47TH ANNUAL CONFERENCE

PROCEDINGS

American Association of Bovine Practitioners



Albuquerque, New Mexico September 18-20, 2014



Resflor Gold® (florfenicol and flunixin meglumine) combines the symptom-fighting power of the active ingredient of Banamine® (flunixin meglumine) with the BRD-busting power of the active ingredient of Nuflor® (florfenicol). It's the responsible, simple way to use flunixin meglumine to treat the fever while you also treat the disease.

Talk to your Merck Animal Health Representative to learn more about Resflor Gold.

ResflorGold.com

Animals intended for human consumption must not be slaughtered within 38 days of treatment. This product is not approved for use in female dairy cattle 20 months of age or older, including dry dairy cows. Use in these cattle may cause drug residues in milk and/or in calves born to these cows. A withdrawal period has not been established in pre-ruminating calves. Do not use in calves to be processed for veal. The effects of florfenicol and flunixin on bovine reproductive performance, pregnancy, and lactation have not been determined. When administered according to the label directions, RESFLOR GOLD may induce a transient local reaction in the subcutaneous and underlying muscle tissue. Full product information available on adjacent page.



PROCEEDINGS

of the

FORTY-SEVENTH ANNUAL CONFERENCE

AMERICAN ASSOCIATION OF BOVINE PRACTITIONERS

September 18-20, 2014

Albuquerque, New Mexico



Photo courtesy of Dr. Pamela Ruegg, Madison, Wisconsin.

Editor

Robert A. Smith, DVM

3404 Live Oak Lane Stillwater, OK 74075 Tel: (405) 372-8666 Fax: (405) 743-8422

Executive Vice President

M. Gatz Riddell, Jr., DVM P.O. Box 3610

Auburn, AL 36831-3610 Tel: (800) 269-2227 Fax: (334) 821-9532 Advertising Representative

J. T. O'Brien & Assoc.
12118 Nieman Road
Overland Park, KS 66213
Tel: (913) 579-4084

Publisher

VM Publishing Company

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

Cover photo courtesy of Dr. Bob Smith, Stillwater, Oklahoma.

PRODUCT INFORMATION

NADA 141-299, Approved by FDA.



(Florfenicol and Flunixin Meglumine)
Antimicrobial/Non-Steroidal Anti-Inflammatory Drug

For subcutaneous use in beef and non-lactating dairy cattle only. Not for use in female dairy cattle 20 months of age or older or in calves to be processed for yeal.

BRIEF SUMMARY: For full prescribing information, see package insert.

INDICATION: RESFLOR GOLD® is indicated for treatment of bovine respiratory disease (BRD) associated with *Mannheimia haemolytica*, *Pasteurella multocida*, *Histophilus somni*, and *Mycoplasma bovis*, and control of BRD-associated pyrexia in beef and non-lactating dairy cattle.

CONTRAINDICATIONS: Do not use in animals that have shown hypersensitivity to florfenicol or flunixin.

WARNINGS: NOT FOR HUMAN USE. KEEP OUT OF REACH OF CHILDREN. This product contains material that can be irritating to skin and eyes. Avoid direct contact with skin, eyes, and clothing. In case of accidental eye exposure, flush with water for 15 minutes. In case of accidental skin exposure, wash with soap and water. Remove contaminated clothing. Consult a physician if irritation persists. Accidental injection of this product may cause local irritation. Consult a physician immediately. The Material Safety Data Sheet (MSDS) contains more detailed occupational safety information.

For customer service or to obtain a copy of the MSDS, call 1-800-211-3573. For technical assistance or to report suspected adverse reactions, call 1-800-219-9286.

Not for use in animals intended for breeding purposes. The effects of florfenicol on bovine reproductive performance, pregnancy, and lactation have not been determined. Toxicity studies in dogs, rats, and mice have associated the use of florfenicol with testicular degeneration and atrophy. NSAIDs are known to have potential effects on both parturition and the estrous cycle. There may be a delay in the onset of estrus if flunixin is administered during the prostaglandin phase of the estrous cycle. The effects of flunixin on imminent parturition have not been evaluated in a controlled study. NSAIDs are known to have the potential to delay parturition through a tocolytic effect.

RESFLOR GOLD®, when administered as directed, may induce a transient reaction at the site of injection and underlying tissues that may result in trim loss of edible tissue at slaughter.

RESIDUE WARNINGS: Animals intended for human consumption must not be slaughtered within 38 days of treatment. Do not use in female dairy cattle 20 months of age or older. Use of florfenicol in this class of cattle may cause milk residues. A withdrawal period has not been established in pre-ruminating calves. Do not use in calves to be processed for veal.

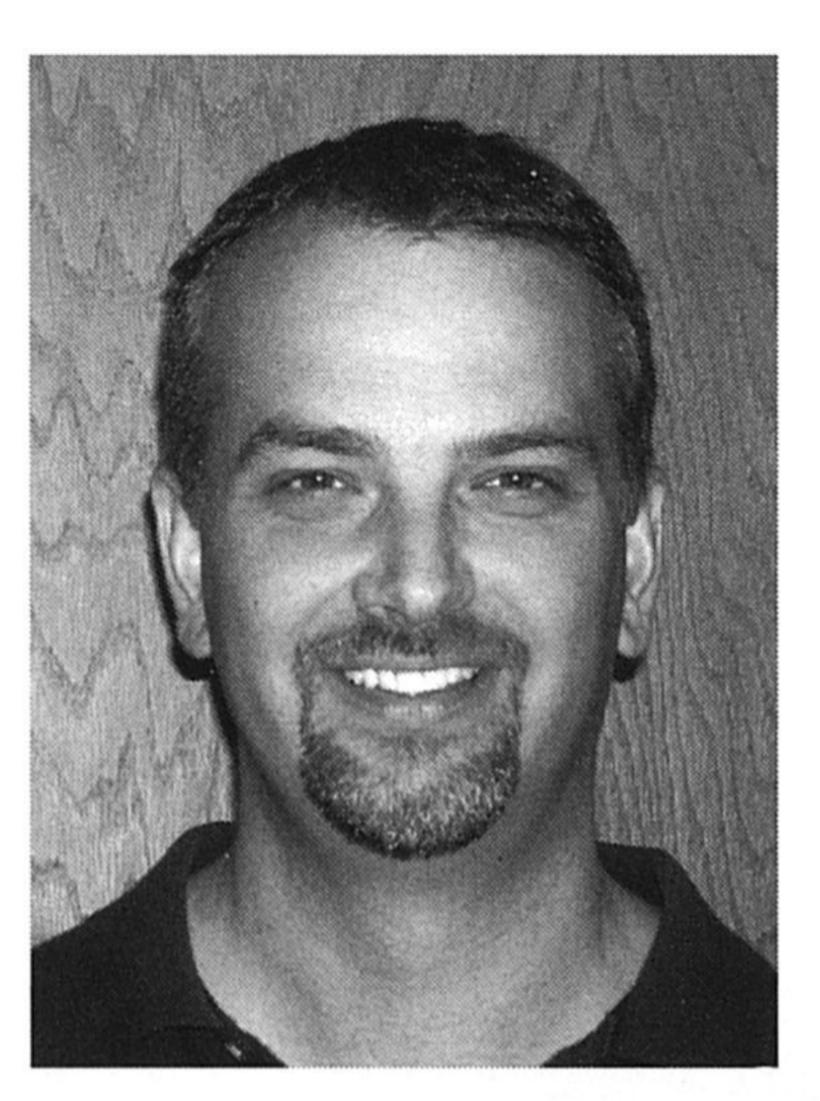
ADVERSE REACTIONS: Transient inappetence, diarrhea, decreased water consumption, and injection site swelling have been associated with the use of florfenicol in cattle. In addition, anaphylaxis and collapse have been reported post-approval with the use of another formulation of florfenicol in cattle.

In cattle, rare instances of anaphylactic-like reactions, some of which have been fatal, have been reported, primarily following intravenous use of flunixin meglumine.

Made in Germany
Intervet Inc. Roseland, NJ 07068
©2009, Intervet Inc. All Rights Reserved.

May 2009
US 3448_IV

President-Elect
JOHN DAVIDSON
DVM
College Station, Texas



Past-President
NIGEL COOK
DVM
Madison, Wisconsin

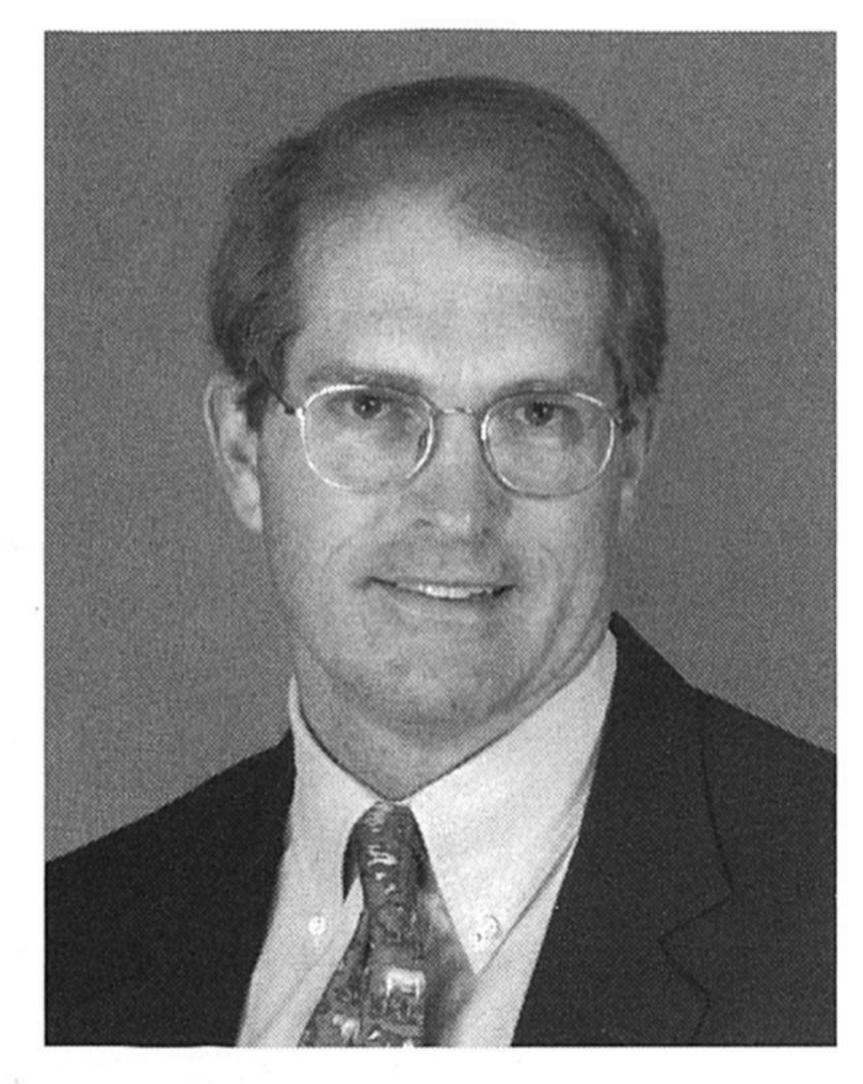
AABP OFFICERS



President
DANIEL L. GROOMS
DVM
Williamston, Michigan

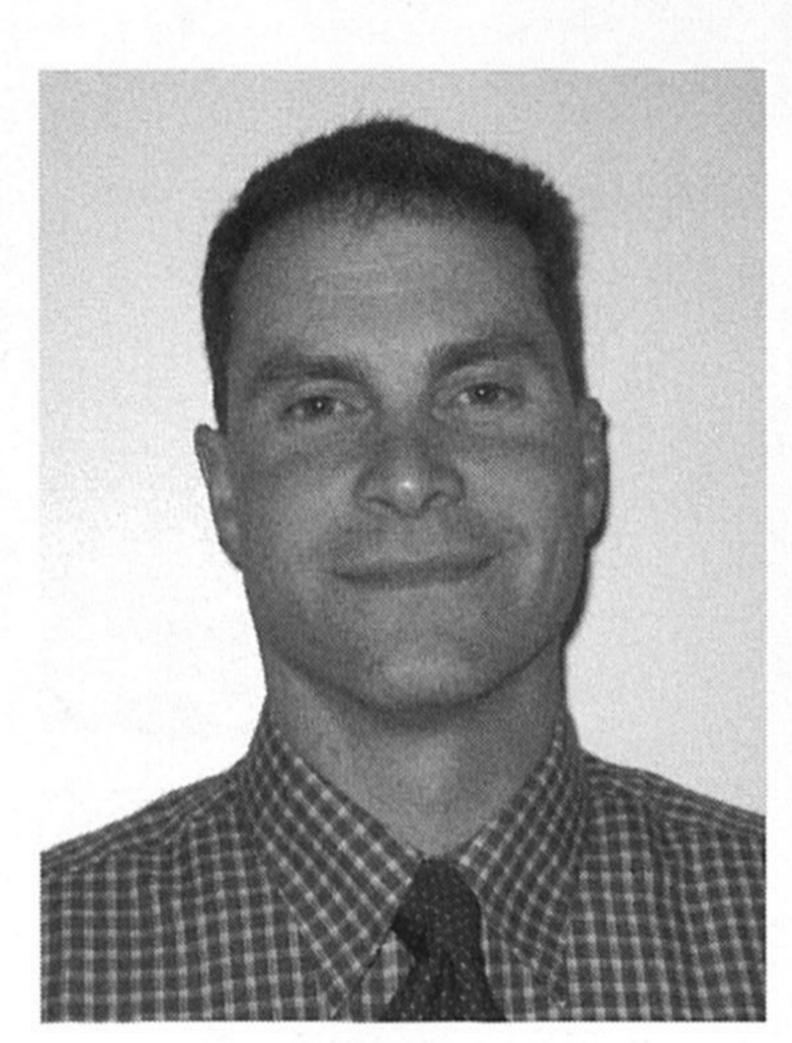


Vice-President
K. FRED GINGRICH II
DVM
Ashland, Ohio

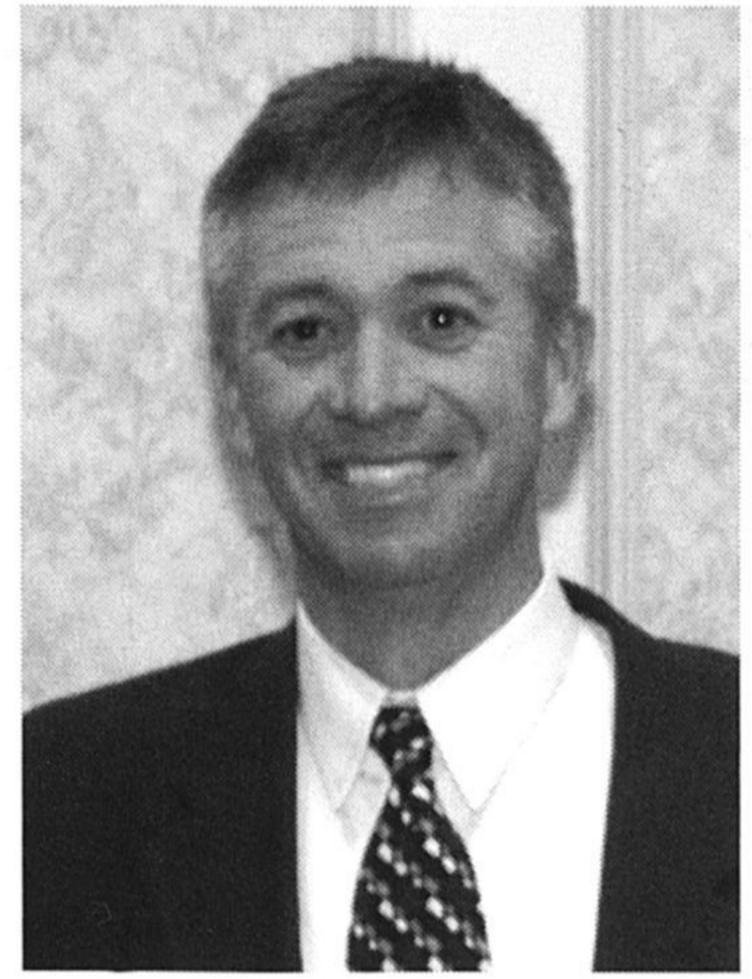


Executive Vice-President
M. GATZ RIDDELL, JR.
DVM
Auburn, Alabama

Directors



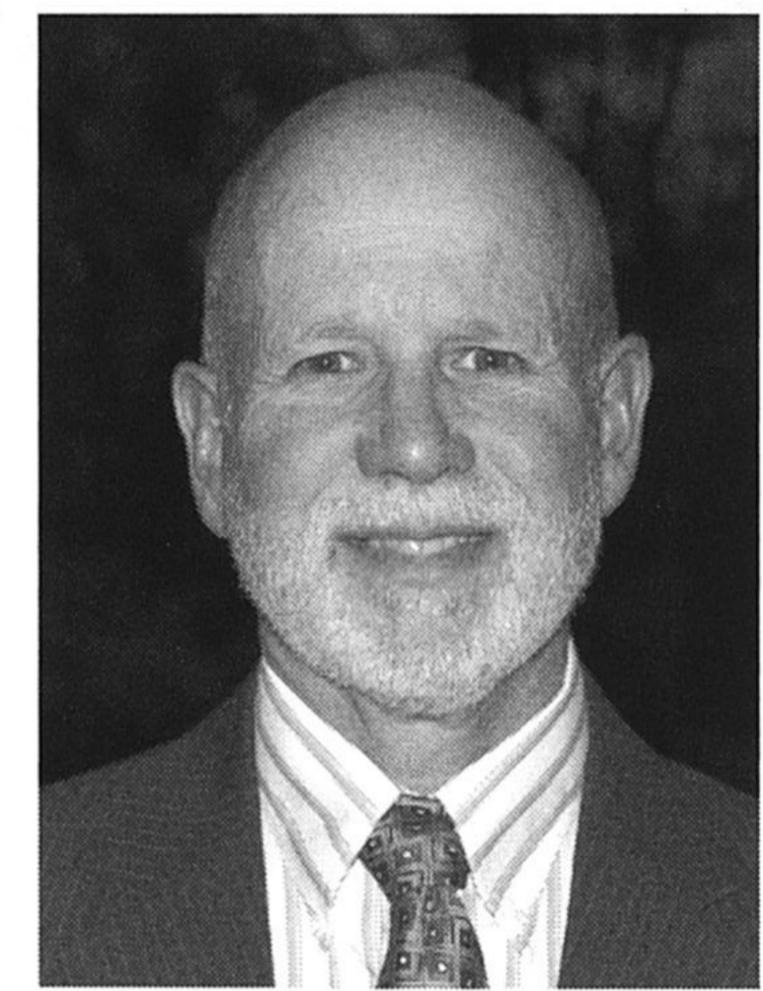
District 1
MARK J. THOMAS
DVM
Carthage, New York



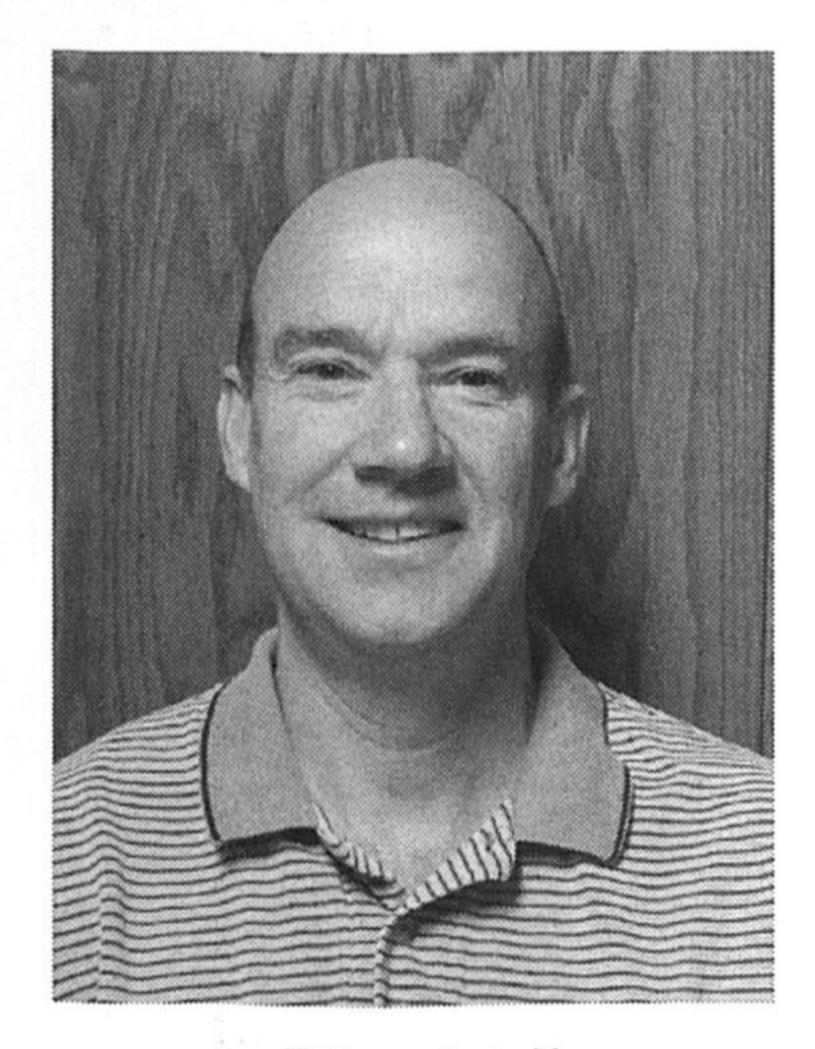
District 2
THOMAS MASSIE, JR.
DVM
Washington, Virginia



District 3
JAMES A. BRETT
DVM
Starkville, Mississippi



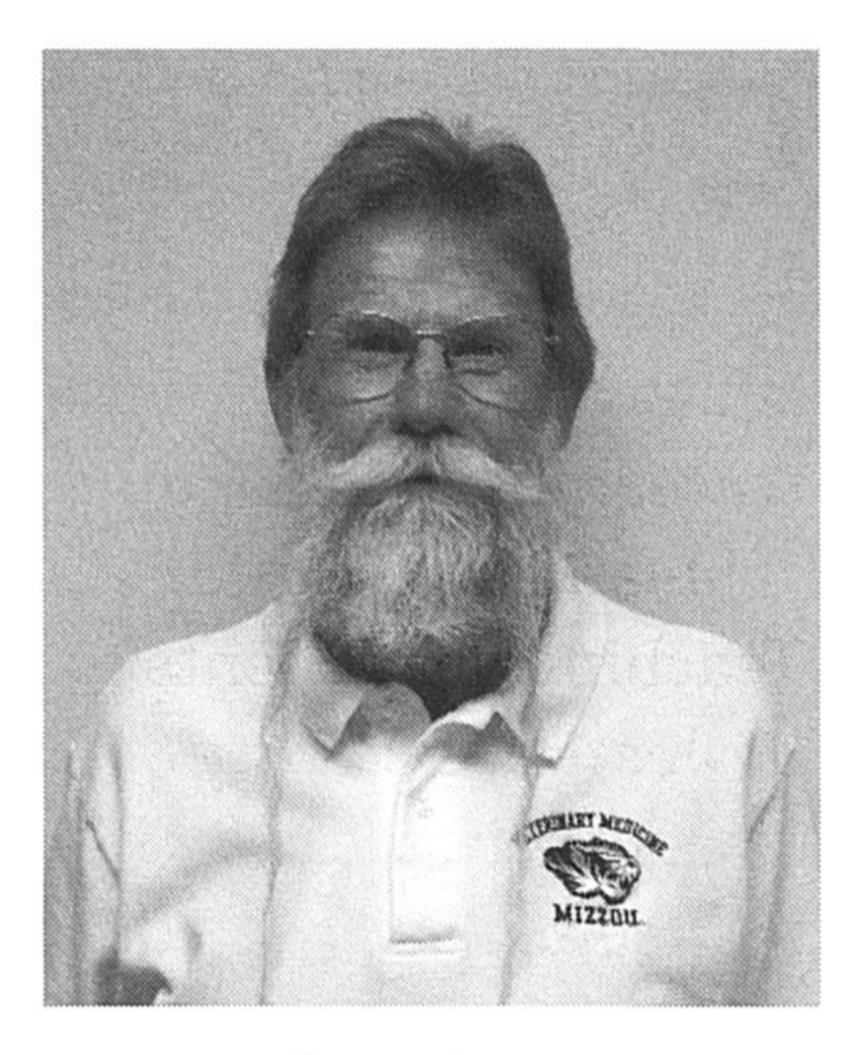
District 4
GARY KOESTER
DVM
Cadillac, Michigan



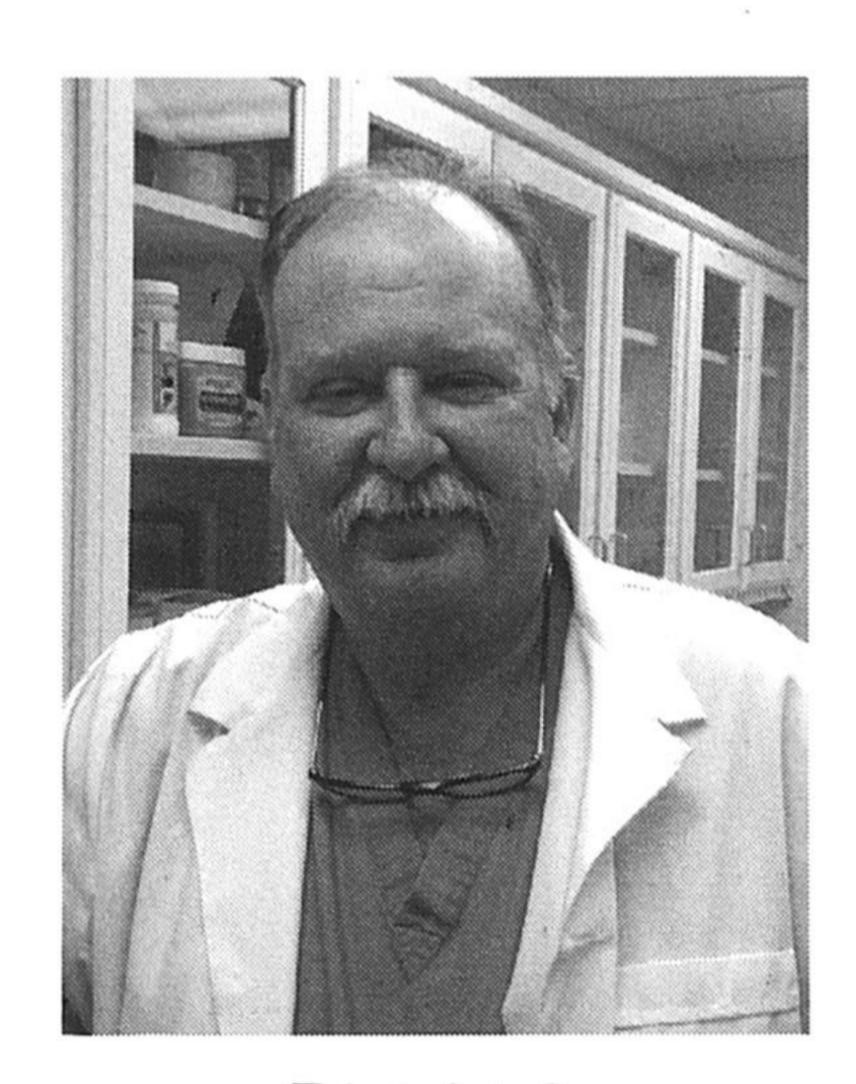
District 5
HUNTER LANG
DVM
Prairie du Sac, Wisconsin



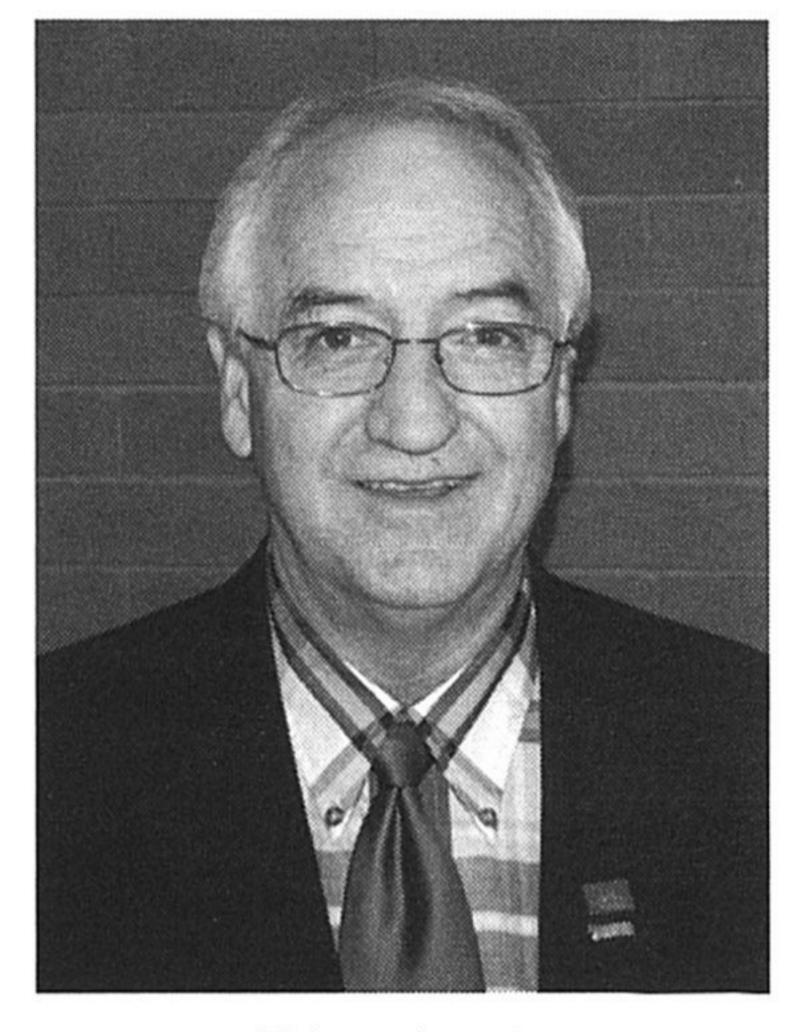
District 6
SARAH OVERBY
DVM
Freeport, Minnesota



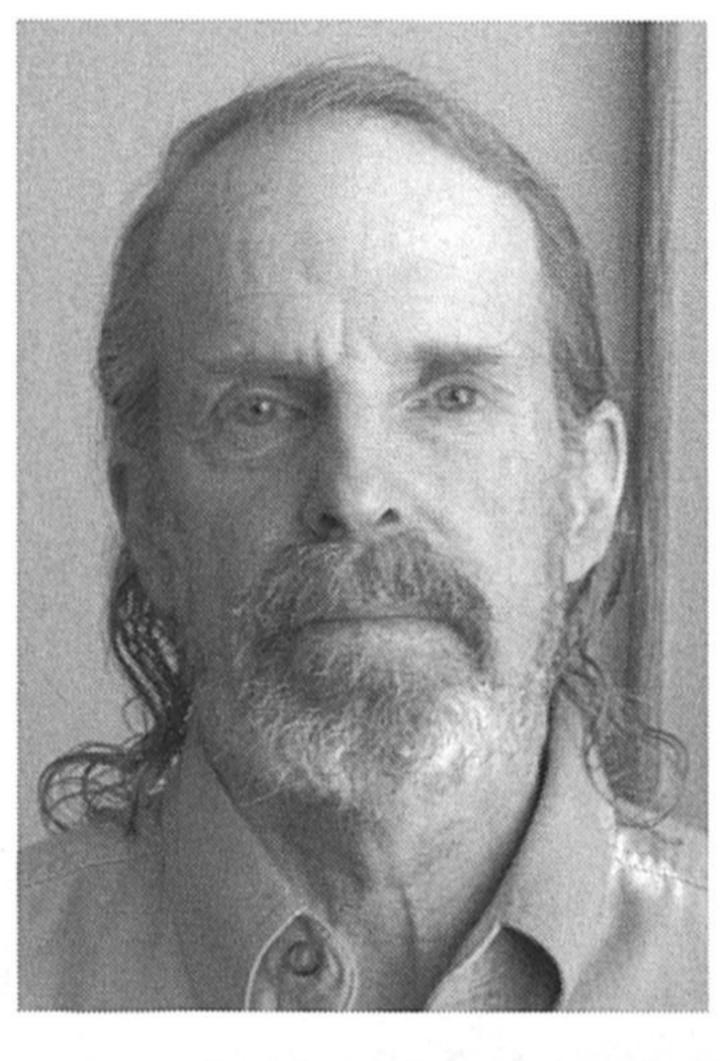
District 7
RODNEY CHAPMAN
DVM
Versailles, Missouri



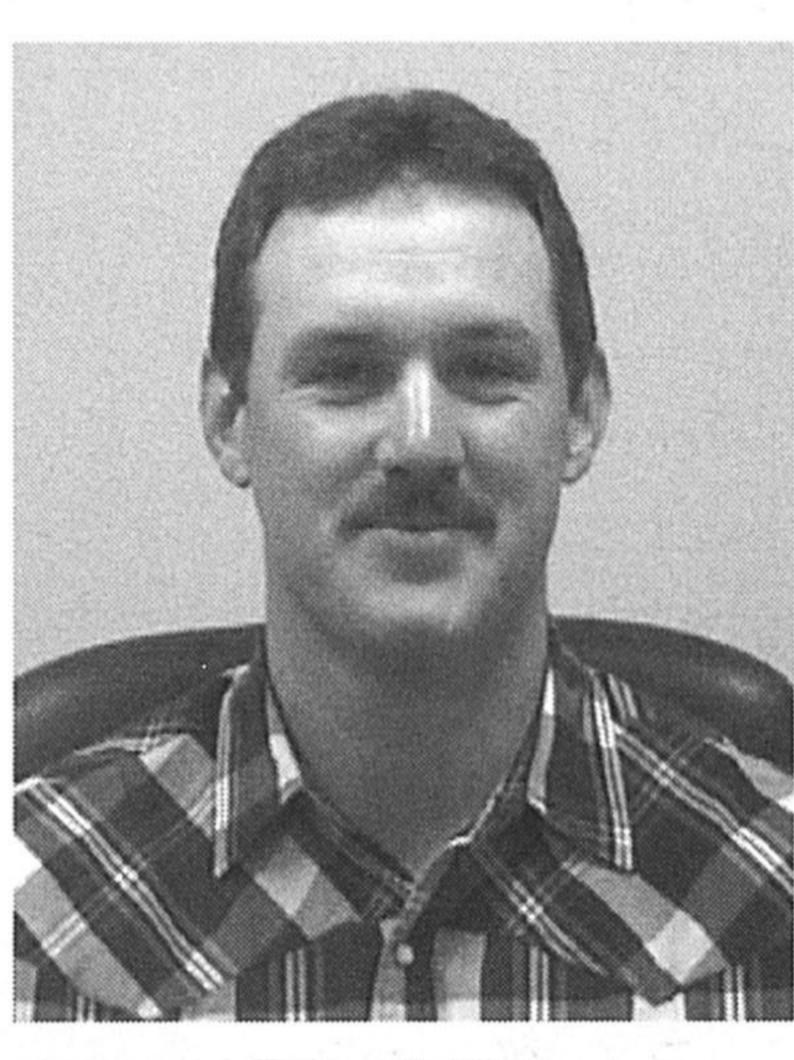
District 8
JOE HILLHOUSE
DVM
Panhandle, Texas



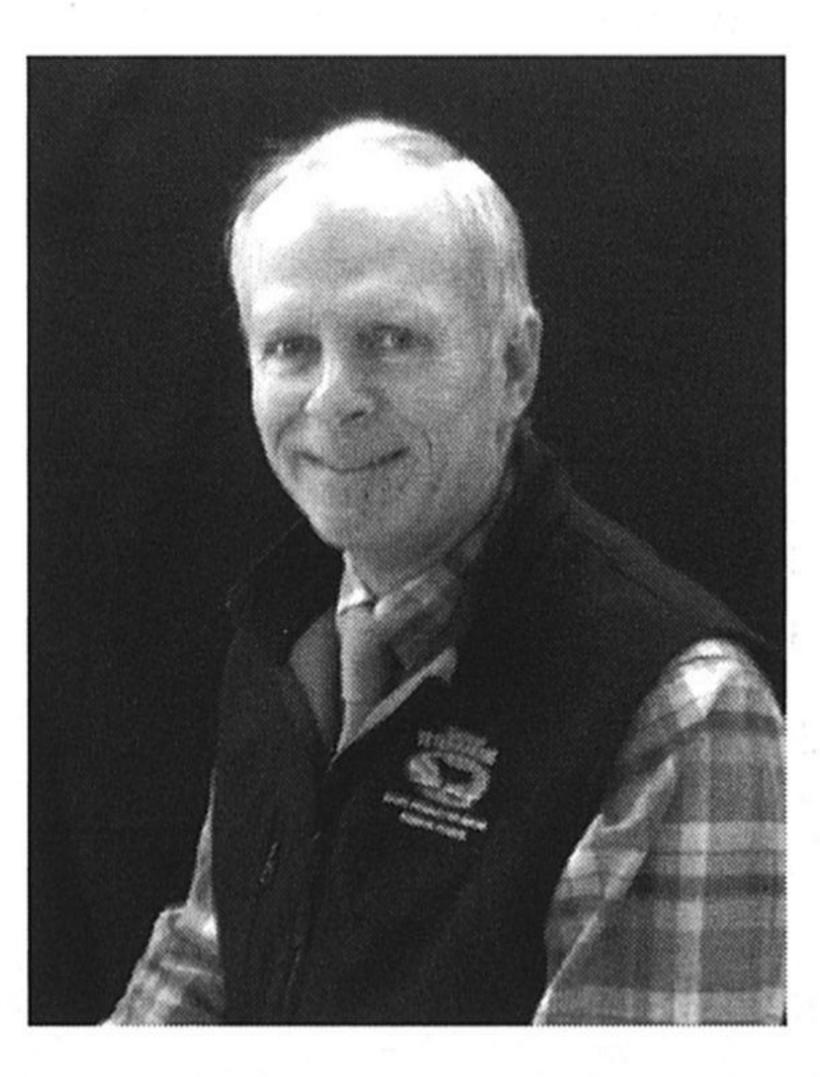
District 9
DEE GRIFFIN
DVM
Clay Center, Nebraska



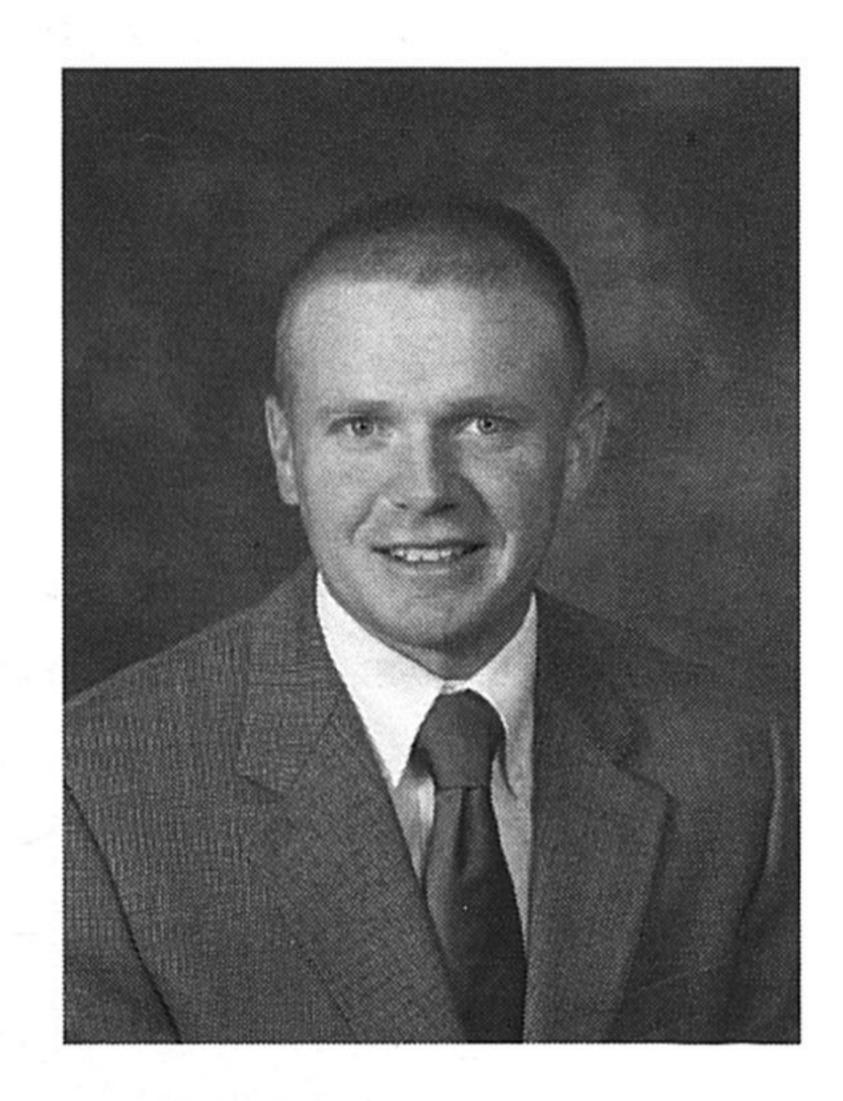
District 10
STEPHEN SMALLEY
VMD
Chandler, Arizona



District 11
FRED MULLER
DVM
Sunnyside, Washington



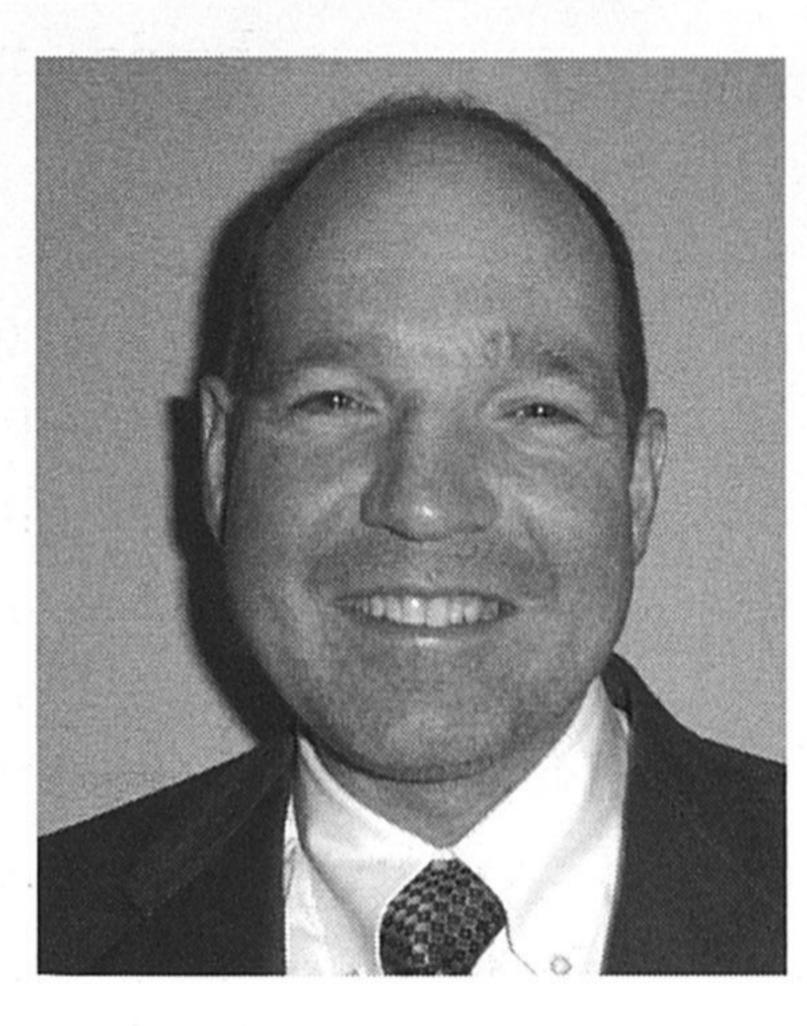
District 12
WAYNE S. SHEWFELT
DVM
Tavistock, Ontario, Canada



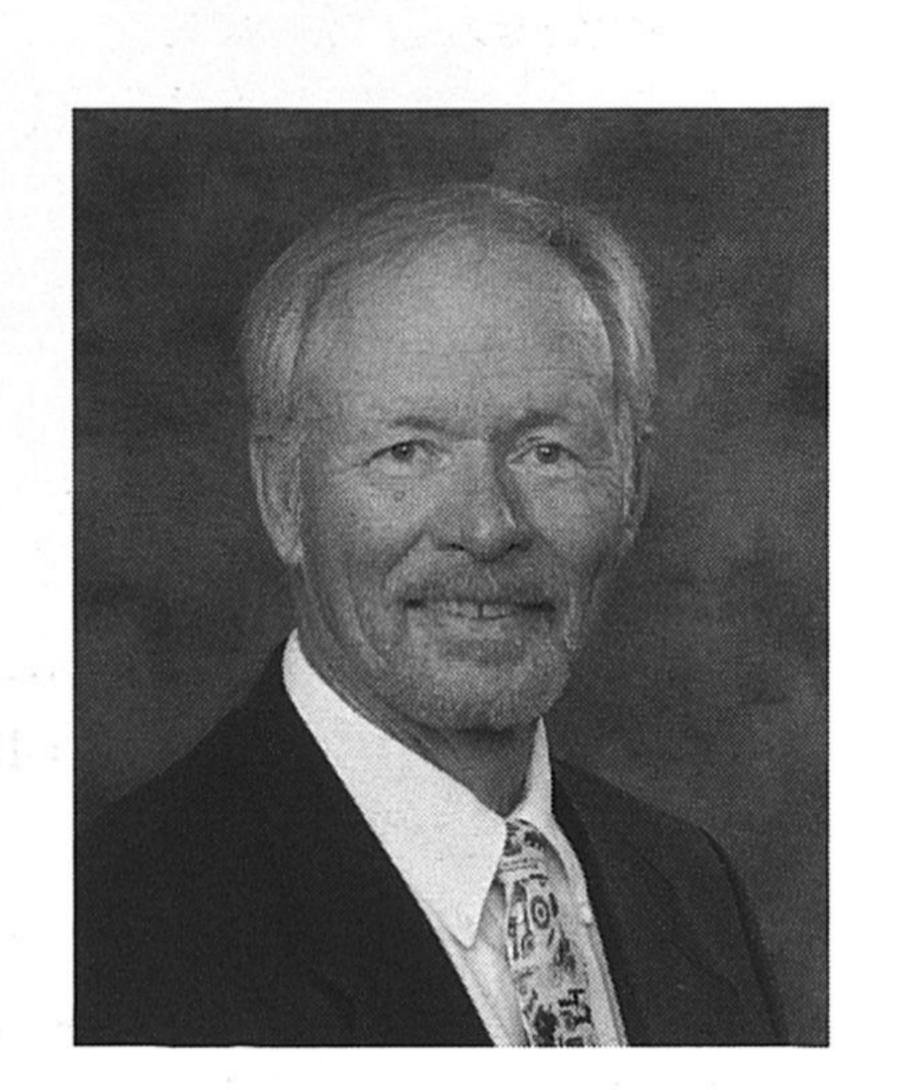
District 13
ERIC BEHLKE
DVM
Okotoks, Alberta, Canada

photo not available

Treasurer
BRYAN D. HALTEMAN
DVM
Turlock, California



Exhibits Manager
CHARLIE HATCHER
DVM
College Grove, Tennessee



Editor ROBERT A. SMITH DVM Stillwater, Oklahoma

Parliamentarian......Rich Meiring, DVM, Mississippi State, Mississippi AVMA Delegate............Mark Spire, DVM, Manhattan, Kansas

Table of Contents

GENERAL SESSIONS	 What bovine practitioners need to know about
 Air quality in open-lot dairies and cattle feedyards 	traceability and scrapie
BrentAuvermann1	Joan Dean Rowe95
	 Teaching goat clients to prevent pregnancy toxemia
BEEF SESSIONS	Joan Dean Rowe
• Pen riding and evaluation of cattle in pens to identify	 Use of reproductive ultrasound for goat herd
compromised individuals	management
Thomas A. Portillo 5	
· Using experimental and observational data to design,	
implement, execute, and maintain a herd health	STUDENT SESSIONS
program for feedlots	Tailgate vaccinology
Delbert G. Miles	
• Field pathology – techniques, findings and diagnostic	Making antibiotic choices in bovine medicine
options	Benjamin W. Newcomer111
Robert D. Glock, Thomas A. Portillo	Denjamm W. INCWComer
• Nutrition and reproduction interactions	RESEARCH SUMMARIES 1
Rick Funston	• A randomized controlled clinical trial to evaluate the
• 2014 protocols for synchronization of estrus and	effect of an intranasal respiratory vaccine on calf
ovulation in beef cows and heifers	
	health, ultrasonographic lung consolidation, and
SK Johnson, RN Funston, JB Hall, GC Lamb,	growth in Holstein dairy calves
JW Lauderdale, DJ Patterson, GA Perry	T.L. Ollivett, K.E. Leslie, T. Duffield, D.V. Nydam,
• Artificial insemination in beef cow practice	J. Hewson, J. Caswell, D.F. Kelton
Jeremy Van Boening	Characterizing the BRD sickness response –
• Utilizing fetal ultrasound in beef herds	opportunities for improved disease detection
Chandy Olson	R.L. Toaff-Rosenstein, L.J. Gershwin, A.J. Zanella,
• Quality breeding soundness examination of bulls	C.B. Tucker
John L. Myers24	• Comparison of a remote early disease identification
	(REDI) system to metaphylaxis and conventional
DAIRY SESSIONS	management for control of bovine respiratory disease
• Milk quality – A look outside the cow	in high risk beef calves
David A. Reid	Brad J. White, Dan R. Goehl, David E. Amrine 115
 Milking equipment: How it works in our world 	 Estimation of sensitivity and specificity of a novel
Patrick J. Gorden 51	clinical snoring system for on-farm diagnosis of
 Milking records – Making sense of it all 	bovine respiratory disease in pre-weaned dairy calves
David A. Reid 55	W.J. Love, T.W. Lehenbauer, A.L. Van Eenennaam,
 Do you get all the milk? The importance of 	C.M. Drake, P.H. Kass, T.B. Farver, S.S. Aly 116
stockmanship	 Relationship of rectal temperature at first treatment
Ulrike S. Sorge 59	for bovine respiratory disease complex in feedlot
 Transition nutrition – Beginning the discussion 	calves to probability of not finishing the production
Heather M. Dann 62	cycle normally
 Transition health – Tools for your toolbox 	M.E. Theurer, B.J. White, R.L. Larson,
Garrett R. Oetzel	K. Holstein, D.E. Amrine
• Genomics: What do we need to know?	 A meta-analysis of vaccine effectiveness against
$Jason\ B.\ Osterstock$	bovine herpesvirus, bovine viral diarrhea virus,
• Healthy calves: From birth to full ruminant	bovine respiratory syncytial virus, and para-
Sam Barringer82	influenza-type 3 virus in cattle for bovine respiratory disease complex
AASRP SESSIONS	M.E. Theurer, R.L. Larson, B.J. White
• Rules of engagement: The veterinarian's role on a	 Characterization of the 13 cytopathic BVDV strains
goat dairy and how to become part of the dairy team	from mucosal disease cases from a single herd
Andrea Mongini86	M.F. Darweesh, M.K.S. Rajput, L.J. Braun,
• Buck management	J.D. Neill, J.F. Ridpath, C.C.L. Chase
Joan Dean Rowe	

 Program outcomes from the Atlantic Johne's Disease Initiative 	 Determination of blood cardiac troonin I and L-lactate cut-off values for predicting survival in
K.A. MacDonald, G.P. Keefe, S.L.B. McKenna 119	dairy cows affected by downer cow syndrome
· Risk factors in beef cattle for terminal rectal mucosa	Josiane Labonté, Jocelyn Dubuc,
colonization of $Escherichia\ coli\ O157{:}H7$	Jean-Philippe Roy, Sébastien Buczinski
L.G. Schneider, G.E. Erickson, R.A. Moxley,	· Hoof histopathological changes in cattle subjected to
D.R. Smith	the euglycemic hyperinsulinemic clamp
• Factors affecting Escherichia coli O157:H7 hide	H.M.F. Mendes, R.C. Valadares, C.F.R. Paz,
contamination of feedlot cattle	S.S. Rocha Júnior, R.M. Ribeiro, R.R. Faleiros 133
L.G. Schneider, G.E. Erickson, R.A. Moxley,	• The effects of flunixin meglumine treatment and
D.R. Smith	hoof trimming on lying behavior and locomotion in
· Comparison of the antimicrobial efficacy of	dairy cows
chlorhexidine gluconate and povidone iodine as	N.M. Chapel, L.L. Hulsman Hanna, N. Chapinal,
preoperative surgical preparation solutions in cattle	S.A. Wagner
under field conditions	 Intra-rater reliability among postural and gait
J.A. Schleining, P.J. Plummer, C. Wang,	abnormalities detected using locomotion scoring with
A.M. Schneider	observations in milking parlor and headlock
 Predicting prognosis of left displaced abomasal 	stanchions
corrective surgery	A. Garcia-Muñoz, G. Vidal, N. Singh,
J.L. Reynen, S.J. LeBlanc, D.F. Kelton,	N. Silva-del Rio 135
T.F. Duffield	• Evaluation of risks of violative milk residues
• An evaluation of milk components for use as	following extra-label topical administration of
biochemical markers that will help detect rumen	tetracycline for digital dermatitis in dairy cattle
acidosis and indigestion in dairy cows	G. Cramer, R. Johnson
G.A. Donovan, P.P. Pinedo, F.P. Maunsell,	• Effect of topical treatment of claw horn lesions
C.A. Risco, S.É. Kirchman	with tetracycline-derivatives on plasma and milk
	concentrations
RESEARCH SUMMARIES 2	J. Coetzee, K. Kleinhenz, B. Pingsterhaus,
• Evaluation of a handheld device for the detection of	J. Schleining, P. Wulf, J. Shearer, L. Shearer 137
β-hydroxybutyrate pre-calving in dairy cattle	 Validation of a penetrating captive bolt device with
E.H. Tatone, J.L. Gordon, S.J. LeBlanc,	air-channel pithing as a single-step method for
T.F. Duffield	euthanasia of cattle in mass depopulation situations
• Hyperketonemia in early lactation dairy cattle:	J. Shearer, G. Dewell, R. Dewell, R. Derscheid,
component and total cost per case	K. Kleinhenz, L. Shearer
J.A.A. McArt, D.V. Nydam, M.W. Overton	
• Influence of dry period plane of energy on peripartal	RESEARCH SUMMARIES 3
concentration of β-hydroxybutyrate, non-estrified	• Survey of reproduction management on Canadian
fatty acids, glucose and insulin	dairy farms
S. Mann, F.A. Leal Yepes, J.J. Wakshlag,	J. Denis-Robichaud, R.L.A. Cerri, A. Jones-Bitton,
T.R. Overton, B.P. Cummings, D.V. Nydam	S.J. LeBlanc
• The relationship between subclinical hypocalcemia	• The effect of prepartum housing on metabolic and
and negative energy balance on the return of ovarian	reproductive health in dairy cows
function during the voluntary waiting period of dairy	C.L. Miltenburg, D. Bienzle, E. Scholtz,
cows	T.F. Duffield, S.J. LeBlanc
L.S. Caixeta, P.A. Ospina, M.B. Capel,	 Non-inferiority randomized field clinical trial of two
D.V. Nydam	GnRH commercial products used in a systematic
High NEFA concentration in postpartum dairy cows	double-ovsynch protocol at first breeding in dairy
is not strongly correlated with hyperketonemia; are	cows
there associated genomic regions?	V. Caldwell, N. Tison, R. Martineau, J. Dubuc,
F.A. Leal Yepes, S. Mann, J.A.A. McArt,	L. DesCoteaux
H.J. Huson, T.R. Overton, D.V. Nydam	• Comparison of 4-day vs 5-day controlled internal
• Effect of serum calcium status at calving on survival,	drug release (CIDR) + timed artificial insemination
health, and performance of post-partum dairy cows	protocols in dairy heifers
and calves	Roberto A. Palomares, Heidi J. Fishman,
A. Hunter, M.G. Maquivar, S. Bas, T.A. Brick,	Arthur L. Jones, Mathews Jenerette,
W.P. Weiss, H. Bothe, J. Velez,	Aimee Vaughn
,,,,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	TATITOO TUUGIIII IAZ

• Comparison of serum progesterone curves in beef	Effect of milking routine performance and turnover
heifers during luteolysis after administration of	of personnel on milk losses in dairy herds
dinoprost in the muscle or the ischiorectal fossa	G.M. Schuenemann, A.A. Barragan, S. Bas,
S.C. Holland, S.G. Clark, W.D. Whittier,	J.D. Workman
W.S. Swecker, Jr	 Seroprevalence of bovine anaplasmosis in the
 Pre-breeding beef heifer management and season 	southern US
affect mid to late gestation uteroplacental	B.K. Whitlock, J.A. Daniel, B.S. Harvey,
hemodynamics	J.K. Johnson, J.F. Coetzee
A.J. Cain, C.O. Lemley, F.K. Walters,	 Comparison of two competitive enzyme-linked
D.L. Christiansen, E.H. King, R.M. Hopper 144	immunosorbent assays for Anaplasma marginale in
 Prevalence of bacteremia in dairy cattle with acute 	cattle
puerperal metritis	B.K. Whitlock, J.A. Daniel, J.K. Johnson,
Brent Credille, Steeve Giguere, David J. Hurley,	W.R. Stensland, C. Chung, J.F. Coetzee
Amelia Woolums145	• The Texas A&M University Medical Sciences
• Disposition of ampicillin trihydrate in plasma,	Library/AABP Partnership: providing tools for AABP
uterine tissue, and lochial fluid of post-partum dairy	members to practice evidence-based veterinary
cattle	medicine
Brent Credille, Steeve Giguere, Thomas W. Vickroy,	H.K. Moberly, V.R. Fajt, T.D. Halling, E. Carrigan 159
Heidi J. Fishman, A. Lee Jones, Douglas T. Ensley 146	
• Pharmacokinetics of hetacillin in dairy cattle	POSTERS
following 3X milking	• Cobalt supplementation in pre-weaned beef calves
D.A. Kindquist, R.E. Baynes, G.W. Smith	affects humoral immune response, feedlot health,
• Pharmacokinetics and tissue elimination of flunixin	and final carcass characteristics
in veal calves	Bob Sager 160
G.W. Smith, P.D. Brinson, R. Gehring, R.E. Baynes,	• Injuries and illnesses in performance-age bucking
L.W. Kissell, L.A. Tell	bulls: 78 cases (2000-2014)
• Temperatures of drug storage areas in large animal	J.S. Smith, J.A. Angelos, M. Chigerwe
veterinary practice vehicles in the summer	• Effect of castration regimen on health, performance,
M.L. Jones, J.D. Ondrak, V.R. Fajt	and inflammation in beef cattle
	J.G. Powell, S.L. Roberts, H.D. Hughes,
RESEARCH SUMMARIES 4	J.T. Richeson
• Use of veterinarians on U.S. dairy operations	Bispectral index and hemodynamic effects of a
J.E. Lombard, C.P. Fossler, A.E. Adams,	constant rate infusion of propofol combined with
K.F. Gingrich	fentanyl in calves under spontaneous ventilation
• A survey of calf rearing practices on California	M. Deschk, T.A. Trein, J.T. Wagatsuma, G.L. Silva,
dairies	C.A. Rodrigues, P.S.P. Santos
B.M. Karle, W.J. Love, T. Lehenbauer,	• Co-administration of meloxicam and gabapentin
A.L. Van Eenennaam, L. Hulbert, R.J. Anderson,	does not compromise beef bull semen quality
P.H. Kass, T.B. Farver, S.S. Aly	A.J. Cain, J.F. Comstock, E.H. King, R.M. Hopper 163
• Evaluation of the MISCO Palm Abbe PA-203X digital	• Comparison of cardiopulmonary effects of 5 degree
refractometer for estimation of serum total protein	reverse Trendelenberg and horizontal positions in
and serum IgG in neonatal calves	dorsally recumbent sevoflurane-anesthetized calves:
Megan Thompson, Loren Heusel, Sandra Godden,	preliminary data
Sheila McGuirk, Deborah Haines	M.A. Araújo, M. Deschk, J.T. Wagatsuma,
• Comparison of a novel umbilical dip, Super7+TM	B.P. Floriano, G.L. Silva, P.S.P. Santos
Navel Dip to 7% tincture of iodine to desiccate the	• Comparison of 2 gonadorelin formulations and 2
umbilical remnant in neonatal Holstein dairy calves	luteolytic agents on pregnancy rates in beef cattle
J.A. Gard, S.P. Rodning, S. Duran, D.R. Taylor,	synchronized with a 5-d CO-Synch + CIDR program
M.A. Edmondson, F. DeGraves, B. Fields,	S. Bas, T.A. Brick, G. Starkey, G. Messerschmidt,
R. Farrell, M.L. Schnuelle, C. Bratcher, W. Justus 153	A.A. Barragan, G.M. Schuenemann, M.L. Day 165
• Neonatal calf diarrhea: reducing impacts and	• The occurrence of flunixin residues in bovine milk
antibiotic use with lactoferrin and Diaque TM	
	samples from the United States I. W. Kiggell, P. F. Boymeg, C. W. Smith
M.R. Miller, S. DeWitt, L. Muñoz, G.G. Habing 154 Fffort of milk intake and weening strategy on	L.W. Kissell, R.E. Baynes, G.W. Smith,
• Effect of milk intake and weaning strategy on moscures of colf performance and food utilization in	J.E. Riviere
measures of calf performance and feed utilization in	Benefits of intrauterine treatment with cephapirin in deing course with and amothitic
group-housed Jersey calves	dairy cows with endometritis
L. Michels, S. Godden, J. Ranum, W. Knauer,	N. Tison, E. Bouchard, R.C. Lefebvre
J. Fetrow, R. Chebel	

 Using chitosan microparticles to prevent metritis in lactating dairy cows R. Daetz, J.H.J. Bittar, J.E.P. Santos, F. Cunha, F. Magalhaes, Y. Maeda, C. Risco, K.N. Galvao 168 	 Evaluation of bovine viral diarrhea virus (BVDV) transmission from a persistently infected goat to pregnant goats and calves T. Passler, K.P. Riddell, M.A. Edmondson,
• Using Y chromosome fragment testing to identify potentially sub-fertile beef heifers	P.K. Galik, Z. Zhang, P.H. Walz
 Matthew Studstill, Lawton Stewart, Lee Jones 169 Validation of an activity monitoring system for detecting early behavioral markers of respiratory disease development in young dairy calves Maria E. Prado, John Wilkerson, Sheila McGuirk, 	midwestern goats B.T. Jones, J.E. Keen
Peter D. Krawczel	L.A. Tell
 AASRP POSTERS AND RESEARCH SUMMARIES Evaluation of thoracic radiographic in full-term and premature lambs F. Bovino, D.S. Denadai, L.G. Avila, 	shot placement and evaluation of polled and horned goats P. Plummer, J. Shearer, A. Ramirez, K. Kleinhenz, W. Weber, L. Shearer
L.D.R.P. Ciarlini, F.L.F. Feitosa, L.C.N. Mendes 171 • Spirometry in full-term and premature lambs F. Bovino, E.M. Panelli, D.G. Camargo, M. Deschk, P.S.P. Santos, L.C.N. Mendes	 Producer concern and prevalence of subclinical intramammary infections between lactations on 10 dairy goat farms in Ontario, Canada G. Zobel, K. Leslie, D. Weary,
Occurrence of mastitis pathogens in goat colostrum J.F. Alcindo, M. Deschk, G.I. Braga, M. Marinho, F.L.F. Feitosa	M.A.G. von Keyerslingk
 Lying behavior as an early predictor of ketosis in early lactation dairy goats G. Zobel, K. Leslie, D. Weary, M.A.G. von Keyserlingk	A.A. Miller, R.L. Lyman, K.L. Anderson
• Alpaca growth curves J.L. Brown, R.J. Van Saun	A.D. Rowson, T.J. Boyle, D.J. McLean, S.A. Armstrong, S.B. Puntenney
Advertise	rs' Index
Merck Animal Health	inside front cover, front of book
Norbrook Laboratories Limited	back cover

French translations by Mr. Guy Beauchamp. 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.