Changes in Behavior and Clinical Illness Scores in Calves after Induction of Mycoplasma bovis Pneumonia  
  D.E. Amrine, B.J. White, D.E. Anderson, R.L. Larson,  
  D. Mosier, D.G. Renter ................................................ 136
- Effects of SRP® E.coli Vaccine Technology on Feeder Cattle Performance, Health, and Carcass Characteristics  
  D.J. Rezac, D.U. Thomson, B.A. Butler, B.W. Wileman,  
  C.D. Reinhardt ........................................................... 137
- A Commercially Available Siderophore-Receptor and Porin-Based Vaccine Reduces the Prevalence of E. coli O157:H7 in the Feces of Beef Cattle under Field Conditions in 10 Commercial Feedlots  
  B.A. Butler, D.U. Thomson, G.H. Loneragan,  
  B.W. Wileman ........................................................... 138
- Effects of Delayed Implanting on Feeder Cattle Health, Performance, and Carcass Quality  
  R.D. Munson, D.U. Thomson, D.J. Rezac,  
  C.D. Reinhardt ........................................................... 139
- Comparison of Three Different Dehorning Techniques on Pain, Behavior, Wound Healing, and Performance in Feeder Cattle  
  C.D. Neely, D.U. Thomson, C.A. Kerr, D.J. Rezac,  
  C.D. Reinhardt ........................................................... 140
- Effect of Oral Meloxicam on Performance and Health of Stocker Calves after Castration  
  J.F. Coetzee, L.N. Edwards, R.A. Mosher,  
  A.M. O’Connor, B. KuKanich, D.A. Blasi ..................... 141
- Pharmacokinetics and Milk Depletion of Meloxicam and Gabapentin in Lactating Holsteins  
  R. Gehring, P. Malreedy, J. F. Coetzee, B. KuKanich ...... 142
- Evaluation of a Serpens Species Bacterin for Therapy of Bovine Digital Dermatitis  
  A.P. Fidler, G.W. Smith ................................................ 143
- IDEXX Bovine Pregnancy Test – A New Tool for Accurate and Early Pregnancy Diagnosis in Cattle  
  Katherine Velek, Shona Michaud, Meghan Hart,  
  Valerie Leathers, Christoph Egli .................................. 144
• An Evaluation of Wheat and Corn-Based Dry Distiller Grains with Solubles in Barley-Based Finishing Diets of Feedlot Steers in Western Canada
• The Survival of Bovine Viral Diarrhea Virus on Materials Associated with Livestock Production
  Elliot T. Stevens, Daniel U. Thomson, Ben Wileman, Sean O’Dell, Christopher C.L. Chase ......................................... 146
• Diagnosis of Congenital Bovine Viral Diarrhea Infection in Beef Cow-Calf herd from Fence-Line Contact
  P.B. Scharko, R.C. Giles, M.L. Vickers, M.H. McCoy .......................................................... 147

RESEARCH SUMMARIES II
• Use of Rapid Thoracic Ultrasoundography for Detection of Subclinical and Clinical Pneumonia in Dairy Calfes
• Efficacy of a Monovalent Leptospira borgpetersenii Serovar Hardjo Strain hardjovovis Vaccine Protocol on Measures of Fertility in Holstein Dairy Cattle
• Interpreting Outcome Measures of Disease and Health in Cattle Research and Practice
  P.A. Ospsa, D.V. Nydam, T.J. DiCiccio .............................................................. 150
• Evaluation of Peripartal Calcium Status and Neutrophil Function of Dairy Cows of Low or High Risk of Developing Uterine Diseases
  N. Martinez, C.A. Risco, F. Maunsell, N. Galvao, J.E.P. Santos ......................................................... 151
• Glucose Transporter Expression in Bovine Monocytes
  Nial J. O’Boyle, Andres Contreras, Sarah Matmiller, Lorraine Sordillo ........................................................... 152
• Systematic Review of Ketosis Treatment in Lactating Dairy Cattle
  Jessica Gordon, Stephen LeBlanc, Todd Duffield ............................................................. 153
• A Field Trial on the Effect of Propylene Glycol on Milk Yield and Resolution of Ketosis in Fresh Cows Diagnosed with Subclinical Ketosis
  J.A.A. McArt, D.V. Nydam, P.A. Ospsa, G.R. Oetzel ......................................................... 154
• A Field Trial on the Effect of Propylene Glycol on Displaced Abomasum, Removal from Herd, and Reproduction in Fresh Cows Diagnosed with Subclinical Ketosis
  J.A.A. McArt, D.V. Nydam, G.R. Oetzel .............................................................. 155
• Bovine Blood Glucose Concentrations: Point of Care Testing with Glucometers
  C. Landa, W.S. Swecker Jr .............................................................. 156
• Clinical Trial of Early Ketosis Detection and Therapy in Fresh Cows
  J. Carrier, S. Godden, J. Fetrow, P. Rapnicki .............................................................. 157
• Assessment of Calving Progress and Reference Times for Obstetric Intervention during Dystocia in Holstein Dairy Cows
  G.M. Schuenneman, I. Nieto, S. Bas, K.N. Galvao, J.D. Workman .............................................. 158
• Efficacy of a New Navel Dip to Prevent Umbilical Infection in Dairy Calves
  Wayne M. Grover, Sandra Godden .............................................................. 159
• Effect of High-Dose Vitamin D, Injection Prepartum as Prophylaxis of Milk Fever on Bone Metabolism in Dairy Cattle
  J. Storic, M. Klinkon, Z. Stojecvic, I. Avbersek-Luznik, T. Zadnik ......................................................... 160

RESEARCH SUMMARIES III
• Performance and Fecal Starch Analysis in Feedlot Finisher Steers Supplemented with Top-Dressed Sarsaparillin
• Physiological and Behavioral Changes with Variations in Ambient Temperature and Exposure to Lipopolysaccharides in Cattle
  Miles E. Theurer; David E. Anderson, Brad J. White, Matt D. Miesner, Mark F. Spire .............................................. 163
• Perceptions of Beef Cow-Calf Producers and Veterinarians on Losses Associated with Johne’s Disease
• Evaluation of Two Chute-Side Tests for the Detection of Leukocytes and Bacteria in Semen from Yearling Bulls
• Sensitivity of a Real Time PCR Assay for Bovine Trichomonosis in Pooled Preputial Samples
  A. Garcia Guerra, S. Hendrick, C. Waldner, J. Hill, J. Campbell ......................................................... 165
• Management Practices Associated with the Rate of Pre-Weaning Calf Respiratory Disease: Results from a National Survey of US Calf-Operations
• Associations between Weather Conditions and Bovine Respiratory Disease in Feedlot Cattle
  N. Cernicchiaro, D.G. Rentier, B. J. White, A. H. Babcock, J. T. Fox ......................................................... 167
• Associations between Transport Distance and Weight Loss during Transit with Health Parameters in Feedlot Cattle
  N. Cernicchiaro, B. J. White, D. G. Rentier, A. H. Babcock, L. Kelly, R. Slattery ......................................................... 168
• An Evaluation of Feedlot Arrival Castration Status on Individual Animal Performance Over a 61-Day Preconditioning Period in Calves Having an Ultra-High Risk of Developing Bovine Respiratory Disease
• An Evaluation of Arrival Health Risk Status of Steer Calves on Individual Animal Performance and Health over a 61-Day Preconditioning Period
  M. L. May, C. R. Krehbiel, O.C. Schunich, B.P. Holland, C. W. Booker, L. O. Burciaga-Robles .............................................. 170
• Effectiveness of Different Caliber of Firearms on Penetration of the Frontal Bone and Amount of Brain Matter Destruction of Feedlot Cattle Using Computed Tomography
  B.W. Wileman, D.U. Thomson, M.D. Miesner, D.S. Biller ......................................................... 171

RESEARCH SUMMARIES IV
• Antimicrobial Activity of Gallium Nitrate against Mycobacterium avium subsp paratuberculosis in Neonatal Calves
  M.E. Fecteau, R.H. Whitlock, T.L. Fyock, S.C. McAdams, R.C. Boston, R.W. Sweeney .............................................. 172
• Passive Transfer of Immunity, Preweaning Health, and Growth in Holstein Calves Fed a Bovine Lacteal-Derived Colostrum Replacer or Raw Pooled Colostrum
• Evaluation of Response and Safety to Parenteral Trace
  Mineral Supplementation in Idaho Neonatal Dairy Hutch
  Calves
  C. J. Louder, C. S. Schneider, M. W. Ayers ..............................174
• Comparison of Milk BVD ELISA Results with Ear Notch
  Testing, between Milk Sample Handling Methods and with
  Cow Characteristics
  D.J. Wilson, K. Rood, G. Goodell ........................................175
• Factors Associated with Antimicrobial Resistance Patterns
  in Fecal Escherichia coli from Minnesota Dairy Calves
  from Birth to Four Months of Age
  C. Foutz, S. Godden, J. Bender, M. Akhtar, A. Vatulin, F. Diez-Gonzalez ..................176
• Increased Productivity in Calves Fed a Fatty Acid
  Supplement in Milk Replacer
  J.C. Gawthrop, A.W. Riad ..................................................177
• Temporal Repeatability of Positive Test Results of
  Mycobacterium avium subspecies paratuberculosis-
  antibody Milk ELISA-positive Cows
• Conductive Cooling Technology Applied to Free-stall Beds
  for Holstein Cows in Central California
  T. W. Lehenbauer, S. S. Aly, H. A. Rossow, J. D. Champagne, D. N. Ledgerwood ................179

POSTERS
• The Effects of Anabolic Growth Implant and Restricted
  Feed Intake on Proliferation of Bovine Primary Skeletal
  Muscle Cells
• IDEXX Mycobacterium bovis Antibody Test Kit
  John Lawrence, Nevena Djuranovic, Christoph Egli .................181
• Comparison of Long-Term Progesterin-Based Estrous
  Synchronization Protocols in Beef Cows and Heifers
  J.G. Powell, T.D. Lester, M.P. Rowe, C.L. Williams, R.W. Rorie ........................................182
• A Private Feedlot Industry Company’s Journey Related to
  Recognized Animal Care and Welfare Standards
  S. J. Hannon, C. W. Booker, T.M. Hancock, K. Rogers, R.K. Fenton, G.K. Jim ........................183
• The Effects of Spaying on Average Daily Gain in Implanted
  Heifers on Pasture
• Effects of Oral Administration of Magnesium Sulfate on
  Bovine Rumen pH, Rumen Protozoa and Serum
  Magnesium
  M. Badillo, J. Denis-Robichaud, S. Buczinski, M. Veillette ...........................................185
• Apparent Prevalence of Congenital Infections in Calves
  Born on a Single California Dairy Herd
  Sharif Aly, Alexandria Glover, John Champagne, Patrick Pithua, Terry Lehenbauer ............186
• Prevalence of Oral, Pharyngeal and Respiratory Infection in
  Mycoplasma bovis Experimentally Infected Neonatal
  Calves
  A.M. Keenier, M. Felice; S. Oliveira, C.S. Schneider .................................187
• Resistance or Susceptibility to Production-Related
  Metabolic Diseases (PRMDs) Can Be Predicted with Fecal
  and Erythrocyte Isotopic Signatures
• Validation of a Chemical Analysis Technique to Quantify
  β-hydroxybutyric Acid Concentration in Milk of Holstein
  Dairy Cows
  J. Denis-Robichaud, G. Forté, J. Dubuc, D. Lefebvre, L. DesCôteaux ............................189
• Preliminary Evaluation of Two Methods for Estimating
  Lameness Prevalence on Western US Dairies
  A.C. Hoffman, J.R. Wenz, J. Vanegas, D.A. Moore ..................................................190
• Is Thermography a Possible New Method to Evaluate Body
  Temperature in Fresh Cows?
  Arturo Gomez, Cristian Vergara, Nigel B. Cook, Kenneth Nordlund .............................191
• Factors that Influence Resting Time as an Indicator of Cow
  Comfort in Lactating Dairy Cows
  A. Villarroel, B.J. Krahn ......................................................192

Advertisers’ Index

IDEXX Laboratories, Inc .................................135
Merck Animal Health ........................................inside front cover, 11, 12, 19, 20, inside back cover
Pfizer Animal Health ..................................63, 73, back cover

French translations by Guy Beauchamp and Hubert Brochard. Revisions by Dr. Emile Bouchard.

Notice to Readers

Articles published in the Proceedings of the American Association of Bovine Practitioners are not peer-reviewed or refereed. All
statements, opinions and conclusions contained in articles in the Proceedings are those of the author(s), and are not necessarily those of
the American Association of Bovine Practitioners (AABP) unless specifically approved by the AABP Board of Directors.