



Vol. 26, No. 2

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DR. GARY ALTHOUSE

## ...from the president

Well, it looks like the weather has finally caught up with the season here in the Northeast. Unlike the previous few years, rain was ample this year—so ample that as we start the summer, many of us are just now obtaining our first cutting of hay. Fortunately for us the weather doesn't seem to have slowed down our equine breeding caseload. Cattle and hog markets are also looking favorable these days, most likely a significant contributor to our increased demand for reproductive services for these species.

The start of the summer season also signals many of us to get our conference and hotel registrations filled out for the upcoming SFT annual meeting, usually held in late summer/fall. It will be at this meeting that my year as your Society's president will conclude, and with confidence and wistfulness I will hand over the baton of leadership to my willing and able successor—Dr. Fred Lehman.

As I prepare this, my last president's message, I look back over all that we have shared in the past year. Highlights of the past year include securing a superb Executive Director, Dr. Charles Franz, and his management firm which I feel will quite adeptly provide the necessary oversight vital to our Society's future. Additionally, I feel that our Society successfully showed its scientific autonomy within the field of veterinary medicine by hosting a financially successful and well attended stand-alone 2002 conference.

Along with the work to achieve these accomplishments, we faced challenges of making board decisions which maintain the Society's financial solvency, renewed efforts to attract more of our colleagues to our organization, and found additional ways to increase the Society's value to its membership. Lastly, I feel the organization made a forward-thinking move by becoming more actively involved in surveillance of and response to challenges with state veterinary practice acts related to the field of theriogenology.

It is with this last message that I want to truly thank every one of my Society colleagues who volunteered their valuable time, ideas, and knowledge for the betterment of our organization. I predict that next year will be as exciting, challenging, and fulfilling for the SFT and its new leader. I look forward to my new role and continued involvement in what I consider a grand organization. Well, I guess it's back to baling some hay – we'll see you in Ohio!

*From your association office...*

Has any of your vital information changed? Please notify our office of any address, phone, or e-mail changes. Send all changes to Tammy Wallace (tammy@franzmgt.com) or call the association office.

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**DR. FRED LEHMAN**  
2003 CONFERENCE CHAIR

# is theriogenology working for you?

## is it contributing to the bottom line?

**T**he goal for the 2003 Society for Theriogenology conference is to explore opportunities to put practical and/or advanced reproductive

techniques into the category of "profit center" for your practice. Isn't it amazing how frequently reproduction is the initial reason that you are invited onto a farm or a new client walks through your front door? If you want to capitalize on that initial momentum that comes from a first visit, Columbus, Ohio is where you want to be September 17<sup>th</sup> through 20<sup>th</sup>.

Dr. Robert Bazer will be the featured speaker for the opening plenary session. Dr. Bazer, a professor at Texas A&M will explore the field of biotechnology and its impact on a changing world. Drs. Bob Hutchison and Peggy Root-Kustritz have developed a small animal track with domestic and international experts that introduce emerging techniques, which are also both advanced and practical for practice application. Drs. Walter Zent and Brian Carroll have focused the equine section on the business of equine reproduction, how one can take full advantage of the income potential of fundamental practices. Sustainable veterinarians must be able to combine excellent science-based management practices with the requirement for efficiency and practicality. This is true for equine breeding farms as well as beef and dairy cattle operations. Dr. Herris Maxwell as chair of the food animal section has focused on topics that are both timely and practical. In an unsettled era surrounded by concerns of bioterrorism and other threats to the food chain, this program addresses the practitioner's role in biosecurity, pathogen transmission in semen and embryos, and vaccinology.

Dr. Jeanette Floss is chairing the ACT abstract program. The competitive abstract session will be held Thursday morning. Each species track will have

abstracts as well so that emerging, relevant research issues can be addressed in a rapid-fire format.

Quite possibly the most exciting portion of the conference will be the symposia scheduled for Saturday. Dr. Ahmed Tibary will host a small ruminant symposia tailored to the practitioner that needs an update on current topics and techniques. Dr. Peggy Root-Kustritz has developed a feline reproduction update featuring speakers with US and international expertise. Dr. Carlos Risco is leading a bovine reproduction symposium with topics delivered by some of North America's leading reproduction experts.



### Reunion Bicycle Tour

#### Tour De Therio

Pre SFT meeting, Columbus Ohio  
3 Days Sep 13, 14, 15



In Planning Process - shaping up as a great tour

#### Contact:

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This is a program that could be overlooked by many in the veterinary profession since we are a small organization. Likewise, we have limited resources for promotion, so the challenge is yours. Yours to attend. Yours to invite your colleagues. Don't miss what could turn out to be one of the best continuing education events in 2003.

See you in Columbus.  
Fred Lehman, Program Committee Chair

**2003 SFT ANNUAL CONFERENCE & THE SFT/ACT SYMPOSIA REGISTRATION FORM**

Name: \_\_\_\_\_

Name as you would like it to appear on nametag: \_\_\_\_\_

Business /Clinic Name: \_\_\_\_\_

Street Address: \_\_\_\_\_ P.O. Box: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip/Postal Code: \_\_\_\_\_ Country: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

(Required for confirmation purposes.)

\_\_\_\_ Please mark here if this is new contact information which needs to be updated in the SFT database. \_\_\_\_\_ Conference attendees may be posted on the SFT website. If you do NOT want your name listed mark here.

**I. SFT/ACT SYMPOSIA** (Saturday, September 20, 2003)By August 22    After August 22

## • Bovine Symposium

SFT/ACT Members	\$200	.....	\$270	.....	\$	_____
Non-Members	\$295	.....	\$365	.....	\$	_____

## • Feline Symposium

SFT/ACT Members	\$200	.....	\$270	.....	\$	_____
Non-Members	\$295	.....	\$365	.....	\$	_____

## • Small Ruminant Symposium

SFT/ACT Members	\$200	.....	\$270	.....	\$	_____
Non-Members	\$295	.....	\$365	.....	\$	_____

**II. SFT/ACT ANNUAL CONFERENCE**By August 22    After August 22

SFT/ACT Members	\$215	.....	\$285	.....	\$	_____
Non-Members	\$310	.....	\$380	.....	\$	_____

\*\* \_\_\_\_\_ Includes a current year SFT membership for veterinarians, please check here **only** if you **wish to decline** the membership offer (declining membership does not reduce your registration fee.)

**III. AABP & SFT/ACT Annual Conference Dual Registration**By August 22    After August 22

SFT/ACT Members	\$405	.....	\$475	.....	\$	_____
Non-Members	\$500	.....	\$570	.....	\$	_____

**IV. "Theriogenologist of the Year Award" Reception \$15.00 per.** \_\_\_\_\_

(Ticket is required to attend- open to all conference attendees.)

**Total Amount Due** \$ \_\_\_\_\_**PROCEEDINGS FORMAT**

Please indicate below, the format in which you would like to receive your proceedings. (If you do not mark a preference, you will automatically receive a CD-ROM).

☐ Bound Book    ☐ CD-ROM**PAYMENT INFORMATION**

You may register via fax (334/270-3399) or SFT website ([www.therio.org](http://www.therio.org)) if you are paying by Visa, Mastercard or American Express. Otherwise, please mail your payment and completed Registration form to: SFT Headquarters, P.O. Box 3007 – Montgomery, Alabama 36109.

Fees are due and payable to SFT only in U. S. Funds drawn on U. S. Banks.

Please indicate your method of payment:

☐ Check    ☐ Visa    ☐ Mastercard    ☐ American Express

Card Number \_\_\_\_\_

Expiration Date \_\_\_\_\_

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If you have questions, please contact SFT Headquarters at 334/395-4666. Or email us at: [Tammy@franzmgt.com](mailto:Tammy@franzmgt.com)

# SFT ANNUAL CONFERENCE SFT/ACT SYMPOSIA

## SCHEDULE

### Wednesday, September 17 2003

7:00-9:00pm

Happy Hour Abstract presentations

### Thursday, September 18 2003

8:00am-9:00am

Emerging Technology in Animal Reproduction

9:00am-11:00am

Competitive Student Abstracts

11:00-12:00pm

SFT Annual Meeting

12:00pm-1:30pm

LUNCH

1:30pm-3:30pm

Separate Track Programs\*

3:30pm-4:00pm

BREAK

4:00pm-6:30pm

Separate Track Programs\*

6:30pm-8:30pm

Bartlett Reception & Address

8:30pm-9:30pm

ACT Business Meeting

### Friday, September 19 2003

8:00am-10:00am

Separate Track Programs\*

10:00am-10:30am

BREAK

10:30am-12:00pm

Separate Track Programs\*

12:00pm-1:30pm

LUNCH (1.5 Hrs.)

1:30pm-3:00pm

Separate Track Programs\*

3:00pm-3:30pm

BREAK

3:30pm-5:45pm

Separate Track Programs\*

6:00pm-8:00pm

Theriogenologist of the Year Award and Reception

### Saturday, September 20 2003

8:00am-9:30am

Separate Track Programs\*

9:00am-10:00am

BREAK (Feline Track)

10:00am-10:30am

BREAK (Bovine Track)

10:15am-10:45am

BREAK (Small Ruminant Track)

10:00am-12:15pm

Separate Track Programs\*

12:15pm-1:45pm

LUNCH (1.5 Hrs.)

1:45pm-3:15pm

Separate Track Programs\*

3:15pm-3:45pm

BREAK

3:45pm-4:30pm

Separate Track Programs\*

\*Description of Track Programs are on pages 4-5

## COURSE DESCRIPTION — THURSDAY, SEPTEMBER 18 2003

### EQUINE TRACK

**1:30pm-2:30pm** - Practical Use of Equine Ultrasonography - Karen Wolfsdorf, DVM, DACT

This lecture will discuss the uses for ultrasonography in the field. This includes medical, lameness and reproductive indications. Normal and abnormal images will be demonstrated along with the benefits.

**2:30pm-3:30pm** - Equine Fetal Sex Determination Between 55 and 150 days of Gestation - Richard Holder, DVM

This lecture covers procedures to follow in determining fetal sex in the equine between 55 and 150 days gestation (includes materials and equipment needed). Discussion includes reasons for determining sex, advantages to the farm and owner, and as a profit center for the veterinarian. Procedures will be step-by-step using 35 mm slides and VHS tape visuals.

**4:00pm-6:00pm** - Species Abstracts

### FOOD ANIMAL TRACK

**1:30pm-2:30pm** - Cost Analysis of BVD PI Testing and Eradication in Cow Calf Herd - Bob Larson, DVM, PhD, DACT

The Presence of PI calves in a cow-calf herd will reduce economic returns by decreasing pregnancy and weaning percentages. However, the cost of complete herd screening for BVD PI calves is substantial and must be considered when selecting the best diagnostic and biosecurity procedures for individual herds.

**2:30pm-3:30pm** - Economic Analysis of Diagnostic Procedures Commonly Used in Bovine Theriogenology - Bob Larson, DVM, PhD, DACT

The data needed to form diagnostic strategies includes the condition prevalence and sensitivity and specificity of available diagnostic procedures. In addition, food animal veterinarians must also have data on the economic costs of condition and intervention. Finally, we must make conclusions in the face of uncertainty that comes from imperfect information, imperfect tests, and biologic variation.

**4:00pm-6:00pm** - Species Abstracts

### SMALL ANIMAL TRACK

**1:30pm-3:30pm** - Surgical Techniques of the Reproductive Tract - Mary McLoughlin, DVM, MS, DACVS

An overview of surgical techniques and procedures used for diagnosis and treatment of diseases of the small animal reproductive tract as well as breeding management.

**4:00pm-5:00pm** - Pathology of the Canine Ovary and Uterus: What's Important, What's Not - Don Schlafer, DVM, MS, PhD, DACT, DACVP, DACVM

This lecture will address the nature and clinical importance of lesions of the canine ovary and uterus organized in the following categories: 1) developmental defects, 2) cyclical changes, 3) degenerative changes leading to cystic conditions, 4) neoplastic conditions, and 5) surgical uterine biopsy as a tool in clinical reproductive management.

**5:00pm-6:00pm** - Species Abstracts

## COURSE DESCRIPTION — FRIDAY, SEPTEMBER 19 2003

### EQUINE TRACK

**8:00am-9:00am** - The Role of Breeding Record Evaluation in the Evaluation of the Stallion for Breeding Soundness - Charles Love, DVM, PhD, DACT

This program covers the role of breeding record evaluation in the Stallion Breeding Soundness Evaluation. How to evaluate breeding records will be discussed. This will include those parameters that the clinician can use to determine the sources (mare, management, stallion) of reduced fertility.

**9:00am-10:00am** - Record Keeping Using Hand Held Or Tablet Computers - John Atack, DVM

This presentation will demonstrate the advantages of utilizing mobile hand held or tablet computers for patient record keeping. In this day and age, it behooves us to keep accurate records of our patients, and have access to them 24/7.

**10:30am-11:30am** - Embryo Transfer as an Integral Part of Today's Equine Practice - David Hartman, DVM

This presentation will cover embryo transfer as it is incorporated into a private practice setting. Topics of discussion will include client request for the procedure, costs involved, facilities, and personal procedure technique. Possible profit potential will also be discussed.

**11:30am-12:00pm** - Update on Mare Reproductive Loss Syndrome - Thomas Riddle, DVM

This paper provides a history of Mare Reproductive Loss Syndrome (MRLS), along with a discussion of the reproductive (early and late term fetal loss and compromised neonates) and non-reproductive (pericarditis and endophthalmitis) syndromes. An update is given on research on Mare Reproductive Loss Syndrome.

**1:30pm-2:15pm** - Breeding Mares w/Frozen Semen - Phil Matthews, DVM

This program discusses techniques and strategies for breeding mares with frozen semen. There is an emphasis on integrating these techniques into your practice as a way of dispelling some old myths about frozen semen held by veterinarians and horse breeders alike.

**2:15pm-3:00pm** - So Many Mares, So Little Semen - Brian Carroll, DVM

This program discusses management of a breeding program to maximize conception rates. Individual client examples will be utilized.

**3:30pm-4:15pm** - Round Table Discussion- Ways to Market Reproductive Services

### FOOD ANIMAL TRACK

**8:00am-9:00am** - Biosecurity & Frozen Semen: Industry Efforts to Prevent Transmission of Selected Pathogens - Don Monke, DVM

This presentation will explain the risk management approaches taken by AI centers to maintain individual bulls and bull herds free of specific diseases. The relationships between animal health management programs and the prevention of seminal transmission of disease will be reviewed.

**9:00am-10:00am** - Bovine Placental Pathology: An Overview of Placental Development, Infectious Diseases and Diagnostic Features in Cases of Pregnancy Failure - Don Schlafer, DVM, MS, PhD, DACT, DACVP, DACVM

This lecture will focus on normal placental development in the cow, gross placental anatomy and examination of the placenta, and an overview of specific placental pathology as it relates to common causes of abortion in cows. Mechanisms by which infectious agents gain access to the gravid uterus, the changes they cause and role of trophoblasts in these processes will be reviewed.

**10:30am-11:30am** - Estrous Synchronization in Heifers - Mike Day, DVM

A variety of methods exist to control estrous cycles in heifers. The available systems will be reviewed and their relative advantages/disadvantages discussed. The costs of various systems will be compared. Also, the relative cost of AI versus natural service and the benefits of these approaches will be discussed.

**11:30am-12:00pm** - Producing Bulls for Commercial AI Centers: Industry Concerns and Producer Difficulties - Don Monke, DVM

This presentation will focus on animal health and diagnostic problems associated with the procurement by commercial AI Centers of genetically superior, contract-mated dairy bull calves. The number of dairy bulls rejected following on-farm examination has increased in recent years. Reasons associated with this increasing trend will be discussed.

**1:30pm-2:15pm** - Emerging Technologies in Bovine Pregnancy Diagnosis - Robert Youngquist, DVM, DACT

This presentation will review the mechanism and application of methods to detect pregnancy in cattle other than palpation per rectum.

**2:15pm-3:00pm** - Shedding & Transmission of BVD Virus in Semen - Dan Givens, DVM, DACT

The potential for infectious bovine viral diarrhea virus to be transmitted by artificial insemination and natural breeding will be reviewed. The persistence of BVDV in semen after experimental acute infection and the prevalence of bulls in the Southeastern United States that shed BVDV in semen in the absence of viremia will be addressed.

**3:30pm-4:15pm** - Ovarian Follicle Maturity at Induced Ovulation Influences Fertility in Cattle - Mike Day, DVM

Synchronized ovulation is becoming a standard practice for many estrous control programs. Variation in follicle diameter exists at this induced ovulation. The impact of follicle maturity at the time of GnRH treatment on subsequent fertility will be the focus of this presentation.



# SFT ANNUAL CONFERENCE SFT/ACT SYMPOSIA

## COURSE DESCRIPTION — FRIDAY, SEPTEMBER 19 2003 (CONTINUED)

**4:15pm-5:00pm** - Assessment of Available Vaccines for Bovine Reproductive Pathogens - Dan Given, DVM, DACT  
Available vaccines for bovine reproductive pathogens will be reviewed. Efficacy of vaccination in field circumstances will be described. Appropriate determinants for vaccine selection will be emphasized.

### SMALL ANIMAL TRACK

**8:00am-9:00am** - Male Infertility and Treatments in the Canine Species - John Verstegen, Professor, MSc, PhD, Diplomate ECAR  
Infertility in the male dog is a common problem more and more often observed. Causes are multiple from genetic selection to infectious. A clear evaluation of the process and causes is absolutely required to allow for possible treatment. This lecture will present the most recent and most practical views on this often disappointing topic.

**9:00am-10:00am** - Feline Reproductive Physiology- Part I Elise Malandain, DVM, MSc

This lecture is a survey of the main characteristic of feline reproductive physiology, including the variations of the onset of puberty, and the particularities of seasonality. Sexual and mating behavior, management of the breeding, and optimal breeding period will be discussed.

**10:30am-11:30am** - Etiopathogeny, Classification and Prognosis of Mammary Tumors in the Canine and Feline Species - John Verstegen, Professor, MSc, PhD, Diplomate ECAR

Mammary tumors are the second most important tumors in dogs and third in cats. Much controversy still exists concerning their pathology, diagnosis and treatment approaches. The lecture will concentrate on the most recent opinions and treatments available. The potential interests of chemotherapy as well as the controversial benefit of sterilization will be discussed.

**11:30am-12:00pm** - Feline Reproductive Physiology- Elise Malandain, DVM, MSc

This program focuses on estrous follow up in the queen. Cat breeders are more often asking for follow up of their queens, particularly during estral period. Vaginal smears, endocrinology assays and ultrasonography, described in this lecture, are techniques that allow different approaches of the follicular maturation and ovulation in queen.

**1:30pm-2:15pm** - The OVT Charting System - Norman Roskin, DVM  
This system consists of a group of computer applications that will allow you to compile, compare, and share data on breeding bitches. The computer applications consist of a desktop application, web site, and hand held devices, all of which can be synchronized. Veterinarians throughout the

world working in canine reproduction can share information.

**2:15pm-3:00pm** - Nutritional Considerations for the Bitch During Reproduction - Allan J. Lepine, PhD

Presentation will provide an overview of past research as well as recent findings in the area of nutrition and reproduction in the bitch. Particular emphasis will be given to the physiological impact of pregnancy and lactation on the bitch. Presentation will also address the relationship between maternal nutrition and the nutrient status and growth of puppies from birth through weaning.

**3:30pm-4:15pm** - The Amazing Placenta: A Primer on Placental Development, Function, and Diseases of Gross Pathology in the Dog and Cat - Don Schlafer, DVM, MS, PhD, DACT, DACVP, DACVM

The placenta is an amazing interface between the mother and the fetus. Normal fetal development is entirely dependent upon establishment and appropriate growth and function of the placenta. This lecture will deal with basic elements of how placentas of the dog and cat develop, their gross appearance, and function mechanisms of placental failure resulting in abortion, or in utero growth retardation.

**4:15pm-5:00pm** - Experiences & Perils of Frozen & Fresh - Cooled Canine Semen.- (group discussion) - Scarlett Gotwals, DVM, Moderator

## COURSE DESCRIPTION — SATURDAY, SEPTEMBER 20 2003

### SMALL RUMINANT SYMPOSIUM

**8:00am-8:45am** - Advances in the Control of Reproduction in Sheep & Goats - Brian Buckrell, DVM, MSc, Diplomate ACT

Recent developments in our understanding of the management of the estrous cycle will be presented as it applies to synchronized natural or artificial breeding of sheep and goats.

**8:45am-9:30am** - Investigation of Flock Infertility - Seyed Mobini, DVM, MS, Diplomate ACT

Investigation of Flock Infertility in Sheep and Goats

**9:30am-10:15am** - Advances in Artificial Insemination & Embryo Transfer in Sheep & Goats - Brian Buckrell, DVM, MSc, Diplomate ACT

Recent information useful to improve the results of superovulation, artificial insemination and embryo transfer will be presented.

**10:45am-11:30am** - Investigation of Abortion in Sheep & Goats - Seyed Mobini, DVM, MS, Diplomate ACT

Investigation of abortion in sheep and goats.

**11:30am-12:15pm** - Infertility in the Female Lamoid - Ahmed Tibary, DVM / David G. Pugh, DVM, MS, Diplomate ACT, Diplomate ACVN

This lecture describes the breeding soundness examination of female llamas and alpacas and diagnostic approach to congenital and acquired causes of infertility. The importance of the techniques such as ovarian and uterine ultrasonography, hysteroscopy, laparoscopy and endocrinology in the diagnosis of reproductive abnormalities in these species will be emphasized.

**1:45pm-2:30pm** - Infertility in the Male Lamoid - Ahmed Tibary, DVM / David G. Pugh, DVM, MS, Diplomate ACT, Diplomate ACVN

This lecture presents the fundamental aspects of lamoid male reproductive physiology as well as breeding soundness examination and reviews the main congenital and acquired problems seen in the author's practice. A detailed description of the ultrasonographic evaluation of the genitalia and semen collection and evaluation is given. Indication and interpretation of testicular biopsy will be presented.

**2:30pm-3:15pm** - Surgery of the Urogenital System in Lamoids - David Anderson, DVM, MS, DACVS

This seminar will discuss abnormalities of the female reproductive tract in which surgical restoration of fertility are possible.

**3:45pm-4:30pm** - Surgery of the Urogenital System in Lamoids - David Anderson, DVM, MS, DACVS

This seminar will discuss abnormalities of the male reproductive tract in which surgical restoration of fertility are possible.

### FELINE SYMPOSIUM

**8:00am-8:30am** - Estrous Cycle Regulation and Estrous Induction in the Queen - John Verstegen, Professor, MSc, PhD, Diplomate ECAR  
For long, estrous cycle regulation in cat was poorly studied and the major regulations were poorly understood. Fortunately, new information have been gained regarding ovulation and pregnancy regulation. Consequently, the improved knowledge of the cycle has allowed for improved treatments. Estrous induction is of major concern in this species and often is used as model for wild carnivores. The different possibilities will be discussed.

**8:30am-9:30am** - Advanced Reproductive Techniques - Elise Malandain, DVM, MSc

The practice of artificial insemination is unusual in cats. Little research has been conducted on this subject, whereas demands from breeders are increasing. The different methods of semen collection (electroejaculation and vaginal collection) will be presented, and the timing of ovulation and insemination will be discussed. The practical aspect of vaginal or uterine insemination will be described.

**10:00am-11:00am** - Pregnancy Regulation & Pregnancy Termination - John Verstegen, Professor, MSc, PhD, Diplomate ECAR  
Pregnancy regulation in cats is still a major physiological concern. However, new data are available to permit better management of pregnancy and improved treatments for abortion induction. The interests of dopamine agonists, PgF<sub>2</sub>alpha and progesterone antagonists will be discussed.

**11:00am-12:15pm** - Feline Coronavirus and Cattery Management - Diane Addie, DVM

Feline coronavirus (FCoV) causes feline infectious peritonitis (FIP). Up to 10% of cats infected with FCoV go on to develop FIP. FIP is incurable and currently believed to be the major infectious cause of cat death. There is much controversy over the only commercially available vaccine. FCoV is shed in the feces and control is largely about minimizing spread of this very infectious virus by excellent hygiene and management.

**1:45am-2:45am** - The Effect of Nutrition on Feline Reproduction - Russ Kelley, MS

Presentation will provide an in-depth overview of research efforts related to feline reproduction. Particular emphasis will be placed on the effects of nutrition on litter size, milk production, and changes in body composition in the queen. In addition, the presentation will provide information highlighting the impact of maternal nutrition on the growth and development of the neonatal kitten.

**2:45pm-3:30pm** - Vaccinations in Cats and Catteries - Tracey Rock, DVM

This lecture will cover the current controversial issues surrounding feline vaccination. The topics covered will be presented from a vaccine manufacturers point of view and will include vaccination protocols and vaccine associated fibrosarcomas.

**3:45pm-4:15pm** - Infertility in the Queen - Elise Malandain, DVM, MSc.

Pure bred cats are increasing in popularity. Cat breeders are now asking their vets to diagnose or treat infertility of their valuable females. Anestrus, hyperestrus, uterine pathology, and hormonal or infectious diseases leading to infertility will be presented. A chronological and practical diagnostic procedure for infertile queens will be proposed.

### BOVINE SYMPOSIUM

**8:00am-9:00am** - Economic Impact of Systematic Breeding Programs and Factors to Consider in Program Selection for the Reproductive Management of Dairy Cattle - Raymond L. Nebel, PhD  
This program covers the economic impact of estrus synchronization programs of dairy cattle and factors to consider in protocol selection. Discussion will focus on cost benefits of synchronization programs that in general reduce days to first service and increase the rate at which cows become pregnant. Advantages and pitfalls of various protocols will be discussed.

**9:00am-10:00am** - Resynchronization Protocols in Lactating Dairy Cows - Julian Bartolome, MV, MS, FRVCS

Failure to rapidly re-inseminate previously inseminated cows that remain open increases days open in lactating dairy cows. Estrus detection in dairy herds is low, therefore, it is imperative to identify open cows early and reinseminate them. The stage of the estrous cycle is known to affect the response to TAI protocols. Different protocols for re-synchronization and the effect of the estrous cycle in cows found open at ultrasonography will be discussed.

**10:30am-11:30am** - Measuring Client Compliance - Austin Belschner, DVM, MS

There are many reproductive programs that will allow dairy producers to get reasonable results. How we implement these programs may be more important than which one we use. The measure of implementation efficiency is compliance. This talk will focus on the value of compliance and how it can be measured.

**11:30am-12:15pm** - Insemination Related Factors Affecting Fertilization in Estrous Synchronized Cattle - Dick Saccke, DVM, PhD  
In this paper, we will discuss sire, semen selection and time of insemination with respect to controlled time of ovulation. Attention will also be given to the nature of reproductive success, failure related to semen, insemination from the standpoint of fertilization, and early embryonic development.

**1:45pm-3:00pm** - Characterization of Early Embryonic Death and Prevention of Pregnancy Wastage - William W. Thatcher, DVM, Professor

Objectives of this presentation are to characterize bovine embryo development and losses, to identify physiological windows that may be impaired and associated with embryo wastage, and to identify strategies to improve pregnancy rates. This basic and applied information is essential for development of strategies to increase reproductive efficiency of lactating dairy cows.

**3:00pm-3:30pm** - Regulatory Environment Regarding ELDU of Hormones - M. Gatz Riddell, Jr., DVM, Professor

The Animal Medicinal Drug Use Clarification Act (AMDUCA) specifically exempts reproductive hormones from legal extralabel drug use. Therefore, use of any approved reproductive hormone in an extralabel fashion is illegal. Increasingly, compounded products are being produced from bulk drugs which constitutes manufacturing. This is also illegal and raises concerns about quality control, target animal safety and human food safety where applicable.

**4:00pm-5:00pm** - Impact of Estrus Synchronization on the Economics of Reproductive Management of Beef Cattle and Factors to Consider in Protocol Selection - Sandy Johnson, DVM

Breeding system costs were estimated for natural service and various estrous synchronization plus AI systems. Several synchronization systems had lower breakeven prices than natural service when the value of an AI-sired calf at weaning was included as \$25 greater than a natural service sired calf. While cost drives many decisions, other factors should be considered in selecting the most appropriate protocol.

# ABSTRACTS

**The first five abstracts in this issue are provided by Dr. Craig Smith. Other abstracts are provided by Dr. Robert Youngquist. The Society wishes to thank them for their contributions**

## **Application of the *Neospora caninum* IgG avidity ELISA in assessment of chronic reproductive losses after an outbreak of neosporosis in a herd of beef cattle**

JOURNAL OF VETERINARY DIAGNOSTIC INVESTIGATION, JANUARY, 2003, VOL. 15, NO. 1, PP. 3-7



examine the chronicity of infections and patterns of transmission. During the study, 76-78% of animals were seropositive for *N. caninum*. The pregnancy rate varied from 88% to 94%, without any

Point-source infections are most likely the cause for *Neospora caninum*-induced abortion outbreaks in cattle, whereas an increased annual abortion rate may be a consequence of vertical transmission. The aims of the present study were to examine the reproductive effects of neosporosis in a beef herd for 3 years, after a point-source outbreak, and to use IgG avidity serology to

reduction in the pregnancy rate of seropositive cows compared with seronegative cows. The annual abortion rate was 2.5-5.5%, and all but 1 abortion occurred in seropositive dams. The efficiency of vertical transmission was estimated to be 85%. Several calves, born to seronegative dams, were seropositive at 6-13 months of age, indicating a 22% mean annual rate of horizontal transmission. The mean avidity in seropositive cows increased from 30 during the initial outbreak to 74 after 3 years. The mode of IgG avidity was 21-40 during the initial abortion outbreak, 41-60 after 1 year, and 61-80 after 2 and 3 years. The results reveal high annual rates of both vertical and horizontal transmission of *N. caninum* in a herd of beef cows and provide further validation on the ability of the *N. caninum* IgG avidity ELISA to accurately assess the chronicity of infection.-30-

## **Relationship among insulin-like growth factor-I, blood metabolites and postpartum ovarian function in dairy cows**

JOURNAL OF VETERINARY MEDICAL SCIENCE, OCTOBER, 200, VOL. 64, NO. 10, PP. 879-885

VICTOR CHISHA ZULU, YUTAKA SAWAMUKAI, KEN NAKADA, KATSUYA KIDA, AND MASA HARU MORIYOSHI

The relationship among nutritional status, systemic insulin-like growth factor-I (IGF-I), and ovarian function early postpartum was investigated. A total of 27 Holstein-Friesian cows, 10 that cycled normally within 20 days postpartum, 5 diagnosed with follicular cysts, 9 with persistent corpus luteum (CL) after the first ovulation postpartum, and 4 with inactive ovaries, were used for the study. Blood samples were collected 1-3 times per week, for 60 days pre- and postpartum, for IGF-I, progesterone, estradiol, free fatty acids (FFA), blood urea nitrogen (BUN), and aspartate aminotransferase (AST) determination. Inactive ovary and cystic cows had a higher body condition score before calving and lost more condition than normal or persistent CL cows. Immediately postpartum, IGF-I levels were higher and rose more sharply in cows that cycled normally than in cystic, inactive ovary, or persistent CL cows. There was a significant strong positive relationship between IGF-I and BUN, and strong negative relationships between IGF-I and FFA and AST in all groups.

There was a positive relationship between serum IGF-I and estradiol in normal, cystic, and inactive ovary cows. This study found that overconditioned cows during the dry period or at calving lost more body condition postpartum. These cows also had a deeper and longer period of negative energy balance (NEB), poor liver function, and low circulating IGF-I concentrations early postpartum. Such cows were likely to have poor reproductive function as seen in development of cystic ovaries, persistent CL, and inactive ovaries. Changes in serum IGF-I early postpartum may help predict both nutritional and reproductive status in dairy cattle.-30-



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for SFT's  
Future Meetings***

**AUGUST 4-8, 2004**

**SFT Annual Conference  
& Symposium**

**Hyatt Hotel, Lexington, KY**

# ABSTRACTS

## Fixed-time insemination in peripuberal, lightweight replacement beef heifers after estrus synchronization with PGF2alpha and GnRH

THERIOGENOLOGY, APRIL 15, 2003, VOL. 59, NO. 8, PP. 1827-1837, C. R. DAHLEN, G. C. LAMB, C. M. ZEHNDER, L. R. MILLER, AND A. DICOSTANZO

Estrus synchronization contributes to optimizing the use of time, labor, and financial resources by shortening the calving season, in addition to increasing the uniformity of the calf crop. We determined whether acceptable pregnancy rates could be achieved after synchronization of ovulation and fixed-time artificial insemination (AI) in peripuberal replacement beef heifers using gonadotropin-releasing hormone (GnRH) and PGF2alpha. Crossbred heifers from two herds (MH, n = 239; SS, n = 330) were wintered at a single location. After a prebreeding examination revealed that 55 heifers had a reproductive tract score (RTS) of 1 (infantile reproductive tract), they were culled, and the remaining heifers were assigned randomly to one of three treatment groups: administration of 25 mg PGF2alpha i.m. on days -12 and 0 followed by estrus detection and insemination between 10 and 14 hours after an observed estrus (control; n = 173); administration of 100 mg GnRH i.m. on day -6, followed by 25 mg PGF2alpha i.m. on day 0, then fixed-time AI and administration of 100 mg GnRH i.m. on day +2 (GPG; n = 172); and treatment as for group GPG in addition to administration of 100 mg GnRH i.m. on day -12 (GGPG; n = 169). Bulls were introduced 10 days after AI for 60 days to breed heifers that did not conceive after AI (clean-up bulls). On days -12, -6, and

0, transrectal ultrasonography was used to monitor ovarian structures in a subset of heifers (30 per treatment). At 30 to 35 days after AI, ultrasound was used to determine the presence of a viable fetus. Presence of a fetus and stage of pregnancy were determined via palpation per rectum 61 to 63 days after the conclusion of the breeding season. Heifers in the MH herd ( $309 \pm 1.9$  kg) were heavier ( $P < 0.001$ ) than those in the SS herd ( $283 \pm 1.7$  kg) at initiation of the breeding season. Synchronized pregnancy rates were greater ( $P < 0.05$ ) in GGPG (25.4%) and GPG (22.1%) than control (12.7%) heifers. Pregnancy rates were 9, 21, 32, or 31% for heifers with RTS of 2, 3, 4, or 5, respectively. The average diameter of 22 follicles induced to ovulate in heifers treated with GnRH (GPG or GGPG treatments) was  $14.2 \pm 0.8$  mm (range = 10.0 to 23.6 mm). In conclusion, a fixed-time ovulation synchronization program using GnRH and PGF2alpha improved pregnancy rates in peripuberal, lightweight replacement beef heifers.-30-



## Semen characteristics of genetically identical quadruplet bulls

THERIOGENOLOGY, APRIL 15, 2003, VOL. 59, NO. 8, PP. 1865-1877, CARL LESSARD, ISABELLE MASSEAU, JEAN-FRANÇOIS BILODEAU, TOM KROETSCH, HERMENEGILDE TWAGIRAMUNGU, JANICE L. BAILEY, PIERRE LECLERC, AND ROBERT SULLIVAN



Modern cloning methods have become an important technology in artificial insemination that is used to create and maintain pools of genetically superior bull semen. In this study, semen from four identical quadruplet bulls (Q1, Q2, Q3, and Q4) produced by blastomere separation was analyzed to evaluate the differences in reproductive potential, if any, that existed between the identical quadruplet siblings. Analysis of fresh semen collected from 1994 to 1996 showed lower progressive motility and lower sperm concentration for one

bull (Q3) compared to his identical brothers ( $P < 0.05$ ). Semen characteristics following freezing-thawing procedures have also been tested for these quadruplet bulls. The percentage of motility, progressive motility, and mean path velocity were lower in Q4 compared with Q1. Moreover, intracellular calcium level and P25b level (P25b is a sperm surface protein proposed to be a potential bull fertility marker) were lower in Q4 compared with his siblings ( $P < 0.05$ ). Cryodamage to Q4's frozen-thawed spermatozoa was confirmed by a lower percentage of embryo development after in vitro fertilization. Thus, the higher instability of cryopreserved spermatozoa from Q4 and the lower semen production of Q3, compared to their siblings, indicate that differences in semen characteristics can indeed exist among genetically identical animals.-30-

## SFT Announces Board of Directors Candidates

The Nominating Committee of the Society for Theriogenology is pleased to announce the following candidates for Board of Directors. The individuals below are running to serve a three-year term as a director on the SFT Board of Directors. Pursuant to the SFT Bylaws, the general election will be held during the Annual Business Meeting at the next Annual Conference (September 17-20 in Columbus, Ohio).

**Dr. Gary Warner – Bovine Practice, Elgin, Texas**

**Dr. James Brendemuehl – Equine Practice, Clements, California**

**Dr. Ana Adams – Small Animal Practice, Alpharetta, Georgia**

Completing their term on the Board this September are Drs. Robert Hutchison, Herris Maxwell, and Margaret Root Kustritz. The Society would like to thank these individuals for their dedication and service as directors.



# ABSTRACTS

## Sternal recumbency or suspension by the hind legs immediately after delivery improves respiratory and metabolic adaptation to extra uterine life in newborn calves delivered by caesarean section

VETERINARY RESEARCH, NOVEMBER-DECEMBER, 2002, VOL. 33, NO. 6, PP. 709-724, CHRISTOPHE UYSTEPRIYST, JOOST COGHE, THIERRY DORTS, NATACHA HARMEGNIES, MARIE-HELENE DELSEMME, TATIANA ART, AND PIERRE LEBEUX



The aim of the study was to evaluate the effect of body positioning immediately after delivery on respiratory and metabolic adaptation to extra-uterine life in newborn calves. One hundred one Belgian White and Blue calves were delivered at term by an elective cesarean section and were assigned into three categories according to the body position imposed immediately after umbilical cord rupture: 71 calves were placed in lateral recumbency, 16 calves were placed in sternal recumbency, and 14 calves were suspended by the hind legs for less than 90 seconds ( $75 \pm 5$  seconds). Following the initial body position, the calves were allowed to move without restraint. They were examined at birth, 5, 15, 30, 45, and 60 minutes, and 2, 3, 6, 12, and 24 hours after birth by the following measurements: physical examination, heart rate, arterial blood gas analysis, pulmonary

function tests using the esophageal balloon catheter technique, arterial and venous blood acid-base balance analysis, rectal temperature, jugular venous blood sampling for the determination of blood glucose, plasma lactate, and serum cortisol concentrations, hematology variables, and passive immune transfer variables. Body positioning immediately after delivery clearly influenced respiratory and metabolic adaptation to extra-uterine life in term calves delivered by an elective cesarean section. Systematic sternal recumbency and suspension by the hind legs for less than 90 seconds immediately after umbilical cord rupture had a positive functional impact on postnatal pulmonary mechanics and gas exchange and on postnatal correction of mixed acidosis present at birth, contributing in turn to an enhanced passive immune transfer. These two body positions should be encouraged to improve adaptation at birth in healthy term calves delivered by an elective cesarean section. Evaluation of possible side-effects is required before application in severely asphyxiated calves.-30-

## Dystocia in a referral hospital setting: approach and results.

BYRON,CR; EMBERTSON,FM; BERNARD,WV; HANCE,SR; BRAMLAGE,LR; HOPPER,SA (2003) EQUINE VET. J. 35, 82-85.

Reasons for performing study: Dystocia in the mare is an emergency in which duration has a profound effect on survival of the foal. Specific examination of the effects of dystocia duration on foal survival provides information to enable horse care personnel and veterinarians to manage these cases more effectively and maximize the chances of obtaining a live foal. Hypothesis: Dystocia duration would have a negative impact on foal survival while method of dystocia resolution would not have an effect on foal survival. Additionally, we were interested in determining the effects of dystocia on subsequent fertility. Methods and results: In the years 1986-1999, 247 dystocias were admitted. Of these, 91% resulted in survival and discharge of the mare, 42% in delivery of a live foal, and 29% of foals survived to discharge. Period from hospital arrival to delivery for foals alive at discharge ( $23.0 \pm 14.1$  mins) was not significantly different than for foals not surviving ( $24.8 \pm 10.6$  mins) ( $P > 0.05$ ); and from chorioallantoic rupture to delivery for foals alive at discharge ( $71.7 \pm 34.3$  mins) was significantly less than for foals not surviving ( $85.3 \pm 37.4$  mins) ( $P < 0.05$ ). Average pre-dystocia live

foaling rates for all mares with available records was 84%. Overall post-dystocia live foaling rates over the entire period of this study were 67%. Of mares bred in the year of the dystocia, 59% had a live foal in the year following. Conclusions: Based on these results, dystocia duration has a significant effect on foal survival and resolution methods should be chosen to minimize this time, as the difference between mean dystocia duration for foals that lived and those that did not in this study was 13.6 mins. Post-dystocia foaling rates reported here are higher than previously reported for both same-season and overall breedings, indicating same-season breeding may be rewarding for select dystocia cases. Potential relevance: Dystocia resolution methods that minimize delivery time may maximize foal survival. Post-dystocia breeding may be rewarding in select cases.-30-



## X/XY/YYY mosaicism as a cause of subfertility in boars: a single case study.

QUILTER,CR; WOOD,D; SOUTHWOOD,OI; GRIFFIN,DK (2003) ANIM. GENET. 34, 51-54.



Sex chromosome abnormalities are common in mammals and humans and are often associated with sub-fertility. In this study a boar with normal sperm parameters was indicated to have reduced prolificacy from figures obtained for return rate, farrowing rate and total number of piglets born. G-banded cytogenetic analysis of peripheral blood identified an abnormal

mosaic sex chromosome constitution 39,XXY[74]/38,XY[23]/37,X[3]. Cytogenetic analysis of fibroblasts confirmed this mosaic karyotype with similar percentages of cell lines observed 39,XXY[76]/38,XY[19]/37,X[5]. External genitalia revealed a poorly developed scrotum with the right testicle being smaller than the left. To the best of our knowledge this is the first time that this chromosome constitution has been reported in the pig. It is of particular interest that this karyotype is associated with reduced boar fertility, which could lead to potential economic losses if such a boar were selected for breeding purposes.-30-



# ABSTRACTS

## Studies on congenital toxoplasmosis in canines.

SMIELEWSKA LOS,E, RYPULA,K; DZIMIRA,S (2003) MED. WETER. 59, 141-145.

The purpose of the study was to determine the influence of *Toxoplasma gondii* infection on reproductive failures in dogs, foxes and raccoon dogs as well as to find the optimal method for diagnosing congenital toxoplasmosis in canines. The studies were performed on farmed silver and polar foxes, raccoon dogs and dogs. Fifty-two females from 20 farms and 4 bitches that had miscarried or lost their litters in the first 3 days after whelping were serologically examined using the latex agglutination test. Twenty out of 42 seropositive females were chosen for detailed serologic examination performed by the immunofluorescent antibody test. The *T. gondii* specific IFA IgG antibodies were found in titres ranging from 1:80 to 1:2560 and IgM in titres from 1:20 to 1:1280, respectively. In 4 females with low IgG titres a twofold increase in titres was found after 3 weeks. Miscarried fetuses and dead neonates were examined for *T. gondii* infection using the following methods: immunofluorescence, cytol-

ogy, histopathology, PCR and mouse inoculation. A total of 35 samples of organs (liver, lungs, brain) were examined. *T. gondii* was detected in 32 samples by PCR, in 4 by using impression smears stained cytologically, and in 11 examined by the immunofluorescent test. Interstitial pneumonia and non-purulent encephalitis were observed in the histology preparations as well, and *T. gondii* cysts were found in 5 liver samples. Only 2 organ samples (of the 14 examined) were positive by mouse inoculation. *T. gondii* infection is a realistic cause of reproductive failures in canines. Sensitivity to PCR is most efficient method used to detect *T. gondii* in miscarried fetuses and dead neonates of canines.-30-



## Effects of mating behaviour and the ovarian follicular state of female alpacas on conception.

VAUGHAN,JL; MACMILLAN,KL; ANDERSON,GA; D'OCCHIO,MJ (2003): AUST. VET. J. 81, 86-90.



**Objective** To determine relationships between mating behavior, ovarian follicular state and successful conception in receptive female alpacas. **Procedure:** Seventy pen matings were observed at a commercial alpaca stud in south-western Victoria. The behaviors observed included time taken to assume sternal recumbency, mating duration, and evidence of non-receptive behavior such as spitting, kicking and vocalization. Ovarian follicular

state was determined by ultrasonography, which was complemented by measuring plasma concentrations of estradiol and progesterone. Pregnancies were confirmed by transabdominal ultrasonography between days 45 and 80 after mating. **Results:** There were no significant differences between receptive females that conceived and those that failed to conceive in the time taken to adopt the copulation position of sternal recumbency, mating duration, or maximum follicle diameter. There was no significant relationship between time taken to assume sternal recumbency and maximum follicle diameter or plasma estradiol. However, there was a significant quadratic relationship

between plasma estradiol concentration and follicle diameter, and the probability of pregnancy increased as the plasma concentration of estradiol at the time of mating increased. Females were sexually receptive most of the time in the absence of a corpus luteum, and regardless of size of the largest follicle or plasma concentration of estradiol. Breed (Huacaya vs Suri), site of the dominant follicle (left or right ovary), lactation state, number of matings by the male (1 or 2), or interval between parturition and mating, did not affect pregnancy outcome. Follicles with a diameter less than 7 mm were able to ovulate in response to mating. This was smaller than previously reported. Thirty-four pregnancies (49% pregnancy rate) resulted in 30 (88%) births with a gestation length of 343 days (SEM +/- 2, range 316-367 days). There were 4 (12%) abortions between days 45 and 80 of gestation and full term. **Conclusion:** It was not possible to correlate mating behavior and ovarian state with conception. To optimize pregnancy rates in receptive alpacas, matings need to occur in the presence of an estrogenic follicle that is capable of ovulation in response to mating. A simple method of detecting alpacas with follicles in this state is not currently available and treatments that control ovarian follicular growth should therefore be investigated.-30-

## Association of uterine edema with follicle waves around the onset of the breeding season in pony mares.

WATSON,ED; THOMASSEN,R; NIKOLAKOPOULOS,E (2003): THERIOGENOLOGY. 59, 1181-1187.

During spring transition, when estrus may be exhibited for prolonged periods, it is important for veterinarians and stud farm personnel to be able to predict whether a large follicle will ovulate or regress. It is thought that the presence of ultrasonically detectable uterine edema indicates that a follicle will ovulate, however, there is little evidence to support this. In the present study, 16 mares were regularly examined by transrectal ultrasonography to follow growth and regression of follicles from seasonal anestrus in February until second ovulation. Blood samples were collected daily for measurement of estradiol concentrations when a large ovarian follicle was present. Estrous-like uterine edema was detected during 7 of 11 (64%) anovulatory follicle waves, in 12 of 14 (86%) mares before their first ovulation, and in 100% of mares before their second ovulation. Uterine edema was first detected 43 +/- 6.7 days before first ovulation. Large anovulatory follicles tended to be present for longer periods of time than ovulatory follicles. Uterine edema was present for

a significantly greater proportion of time in the presence of a large follicle at second ovulation than at first ovulation ( $P < 0.05$ ) or for anovulatory follicles ( $P < 0.01$ ). Peak plasma estradiol concentrations and mean plasma estradiol concentrations were significantly higher ( $P < 0.001$ ) when a dominant preovulatory follicle was present compared with a dominant anovulatory follicle, but there was no difference in estradiol concentrations between first and second ovulations. It was apparent, therefore, that uterine edema was not a reliable indicator of follicular steroidogenic competence, or of whether the follicle would ovulate. -30-



# ABSTRACTS

## Electronic quantification of tractive force in the use of a mechanical calving aid in bovine parturition.

WEHREND,A; PADBERG,KB; BOSTEDT,H (2003): BERL. MUN. TIERARZTL. WOCHENSCHR. 116, 12-19.



In this study, a specially developed computer-controlled system was used to obtain a continuous measurement of the forces that arise when using a mechanical calving aid. By this means, potentiograms for twenty-four births in cows using a tractive device were obtained (fourteen primiparae with an average age of twenty-eight months; ten pluriparae with an average age of fifty-four months; breeds: thirteen RB, eleven SB). A modern mechanical calving device with a locking mechanism was used as an aid in the extraction process. In births with use of light tractive force (approx. 50 kp), extraction took between 41 and 21 seconds. Moderately heavy

tractive force (approx. 80-100 kp) was applied in extractions taking 86 to 22 seconds, whereas heavy tractive force (etwa 100-120 kp) was used in extractions lasting between 268 and 117 seconds. The highest levels measured for brief applications of force were between 130 and 140 kp. Single strains of up to 150 kp were reached. Injuries in the soft birth canal were ascertained in 29.2% of the births. Such injuries were discerned more often in primiparae than in the pluriparae. The lacerations were merely superficial and caused no further after-effects. There were no limb injuries in the calves. For the use of mechanical calving aids the use of chains with exact markings should ensure that the limbs are fixated at equal lengths. Furthermore, every device should be equipped with a locking mechanism (150 kp) to prevent the use of too much force. This also prevents misjudgment of the birth situation concerning fetus size and the dimensions of the mother cow's pelvis.-30-

## Effect of boar exposure at time of insemination on factors influencing fertility in gilts.

WILLENBURG,KL; MILLER,GM; RODRIGUEZ ZAS,SL; KNOX,RV (2003): J. ANIM. SCI. 81, 9-15.

The effect of boar exposure during artificial insemination (AI) on semen backflow, fertilization, and embryo quality was evaluated. Gilts were induced into estrus with PG600, and ovulation was synchronized using hCG 72 h later. Estrus detection was initiated after PG600 and continued at 12-h intervals. At estrus, gilts were allotted to receive boar exposure (BE, n = 20) or no boar exposure (NBE, n = 20) during AI. Gilts receiving NBE were identified to be in estrus prior to AI and the boar was then removed for 1 h, whereas gilts in the BE group received 15 min of exposure during AI. Insemination occurred in crates at 12 and 24 h after onset of estrus with 3 x 10<sup>9</sup> sperm/80 mL. Backflow was collected continuously with samples taken at time 0, (during AI), and at 0.25, 0.5, 0.75, 1, 2, 4, and 8 h after first and second AI. The effect of treatment was evaluated for time of insemination (min), backflow (mL), and sperm in backflow samples. Oviducts were flushed 2 d after first AI to evaluate the effect of treatment on fertilization rate, accessory sperm numbers on embryos (scored 1 to 5), and embryo quality. There was no effect of first or second AI; therefore, data were pooled. Average duration of AI was 3.7 +/- 0.2 min and was not influenced by BE. However, during the initial stage of AI, BE reduced the volume of semen (18.6 vs 32.4 +/- 3 mL) and the number of sperm lost (0.8 vs 1.3 +/- 0.15 x 10<sup>9</sup> sperm) compared to NBE (P < 0.05). There was a treatment x

time effect (P < 0.05) for volume of backflow. By 45 min, the BE gilts lost more volume (9.0 vs 3.6 mL) compared to the NBE group, but sperm loss did not differ. Between 1 and 8 h after AI, neither volume nor sperm loss was influenced by treatment. By 8 h, total leakage (65 vs 63 mL) and total sperm loss (1.6 x 10<sup>9</sup> vs 1.8 x 10<sup>9</sup> sperm) were not influenced by BE (P > 0.10). However, more accessory sperm (P < 0.01) were found on embryos for the NBE (≥11 sperm/embryo) compared to BE embryos (≤10 sperm/embryo). Despite this observation, percentages of fertilized embryos (99.5 +/- 0.5 %) and number of embryos (11.5 +/- 0.1) were not different (P > 0.10). In conclusion, AI in the presence of a mature boar did not affect total semen leakage, sperm loss, fertilized embryos, or embryo quality. The importance of boar exposure during insemination was evident from less leakage during insemination, but had no effect on fertility; this suggests that the elimination of boar exposure during AI may not be deleterious to reproductive performance.-30-



## The association between lameness, ovarian cysts and fertility in lactating dairy cows.

MELENDEZ,P; BARTOLOME,J; ARCHBALD,LF; DONOVAN,A (2003): THERIOGENOLOGY. 59, 927-937.

The objective of this observational study was to evaluate the association between lameness, ovarian cysts, and fertility in lactating dairy cows. Data analysis of historical records from a 3000 Holstein farm was conducted. Sixty-five cows that became lame within 30 days postpartum were used as cases, and 130 non-lame cows served as controls. The outcome variables were incidence of ovarian cysts (OC, %), conception rate at first service (CRFS, %), overall pregnancy rate (PR, %), and calving to first service interval (CFSI, day). Incidence of OC and CRFS were analyzed by logistic regression, PR by survival analysis and CFSI by ANOVA. Lame cows had a lower CRFS (17.5% versus 42.6%) and higher incidence of OC (25.0% versus 11.1%) than controls. Calving to first service interval was not different between lame

and control cows. There was a multicollinearity relationship between lameness and ovarian cysts. The results show that cows that became lame within the first 30 days postpartum were associated with a higher incidence of ovarian cysts, a lower likelihood of pregnancy, and lower fertility than control cows. Because this is an observational study it is not possible to conclude a cause-effect relationship.-30-



# ABSTRACTS

## Incidence of repeat-breeding among Angus bulls (*Bos taurus*) differing in sexual performance.

DEARAUJO, JW; BORGWARDT, RE; SW EEN, ML; YELICH, JV; PRICE, EO (2003): APPL. ANIM. BEHAV. SCI. 81, 89-98.



Rams exhibiting relatively high levels of sexual performance (HP) repeat-breed the same female fewer times than low-performing (LP) rams. The objective of this study was to determine if HP and LP bulls differed in their tendency to repeat-breed individual females. Eighteen sexually experienced Angus bulls (20-60 months of age) were tested individually with 10 unrestrained, estrous females.

The sexual behaviors of all cattle were recorded until the bull achieved six services (ejaculations). Bulls were tested on 2 days with at least 10 days between tests. Frequencies of recorded sexual behaviors were higher for LP than HP bulls, possibly because of the greater

time spent in attaining six services. LP and HP bulls did not differ in the number of females serviced. LP bulls serviced the same number of individual females in both tests (4.0 +/- 0.3). However, HP bulls serviced a greater number of individual females (repeat-bred less) during Test 2 than Test 1. There was no correlation between time to attain six services and the number of different females serviced, but the number of different females serviced positively correlated with age of the bull. Repeat-breeding of at least one female was observed in 33 of 36 tests (92%). Repeat-breeding at least one female twice in succession was observed in 24 of 36 tests (67%). There were 12 of 36 tests (33%) in which a female was serviced twice but not in succession. Females were serviced three times in succession in seven tests (19.4%). Sexual performance level did not influence mate preferences or the incidence of repeat-breeding during tests.-30-

## DR. ROBERT HILLMAN TO RECEIVE 2003 BARTLETT AWARD

**D**r. Robert Hillman has been named by the Society for Theriogenology (SFT) and the American College of Theriogenologists (ACT) as the recipient of the 2003 Bartlett Award. He will be honored at the upcoming Annual Conference in Columbus, Ohio and will present to the attendees on Thursday, September 18, at 6:30 p.m. In addition there will be a reception immediately following the presentation. Dr. Hillman is recognized for outstanding service in the field of theriogenology and his extensive contributions to this discipline.

Dr. Hillman was born and educated in New York, receiving his A. B. from Syracuse and his D.V.M. and M.S. degrees at Cornell. He has served in the U.S. Army

Veterinary Corps, private practice, and various capacities at the New York State College of Veterinary Medicine. He also was a Public Health Service Research Fellow in the 1960's.

Numerous professional affiliations, spanning the distinguished career of Dr. Hillman, show his devoted interest to the veterinary profession. The list includes the AVMA, New York VMA, Southern Tier VMA, AAEP, AABP, AAVC, SFT, and ACT, becoming board certified in 1978. Dr. Hillman received the Norden Teacher of the Year Award in 1974.

Please make plans to attend the 2003 SFT/ACT Annual Conference, and hear Dr. Hillman's presentation.

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