

THE FOOD ANIMAL VETERINARIAN



VIRGINIA-MARYLAND REGIONAL COLLEGE OF VETERINARY MEDICINE LIBRARY

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BLACKSBURG, VA

Spring 1991

Dear Virginia Practitioners,

Several items of interest in the area of Food Animal Practice:

-Food Animal CE The continuing education meeting jointly sponsored with the Virginia Academy of Food Animal Practice is planned and will be held on April the 27, 1991 at the Ingleside Inn in Staunton. The Program is listed below. A few notes about the speakers: Dr. Larry Chase is a dairy cattle nutritionist at Cornell University. He writes widely and is an excellent speaker on his subjects. Our own Dr. Donna Mathews does extensive small ruminant herd health work in her practice and will provide an excellent update on the subject. Dr. Tim Guichon is a practitioner from Alberta Canada with an aggressive, very successful approach to bovine veterinary practice. His topics will be of interest to anyone involved in production oriented practice. Note also that there are pre-conference activities arranged for the first time this year. Put this program on your calendar and plan to be with us.

Preconference Activity- Fri. April 26, 1991

Golf: Ingleside Golf Course - 1pm

Virginia Beef Expo: April 26, 1991

Rockingham Co. Fairgrounds.

Beef Festival and Entertainment (Includes dinner)6-

9:30 pm. Order tickets(\$10) on registration form.

Program - April 27, 1991

7:00 am Registration

7:15 Continental Breakfast and Academy Business Meeting

8:30 Break

9:00 Feeding the High Producing Dairy Cow - Dr. Larry Chase

10:00 Utilizing Bypass Protein and Fats in Dairy Rations - Dr. Larry Chase

10:50 BREAK

11:10 What's Happening on the Farm - Monitoring and Evaluating the Feeding Program - Dr. Larry Chase

12:00 Lunch

- 1:00 pm Health Programs for Small Ruminants - Dr. Donna Mathews
- 1:45 How to Get Paid for Beef Herd Health Services and Be Worth Your Money - Dr. Tim Guichon
- 2:30 BREAK
- 2:45 Cost-effective Cow/Calf Herd Health Program - Dr. Tim Guichon
- 3:45 Adjourn

-Vet Student Internships Efforts are being made to define and assess interest in an internship program for veterinary students between their first and second and second and third years of veterinary school. The Academy and the Food Animal Committee of the VVMA are working with the Veterinary School. est. A survey is being prepared to find out your interest and ability to participate. Please take time to read it and complete it when it arrives in your practice.

- **Dr. Allen Strecker** has accepted a position as the Veterinary representative on the Virginia Cattleman's Association Board.

- **Animal Welfare** issues are more and more facing animal agriculture. Dr. Don Gardener and I are on a newly formed VVMA committee on Animal Well-Being. Dr. Nick Sojka heads the committee.

- **Trader Cattle** have become somewhat of an issue in the state and the State Veterinarian has formed an ad hoc committee to study the issue. Are there ways to decrease the practice of repeatedly buying and selling calves to their health detriment? I serve on the committee so let me know if you have comments or ideas.

Best regards,

Dee Whittier
Extension Veterinarian, Cattle

PRACTICE TIPS

For Building Better Client Relationships - We have found the following practices to be useful:

1. Summarizing mastitis culture results and sensitivities done during the month and mailing the client a copy to include in their record.
2. Giving the dairyman a brief, one-page summary sheet of our recommendations each month outlining management changes we feel should be implemented.
3. Using self-adhesive colored labels with "Vet Check" typed on. Each herd visit we apply a sticker to the date of their next planned visit and mark it in our schedule books at the same time.

Under the Category of Practice Tips, below are some of the things we have found to help us out:

1. Tape a magnet to your bottle of tattoo ink so when vaccinating heifers, your ink is right there within easy reach, stuck to the nearest metal pipe!
2. Tube dehorning at 2-6 weeks of age gives nicely shaped heads, minimal bleeding, no holes, and calves are easy to handle at this age.
3. Pregnancy re-checking 4-8 weeks after initial pregnancy diagnosis is to identify missed EEDs or abortions.
4. When replacing a uterine prolapse, use your hands as a funnel and pour a large (5 gal) bucket of warm water into the vagina/uterus to help fully evert the uterine horns. They spit a lot of water back at you, but a lot of the debris comes along with it. --Darcie Stolz, Strasburg, PA.

To Determine the Age of an Aborted Fetus - I use and recommend the use of Leary's Law. This law states -- take the length in inches from the crown of the head to the rump, multiply this by 2 and take the square root. The resultant figure is the age of the fetus in months. For example, if crown-rump length is 8 inches, then multiplied by 2 equals 16, the square root of 16 is 4. So the age is 4 months. --David Byers, Galax, VA.

Drug Storage, Labeling and Milk Inspectors - We are POSTING in the milkhouse the drug labeling and storage regulations that our inspectors are using (use colored paper and put in clear waterproof sleeve). This has been very helpful in reminding vets and dairymen to keep everything "up to snuff" when leaving new drugs and checking on drugs already at the dairy. --Nicollet-New Ulm Veterinary Clinic-Minnesota.

My Tip is a Phone Number -- 1-800-255-5127 - This is FARM PLAN - a charge card for producers and ag-related business. Cash flow stimulation is the result.

You submit all your charge accounts, whose credit applications have been approved, and they send you a check immediately. Service charges range from 3 1/8 percent to 3 3/4 percent, depending on the type of transaction. Any delinquent accounts are Farm Plan's problem. They bill the client, and bills can be planned to arrive around milk check time.

Everyone in our area enjoys the plan. Several other companies (equipment dealers, etc.) are also on Farm Plan; so our clients can pay one statement monthly. This can also be used on your small animal clients if your is a mixed practice. --John Simms, Shippensburg.

EFFECT OF VACCINATION WITH A PENTAVALENT LEPTOSPIRAL VACCINE

Infection with *L. interrogans* serovar *hardjo* is the most common cause of bovine leptospirosis in the US. Besides abortions, stillbirths, weak calves, and agalactia, infected cattle may shed the organisms for months to years and serve as reservoirs of infection for other animals and humans. Two types of serovar *hardjo* have been identified. Type hardjoprajitno is the reference strain, was first isolated in Europe, and is used to prepare the hardjo component of leptospiral vaccines (including all US vaccines). Type hardjo-bovis is isolated all over the world and is the only type found in the United States. The purpose of this study was to evaluate the hardjoprajitno component of USDA-licensed pentavalent vaccines in preventing infection of vaccinated cattle and in preventing fetal infection in cattle challenged with hardjo-bovis.

Seven seronegative cows vaccinated once, 8 cows vaccinated twice, and 5 controls were challenged exposed during the fourth to the sixth month of pregnancy (approx. 5-6 months post vaccination) with hardjo-bovis by conjunctival instillation. Blood and urine samples were collected weekly and cows were euthanatized 3-6 weeks following parturition. Calves (and stillbirths) were euthanatized and necropsied within 24 hours after birth.

All control cows and 13 of 15 vaccinated cows became infected and shed leptospores in their urine. Leptospores were detected by culture and fluorescent antibody (FA). Isolates were shown to be hardjo-bovis. All vaccinated cows had titers less than or equal to 12.5 at the time of challenge. Only 3 of 7 single vaccinated and 4 of 8 double vaccinated cows had agglutinating antibodies at a titer greater than or equal to 40 at least once after challenge. Four stillborn and 3 week calves were delivered. Five apparently healthy calves had gross lesions of the liver and kidneys. Large numbers of leptospores were demonstrated in the kidneys of 17 of 19 calves by histopathology and FA staining. Agglutinating antibodies were not found in their precolostral serum. Moderate to severe interstitial nephritis was present in the kidneys of all cows at necropsy. Low numbers of leptospiras were identified in kidneys of 4 of 5 controls, 6 of 7 single vaccinates, and 6 of 8 double vaccinates.

Recognizing that their challenge was rigorous, the authors concluded that 1) cultural procedures failed to identify 12 of 13 vaccinated cattle infected and shedding leptospores in their urine (FA identified), 2) apparently healthy but infected calves may have large numbers of organisms in their kidneys and may exhibit immune tolerance, 3) nephritis in the cows suggests that nephritis in the cows suggests that nephritis may be the result of host immune response, 4) serovar hardjo may be a weak immunogen when combined in a pentavalent vaccine (low serum titers following vaccination), and 5) vaccines formulated with serovar hardjoprajitno may not provide optimal protection of cattle exposed to hardjo-bovis. --Bolin C. A., et al. *Am J Vet Res.* 1989:50161-165. As reported in Ohio Veterinary Newsleter, Winter 1989.

CHOPPED NEWSPAPER BEDDING

Recycled chopped newspaper can be used as an acceptable alternative bedding for lactating dairy cows. However, there appears to be little advantage of the use of recycled newspaper in reducing exposure of teat ends to mastitis pathogens compared to use of other organic materials.

An experiment was conducted at the Ohio Agricultural Research and Development Center dairy to investigate the use of recycled chopped newspaper as tie-stall bedding for lactating dairy cows. Bacterial counts associated with recycled chopped newspaper, hard wood shavings, and pelleted corn cob bedding materials were compared in a nine week trial. Newspaper was chopped into 2 x 4 inch sections using a straw chopper.

Bacterial counts in pelleted corn cob and chopped newspaper bedding were similar. On the other hand *Klebsiella* species and staphylococcal counts in chopped newspaper were greater than in wood shavings. Coliform and streptococcal counts did not differ between chopped newspaper and wood shavings bedding.

The number of bacteria on teat skin did increase as bacterial counts in bedding increased. Transfer of bacteria from bedding to teat skin may have been associated with bedding particle size and adherence. Corn cob pellets tended to crumble into a fine granular material and adhere to teats more readily than the larger particle sizes of chopped newspaper and wood shavings. This difference in adherence of bedding to teats was evident by the fact that bacterial counts in chopped newspaper and pelleted corn cob bedding did not differ, but the number of mastitis pathogens on teat skin were less for cows bedded on chopped newspaper than those bedded on pelleted corn cobs. Teats of cows bedded on chopped newspaper and wood shavings had similar coliform counts. Streptococcal and staphylococcal populations on teats of cows bedded on chopped newspaper were greater than those for cows bedded on wood shavings. --J.S. Hogan, PhD, Department of Dairy Science, The Ohio State University-OARDC, Wooster, Ohio. As reported in Ohio Veterinary Newsletter, Winter 1989. The Ohio State University.

SULFAMETHAZINE USE ON DAIRIES

The use of sulfamethazine has been restricted for dairy cattle because of milk residue problems. But, there has also been some mis-information about the restrictions on its use. It can still be stored on the dairy and used in certain situations.

The current label on sulfamethazine products should read "Do not use on female dairy cattle 20 months of age or older". This still allows use (because there is no risk of milk residues) for:

1. Dairy stock under 20 months of age
2. Male dairy animals of any age

(Proper withdrawal times prior to slaughter must still be observed and the producer is responsible for any tissue residues).

It may also be used under the direction of a veterinarian as an extra label use drug. The veterinarian can prescribe it for animals over 20 months of age and even lactating cows. But he and the dairyman become responsible and liable for any milk or meat residues and they must follow the established guidelines for use in his manner. --CVB. Veterinary Newsletter, Utah State University Extension, July 1990. Logan, Utah.

NONCONTAGIOUS TEAT LESIONS

Chapped teats - Chapped skin is probably the most common teat lesion observed during cold weather. In determining cause and subsequent remedial action, milking machine factors, milking technique, teat dips, bedding, other environmental conditions, and the interaction of all of the above factors (contagious and noncontagious) must be considered. Work at Washington State University indicated that chapped teats and teat orifices were more easily colonized by *Staph aureus*, which eventually led to an increase in *S. aureus* mastitis (Fox and Nagy, Abst. 27, Proc NMC, 1990). Teat movement within the liner barrel has been reported to result in "garter marks" on the teat. These may lead to the formation of longitudinal chaps that run transverse to the long axis of the test (P. G. Francis, Mastitis Control and Herd Management, Technical Bulletin 4, NIRD, Reading, England, 1981).

Milking machines - As with many other aspects of milking machines, the exact relationship of machine function to damage of teats has not been completely determined. Typically, 90% of the milk is removed within 50% of the total time the milker unit is attached to the cow. Logically, one might expect that the greater the duration of milking time the greater the risk for teat damage. Experimentally it was demonstrated that 5 minutes of overmilking for 16 milkings resulted in less teat trauma than 20 minutes of overmilking for 4 milkings (Peterson, AJRV, 1964;25:1002-9).

Teat orifice abnormalities - Producers are often concerned about everted teat ends or teat-end erosions. In many cases these abnormalities are neither eversions nor erosions, but hyperkeratosis. British investigators, studying the same cows at 10-week intervals over an 18-month period, found that 22% of teats had orifice abnormalities. They reported that abnormalities began as a white ring extending about 2 mm from the orifice. In this study, as ring formation progressed, radial cracking occurred, and in some severe cases, hypertrophy progressed to scab formation, actual erosion, and secondary infection. Hyperkeratosis was more prevalent during the first 120 days of lactation, after which there was a tendency for regression. These workers concluded that some hyperkeratosis should be expected in high producing machine-milked cows. Bacteriologic data were not reported (Francis, Mastitis Control and Herd Management).

Minnesota researchers (Sieber and Farnsworth, JAVMA 1981;178:1263-7) reported a 22-herd cross-sectional study, as opposed to the British longitudinal study, may be thought of as a "snapshot" or one look in time). They classified teat ends as: (1) normal, (2) smooth chronic rings, (3) rough chronic rings, and (4) acute teat-orifice lesions. Only those teats in the acute category (orifice with ulcerative or hemorrhagic appearance with or without scab formation) had a concurrent increased incidence of intramammary infection.

Few producers or practitioners would disagree with the desirability of maintaining as healthy a teat end and teat orifice as possible. Of particular interest in the Minnesota study was the finding of markedly different rates of teat-end abnormalities among herds. For example, in one herd less than 5% of teats had chronic rough lesions, whereas almost 50% of teats in another herd had similar lesions. Questions remain regarding both the cause and importance of teat-end hyperkeratosis. --As reported in Herd Health Memo, October 1990, No. 4, University of Kentucky Extension. Lexington, Kentucky.

PHOSPHORUS IS KEY TO GRASS TETANY

University of Missouri researchers Dale Blevins and Tim Reinbott say they have solved the grass tetany puzzle.

For years, scientists have known the disease was linked to a shortage of magnesium, a trace element normally found in the soil and plants. However, past efforts by agronomists to understand how this magnesium deficiency occurs and how to prevent the deficiency in fast-growing plants have always met with failure.

In laboratory and greenhouse studies, Blevins and Reinbott found that when sufficient phosphorus is applied to the soil, magnesium is taken up by the roots and moves into the leaves. Without enough phosphorus, even if there is sufficient magnesium in the soil, the critical magnesium is not absorbed into the plant.

"Too often in topdressing fertilizer, farmers will apply large amounts of nitrogen and potash," Blevins says. "That's the worst thing to do because it throws the potassium-magnesium ratio further out of balance."

Although it has not been field tested, Blevins speculates blending in phosphorus in the spring should eliminate grass tetany. He believes incorporating the phosphorus fertilizer into the soil with a knife injector will give the quickest response. --**BEEF, August 1990 as reported in Communications in Continuing Education, Hoechst-Roussel, Vol 6 #3, September 1990.**

SHEEP LICE

If a client describes his sheep as looking "ragged", losing wood and scratching, you can be fairly sure they are infested with the body louse. Keds can cause the scratching, but usually not the wool loss. With lice, a few of the sheep will usually pull out wool so they have patches on their sides that are almost bare. The lice are very difficult to see at first until you learn what to look for. You won't see many in the bare patches, but out in the wool around them. Sometimes the sheep that are just "ragged", with no bare spots, will have the most lice. This is a biting (chewing) type of louse. They are almost white to light brown, depending on their stage of development. The easiest treatment is Ectrin as a pour-on (or applied topically with a drench gun). It is 99% effective and can be used even in very cold weather, which is when you'll see the problem. Spoton and Ivomec are not effective. Sheep can also be affected with a sucking type louse down on the feet and lower legs. They congregate around the dew claws and are dark (blue-back) but very difficult to see. The Ectrin pour-on will not be effective against this louse. It requires a direct spray, or ivermectin by injection may also be effective. --**Clell V. Bagley, Extension Veterinarian, Utah State University as reported in Kentucky Herd Health Memo.**

NEW PRODUCTS AND LABEL CHANGES

Ivomec Pour-On has received clearance for marketing by FDA. Indications include "control of gastrointestinal roundworms, lungworms, cattle grubs, mites, lice and horn flies." The label claims horn fly control for up to 28 days after dosing. The withdrawal time for Ivomec Pour-On is 48 days for slaughter animals.

Ivomec-F (ivermectin and clorsulon) has received clearance for marketing by FDA. This injectable parasiticide is indicated for "the treatment and control of external and internal parasites of cattle, including adult liver flukes." The withdrawal time is 49 days for slaughter animals. --**Veterinary Newsletter No. 268, January 1991, University of Georgia, Athens GA.**

SHORT NOTES

An anti-GnRH vaccine has been tested in Australia to replace bovine spay operations. The vaccine, given SQ, produces neutralizing antibodies to GnRH. Eighty percent of vaccinated cull cows were non-pregnant after 9 months in one study.

FDA will start a more intensive milk testing program this fall. Over 250 randomly selected tanker truck samples will be taken. Additional tests will be scheduled from locations where positive samples are found. Sulfonamide safety levels in milk have been set at 10 ppb, tetracycline at 80 ppb, and chlortetracycline and oxytetracycline at 30 ppb. Levels over these will bring regulatory action against producers and, where applicable, veterinarians who are responsible for inadequate milk withdrawal procedures. Continue to counsel your dairy clients about this issue. --**Iowa State University Veterinary Medical Extension Newsletter, OCT 90 as reported in Herd Health Memo, No. 7, January 1991, University of Kentucky, Lexington.**

PRACTICE TIPS

Centre Herd Health Services - Do you drive 30,000, 40,000, 50,000 miles per year keeping cows producing to their genetic potential? Are your billable hours spent working? I have found a way to utilize your transportation time to increase billable hours. Take a technician with you one or two days a week and let them drive. The time between calls is utilized to formulate rations with a laptop computer, analyze dairy herd monitors, keep up with correspondence, and lastly, read. This has increased the productivity in my practice this past year. It is nice to be done with work when you get home instead of working on rations until the early morning hours. Also, you won't hear, "When are you going to bed? Don't stay up too late."

Another advantage of a technician on those one or two days per week is the assistance given to you at herd checks, surgeries, calf vaccination, etc. The use of technicians will increase your efficiency. --**Robert Cloninger, State College, PA. Herd Health Memo, Penn State Extension, December 1990.**

BOVINE SPONGIFORM ENCEPHALOPATHY (BSE)

If you receive questions from the media about this issue, please stick the points below in your response:

1. BSE has never been diagnosed in the U.S.
2. The U.S. banned the imports of live cattle from the U.K. in 1989.

While it is best not to volunteer information about the human health issues, please use the following points if the subject comes up:

3. The U.S. does not import any beef or beef products from the U.K.
4. There is **no** scientific evidence to date that indicates BSE is a human health concern.

PLEASE DO NOT REFER TO BSE AS "MAD COW DISEASE". We have learned from the British that this term serves as a lightning rod for the media. Refer to this disease as BSE. --**National Cattlemen's Association, Fact Sheet, July 1990.**

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