

# Wool & Wattles

The AASRP Newsletter  
April – June 2003  
Volume 31, Issue 2

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## Mission Statement of AASRP

"To improve the health and welfare of sheep, goats, camelids and cervids, to further the professional development of the members, provide resources to elevate the standards of small ruminant practice and to be the voice for small ruminant issues."





# **AASRP Annual Membership Meeting**

**held in conjunction with the**

**AVMA Annual Convention  
July 19 – 23, 2003**

**Denver, Colorado**

**Place:** Hyatt Regency Denver Downtown  
1750 Welton Street • Denver, CO 80202  
(Currently scheduled in the Mt. Evans room)

**Date:** Monday, July 21st

**Time:** 12:00-2:00 p.m.

Please join the AASRP Board for election  
of officers and other important agenda items.

For more information regarding the small ruminant program at  
the AVMA Convention, please visit [www.avma.org](http://www.avma.org).

# Letter from the President



Hello AASRP members!

Paul Jones will be taking over in July, as President. Let's give him all the support that we can. These past two years have been great. We welcome Joan Bowen who will be taking over Paul's responsibilities pertaining to continuing education, as our new Vice President/President

Elect. The board of directors have met monthly by conference calls. We should have small ruminant brochures out soon. The survey results should be ready for the July meeting in conjunction with the AVMA convention in Denver.

Janeen and I had a good time in Athens, Ga with the students at the SAVMA symposium in March. The small ruminant program was full. The interest in small ruminants keeps growing! We plan to attend the 2004 symposium in Knoxville, Tenn. We welcome any suggestions with respect to reaching out to the veterinary students. We have looked at going to the pre-veterinary student symposium, also in March. We need to reach back into the pre-vet programs to locate and encourage students interested in ruminants. If you have young people interested in veterinary medicine, please call and let us know. Half of the veterinary schools have early admissions programs where they admit high school seniors to veterinary school provided they complete the pre-veterinary curriculum.

Please don't forget MUMS! Call and write to your congressmen and congresswomen. Ask them if they are familiar with H.R. 1367...National Veterinary Service Act. This act would forgive student loans for veterinary graduates agreeing to work in rural and inner city areas in need of veterinary services.

Thank you to all of the board members. Welcome to Mike Rings and Glenn Zearth. A special thanks to Dave McCrystle, as he moves from our Small Ruminant Alternate Delegate and Executive Director to join the AVMA Executive Board.

Please volunteer your thoughts and your time,  
Richard W. Stobaeus, Jr. DVM

## UPCOMING 2003 MEETINGS

<b>June 28</b> (9am-5pm)	Diagnostic Techniques for Practitioners in Llamas and Alpacas
<b>July 16-18</b>	Executive Veterinary Program
<b>July 19-23</b>	AVMA Convention
<b>August 7-10</b>	Pennsylvania Veterinary Medical Association 121st Annual Scientific Meeting
<b>Sept 10-12</b>	Executive Veterinary Program
<b>Oct 25-Nov 1</b>	American Dairy Goat Association Annual Convention
<b>Nov 12-14</b>	Executive Veterinary Program

For additional information on the above listed meetings log-on to [www.aasrp.org](http://www.aasrp.org) under CE/Meetings.

# Ohio Veterinary Medical Association (OVMA) - Partnership

The first annual meeting of the American Association of Small Ruminant Practitioners will be held in February 2004. This historic event was approved by the AASRP executive board at its meeting in Las Vegas this year. We are planning for this to be two full days of continuing education opportunities, a membership meeting and a social event. This is a major step for our organization and a commitment to our membership to provide focused small ruminant education and an opportunity for improved communication. We do not feel we are ready for a stand along meeting so we are partnering with the Ohio Veterinary Medicine Association to provide infrastructure and an excellent venue. Although the exact dates have not been established the meeting will be held in Columbus, Ohio during the OVMA Convention February 25 - 29, 2004.

We need the support of the AASRP membership in order for this to be a successful meeting. We need your attendance, your ideas for program, your ideas for speakers, your ideas for funding and your ideas for fun. Please let me know what you think will make this meeting something that will spark your enthusiasm for support and attendance.

"Columbus, it's all about discovery"

Paul Jones, Vice President, AASRP

## AASRP BALLOT RESULTS 2003 ELECTION OF BOARD OF DIRECTORS

### Vice President (President-Elect)

Dr. Joan Bowen

### Director, Region 1

Dr. Mike Rings

### Director, Region 4

Dr. Joe Snyder

**CONGRATULATIONS TO THESE  
SUCCESSFUL BOARD MEMBERS!**

# Letter from Management

Summer is finally here and we are nearing our next big event, "Annual Membership Meeting" to be held at the AVMA Annual Convention in Denver, Colorado on July 21st. As you are aware AASRP will be changing many of its board positions this year and we would encourage all members who will be attending AVMA to join in the AASRP meeting. Also, we will be exhibiting throughout the meeting and hope you will find the time to stop by and see us. You will find more detailed information in this edition of Wool & Wattles, as well as on the AASRP website.

As mentioned in the last issue, a survey was mailed in April to all membership and cancelled memberships over the last three years. We have had an excellent response on returns and your input is beneficial in assisting us to provide services for the membership and organization as a whole. Thank you for taking the time to participate.

We have been posting the 'minutes' of the AASRP Board conference calls in Wool & Wattles. The minutes of the February 16th meeting posted in the last Wool & Wattles were amended under the Constitution Review & Rewrite section. The amendment was made regarding final approval. This will be made by

the AASRP membership during annual meeting at AVMA Annual Convention in July.

We would like to remind those of you who are veterinarians or veterinary students that you may utilize the AASRP 'listserv' provided to discuss small ruminant issues. Many practitioners find this to be one of the most valuable sources of information. If you are not subscribed to the listserv and would like to be, please forward an e-mail message to: listproc@cornell.edu and in the body of the message type: Subscribe AASRP-L Firstname Lastname. If you have any problems accessing, please contact the management office and we will be happy to assist you.

Our new memberships are continuing to come in, to date we have 72 new members for 2003. We would like to challenge each member to recruit one new member. Should you need to contact us at the office with a question or problem please call 270-793-0781 or send an e-mail to aasrp@aasrp.org.

Thank you,  
Peggy Logsdon

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## National Veterinary Medical Services Act Briefing

### WHAT IS THE PROBLEM?

- The United States is currently experiencing a shortage of veterinarians in rural agricultural and inner-city areas, in certain population groups, and in various veterinary disciplines.
- The financial constraints of loan repayment obligations of as much as \$800-\$900 per month prevent many new veterinary graduates from working in these underserved areas.
- Veterinarians are needed in rural agricultural and inner-city areas to support our nation's defense against bioterrorism, improve food safety, and prevent domestic diseases.
- Rural veterinarians are the nation's front line of defense against disease outbreaks such as foot-and-mouth disease (FMD) and bovine spongiform encephalopathy (BSE), preserving food safety.
- Inner-city veterinarians are in demand to address public health problems associated with pet overpopulation, parasites, rabies and other zoonotic diseases.
- There is a critical shortage of veterinarians with special training in strategic disciplines within the profession, including food safety veterinarians.
- While the National Health Service Corps provides recent graduates of human health professions with loan forgiveness in return for work in underserved areas, no such program exists for veterinary school graduates.

### HOW CAN LEGISLATION HELP?

- The National Veterinary Medical Service Act (H.R. 1367) will provide loan forgiveness for veterinary students and new graduates who agree to work in underserved areas, in underserved population groups and in underserved disciplines of veterinary practice.
- The Act will authorize the Secretary of Agriculture to make grants for loan repayment programs regarding the provision of veterinary services in shortage situations.

- Veterinary clinics in underserved areas and underserved populations can rarely offer new veterinary graduates salaries to cover both loan repayment and living expenses.
- In 2001 the mean starting salary for veterinary graduates was \$44,500, with the mean loan debt of \$67,800.
- Loan payments on that amount of debt range from \$800-\$900 a month, requiring average veterinary graduates to spend nearly one-third of their monthly salaries on educational debt.
- In 1992, Pennsylvania passed a law to provide student debt relief for graduates, including veterinarians, working in production agriculture.
- In 1999, Texas passed a state debt relief program for veterinary school graduates who agree to serve in needed areas, however funding has yet to be appropriated.
- A national veterinary loan forgiveness program will allow states with and without veterinary schools to benefit from the presence of trained veterinarians in underserved areas, underserved populations and underserved disciplines of veterinary practice.
- The National Veterinary Medical Service Act is a win-win situation for new veterinary graduates and our nation's underserved areas in need of veterinary health care.

### WHAT YOU CAN DO?

- Encourage your Members of Congress to co-sponsor H.R. 1367, the National Veterinary Medical Service Act to provide loan forgiveness to new graduates who work in underserved areas.
- Contact the AVMA Government Relations Division at (800) 321-1473 ext. 3205 to speak with Ms. April Demert (ademert@avma.org) for more information.

Updated 3/26/2003

# MINUTES

## Board Meeting via Conference Call — April 23, 2003

### Call to Order

A meeting, via teleconference, of the AASRP Board was called to order by President Ric Stobaeus at 9:05 a.m. Central Standard time.

### Roll Call

Participating were Ric Stobaeus, Paul Jones, David McCrystle, LaRue Johnson, Martin Warbington and David Anderson. Unable to attend were Jim Fallen, Christine Navarre and Joe Snyder. Peggy Logsdon was also present for the meeting and recorded minutes.

### Agenda

- **Minutes 3/16/03**

Dr. Anderson moved to approve minutes of 3/16/03, Dr. Jones seconded. Minutes approved. Dr. Johnson moved to amend minutes of 2/16/03 regarding Constitution final approval of edits, Dr. McCrystle seconded. Motion carried.

- **Member Survey**

Survey was mailed on 4/15/03 to all AASRP membership and non-members from the last three years.

- **AASRP Official Judicious Drug Use Guideline**

Dr. Stobaeus noted progress on this project, Virginia Fajt spoke with Joe Snyder and Martin Warbington for further direction. Dr. Warbington will contact her to discuss how to proceed.

- **Replacement of Robert Deegan**

Dr. Kenneth Waldrup has agreed to accept the position of Representative for Deer on the AASRP Board. Also, Dr. Glen Zebarth has agreed to fill the Species Committee position. Peggy Logsdon will contact them to request bios, Board will review these at next call for appointment.

- **Mid-West Veterinary Conference (Jack Advent)**

Dr. Jones and Glenn Slack have been in contact with Jack Advent, contract is in final stages for partnership. Progress will be reported at next conference call. Board agreed that the small ruminant portion should be a two-day session, one day of sheep & goat, one day of cervid & camelid. We would also like to see the days be moved to the middle of the meeting instead of the weekend time slot. Dr. Anderson noted that this is a good meeting for recruitment of members. The annual meeting for AASRP will be held either at the beginning or end.

- **Proposed Practice Act on Artificial Insemination**

Dr. McCrystle reported this is going forward and will update progress at next meeting.

The next Board meeting is scheduled for Wednesday, May 21st @ 9:00 a.m. Central Standard Time. Meeting was adjourned at 9:40 a.m. Central Standard Time.

Respectfully submitted:

Peggy Logsdon, AASRP Management Office

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# MINUTES

## Board Meeting via Conference Call — May 21, 2003

### Call to Order

A meeting, via teleconference, of the AASRP Board was called to order by President Ric Stobaeus at 9:08 a.m. Central Standard time.

### Roll Call

Participating were Ric Stobaeus, Paul Jones, David McCrystle, LaRue Johnson, Martin Warbington and Christine Navarre. Unable to attend were Jim Fallen, David Anderson and Joe Snyder. Peggy Logsdon was also present for the meeting and recorded minutes.

### Agenda

- **Minutes 04/23/03**

Dr. Jones moved to approve minutes of 4/23/03, Dr. Navarre seconded. Minutes approved. Motion carried.

- **Member Survey**

Survey response has been excellent to date 611 have been

received for a 41% response rate. It was the consensus of the board not to mail a reminder notice due to the current response level.

- **Replacement of Robert Deegan**

Dr. Stobaeus recommended Dr. Glen Zebarth for the position of Deer Representative on the board. Dr. Warbington moved to accept recommendation, seconded by Dr. Jones. Motion carried. Dr. Kenneth Waldrup will remain Deer Representative for the Species Committee.

- **Election Results**

The following are the results of the recent election of officers: Dr. Joan Bowen – Vice President (President Elect)  
Dr. Mike Rings – Director, Region 1  
Dr. Joe Snyder – Director, Region 4  
Election results will be posted in Wool & Wattles of the newly elected board members. They will take seat at the July Annual Membership Meeting in Colorado. It was recommended by the board to send an independent mailing for the next election in post card ballot form.

- **George McConnell Award**

The board elected to form a sub-committee to review nominations received for the George McConnell Award. Dr. Stobaeus recommended Dr. LaRue Johnson for Chair of the sub-committee. Dr. Jones moved to accept recommendation, Dr. McCrystle seconded. Motion carried. Dr. Navarre and Dr. Jones will serve on sub-committee with Dr. Johnson. Award will be presented at the Annual Membership Meeting.

- **Web Page Representative**

Dr. Stobaeus recommended Dr. Joe Snyder for Liaison to the web-page committee. The management office will present its recommendations and costs involved to update the web-page at the next board conference call.

- **Mid-West Veterinary Conference (Jack Advent)**

Dr. Jones reported the contract had been signed with MWVC and the next scheduled meeting will be at the end of February 2004. There will be a membership meeting held at this time and all membership will be invited to attend. Dates will be posted in Wool & Wattles and on the AASRP web-site.

- **Student Grants**

Dr. Cindy Wolf requested an additional \$600 for student

externships due to volume received this year. Motion was made and seconded to approve request. Motion carried. The board will have this as an agenda item for the upcoming membership meeting in Colorado to firm up more solid guidelines to follow for submission of request and maximum available for each student.

## New Business

- **FAST (Food Animal Task Force)**

Dr. McCrystle reported there is a conference call coming up regarding FAST. He questioned how involved do we want to be? AASRP may need to get some more people involved, retention of veterinary students should be a main focus for this organization. Dr. Navarre volunteered to take the lead on this task. Motion was made and seconded to move forward. Motion carried.

The next Board meeting is scheduled for Wednesday, June 18 @ 9:00 a.m. Central Standard Time. Meeting was adjourned at 10:00 a.m. Central Standard Time.

Respectfully submitted:

Peggy Logsdon, AASRP Management Office

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## Announcements

**The annual AVMA meeting** will be held at the Colorado Convention Center in Denver, Colorado on July 19 to 23, 2003. Lectures include Monitoring sheep health and productivity (P. Menzies); Urolithiasis in goats (C. Wolf); Energy metabolism and diseases (C. Cebra); Chronic wasting disease in free ranging ruminants (T. Spraker); The difficult diseases of CAE, Johne's and caseous lymphadenitis (C. Wolf); Experience with maedi visna/ovine progressive pneumonia control programs in Ontario (P. Menzies); Poisonous plants affecting small ruminants (A. Knight); Diarrhea in crias (C. Cebra); Overview of recent research findings with mastitis in sheep and causes of abortion in sheep (P. Menzies); Emerging issues in the control of gastrointestinal nematode parasites (R. Kaplan); New concepts in parasite control: Smart Drenching and FAMACHA (R. Kaplan); Diseases and how to manage the prolific peripartum ewe (P. Menzies); Practice tips for sick camelids (C. Cebra). Additional topics of interest to small ruminant practitioners include FARAD and ELUD guidelines and New techniques for animal identification. Register online at <[www.avma.org/convention](http://www.avma.org/convention)> or phone the AVMA at 800-248-2862 ext 4700, fax 847-925-1329.

**The 121st Annual Pennsylvania Veterinary Medical Association Scientific Meeting** for veterinarians and technicians is being held August 7-10, 2003 at the Hershey Lodge and Convention Center in Hershey, Pa. For the first time within the 4-day event, there will be an extensive program providing 15 CE credits on small ruminants, cervidae, and camelids. Featured speakers will include Dr. David Anderson of the Ohio State Univ. lecturing on medicine and surgery of small ruminants and camelids; Dr. Fernando Silveira of the Ohio State Univ. speaking on cervidae medicine and surgery; Dr. Robert Van Saun of Penn State Univ. discussing the nutrition and nutritional problems of small ruminants and cervidae; and Dr. John Enck, State Veterinarian of Pennsylvania, et al., discussing emergency management, bioterrorism, and the emergence of new diseases (e.g.

CWD) affecting the welfare of Pennsylvania's animal and human population. For further information contact David V. Medic, D.V.M. at 724-253-4186, email - [dvmdvm@toolcity.net](mailto:dvmdvm@toolcity.net) or the PVMA's Harrisburg office at 1-888-550-PVMA (7862).

**The American Dairy Goat Association Annual Convention**

will be held at the Nashville Marriott Hotel, 600 Marriott Dr., Nashville, TN, October 25-November 1, 2003. Watch the ADGA website at <[www.adga.org](http://www.adga.org)> or the AASRP website for more information about the convention and the AASRP sponsored CE programming on October 27-28, 2003. Speakers include Drs. David Pugh, Seyedmehdi Mobini, and more! For more information, contact the American Dairy Goat Association (828-286-3801) or <[www.adga.org](http://www.adga.org)> or contact Joan Dean Rowe (530-752-0292) or <[jdrowe@ucdavis.edu](mailto:jdrowe@ucdavis.edu)>.

**The (next) 7th World Sheep & Wool Congress**

will be held July 17-23, 2004 in Quebec City, Canada. More information will become available at <[www.worldsheep.com](http://www.worldsheep.com)>.

**The 8th International Conference on Goats**

will be held Sunday July 4th to Friday July 9th, 2004 in Pretoria, South Africa. Topics include Foresight on Goat Research, Social Environment, Physical Environment and Infrastructure, Business Environment, Nutrition, Genetics and Biodiversity, Physiology (growth, reproduction, lactation), Health (Importance and application of national, international and on-farm strategies for monitoring and maintaining sanitary and health conditions as these may affect productivity, product quality and welfare), Goat Products, International Relationships and Trading, The Goat in Philosophy and Perspective. The conference will be presented in English. For information and on-line registration, visit <<http://www.icgsa.co.za>>. Information on submitting papers will be posted at a later date.

# AVMA's Legislative Agenda for the 108th Congress Revealed

Reported by Malcolm A. Kram, DVM

**Washington, DC** – March 15-16 marked the meeting of AVMA's Legislative Advisory Committee (LAC) to review and comment on the focus of AVMA's activities within the 108th Congress and that of AVMA's Governmental Relations Division (GRD). LAC's Chair, Dr. Gregory Hammer, opened the meeting with the introduction of GRD's new Director, Dr. Michael Chaddock. While Dr. Chaddock's leadership was welcome news, committee members also learned of significant staffing shortages created by the loss of key staffers, Drs. Bernadette Dunham and Dean Goeldner, to federal agency positions. This will lay a heavy burden on Dr. Pamela Abney and April Demert to maintain and provide institutional memory and guidance to AVMA. Plans are in place for Dr. Chaddock to ramp up his staff quickly and any AVMA member with interest in these positions should check current issues of the JAVMA and or AVMA's website ([www.avma.org/grd](http://www.avma.org/grd)).

Key federal legislative issues for this congressional session will focus on **MUMS (Minor Use and Minor Species Animal Health Act); ADUFA (Animal Drug User Fee Act); National Veterinary Medical Services Act;** Board Certified Pay for Federal Veterinarians; and Association Health Plans. Details for each of these key legislative proposals can be found at AVMA's Government Action Center within the AVMA's website or by contacting the GRD at 800 321-1473.

While ADUFA is progressing rapidly within the legislative process, MUMS needs a large grassroots push as it is being held back by concerns of food animal safety. MUMS, which has been introduced in the Senate, as bill S.741 **needs your immediate action** in securing co-sponsorship. Senators from the following States are critical: Connecticut, Kansas, Maryland, Massachusetts, North Carolina, New York, Ohio, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, and Washington. Not sure what to say or how to do this, contact April Demert or Dr. Pamela Abney at the GRD.

The National Veterinary Medical Services Act should be the key concern for all States with schools or colleges of Veterinary Medicine as well as veterinarians and students grappling with educational indebtedness. This act will provide loan forgiveness for veterinary students and new graduates who agree to work in underserved areas, in underserved population groups and in underserved disciplines of veterinary practice. Again, a strong grassroots effort is required **NOW!**

One of the most significant issues of impact for the LAC and more importantly the profession is the rapidly spreading attempts to legislate the change from animal ownership to animal guardianship. While our profession is keenly aware of the value of the human animal bond, it has not yet grasped the impact of guardianship and the profession's role in education of

the public. This is a lot more than potential significant increases in veterinary malpractice insurance but rather an impact on food animal production, pet ownership and vitally important research. The LAC, acutely aware of the impact of such legislation, has strongly encouraged the AVMA's Executive Board to actively support an initiative to educate the public as well as legislators through enhancing its outreach with non-traditional coalition partners, such as the AARP. To learn more about the impact of "guardianship", the author would suggest that you read the May/June 2002 issue of **California Veterinarian** entitled *Ownership of Animals versus Guardianship of Animals*. Additionally, you can contact Dr. Gail Golab ([ggolab@avma.org](mailto:ggolab@avma.org)) at AVMA's Schaumburg office. Aligned with this issue is the Foundation for Biomedical Research's newly launched program entitled *Animal Research Saves Animals, Too*. For more information on this initiative contact Donna Artuso at [dmartuso@fbresearch.org](mailto:dmartuso@fbresearch.org).

For veterinarians with DEA registrations, hang on to your wallets as the Drug Enforcement Agency is proposing a 90% increase in fees. This proposal was published in the February 18th issue of the Federal Register. Veterinarians and others impacted by this change have until April 21, 2003 to comment. **Time is now for you to send your written comments to:** The Administrator, Drug Enforcement Administration, Washington, DC 20537, Attention: DEA.

On the positive is the announcement that the LAC's previous recommendation and support for a study on the status and future of selected fields of veterinary research in the United States has been approved by the National Academies. Research dollars, specifically ear marked for veterinary medicine have basically evaporated. This study will provide significant facts and data that potentially could impact the creation of new dollars for veterinary research in the fields of public health, food safety, animal health and comparative medicine. Funding for this study under the auspices of the Board of Agriculture and Natural Resources is being sought from public and private sources such as the AVMA, FDA, USDA, and the pharmaceutical industry. For more information visit AVMA's website Government Action Center or contact Dr. Elizabeth Sabin at [esabin@avma.org](mailto:esabin@avma.org).

Additional topics discussed were: horse slaughter legislation, proposed revisions to the model veterinary practice act, enhanced scope to the AVMA's Fellowship program, agri and eco terrorism, and federal agency budget issues. In closing, the members of the LAC were reminded that certain constituent group's seats on the committee were up for re-election and that nominations are due immediately. April Demert at the GRD should be contacted for further information on those constituent groups impacted. The next scheduled meeting of the LAC was set for the fall of 2003, and the Committee's session was adjourned.

# AASRP Student Educational Opportunities Committee Report – May 2003

Since the February 2003 report, the American Association of Small Ruminant Practitioners Student Educational Opportunities Committee has received several more applications (see table below). Applications were requested for acquiring experience in the following areas/animals:

- **Camelids** – 1 (The Ohio State University),
- **Sheep** – 6 (University of Idaho, US Sheep Experiment Station),
- **Sheep/Deer** – 2 (New Zealand).

All of the applicants received grant money. The application instructions and forms for student grants can be found on the AASRP website.

## AASRP Education Grants summary – Final 2003

Number applications received: 12  
 Amount budgeted for grants: \$3100.00 (an additional \$600 was approved by the board)  
 Total amount awarded: \$3100.00  
 Amount left in budget: 0

## AASRP Student Externship Grant Information for 2003 since 2/05/03

Request Recvd	Who	School	Location and Date	Amount requested	Amount awarded	Recvd reports
2/26/03	Jocelyn Patterson	U of PA	University of ID, US Sheep Expt Stn March 23 – April 6, 2003	\$700	\$300	NO
2/28/03	David Kersten	U of PA	University of ID, US Sheep Expt Stn March 23 – April 6, 2003	\$693	\$300	NO
3/01/03	Freya Moskowitz	U of PA	University of ID, US Sheep Expt Stn March 23 – April 6, 2003	\$500	\$300	NO
3/05/03	Nancy Parks	U of PA	The Ohio State Camelid conference March 10 – 23, 2003	\$315	\$200	YES
3/05/03	Nancy Parks	U of PA	University of ID, US Sheep Expt Stn April 7 – 19, 2003	\$245		YES
3/19/03	Marie Haddock	U of PA	University of ID, US Sheep Expt Stn April 6 – 20, 2003	\$600	\$200	NO
3/29/03	Katie Beltaire	Tufts U.	University of ID, US Sheep Expt Stn April 13 – 25, 2003	\$725	\$200	NO
5/08/03	Stephanie Coates	Purdue	Riverside Vet Srvs Ltd, New Zealand October 27 – November 11, 2003	\$500	\$200	NO
5/21/03	Amanda Harlow	U of MN	Vet Srvcs Ltd & Vet Assoc, New Zealand, September 2 – 12, 2003	\$500	\$200	NO
	<b>TOTAL</b>			<b>\$4778</b>	<b>\$1900</b>	

At this time there are no more funds to award grants. Funds will be available in January 2004. The committee awards grants to applicants on a first come, first serve basis, with the understanding that their application is well prepared and complete. If necessary students are sent a reminder that their report is past due. This is the first year in the past several that the educational opportunities portion of the AASRP budget had been exhausted ahead of the budget cycle. Because of this the chair of the SEO committee proposes that only one grant of a set monetary amount would be awarded per student per budget/calendar year.

## Practice Tip from AASRP-L — Diagnosis of Imperforate Hymen in Camelids

It is important to determine how much of the vagina is missing (vaginal aplasia) or is it just an imperforate hymen. I have used a combination of transrectal US, a short vaginoscope and a long needle attached to a syringe with warm saline/dilute betadine. Sedate with butorphanol and insert the "equipment". Gradually penetrate the hymen area and follow the course with US injecting some fluid as you progress. If you don't rather quickly encounter an option to inject fluid without resistance, it is unlikely just an imperforate hymen but rather vaginal aplasia with of course the observed mucometra. You could attempt to

repair an imperforate hymen while vaginal aplasia is not repairable. Oh, yes I know some heavy breathing surgeon will have repaired one but neither condition should be regarded lightly in that some suspect genetics is likely involved. LaRue Johnson, Colorado

## Drugs and Biologics

The Compendium of Veterinary Products with more than 4,800 monographs of approved pharmaceuticals, pesticides, biologics, and other products is available free on line for AVMA members. You need to know your AVMA number (the first number on your journal mailing label) and your last name to enter the NOAH site at <[www.avma.org/noah/](http://www.avma.org/noah/)>. Also in NOAH you can access Material Safety Data Sheets (MSDS) for more than 10,000 animal health products.



# Externship Grant Letters

Dear AASRP Leadership:

Thank you AASRP for the grant! The 2003 Camelid Veterinary Conference at Oregon State University was an excellent opportunity for me to learn about camelid medicine and meet veterinarians from around the world. The lectures were from 8 to 5 pm Friday to Sunday, but due to classes on Monday I had to miss the proceedings most of Sunday. With only a \$50 registration fee I was able to attend all the proceedings, have a complete booklet of lecture notes and attend the barbecue. It was quite enjoyable to interact with veterinarians at a relaxed setting. The registration also allowed me to attend other lectures within the Oregon State Veterinary Conference; therefore I was able to attend one of Dr. Bowen's small ruminant lectures. The financial contribution I received from AASRP allowed me to pay for transportation and hotel costs. Without this grant it would have been more difficult for me to attend. This is a great opportunity to speak with veterinarians about job opportunities and networking.

The site was an excellent site to attend. Connie Kahn was not only my transporter from the hotel to the conference, but she was also a valuable information source. The conference is usually during the spring break of that particular veterinary school which may or may not allow other veterinary students to attend. The experience met and went beyond my expectations, from the courteous veterinarians to the amazing amount of camelid medicine information. The sedation and radiology wet lab was also very informative, and material that I will keep with me throughout my future veterinary careers. The only negative aspect of the conference was the lack of information about the conference for veterinary students and cost. It would be very helpful if the presidents of the local AASRP chapters at veterinary schools could receive the information about the conference before hand and be able to address it to student members. The grant is a very fortunate financial assistance for many students, but costs are still high with hotel and local transportation. I look forward to attending next year's conference.

Sincerely,  
Jaime Houston  
2002-2003 President of CSU-AASRP

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Dear AASRP Leadership:

Thank you for the grant to attend the Camelid Conference in Eugene, Oregon in March 2003. The conference was a very valuable learning experience that reinforced my understanding of current topics in Camelid veterinary medicine. Topics covered included dermatology, infectious diseases, tooth root abscesses, fracture fixation, neurologic disease, neonatology, and nutrition. I found the information on vaccine schedules and recommendations, neonate care and target areas of future research particularly informative. In addition, I was able to network with practicing veterinarians and learn more about opportunities for the future in this field.

I would recommend attending this conference to anyone interested in working with llamas and alpacas.

Sincerely,  
Erin Tripp  
University of Minnesota  
College of Veterinary Medicine  
Class of 2004

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Dear AASRP Leadership:

In February of 2003, I spent two weeks working with Dr. Keith Flanagan, a Christian Veterinary Mission veterinarian from Oklahoma who has lived in Haiti for the past 15 years. Dr. Flanagan and his wife currently live in Port au Prince. Due to Haiti's large population of goats, he spends much of his time treating goats and training veterinary agents in the basic husbandry, physical exam, diagnosis, and treatment of minor ailments. Haiti has no veterinary school and there are only 14 veterinarians in Haiti, of which not all are practicing veterinary medicine. For this reason, most communities and villages have no access to a veterinarian, but some do have a veterinary agent who can provide basic veterinary services.

During my externship I was fortunate to have gained much experience working with goats. Dr. Flanagan spent a significant amount of time explaining the use of goats in Haitian culture, common medical problems, husbandry practices, and basic treatments. I participated in diagnosing and treating caseous lymphadenitis (a disease I had not yet encountered in my veterinary training) in a herd that had never experienced this problem before. We also held a veterinary clinic in a small village on the outskirts of Port au Prince. During the clinic days, we examined and treated many goats belonging to local villagers, as well as a few calves and dogs, a sow, a piglet, and a guinea pig. Later in my stay, after I had become comfortable with physical exams, I trained a class of veterinary agents on how to examine a goat. I also demonstrated on their herd buck and gave some examples of abnormalities they may encounter and what they likely indicate. We also held an all day lab, where each veterinary agent examined goats with our assistance to become familiar with normal and abnormal findings. In another village, I assisted a group of veterinary agents with their suturing techniques and introduced some new suture patterns. I also visited the veterinary diagnostic lab, an abattoir, a yogurt factory started by a group of foreign veterinarians, and several goat rearing and husbandry training program facilities.

I feel that I have benefited tremendously from this experience and I now feel comfortable examining and treating goats for common problems such as parasites, conjunctivitis, wounds inflicted by dogs, caseous lymphadenitis and various other ailments I encountered in Haiti. I would highly recommend this experience for students interested in getting hands-on experience with goats.

Traci Krueger  
Haiti  
AASRP Funded Externship  
University of Florida, CVM

Dear Dr. Wolf,

First, I would like to thank the AASRP for the grant I received. I greatly appreciate the help, as traveling to Ohio and Idaho was quite expensive.

My first externship (March 10-21) was at The Ohio State University working with Dr. David Anderson. Although I arranged the externship mainly for alpaca experience, the program is run through the food animal department. Thus, I was able to get more hands-on experience working with cows, sheep, and goats as well. Alpacas comprised about 75%-85% of the animals I worked with.

The facilities were indoors. We only went outdoors to do a herd check one Saturday. I worked with a total of 15 other Ohio students and about 6 different clinicians.

There were a variety of things I was involved in. I performed gross necropsies of alpacas, drew blood, gave vaccines to, and basically got more familiar with what "normal" behavior is for an alpaca and how to handle them.

Dr. Anderson assigned me to a group of 3 other Ohio students. Together, we were involved in cases from start to finish – from greeting the owner, getting a history, doing a physical exam, diagnosing, treating, and discharging animals. It was an amazing experience to be so involved. The cases involved toxicities, rhabdomyolysis, eye injuries, other trauma, scabies, meningeal worm infections, lumpy jaw (a CT was done to evaluate the progression – this was very interesting), and umbilical hernias.

In addition to the in-hospital cases, we also had some outpatients that came in for reproduction soundness or pregnancy checks. We did this using ultrasound.

I was very impressed with the degree of involvement the students had in their cases. They even let me scrub in and assist with some surgeries such as umbilical hernia repairs and urachal abscess removals in calves. I was also involved with DA's, c-sections, and fistula placements in cows and BSE's in bulls. There was a case of failure of passive transfer in alpine goats and several other Alpine and Nubian goats came in to have their horns removed. As you can see, there were a variety of cases that I was fortunate to see.

In addition to seeing patients, the students and clinicians had rounds almost every morning. Students presented topics such as synchronization, Anaplasmosis, Babesiosis, and Bovine Leukosis. I also attended a lecture about acid-base abnormalities given by the equine department. Overall, Ohio was a great learning experience for me. The students and clinicians were all so friendly, encouraging me to get involved as much as I wanted. Even when everyone was stressed they still had a good sense of humor, which made it a fun working environment. I would highly recommend this rotation for anyone interested in camelids and/or food animals.

Other information that may be of interest to students interested in this rotation:

There is no housing provided. I e-mailed Alpha Psi (rent is

\$75.00 per week), but they were full. The other fraternity on campus was also full. The student who replied to me at Alpha Psi was nice enough to e-mail her class to see if anyone would be willing to let me stay at their place for 2 weeks. I got at least 10 responses!! I stayed with one student for the first week and another for the 2nd week.

The externship at the United States Sheep Experimentation Station in Idaho lasted 2 weeks from April 7th to April 19th. It is about a 10-minute drive from Dubois and about an hour from Idaho Falls. In other words, you are pretty much isolated. I grew up around a big city (NYC), but I absolutely loved it out in Idaho. It is a really beautiful work site. You work inside half the time and outside the other half. I enjoyed that the most because you can see the snow-capped mountains in the distance and land stretching on and on. I worked with 4-5 other students at a time (from Penn, Davis, and Tufts) and an awesome veterinarian (Dr. Denae Wagner) who graduated from Davis. There were also about 10 other people on the site that we interacted with on a daily basis.

We were assigned to our own rooms in a dorm, which is right on the site. There are laundry facilities on site as well.

A typical day at the Sheep Station started at 7:30 or 8am. We went through the indoor barns to check for new scours cases, new medicine cases, and to treat existing cases. Every morning students took turns helping with dystocias, picking up new lambs in the outside pens, and bleeding ewes and lambs for research projects. After lunch we came back and did necropsies, c-sections, and checked the barns and pens for any new illnesses. Our hours varied day to day. I was there during the peak lambing season so our days lasted anywhere from 9-14 hours a day. There was on-call duty every night as well, for which we took turns.

Some of the cases we saw included pneumonia, caseous lymphadenitis, stillbirths, abortions, dystocias, rectal and vaginal prolapses, hypothermia in lambs, mastitis, scours, entropion, rib fractures, and conformational deformities.

Since diagnostics are minimal at the station, we depended on clinical signs and treated empirically much of the time. Many times, we would get a diagnosis at post mortem.

Even more so than at Ohio, I was able to determine exactly what I wanted to treat the ewe or lamb with. Dr. Wagner always asked us what we thought we should do and allowed us to do surgeries and treatments on our own under her supervision of course. It was great to have so much independence there, making it a great learning experience. I have never worked with this many sheep (about 2500-3000).

Like at Ohio State, the people I worked with were great. We worked really hard all day long, but had a lot of fun at the same time. It was such a great experience that I am seriously considering applying there sometime in the future to be the veterinarian during lambing season.

I feel very fortunate to have had both of these experiences and encourage others to sign up. If any student has questions

regarding either please have him/her contact me at my e-mail address below.

Thank you.

Sincerely,  
Nancy Miyoung Park  
nypark@mail.vet.upenn.edu  
416 South 41st St., Apt #12  
Philadelphia PA 19104

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To Who It May Concern:

I wanted to express my sincere thanks to the AASRP for so generously helping to fund my two-week trip to the U.S. Sheep Research Experiment Station as a student extern.

The facility is set up in such a way that approximately 3000 ewes are bred within a 42 day time period in two separate, but equal bands. The government pays for a veterinarian to be present on site for the 6 weeks of the highly intensive lambing season in the early spring. Peak numbers were estimated at between 80-90 lambings per day. The veterinarian was the supervisor of the veterinary students at all times.

During my first week, there were virtually no ewes that lambed, so we took care of those sick ewes that were brought in from the feedlots. During this time, I gained experience in treating ewes with ketosis, ruptured prepubic tendons, corneal ulcers, arthritis, neoplastic disease surrounding the eye, assisting in an enucleation, treatment of OPP and late term abortions.

During week two, we experienced roughly 50-70 lambings per day. I was able to assist with a cesarean section, fetal manipulations to help correct dystocias, reviving hypothermic lambs and treating pneumonia. The typical hours I put in were greater than or equal to 12 hours per day. Night/weekend and on-call duties rotated with other veterinary students in the house such that two students were on call every night.

The facility was set up such that there were four large feedlots where all the pregnant ewes are brought two weeks prior to lambing, in order to watch them closely through the night by the herdsman. This facility was extremely well-equipped with barns and buildings to facilitate care of the herds. Shortly after lambing the ewes and their lambs are regrouped into small pens and gradually regrouped into larger and larger pens with more ewes and their lambs until they are ready to head out to summer pastures.

Modest, but comfortable housing was provided to student externs. A rental car is not necessarily needed, but is optimal since the closest grocery store is about 50 miles away and there is not much else other than lava rock and sagebrush to be seen on the horizon.

Once lambing started, this experience met my expectations in terms of what I would see and caseload. There were very few negatives to this trip, but they would include: feeling isolated in the middle of nowhere, the weather was very unpredictable and cold (30 degrees and sunshine, clouds, hail, rain all within an hour time frame), being scheduled to arrive a week earlier than the scheduled beginning of lambing.

I would highly recommend this externship to anyone who is interested in veterinary medicine, not just small ruminant practice. The wide variety of caseload and sheer size of the flock is an invaluable resource to be exposed to a wide variety of problems in a very concentrated amount of time.

Again, I would like to thank the AASRP for making it possible for me to travel to the US Sheep Research Experiment Station and gain such valuable, hands on experience that I would not be able to acquire at the University of Pennsylvania School of Veterinary Medicine.

My Best Regards,  
Amy Poulin  
University of Pennsylvania  
School of Veterinary Medicine  
Class of 2004

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## AASRP-L QUESTION AND ANSWER

### Goiter in Boer Kids

**Question:** I have a client that is experiencing goiter in newborn Boer goat kids. The sheep that run with the goats appear to be unaffected. I have diagnosed this condition via histopath in one other herd. The history included sporadic placement of salt in the mineral feeder. The first set of twins was normal in size, had goiters the size of an extra large egg and were totally hairless. They only lived a few minutes. The next set of twins was born two weeks after salt supplementation was initiated. They all had goiters and some patches of hair but all died within a few hours. The last litter was born alive, one kid was vigorous with peach fuzz hair and large goiters. The twin had normal hair covering and small to medium sized goiters. Other than making iodized salt available is there anything else that can be done to alleviate the iodine deficiency? Is anybody else seeing goiter in Boers?

**Answer 1:** I have seen reports of heritable goiter in Boers, Nubians and Dutch Saanens. I suspect your situation is not simple iodine deficiency because of the haircoat changes that you describe. The Boer and Nubian kids that I have seen born with fuzzy, silky coats and huge goiters are very weak, cannot nurse/suck and die. These have been in herds with adequate levels of iodine. I recommended that they switch bucks (easier and faster than switching does) and the problem has not recurred on the same diet. Best wishes, Joan Bowen, Colorado

**Answer 2:** We have seen the increased need for iodine in Boer and Boer crosses since they have come to America. We use a level of iodine in free-choice mineral of 795 ppm with a 0.75 ounce per head per day consumption. The iodine source is EDDI. This level is obtained by blending 2 pounds of EDDI per ton of mineral. This level has controlled goiter in Boer goats. Tim R. Turner, Southwestern Livestock Mineral Co. Inc., San Angelo TX

## Chorioptic Mange in Camelids

**Question:** In March, I saw a 13 year old female llama with a long history of non-pruritic alopecia and crusting of the medial thighs and ventral abdomen. The llama had recently become somewhat anorexic, had lost weight, and had moderate pitting edema of the front legs from the carpus down. The skin condition had worsened and crusts were present on the face, caudo-medial forearms, ventral thorax, and medial and lateral metatarsal areas. The skin underlying the crusts was thickened and oozed serum. One area over a front pastern had several 5-6 mm raised, alopecic areas that were pruritic. The rest did not appear to be pruritic.

**Answer 1:** I would suspect Chorioptes mites based on the location of the skin lesions. Can't explain the weight loss if it's only the mites. Based on comments at the last camelid meeting, scrape between the toes as well as at the edge of the lesions to look for the mites. If you have been following the threads on Chorioptes, you know the current treatment recommendations of weekly injections of Ivomec® at twice the cattle label dose. In my hands, three or four treatments has worked on a few cases. You might check for a concurrent Eperythrozoon (now Mycoplasma haemolama) infection as well with a smear or better yet the new PCR test at Oregon State University done by Dr. Sue Tornquist (541-737-6943). Pat Long, Oregon

**Answer 2:** The few experiences I have had with use of Eprinex® on camelids left a lasting impression. When this pour-on was first sold in feed stores in the Pacific NW, several of my clients decided to use it. One herd of 17 had 12 reacting from humming & irritated behavior to skin scalding to incoordination to star gazing to opisthotonus & recumbency. Similar occurrences in two other herds. I still see three of these critters routinely...the site of Eprinex application over the withers is still bare skin. While all this is just anecdotal data from a mixed-up animal practitioner, it is a justifiable reason (for me) to not use pour-ons in camelids. It appears we will soon be able to collaborate on our results of injectable ivermectin at 400 mcg/kg given weekly for 4-6 doses. John Flory, Washington

## Zoonotic Risk of Q Fever

**Question:** A DVM in research called me asking about Q fever in goats. At her facility, they buy only Q fever neg (2 negative tests) goats but still require the animal caretakers to wear N 95 mask, surgical gown, gloves and booties when entering the animal rooms and handling the animals. She is wondering if this is excessive or needed to protect against a potential zoonotic infection. What is the potential for spread to humans if the goats are not kidding?

**Answer 1:** This may be an issue of due diligence on the part of the institution rather than science which may accept a certain amount of risk. Institutions may not be allowed to accept any risk - particularly if unions are involved. I have also heard of serologically negative animals (at the time of purchase) being a source of human infection later on (in this case it was sheep). We work with a research facility providing them with pregnant ewes and, in that case, the entire flock is required to be tested annually and maintain its negative status - as well as all sheep sold to the facility requiring an additional negative test prior to shipping.

The risk of spread is greatest at kidding but the organism can also be shed in the milk, and unpasteurized milk products have been a source of human infection many times in the past. And of course, the organism is highly infectious in the dried state - even years after the initial contamination, and people living downwind of infected premises have been known to become infected in outbreak situations. Paula Menzies, Guelph

**Answer 2:** Kentucky is fast approaching being #2 state with goat numbers. With Phase I Tobacco funding, many producers have gotten into the goat business! It appears that some of the Texas purchased goats brought Q fever with them and have exposed numerous people to the disease. The Kentucky Department of Public Health has confirmed 5 people with Q Fever, as of last summer. Most reported cases have been farmers, men in their 50's. One case is the farm manager for a smaller University in eastern Kentucky. This mid-40's man has worked with livestock all of his life. He had been treated by his local MD but continued to deteriorate. His wife took him to the University of Kentucky Medical College; he was diagnosed with Q fever. He was so weak that he was in the wheel chair for several weeks during his recovery. Another producer was hospitalized and confirmed positive with Q fever. I would have agreed with you before these events had occurred, but I now am very cautious about dealing with Coxiella burnetti. It is reported that a single bacterium can cause infection. Patty Scharko, University of Kentucky

## West Nile Vaccine for Camelids

**Question:** A client requested that we vaccinate her llamas with the Fort Dodge West Nile Virus vaccine upon the recommendation of "all her llama internet friends." We declined her request and informed her we would consult with "all our veterinary internet friends." Has anyone heard about a llama presenting with West Nile virus?

**Answer:** Here at Ohio State we are actually "in" West Nile virus country. We completed a study looking at safety and efficacy of antibody stimulation in llamas and alpacas. We found that the vaccine is safe and we saw few adverse reactions. Both pregnant and non-pregnant females have been vaccinated without any untoward effects. The most severe reaction was far less inflammatory than that of a CD&T shot. We have vaccinated about 125 llamas and alpacas to date. We saw dramatic increase in antibody titers after one booster dose, but titers dropped by about 10 weeks (as is seen in horses). We are vaccinating now in "HIGH" risk areas but continue to state that this is a very low risk disease for llamas and alpacas and have discussions about off-label use etc. When we vaccinate, we use two doses given 3 weeks apart and then a booster at 10 to 12 weeks (as many are doing now with horses). If you are in a "no West Nile" area, I can see no reason to vaccinate, but you would not be doing "harm" - I think we can all see it moving west rapidly this summer. If you are in a "high" risk area, it is worth discussing. In any event, the single most critical point is farm management to minimize mosquito risks. David Anderson, Ohio

## ASSESSMENT OF DOMESTIC GOATS AS A PATENT HOST OF *ELAPHOSTRONGYLUS CERVI*

The goats evaluated did not become patent hosts and thus there is no evidence that importing goats would present a risk for translocating this parasite.

*Elaphostrongylus cervi* is a protostrongylid parasite of red deer in Eurasia and New Zealand. It can be found in muscle fascia or meninges but causes no clinical signs in the red deer. The parasite has caused cerebrospinal nematodiasis and severe neurologic disease in alpacas, guinea pigs, North American mule deer, and domestic sheep and goats. In this study, 124 dairy goats that had been raised on a pasture in New Zealand here *E. cervi* is enzootic were imported into Canada. During quarantine, fecal samples were obtained at least twice from each animal over a 6 week sampling period and were evaluated for the presence of dorsal-spined elaphostrongyline larvae by Baerman test. None of the 302 fecal samples tested contained *E. cervi* larvae, but first-stage dorsal spined larvae consistent with *Muellerius capillaris* were found in 176 of the samples. Experimental transmission was attempted using 10 Nubian goats 6-8 months of age and 10 Saanens 2-5 months old. Five different dose levels (from 5 to 125 larvae) were administered orally, with two goats of each breed receiving each dose of larvae. Two yearling red deer served as positive controls, receiving 35 or 65 third stage larvae of *E. cervi*. Fecal samples were tested weekly until 80 days after inoculation, then daily until day 250. Thereafter the goats were euthanized and all tissues evaluated for the presence of nematodes and for lesions. None of 8,898 fecal samples or 67 lung homogenates from the goats yielded dorsal-spined larvae. The control red deer remained clinically healthy and began shedding larvae at 131 days after inoculation. One of the deer was still shedding larvae after 2 years. One goat showed a transient hindlimb ataxia at 29 days, but no *E. cervi* larvae or adults were found in any goat at necropsy. Several animals had a nodular granulomatous myositis, and one of the goats that received 125 L3s had eosinophilic meningoencephalitis while another had nonsuppurative leukomyelitis on histologic exam. Larvae probably died soon after inoculation and were degraded during the course of the experiment. The authors conclude that Nubian and Saanen goats are not suitable hosts for *E. cervi*.

W.B. Scandrett and A.A. Gajadbar

*J Parasitol* 88:93-96, 2002

## THERIOGENOLOGY QUESTION OF THE MONTH (CACHE VALLEY VIRUS)

Although in this case both kids were affected, a normal fetus can be born twin to a mummy or a lamb or kid with severe arthrogryposis. Precolostral titers in serum or fetal fluids confirm the diagnosis.

A 2nd parity LaMancha doe in Texas gave birth to a weak kid and, after 4 hours and 10 IU of oxytocin, a stillborn malformed fetus. The weak kid was bottle fed colostrum and milk but died after 1 week. The stillborn fetus had bilateral arthrogryposis of all joints in the fore- and hindlimbs. Muscle mass was reduced. Scoliosis and torticollis were present, and the cerebral hemispheres collapsed when the calvarium was open, due to severe hydranencephaly. The cerebellum was also dysplastic. Histologically, neurons were lost from brainstem nuclei and the

cerebellum. Skeletal muscle fibers were hypoplastic. The only gross lesion noted in the liveborn kid was dilation of the entire ventricular system in the brain. Serum-neutralizing antibody titers against Cache Valley virus (CVV) were 1:64 in heart blood from the stillborn fetus and 1:256 in the dam. The virus is expected to be cleared from the fetus by the immune response. Cache Valley virus is a bunyavirus which is endemic in the USA and maintains a sylvatic cycle between insect vectors and any mammals. Specific antibodies have been found in swine, sheep, goats, cattle, horses, and various wild ruminants. Since 1987, CVV has been recognized to cause arthrogryposis and hydrocephalus in lambs infected in utero. This is the first published report of the same syndrome in goats. Affected lambs have usually been produced by ewes in early gestation in the early fall, when vector activity is highest. In this case report, the doe was bred during a fall when substantial rainfall ended a prolonged drought in Texas.

J.F. Edwards et al.

*JAVMA* 222:1361-1362, 2003

## TARGETED APPLICATION OF ANTHELMINTICS TO CONTROL *TRICHOSTRONGYLOSIS* IN DAIRY GOATS: RESULT FROM A 2-YEAR SURVEY IN FARMS

Parasitologists have suggested that treating only 80% of the flock will delay the rise of anthelmintic resistance by 5 years.

Factors favoring development of anthelmintic resistance in parasites of goats include the high frequency of treatments due to poor ability of adult goats to mount an effective immune response, lack of alternation in anthelmintic families because of the need to avoid milk residues, and the longterm use of sub-optimal drug doses in goats. As other studies have demonstrated that goats in first lactation and the high-producing flock members are most susceptible to infections, the current study evaluated the selective treatment of those goats over 2 or 3 years on 11 dairy goat farms from three main areas in France. The first year all goats were treated repeatedly during the grazing season with benzimidazoles with no milk withdrawal (fenbendazole, febantel, or oxfendazole at 10 mg/kg, twice the recommended dose for sheep). During the 2nd, and (in 6 herds) the 3rd year, all goats were treated at time of housing in the fall but only first fresheners and high producers (totaling two thirds of the herd) were treated during the grazing season. The anthelmintics used were documented to be still effective by fecal egg count reduction test during year one (>90% reduction). During lactation, 50 adult goats per farm were sampled 4 times using a modified McMaster method for egg counts. Milk production records, when available, were analyzed. The first year, 2 to 5 treatments (average 3.2) were used during the grazing season, while in subsequent years this was decreased to 2.1 treatments. The mean egg output dropped slightly over time (822, 757, and 633 per gram in years 1, 2, and 3 in the 6 farms studied over 3 years). Larval cultures identified *Teladorsagia* and *Trichostrongylus* in spring and fall, and *Haemonchus* larvae in only 9 of 11 farms in fall. Milk production did not decrease with the switch from systematic to selective deworming. Although no contemporary controls could be kept, no other changes occurred in flock or pasture management, and no clinical outbreaks of parasitism were observed.

H. Hoste et al.

*Vet Parasitology* 110:101-108, 2002

## TETRACYCLINES AFFECT PRION INFECTIVITY

Tetracyclines may be a useful therapy for diseases involving protein misfolding and may help to inactivate prions in potentially contaminated products.

The pathologic mechanism underlying scrapie, bovine spongiform encephalopathy, chronic wasting disease of deer, and Creutzfeldt-Jakob disease (CJD) is a conformational conversion of cellular prion protein into disease-specific PrP<sup>Sc</sup> which is insoluble and protease resistant and accumulates in the brain in the form of amorphous aggregates and amyloid fibrils. Previous studies have shown that tetracyclines, relatively safe antibiotics that cross the blood-brain barrier, bind to synthetic PrP peptides and hinder their assembly into amyloid fibrils, cause reversion of protease resistance of PrP<sup>Sc</sup> extracted from the brain of patients with sporadic CJD, and prevent neuronal death and astrocyte proliferation induced by PrP peptides in vitro. In the experiments reported in this article, PrP<sup>Sc</sup> isolated from 3 patients with CJD and a cow with BSE or whole brain homogenates were incubated for 48 hours with tetracycline or doxycycline. Protease resistance was decreased in a drug dose dependent fashion - thus tetracycline renders PrP<sup>Sc</sup> susceptible to proteolytic degradation. This was shown to be accompanied by a decrease in infectivity by inoculating 263K scrapie-infected brain homogenates into Syrian hamsters after incubation with 1 mM tetracycline or doxycycline or vehicle solution. Both compounds significantly delayed the onset of clinical disease and prolonged survival time. When high dilutions of the scrapie brain homogenate were incubated with tetracycline, one third of hamsters did not develop disease. Because it is known that patients with CJD have MRI changes in the thalamus, some of the hamsters were subjected to MRI on day 90 after inoculation, when clinical signs first became apparent in positive controls. The T2 signal hyperintensity of the thalamus was remarkably less intense in the tetracycline treated group than in positive controls, and PrP<sup>Sc</sup> was remarkably less abundant in the brain. By the time the hamsters began to die of infection, differences between groups in PrP<sup>Sc</sup> accumulation, spongiform changes, and astrogliosis were no longer apparent. It appears that MRI is an effective tool to follow the onset and progression of experimental scrapie.

*G. Forloni et al.*

*Proc National Acad Sci 99:10849-10854, 2002*

## CONCURRENT SARCOPTIC AND CHORIOPTIC ACARIOSIS IN A BRITISH LLAMA (*LAMA GLAMA*)

Fipronil spray appeared to be effective in treating the surface dwelling chorioptic mites.

A 17-month old gelded llama was presented with a 5 week history of mild pruritus accompanied by scale and alopecia on the medial thigh, distal hindlimbs, ventrum and bridge of the nose. The animal had been housed with another gelding with chronic, non-pruritic scaling of the distal limbs diagnosed earlier from scrapings and biopsy as an idiopathic hyperkeratotic dermatosis ("munge"). That animal had been euthanized after failing to respond to zinc supplementation. Another recently introduced female developed similar pruritic lesions on the bridge of the nose, ventrum, inner thighs, and interdigital areas. Biopsy sam-

ples and scrapings were taken from the metatarsus and ventral abdomen of the gelding after tranquilization with xylazine. Multiple *Sarcoptes* mites and a single *Chorioptes* specimen were detected in the scrapings and numerous mite cross sections and dense perivascular cellular infiltrates of neutrophils, eosinophils, and mononuclear cells were seen in the biopsy samples. Only a single *Sarcoptes* mite was found in scrapings from the female. Both animals were treated 4 times at weekly intervals with subcutaneous ivermectin at 200 ug/kg and a single topical application of 0.25% fipronil solution (Frontline® spray) at 3 ml/kg. The barn was cleaned and disinfected at weekly intervals. Improvement was evident by the end of the treatment regimen, and no skin lesions were detected on examination 6 months later.

*C.F. Curtis et al.*

*Vet Record 149:208-209, 2001*

## OUTBREAK OF *PASTEURELLA MULTOCIDA* SEPTICAEMIA IN NEONATAL LAMBS

Introduction of the organism into a naive flock may explain a very high morbidity and mortality even in lambs born early in the season and consuming adequate colostrum.

Perinatal lamb mortality causes great losses to the sheep industry, but typically only 10 to 30% of these losses are due to infectious causes. A flock of 31 Suffolk ewes in Scotland was brought inside into a clean facility two weeks before lambing. The first 16 ewes to lamb produced 26 live lambs, with no abortions or stillbirths. However, 11 of these 26 lambs died within 1 to 2 days. The affected lambs became dull, salivated profusely and developed a distended abdomen but no diarrhea. A presumptive diagnosis of "watery mouth" (*E. coli* endotoxemia) was made by the farmer, but treatment with systemic oxytetracycline did not save any lambs and oral spectinomycin soon after birth did not prevent the syndrome. Two dead neonates were submitted to a laboratory and found to have adequate fat reserves and milk in the gastrointestinal tract. A greatly increased (50 ml) amount of yellow peritoneal fluid contained some fibrin, and *P. multocida* was cultured from the peritoneal fluid and liver of both lambs. Zinc turbidity testing revealed normal IgG levels. Septicemic pasteurellosis does not usually occur in lambs of normal size, colostrum status, and fat reserves early in the lambing period, but the failure of spectinomycin to prevent the condition could be explained by poor absorption from the GI tract. When prophylactic long acting oxytetracycline (100 mg/lamb IM) was given soon after birth, losses stopped. It is possible that the organism was introduced to the flock with two purchased shearling ewes the previous fall, as one of them died of pleurisy and pneumonia soon after purchase and *P. multocida* was isolated from the vagina of the surviving purchased ewe and one other pregnant ewe. Housing before lambing could have spread this agent among the pregnant ewes, too late for them to produce antibodies in their colostrum. The vaginal and postmortem isolates were identical strains and differed from 26 other sheep isolates of *P. multocida*.

*P.J. Watson and R.L. Davies*

*Vet Record 151:420-422, 2002*

## **AN INTERFERON-GAMMA ASSAY FOR DIAGNOSIS OF *CORYNEBACTERIUM PSEUDOTUBERCULOSIS* INFECTION IN ADULT SHEEP FROM A RESEARCH FLOCK**

If assessment in field situations gives equally promising results, this test may be useful for flocks using vaccination programs while attempting to eradicate the disease by test and cull methods.

Caseous lymphadenitis has been difficult to diagnose and control in sheep flocks, and available serologic tests have too poor sensitivity and specificity to support a satisfactory test and cull program. *Corynebacterium pseudotuberculosis* is a facultative intracellular pathogen, and cell-mediated immunity is important for a protective immune response. A monoclonal antibody assay for bovine interferon-gamma (which cross reacts with sheep and goat interferon-gamma) previously used to detect tuberculosis was modified by incubating whole blood with whole cell antigens of *C. pseudotuberculosis*. Heparinized blood samples from intentionally infected sheep, uninfected sheep from a CLA-free flock, and uninfected sheep that had been vaccinated 4 times within a year with a commercial bacterin-toxoid (Glanvac 6, Vetrepfarm Canada) were evaluated in the assay. An optical density cut-off of 0.100 appeared to maximize reliability of the test, and results were normalized to the positive control. When 3 non-vaccinated non-infected sheep were bled repeatedly, only 1.8% of samples were falsely positive, while the false positive rate in single samples from 73 animals from a flock free of both CLA and paratuberculosis was 6.8%. The three vaccinated sheep were monitored over time and remained negative, except for a single sample on one sheep taken after the last vaccination. It was not possible to evaluate the sensitivity of the test, as it would be applied in field flocks, in this study. Repeated tests from the 3 experimentally infected sheep were quite variable over time but yielded a mean of 0.2343 and a reliability of 95.7%, compared to a mean for all samples from uninfected sheep (vaccinated and control) of 0.0216 and a specificity of 95.5%.

*J.F. Prescott et al.*

*Vet Microbiology 88:287-297, 2002*

## **A CASE REPORT OF SPORADIC OVINE LISTERIAL MENINGOENCEPHALITIS (sic) IN IOWA WITH AN OVERVIEW OF LIVESTOCK AND HUMAN CASES**

Numerous listerial strains can be isolated from a single farm.

*Listeria monocytogenes* is a human food-borne pathogen that accounts annually for an estimated 2,500 human cases (meningitis, encephalitis, sepsis, abortion, premature birth) and 504 deaths in the USA. The human mortality rate in clinical listeriosis is 25%. Many infected livestock are healthy asymptomatic fecal shedders, and in sheep excretion of *L. monocytogenes* has been linked to consumption of poorly prepared silage. This review article was prompted by the occurrence of a fatal case of ovine listeriosis on a Midwest farm that also grew soybean sprouts for the organic health food market. Public health concerns were raised as previous outbreaks of human *E. coli* and *Salmonella* have been traced to contaminated alfalfa sprouts. A

6-month-old lamb showed mild anorexia 24 hours before it was found in lateral recumbency with total facial nerve paralysis. Typical microabscesses and Gram-positive organisms were seen in its brain and *L. monocytogenes* was isolated (serotype 1). Another lamb on the premises had died previously of similar signs. Environmental samples were taken from the farm, and *L. monocytogenes* (serotypes 1 and 4) was isolated from soybean cleanings fed to the sheep, 6 of 24 fecal samples, and two of three compost piles while other *Listeria* spp were isolated from many of these locations. No isolations were made from well water. None of the environmental isolates matched the clinical isolate, and thus the ultimate source of infection is unknown, although the soybean hulls remain suspect. Shortly after the samples were taken the owner depopulated the herd and vacated the premises. A review of 346 listeriosis cases submitted to the Iowa State University Veterinary Diagnostic Lab from 1993-2000 demonstrated that 88% were encephalitis, 85.5% were bovine, 9.5% ovine, 3.8% caprine, 0.3% llama, and 0.6% equine. From 1990 to 2000, 12 sporadic human cases were identified in Iowa, and 2 of these people died.

*I.V. Wesley et al.*

*J Vet Diagn Invest 14:314-321, 2002*

## **EFFECTS OF EXOGENOUS INSULIN ON GLUCOSE TOLERANCE IN ALPACAS**

Plasma glucose concentrations should be closely monitored after administration of either glucose or insulin, to avoid adverse effects on hydration and blood osmolality.

Blood insulin concentrations are lower and clearance of exogenous glucose is slower in llamas and alpacas, compared with domestic ruminants. After a glucose challenge, blood insulin concentrations often increase 4- to 5-fold in ruminants but only double in New World camelids. This study evaluated the effects of exogenous insulin on clearance of exogenous glucose. On two occasions, each of 7 adult castrated male alpacas fitted with jugular catheters were held off feed for 8 hours. A 50% glucose solution was infused rapidly at 0.5 g/kg body weight and blood samples were collected at intervals for 4 hours. At the 15 minute sample after one of the infusions, regular insulin was administered IV at 0.2 U/kg, a dose that saturates receptors in other species. Plasma glucose concentrations increased from approximately 125 mg/dl to almost 350 mg/dl in the 15 minute sample. Thereafter, alpacas treated with insulin had lower plasma glucose concentrations than those receiving just glucose and reached preinfusion values within 3 hours rather than within 4 hours, as occurred when treated with glucose alone. Lactate concentrations increased after insulin, suggesting that there is limited cellular capacity to increase glucose uptake in the presence of insulin. The authors believe that camelids, because they have low insulin concentrations and are relatively insulin resistant, use fatty acids rather than glucose for energy in skeletal muscle and other insulin-sensitive tissue. Glucose is thus preserved for brain and fetus. Renal loss of glucose may permit camelids to avoid chronic hyperglycemia.

*C.K. Cebra et al.*

*AJVR 62:1544-1547, 2001*

## **FAILURE TO ERADICATE OVINE FOOTROT ASSOCIATED WITH *DICHELOBACTER NODOSUS* STRAIN A198 BY REPEATED DAILY FOOTBATHING IN ZINC SULPHATE WITH SURFACTANT**

This strain produced deep, hidden lesions which protected the organism and were difficult to detect during dry periods.

In a recent study, virulent footrot associated with several types of *D. nodosus* was eradicated by repeated footbathing, even though chronic underrunning lesions were present and the feet were not pared. To validate the findings of that study, mixed age Merinos from multiple genetic lines were inoculated with 4 different strains of *Dichelobacter nodosus*, each uniquely identifiable by its zymogram type and hybridization pattern with recombinant plasmids. Two feet on each of 10 sheep were inoculated with each of the four strains, for a total of 40 sheep, while another 40 sheep were inoculated with all 4 strains simultaneously. The interdigital skin was lightly scarified and then an agar block with a 72 hour culture of *D. nodosus* applied under bandage for a week. At time of bandage removal, 169 clean sheep were added to the infected group. All feet were inspected and scored every other week for 47 weeks and cultures taken from all new lesions. There was a 36 week dry period during which no new lesions were found, but then 3 of the strains resumed activity. A further 235 clean sheep were added at week 47. The flock was divided in half in week 59, in late spring when the pasture was drying off. For each of 5 successive days in week 60, the sheep in the treatment flock were footbathed for 10 minutes in a commercial 15-18% zinc sulfate solution with surfactant (Footrite®). The control sheep were not footbathed and none were trimmed. Monitoring of the feet and culturing of lesions continued. Lesions were detected one week after and strain A198 was isolated 4 weeks after footbathing. During the first 17 weeks after the footbathing in week 60, 75 of 83 lesions (90%) in treated sheep and 95 of 490 lesions (19%) in the control sheep were severe underrunning lesions, while 94% and 38% of the severe lesions were associated with the highly virulent A198 strain. These severe lesions were atypical in that they were characterized by extensive necrosis of the hoof that was visible at the sole but with no concurrent interdigital necrosis or separation of the horn from underlying laminae. In week 110, all surviving sheep were recombined and footbathed again, according to the original protocol. A last inspection was made in week 113, at which time only 10 lesions were detected and strain A198 was isolated from all 8 lesions sampled. During the study, several new strains of *D. nodosus* were isolated, one of which was believed to a deletion mutant of A198.

*P.D. Jelinek and L.J. Depiazzi  
Australian Vet J 81:58-62, 2003*

## **FOOT-AND-MOUTH DISEASE VIRUS INFECTION OF SHEEP: IMPLICATIONS FOR DIAGNOSIS AND CONTROL**

Infected sheep show few lesions, and those are usually on the feet, whereas idiopathic oral lesions are easily confused with FMD.

Foot-and-mouth disease (FMD) is often mild or subclinical in sheep, whereas cattle and pigs usually develop obvious clinical signs. Sheep excrete most heavily over a one- or two-day period before occurrence of clinical signs, and transmission (typically by inhalation of aerosols) will be greatest when animals are crowded under conditions of reduced ventilation. This report reviews 79 contact-infected sheep from various experiments performed at the Institute for Animal Health in Pirbright, England. Over 27% of the infected sheep did not develop any macroscopic vesicular lesions, as revealed by thorough clinical examinations. The FMD lesions that did develop were usually small; they ruptured easily (leaving minor nonspecific erosions) and healed quickly. The mean number of lesions per clinically infected sheep was 3.3, and over 20% developed only one lesion. Thus a high proportion of animals in a flock must be examined closely to detect flock infection. Of all the lesions detected, 93% occurred on the feet; 74% of these were in the interdigital cleft and 26% on the coronary band. Footrot sometimes made detection of the FMD lesions very difficult. Only 2 of 57 clinically infected sheep had oral lesions in the absence of foot lesions, usually on the dental pad. During the 2001 UK epidemic, idiopathic ulcerative lesions were found in sheep not infected with FMD and frequently resulted in misdiagnosis. Definitive clinical signs occurred, on average, 7 days after an animal first had contact with another infected sheep. Virus in the blood preceded vesicular lesions by almost 3 days. Fever and depression and early lameness occurred during viremia, but 8% of seropositive sheep in this study never had detectable viremia. Because a 24 hour culling policy was imposed during the 2001 outbreak, veterinarians did not have the opportunity to repeatedly examine animals suspected of having FMD. Although early slaughter of cattle and pigs is important in halting an epidemic, the low sensitivity and specificity of available tests for sheep suggest that a more rigorous assessment of diagnosis in this species would minimize the culling of uninfected flocks in future outbreaks.

*G.J. Hughes et al.,  
Vet Record 150:724-727, 2002*

## **PHARMACOKINETICS AND PHARMACODYNAMICS OF ANTIULCER AGENTS IN LLAMA**

Intravenous omeprazole at 0.4 mg/kg decreased total gastric acidity for at least 6 hours.

Third compartment ulcers are relatively common in camelids but difficult to diagnose with certainty. In one survey of 271 llama deaths in which necropsies were completed, ulcers were identified as the cause of death in 5.5% of the animals. Clinical experience and experimental studies suggest that nonsteroidal anti-inflammatory drugs are probably not a significant factor in the development of third compartment ulcers, and "stress" remains the most important postulated factor. Many clinicians initiate prophylactic treatment with a variety of H<sub>2</sub>-receptor antagonists using dosages extrapolated from other species. This study used 6 mature male llamas prepared with a surgical gastrotomy which permitted collection of luminal contents from distal compartment 3 at 15 minute intervals from 2 hours before to 12 hours after drug administration. Ranitidine, an H<sub>2</sub>-receptor antagonist, was given IV at 1.5 mg/kg. Pharmacokinetics were determined, including a mean elimination half-life of 1.53 h, but the drug produced less than a 1 hour decline in acid pro-



duction despite reaching plasma levels in the therapeutic range for humans. Probably either llamas have few H2 receptors or those receptors have a low affinity for ranitidine. Previous work has shown that cimetidine is not effective in llamas. Omeprazole is an H<sup>+</sup>, K<sup>+</sup>-ATPase inhibitor used to decrease acid production in humans. Omeprazole at 0.4 mg/kg IV suppressed third compartment acid production of the llamas for nearly 6 hours, reducing titratable acidity by more than 50%. As the volume of gastric secretion was also suppressed, the absolute decrease in total acid production is probably over 80% for an extended period. Dose titration studies demonstrated that 0.2 mg/kg did not suppress acid secretion while 0.8 mg/kg was no more effective than 0.4 mg/kg. Omeprazole is an acid-labile drug and is expected to be less potent if given orally than when given intravenously; when given by stomach tube to the llamas at 0.4 mg/kg, omeprazole (60 mg of a sustained release form) did not cause a statistical decline in third compartment acid production. A third product tested was misoprostol, an E-series prostaglandin used to decrease acid secretion in humans. When given slowly intravenously at 10 ug/kg this drug suppressed acid production for 6 hours but caused collapse of several llamas, making it unsuitable for clinical use. When given orally at the same dose, it was less effective, reducing titratable acidity by less than 50% of the basal secretion.

*J.M. Christensen et al.*

*J Vet Pharmacol Therap 24:23-33, 2001*

## EFFICACY OF DRY-OFF TREATMENT IN SHEEP

Treatment with a full cow tube per half eliminated previous infections and prevented many new ones, but antibiotic residues persisted in some sheep until 5 days after lambing.

Although infusion of antibiotics into the udder of dairy cows at time of dry-off is a standard technique for curing existing mastitis infections and preventing new ones, the efficacy of dry therapy in sheep is not well documented. In this study, 85 Israeli-Assaf sheep on one farm were followed throughout lactation by milk cultures, milk somatic cell counts (SCC), and NAGase activity. The sheep lambed during a two week period, the lambs were removed immediately after birth, and the sheep were machine milked twice daily. The average annual milk yield was 350 liters. Milk samples were tested 3 to 5 times during the lactation for bacterial growth and for somatic cell count by the Coulter Counter method. A lysosomal enzyme in milk, NAGase, was determined fluorometrically. There was a correlation of  $r = 0.85$  between SSC and NAGase as two different markers of udder health in the sheep. At the time of drying-off, the sheep were paired according to culture results, SCC, NAGase activity, and lactation number and then one of each pair was randomly assigned to be dry treated with a commercial cattle dry treatment product containing procaine benzylpenicillin, nafcillin, and dihydrostreptomycin, using a whole tube per udder half. After lambing, the colostrum and milk from each half of 25 treated sheep were tested for antibiotic residues, using inhibition of growth of sensitive organisms on agar as evidence of residues. At time of dry off, about half of the udder halves in each group were not infected with bacteria, and of the infected halves, coagulase-negative staphylococci (CNS) were the most prevalent organisms, being isolated from about a third of all halves over all. About 11% of halves were infected with streptococci, and one sheep with *Pasteurella* was removed from the

study. None of the sheep was infected with *Staphylococcus aureus*. At the first sampling, 15-20 days after lambing, cure rates of 64.9% of treated and 6.5% of control group halves were recorded. Five sheep, all from the treated group, were culled for low production before the next cultures were done at 35 to 50 days. At this time, the apparent cure rate of treated sheep had dropped to 46.4%. No self-cure was recorded for halves infected with streptococci, while 2 of 23 halves with CNS experienced self cure. New infections occurred both during the dry period and during the interval between first and second cultures after lambing. These were mostly CNS and totaled 12 new infected halves out of 44 previously negative halves in treated sheep and 15 of 35 in control sheep. Antibiotic residues were detected in 5 of 25 sheep on the first day, 3/25 on the second day, and in 2/25 on the 3rd and 4th day after lambing. No residues were detected on the 5th day.

*M. Chaffer et al.*

*Small Ruminant Res 47:11-16, 2003*

## RESIDUE PERSISTENCE IN SHEEP MILK FOLLOWING ANTIBIOTIC THERAPY

More studies of residues in sheep milk need to be completed in order to avoid contamination of dairy products and antibiotic interference with production of cultured cheeses.

Although mastitis is becoming an increasingly important problem in intensively managed dairy ewes and goats, available antibiotic treatments are specific for cows, and withdrawal times for sheep are unknown. Many sheep cheeses in Spain are made from raw milk and carry a Protected Denomination of Origin label which guarantees quality control. Residue screening is an important part of that quality control, but few evaluations of screening tests for ewes' milk have been made. This study used 55 Manchegan ewes in the third month of lactation, divided into three groups roughly equivalent in body weight, age and daily milk yield. The ewes suckled their lambs for 35 days and received no other treatment before being used in this study. Sheep were infused, 3 times per udder, with commercial tubes containing cephalixin and gentamicin or were treated intramuscularly two days in a row with injectable penicillin-dihydrostreptomycin or received a single intravenous injection of oxytetracycline (LA 2000 at 1 ml/10 kg body weight). The ewes were machine milked twice a day after treatment and production recorded, while samples for residue analysis were taken until double the time of the withdrawal period recommended by manufacturers. High yielding ewes infused with cephalixin/gentamicin experienced a more rapid decrease in the number of samples determined to be contaminated by the Brilliant Black Reduction test (uses *Bacillus stearothermophilus*). That is to say, ewes with lower milk production took longer to eliminate the antibiotic after intramammary infusion. The manufacturer's withdrawal of 4 days/eight milkings was insufficient. Likewise for the intramuscular penicillin-streptomycin, the manufacturer's withdrawal of three days/six milkings was inadequate. In fact, 88% of samples gave positive results at that time, and 3.3% were positive at the 14th milking. This may be partly because the screening test detected penicillin G at 2 ppb while the legal limit established by the EU is 4 ppb. Milk production did not affect elimination time, presumably because the antibiotics are eliminated mainly through urine rather than milk. The frequency of positive tests after IV tetracycline also decreased with time, but again the manufacturer's recommended 3

days/six milkings was not adequate for dairy sheep. The screening test used also was deemed to be not sensitive enough to detect low concentrations of tetracycline.

*A. Molina et al.*

*Vet Journal 165:84-89, 2003*

### **IMMUNIZATION AGAINST OVINE HAEMONCHOSIS WITH THREE LOW MOLECULAR WEIGHT SOMATIC ANTIGENS OF ADULT *HAEMONCHUS CONTORTUS***

Low molecular weight peptides did not induce a clear protective response in this small study.

As part of the ongoing quest to find alternative ways to control nematode infections in sheep, and specifically infections with *Haemonchus contortus*, the possibility of immunoprophylaxis was investigated. Soluble extracts of adult and infective larvae of *H. contortus* were obtained by electroblotting and then excising specific peptides to administer with Freund complete (first vaccination) or incomplete (2nd and 3rd vaccinations) adjuvant. Lambs housed indoors to preclude nematode infections were vaccinated at 14 day intervals against peptides of various molecular weights (56, 39, or 18.5 kDa) or left as controls. The peptides used were selected because a serologic response was detected to them in immune sheep. Two weeks after the last immunization all lambs were challenged with 300 L3 of *H. contortus* per kg live weight. The animals began passing eggs on the 18th day after challenge and were slaughtered 34 days after challenge. Vaccinated lambs mounted a strong serologic response but a significant cellular response was not detected. Although statistical significance was not found, total egg shedding was reduced by 30 to 47% and average parasite burdens in the abomasum were reduced by as much as 40%. The group size of 6 lambs per peptide tested may have been inadequate to prove efficacy statistically.

*J.M. Alunda et al.*

*J Vet Med B 50: 70-74, 2003*

### **RELATIVE RESISTANCE OF DORPER CROSSBRED EWES TO GASTROINTESTINAL NEMATODE INFECTION COMPARED WITH ST. CROIX AND KATAHDIN EWES IN THE SOUTHEASTERN UNITED STATES.**

Dorper ewes were nearly as resistant as the St. Croix and Katahdin ewes and more resistant than Hampshires.

Hair sheep fit well into sustainable production systems in the southeastern USA because they do not require shearing, tolerate the harsh summer climate, and may be more resistant to gastrointestinal nematodes than most wool breeds. Dorpers (DO) originated in South Africa from crossing Dorset Horns with Blackhead Persians. St. Croix (SC) were imported from the Virgin Islands in 1960 while Katahdins (KA) were developed in Maine by crossing St. Croix with a variety of wool sheep breeds. In a first study, ewes of DO, KA, SC, and Hampshire (HA) breeds were managed together under natural pasture grazing conditions. In the first year they were dewormed in July with Ivomec drench and in winter with Cydectin, while in year 2 they were dewormed by breed groups when the average fecal egg count (FEC) was >1000 epg. Individual ewes were dewormed if the packed cell volume dropped below 20. Body condition score, FEC, and PCV were monitored every 2 to 4 weeks. Dorper FEC reached the treatment threshold two weeks later than the other breeds the second year. The HA ewes were not pregnant or lactating but still appeared more susceptible to parasites than the hair breeds, as FEC increased above 2000 epg in the fall of the second year. The PCV tended to decrease during early lactation. Katahdin ewes maintained higher body condition scores than SC ewes, but all breeds maintained good to excellent body condition. In a second study, the breeds (HA, DO, and KA) were evaluated by means of an experimental infection with *Haemonchus contortus* infective larvae. Body weight changes, FEC, and PCV were monitored for 6 weeks. There was little difference between hair breeds but the Hampshires were heavier and had lower PCV and reached higher FEC.

*J.M. Burke and J.E. Miller*

*Vet Parasitology 109:265-275, 2002*

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vetcoons@aol.com

## **MARCH 2003**

## **AASRP REPRESENTATIVES TO OTHER ORGANIZATIONS:**

**USDA National Scrapie Oversight Committee** – Dr. Marie Bulgin

**AVMA Animal Agriculture Liaison Committee** – Dr. Scott Haskell, P.O. Box 638, Chicago Park, CA 95712

**AVMA Animal Welfare Committee** – Dr. Seyedmehdi Mobini

**AVMA Committee on Environmental Issues** – Dr. Scott Haskell

**AVMA Clinical Practitioners Advisory Committee** – Dr. Gareth Moore

**AVMA Food Safety Committee** – Dr. Martin Warbington

**AVMA Legislative Advisory Committee** – Dr. Cleon Kimberling, 6615 Weld County Rd. 84, Ft. Collins, CO 80524 Phone 970-491-4514; Fax 970-491-0320; ckimberl@vth.colostate.edu

**AMERICAN ASSOCIATION OF SMALL RUMINANT PRACTITIONERS**  
*membership application*

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_  HOME  OFFICE

CITY/STATE/ZIP \_\_\_\_\_

PHONE \_\_\_\_\_ FAX \_\_\_\_\_

E-MAIL \_\_\_\_\_

VET. SCHOOL \_\_\_\_\_ YEAR OF GRADUATION \_\_\_\_\_

Member of  AVMA  Canadian VMA  USAHA

Could you take senior veterinary students as externs? \_\_\_\_\_

% of total working time spent with  
\_\_\_ Sheep \_\_\_ Goats \_\_\_ Llamas \_\_\_ Deer/Elk \_\_\_ Other Small Ruminants

**Member Classification:**

Veterinarian  Vet. Student  Associate  
 Other \_\_\_\_\_

**MEMBERSHIP DUES**

Dues listed are current as of January 2003. All dues must be paid in U.S. funds.

**U.S. Other**

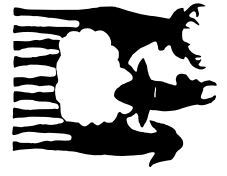
\$50 \$55 Veterinarians  
\$50 \$55 Non-Veterinary Associates  
\$15 \$20 Veterinary Students

Payment Method:  Check  Mastercard  Visa

Credit Card Number \_\_\_\_\_ Exp. Date \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

**PLEASE MAKE YOUR CHECK PAYABLE TO AASRP AND MAIL WITH THIS FORM TO:**  
AASRP, 1910 LYDA AVENUE, SUITE 200, BOWLING GREEN, KY 42104-5809.  
DUES PAYMENTS BY CREDIT CARD MAY BE FAXED TO 270/782-0188.



**Wool & Wattle**  
The AASRP Newsletter  
1910 Lyda Avenue  
Bowling Green, KY 42104-5809

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