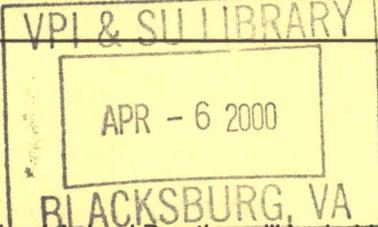




THE FOOD ANIMAL VETERINARIAN

VIRGINIA-MARYLAND REGIONAL COLLEGE OF VETERINARY MEDICINE



Fall 1997

No. 18

Dear Food Animal Practitioners:

The annual Meeting of the Virginia Academy of Food Animal Practice will be held on February 21, 1997. It will be held in conjunction with the Virginia Veterinary Medical Association Meeting at The Hyatt Richmond. This is a considerable change for the Academy and has been undertaken only after considerable thought and debate. I want you all to know a little about the genesis of this change and I would be happy to talk with any of you about it.

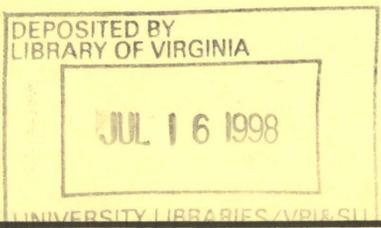
The VVMA approached the Academy last summer and asked what it would take to have the Academy join with the VVMA in its winter meeting. The response of the Academy officers was that they saw several reasons why the VVMA winter food animal meeting was not better attended. Unless these concerns were addressed, the Academy officers were unwilling to change their format. The issues were:

- Cost of registration
- Cost of lodging
- Multiple day format
- Location (not in The Valley)
- Educational program not on Saturday
- Need for VVMA membership

The bottom line is that the VVMA was willing to address as many of these issues as they could. The Academy meeting will be on Saturday and the format will be such that 7.5 to 8 hours of CE will be offered (1/2 of the yearly requirement for licensure). Academy members will not have to register for any additional portions of the VVMA meeting and, in fact, may attend the Friday social event free of charge. Academy members will not have to join the VVMA to attend. The registration fee will be \$75, about what Academy meetings have been. Additional lodging sites will be made available that are less expensive than the Hyatt. Location is the only issue they could not address for this year. But Richmond isn't so far away and Bobby Franck deserves to have one in his backyard occasionally anyway.

We're putting together a high quality educational program for the meeting. Please put it on your calendar and plan to attend on February 21.

The Virginia Quality Assured Cattle Feeder program is well into its first marketing season. Several thousand head of tagged calves have been sold. We have held a number of training sessions around the state to get veterinarians prepared to be certifiers. I have been gratified by the vet response. We are close to having 100 vets trained to be certifiers. Our figures show that 500 lb steers that were certified have brought \$4.00 per cwt. more than similar calves at special sales the same week. I hope this program will be a tool for all of you to use in marketing your services and in improving the health and value of Virginia feeder cattle. If you still have not had a chance to be trained, let me know. We will try to do another training session sometime this winter.



W. Dee Whittier, DVM
 W. Dee Whittier, DVM
 Extension Veterinarian



FALL AND WINTER ACORN POISONING

Acorn poisoning, due to chemicals called tannins, generally occurs when acorns fall off trees in the immature green stage and are over-consumed by cattle. This usually occurs in pastures where there is not much other fodder left. Sickness starts 8 to 14 days after cattle have started eating acorns. Most cattle like the taste of acorns and tend to seek them out. Eating excessive quantities can cause death. The quantity tolerated by an animal is influenced by the protein content of its diet, with higher protein intake permitting the consumption of more acorns without poisoning symptoms. Poisoning from oak tannins also can occur when cattle eat buds and young leaves of oaks (shrubs and trees) in early spring.

Cattle affected by acorn poisoning have a poor appetite, appear dull, become constipated, suffer weight loss, and look "gaunted up" or "tucked up". They also may pass blood in the manure and/or bleed from the nostrils. Profuse diarrhea may follow after the constipation. Affected animals drink large amounts of water and void excessive amounts of clear urine (urine may also contain blood). Many animals go down after 3 to 7 days of clinical signs of acorn poisoning. If these affected animals do not die, it may take as long as 2 to 3 weeks before they start to recover. Ranchers suspecting such a problem should contact a veterinarian as early as possible

Although treatment is of little value in severely affected cattle, control in other cattle that remain on "poor" oak tree pasture is accomplished by providing supplemental feed containing hydrated lime (calcium hydroxide) and protein, which are antidotes for the tannins. The following feed formulation should be mixed and cubed for breeding cattle (4 lb/head/day) and used as a meal creep feed for calves (free-choice lime limits consumption like salt). This feed formulation has given excellent results:

| | |
|------------------------------|----------------|
| Cottonseed meal | 1,040 lb (52%) |
| Dehydrated alfalfa leaf meal | 600 lb (30%) |
| Vegetable oil | 160 lb (8%) |
| Hydrated Lime | 200 lb (10%) |

Of course, lesser amounts of feed can be made up as long as the percentage of ingredients is approximately correct. Straight cottonseed meal (90%) mixed with hydrated lime (10%) can be used as supplemental feed until the other feed formulation can be obtained.

Obviously, acorn poisoning can be prevented by removing cattle from areas with oak trees when acorns have recently fallen. Try to reserve these pastures for late fall or winter grazing, when acorns have had a chance to age and become somewhat less toxic. No matter when cattle are turned onto "poor" oak tree pasture, remember that they still could be affected if they over consume acorns. However, knowing these tips on how to prevent or minimize losses from acorn poisoning should help in future years, when acorns are everywhere one looks. --**Floron C. Faries, Jr, DVM, Texas Agricultural Extension Service and College of Veterinary Medicine, Texas A&M. Herd Health Memo, June 1997, as reported in Veterinary Newsletter, The University of Georgia, September 1997.**

PREGNANCY TOXEMIA IN EWES

Unfortunately the ketone dip stick isn't a very good indication of pregnancy toxemia. Almost all ewes who are carrying twins late in pregnancy will be dumping ketones in their urine. As long as the ewe is alert and eating, chances are she is not getting toxemia. Many ewes that are pregnant with more than two lambs get so large that they have trouble getting around. In fact, some of them slip in the mud or on the ice and injure their pelvis, hips or even break legs, thus can't get up. These often get misdiagnosed as pregnancy ketosis. However, a ewe with pregnancy toxemia or ketosis will be depressed, show little enthusiasm to eat, is often blind, will wobble in the rear end for a day or so before going down. I have even found that some of the ewes brought into our clinic for pregnancy toxemia are actually acidotic from too much grain. The best test for diagnosis of pregnancy toxemia (or ketosis) is a blood glucose which will be low--under 50 mg/dl. --**Marie S. Bulgin, DVM, MBA, University of Idaho, Caine Veterinary Teaching Center, in Veterinary Newsletter-Sheep; Utah State University Extension. MAR 97, as reported in Herd Health Memo, University of Kentucky, Lexington, KY, June 1997.**

IONOPHORES BENEFICIAL IN CATTLE DIETS

Research results indicate that ionophores approved for improving feed efficiency increased both gain and feed efficiency when diets contained less than 70% grain. Ionophores also improved efficiency and reduced days to puberty when fed in heifer diets. Results indicate that ionophores approved for improving feed efficiency increased both gain and feed efficiency when diets contained less than 70% grain. Monensin and lasalocid improved gain 9-12% and feed efficiency 7-16% of growing cattle in confinement. There were differences in dose response according to ionophore. Lasalocid is most effective at >200 mg per head per day, while monensin appears to be effective at >100 mg per head per day. Both ionophores and bambarmycins were equally effective in improving rate of gain, 17-22% for cattle in pasture. Based on these results, feed cost of gain may be reduced \$2.41-5.42/cwt. when confined cattle are fed either lasalocid or monensin and diet cost is \$70 per ton DM. Improvements in rate of gain result in reduced nonfeed costs by shortening feeding periods 7-11% in confinement or 1518% in pasture.

Subsequent data analysis demonstrated that cattle affected by liver abscesses, whether they received ionophore or not, had 5% lower feed efficiencies than those not affected by abscesses. Daily gains of affected cattle were reduced 4%. Thus, under most dietary and management conditions, ionophore use may substitute for up to 5 percentage points dietary grain concentration. This translates to approximate improvements in dietary net energy (gain) of 2-3 Mcal/cwt.

Ionophore use in replacement heifer diets consistently improved efficiency, although effects on gain were more evident with low quality diets. However, ionophore use consistently reduced days to reach puberty and had no impact on first breeding reproductive performance. Based on these results, ionophores may be used in replacement heifer diets to reduce growing period length and costs. This should result in lower heifer raising costs and improved productivity. --**Feedstuffs**, March 17, 1997 as reported in **Herd Health Memo**, July 1997, University of Kentucky, Lexington, KY.

FECAL SHEDDING OF SALMONELLA IN A BEEF HERD

A clinical outbreak of Salmonella occurred on a north central Nebraska ranch during the summer of 1996. The herd consisted of ~120 adult cows and bulls, 27 yearlings and 100 calves. Nine cows and one yearling steer died during the summer. Salmonella serogroup B (Salmonella typhimurium or Salmonella typhimurium var. copenhagen) was isolated from the various tissues of the two animals that were necropsied. Positive Salmonella cultures were also present in the feces from turkeys and a coyote on the ranch. Water samples from two ponds were positive on initial testing. Seventy days from the first clinical case, 48.3% (69/143) of the animals tested were shedding Salmonella in their feces. Three months from the initial outbreak, 51.7% (62/120) were shedders. At 4* months, the shedding of Salmonella decreased to 7.1% (9/126). One cow remained positive for 9 months after initial exposure.

The animals were on pasture, and no abnormal stresses were known to occur during the time of the outbreak. No calves died or showed clinical signs of salmonellosis; however, the percentage of calves shedding Salmonella in their feces did not differ significantly from the number of adults shedding.

This case illustrates that the incidence of Salmonella fecal shedding following a Salmonella outbreak can continue for several months in a large percentage of the herd.

--R.R. Snell, Burwell Vet. Hospital; J.E. Keen and S. Bradley, Univ. of Nebr.- Meat Animal Research Center; J.L. Johnson, Univ. of Nebr., West Central R&E Center. In **Nebraska Department of Veterinary and Biomedical Sciences Extension Newsletter** Volume 26, Number 11, November 1997.

THOUGHT FOR THE MONTH

Things work out best for those who make the best of the way things work out. --**Jack Odle**

PSEUDOMONAS MASTITIS HARD TO CURE

Several *Pseudomonas aeruginosa* mastitis outbreaks have been reported to the Veterinary Extension office over the past year. If you've ever experienced wide swings in bulk tank bacteria and/or somatic cell counts as well as non-responsive, recurring cases of clinical mastitis, you too may have experienced problems with *Pseudomonas*. Commonly, multiple cows are affected simultaneously. Cows can have high fevers and swollen quarters, or they may just be slightly off feed and have abnormal milk. Subclinical cases of *Pseudomonas* mastitis have been reported along with explosive herd outbreaks of clinical mastitis.

These organisms can be found in soil, animal feces, barnyards and water supplies. Trouble begins when poorly cleaned milking equipment or water supply lines become contaminated. *Pseudomonas* can colonize inside drop hoses even when iodine or other disinfectants are added to the water. Less than recommended concentrations of iodine may cause the organisms to produce a slime layer for protection. Low levels of *Pseudomonas* can survive in the farm water supply. Once the organism reaches the pre-heater, it finds favorable conditions for growth and can seed the entire water system.

Contaminated antibiotic preparations intended for intramammary infusion have also been implicated in outbreaks of *Pseudomonas* mastitis. Always use sterile procedures to administer antibiotics. Scrub the teat end thoroughly with an alcohol pad prior to infusion. Make certain the tip of the antibiotic tube does not touch anything but the cow's teat canal.

If a *Pseudomonas* problem is suspected, management of herd infections must include efforts to identify the source. Cultures are often necessary to determine if *Pseudomonas* is the culprit. Cows with clinical mastitis, chronic non-responsive mastitis and/or high somatic cell counts should be sampled. Water from parlor drop-hoses as well as teat cups and teat dippers should be sampled. Do not sample drop hoses immediately after milking. Allow the water in the hoses to settle and stand a while before culturing. Treating cows with clinical mastitis due to *Pseudomonas* has been unrewarding. Cows will appear to clear up, only to relapse or become reinfected a short time later. Some infections will resolve spontaneously, while many infected cows will eventually be culled.

Several steps are required to cleanse water systems contaminated or colonized with *Pseudomonas*. If a well is the water source for the parlor and milking facilities, it can be chlorinated. Flushing the entire system with water at or above 160°F will help decontaminate colonized water lines. Periodically flushing parlor drop hoses with 160°F water will help prevent the organism from becoming reestablished. --**Dick Wallace, Dairy Extension Veterinarian, University of Illinois, in U of IL Quarterly Milk Issues, SPR/SUM 97, as reported in Herd Health Memo, University of Kentucky, Lexington, KY, September 1997.**

ADDITION OF POTASSIUM OR SODIUM, BUT NOT CALCIUM, TO PREPARTUM RATIONS ON MILK FEVER IN DAIRY COWS

The effects of prepartum dietary concentrations of K, Na, and Ca on the incidence of preparturient hypocalcemia or milk fever was determined for older Jersey cows. Cows were fed one of six diets differing in K and Ca contents. In addition, the effect of dietary Na was examined. Treatments were arranged in an incomplete 2 x 4 factorial design; dietary Ca and dietary strong cations were the main effects.

Dietary Ca did not significantly affect the incidence of milk fever or the degree of hypocalcemia experienced by the cows. Milk fever occurred in 2 of 20 cows that were fed the prepartum diet containing 1.1% K and 0.12% Na. Increasing dietary K to 2.1 or 3.1% increased the incidence of milk fever to 10 of 20 cows and 11 of 23 cows, respectively. Increasing dietary Na to 1.3% in the diet containing 1.5% Ca induced milk fever in 5 of 8 cows. Addition of strong cations to the prepartum diet increased blood and urine pH and reduced plasma hydroxyproline concentrations, suggesting that bone resorption of Ca is inhibited in cows fed high K or high Na diets as a result of metabolic alkalosis.

These data demonstrated that dietary Ca concentration is not a major risk factor for milk fever and that dietary strong cations, especially K, induce metabolic alkalosis in the prepartum dairy cow, which reduces the ability of the cow to maintain Ca homeostasis. These data demonstrate that the most constructive step that can be taken to prevent milk fever is to reduce the dietary K content of the prepartum diet. --**Journal of Dairy Science, Vol. 80, No. 1, January 1997, as reported in Dairy Veterinary Newsletter, Utah State University, Logan, UT.**

EFFECT OF INTERVAL FROM MELENGESTROL ACETATE TO PROSTAGLANDIN F_{2α} ON TIMED AND SYNCHRONIZED PREGNANCY RATES OF BEEF HEIFERS AND COWS

The objective of this experiment was to determine the optimal interval from the last day of melengestrol acetate (MGA) feeding to prostaglandin F_{2α} treatment on pregnancy rates of beef heifers and cows. All females were fed MGA daily for 14 d and then administered PGF_{2α} 13, 15, 17 d (Groups 1, 2, and 3, respectively) after that last day of MGA feeding. Females not in estrus the first 52 h after PGF_{2α} treatment were artificially inseminated 72 h after PGF_{2α} treatment. Females in estrus 0 to 52 h and 78h to 6 d after PGF_{2α} treatment were inseminated at estrus. Blood sera (collected immediately before and 3 d after PGF_{2α} treatment) were assayed for progesterone concentrations. Pregnancy was determined 44 to 47 d after the 72-h AI by rectal examination. The intervals from MGA feeding to PGF_{2α} that had the highest 72-h AI pregnancy rates were 17 d for heifers and 15 d for cows. Heifers with 17-d interval had a higher 72-h AI pregnancy rate than heifers with 13-d and 15-d intervals, and cows with a 15-d interval, had a higher 72-h AI pregnancy rate than cows with a 17-d interval. The 4-d synchronized pregnancy rates for both heifers and cows were not different among groups. Fewer cows with a 17-d interval from MGA to PGF_{2α} had corpora lutea regression after PGF_{2α} treatment than cows with 13-d and 15-d intervals. We interpret the results to indicate that the interval from MGA to PGF_{2α} treatment may influence 72-h AI pregnancy rates, that optimal intervals are 17 d for heifers and 15 d for cows, and that pregnancy rates are improved by insemination for 3 d after the 72-h AI. --D. Kesler, D. Faulkner, R Shirley, T. Dyson, F Ireland, R. Ott. **AABP Newsletter, February 1997, as reported in Veterinary Newsletter, The University of Georgia, September 1997.**

INFRARED THERMOMETER -- A HANDY TOOL

Recently, veterinarians have discovered the availability of infrared thermometers that are designed to measure surface temperatures. This type of thermometer is extremely helpful in assessing floor temperatures in farrowing and nursery facilities. Producers are better motivated to manage floor temperatures in creep areas if an objective temperature measurement is used rather than a subjective opinion. The thermometer is shaped like a gun, is pointed at the surface being measured, and the reading is instantaneous. With slatted floors, infrared thermometers will also incorporate the surface temperature of the pit fluid underneath the flooring. To avoid this, angle the gun so that it only "sees" the floor. Also, this gun is useful for measuring wall temperatures to assess insulation quality, and for measuring liquid temperatures which is especially useful in processing semen for artificial insemination. Insertion of a probe into the semen solution can be avoided which reduces the risk of contamination. The skin surface temperature of febrile pigs has been measured with an infrared thermometer but no correlation was found between the skin surface temperature and the rectal temperature. Also, the type of infrared thermometers used by ISU faculty have a fixed emissivity so these thermometers do not work well on shiny surfaces, such as bare stainless steel. The infrared thermometer used at ISU, model number E-39650-02, costs \$199 and is available from Cole-Parmer Instrument Company, 625 East Bunker Court, Vernon Hills, Illinois 60061-1844; telephone (800) 833-7400; FAX (847) 549-7676. --As reported in **Vet Med, Iowa State University, May 1997.**

FAT IN COW'S DIET HELPS CALVES KEEP WARM

About 95,000 calves die each year from cold stress. But extra fat in a cow's diet for the last 6 weeks of pregnancy could help the newborn calf tolerate the cold. Preliminary test results have shown this for the first time. Researchers added safflower with a high concentration of linoleic fatty acid to the diets of 12 cows for 53 days before calving. Eleven other cows ate a standard feed ration. For the first 5 hours after birth, calves were kept at room temperature. Then they were put in a room at 32°F for 2 1/2 hours. Calves whose mothers ate the extra fat maintained their body temperature better than did calves of cows fed the standard diet. The scientists believe the warmer calves had more brown fat, which surrounds organs such as kidneys and helps the animals generate body heat immediately after birth. Researchers are repeating the experiment and hope to determine the significance of fat-influenced body temperature differences. -**Robert Bellows, USDA-ARS Fort Keogh Livestock and Range Research Laboratory, Miles City, MT, Agricultural Research, June 1997.**

BRUCELLOSIS ERADICATION GIVEN EMERGENCY STATUS

Key leaders involved in the brucellosis eradication program decided the dragon has been dragging his tail for too long. The dragon in this case--brucellosis eradication. And its tail is the remaining infected herds. To pick up the dragon's tail and meet the Dec. 31, 1998, eradication deadline, the Southern Animal Health Association (SAHA) met with APHIS officials May 20, 1997, and developed an emergency action plan. The 15 states comprising SAHA include those with the remaining brucellosis infection. The plan reinforces the commitment of state and federal animal health officials to execute the actions required to eradicate this disease. "Everybody recommitted to do everything necessary to accomplish the goal of no infected herds," said Dr. J. Lee Alley, Alabama state veterinarian and president of the SAHA.

Meeting participants agreed on the following elements to reach and maintain this goal:

- **Rapid depopulation** of all known infected herds. Roughly 75 percent of all infected herds remain infected month after month. Depopulating these herds, or sending the entire herd to slaughter, will help eliminate the risk of transmitting the disease to other herds and also will free-up time and resources needed to actively look for remaining infection.
- **Intensify surveillance** to identify remaining infection, with the hope of finding all infection by the end of 1997. Because brucellosis can be carried by animals for years before being detected, it is important to continue looking for the disease even after herds are depopulated. Primary surveillance methods include testing at the first point of concentration, usually livestock markets; slaughter surveillance and brucellosis ring testing of milk samples. Other methods include change of ownership testing, retests of previously infected herds and communities, and identifying and testing herds not entering into normal surveillance channels.

"We can't over-emphasize the importance of surveillance," said Dr. Claude Barton, the national brucellosis program director. "It will be the most critical issue in these last 19-and-a-half months."

The plan's actions cannot be enacted without cost. However, Dr. Joan Arnoldi, deputy administrator for APHIS, Veterinary Services, said resources should not limit eradication. "We can shift resources, we can shift people, we can do whatever it takes to get this job done," she said. "But people on the ground and in the field have got to tell us what they need."

Responding to Arnoldi's assurance, state animal health officials agreed to review their respective state brucellosis programs within 30 days and determine what additional resources they will need to complete brucellosis eradication. At the same time, a review of slaughter plant surveillance will be initiated to determine its role and how to improve its cost effectiveness. In order to be sure that all infected herds have been identified, surveillance will continue after 1998. The group also agreed that enhanced and ongoing communication among involved parties will help facilitate rapid completion of the eradication program.

Time intervals in the Code of Federal Regulations (CFR) and the Uniform Methods and Rules (UM&R), traditionally used to guide the program, were established when the country had hundreds and even thousands of affected herds. Because these guidelines were set on a national average, they do not consider the disease an emergency, as does the new plan. Now, with fewer than 30 affected herds, these intervals need to be shortened, Barton said. "The name of the game is 'urgent' from here on," Barton said. "Anything that pertains to brucellosis needs to be done urgently--meaning do it now." --LCI
Brucellosis Progress Report, SPR 97.

ACTUAL BUMPER STICKERS

- Change is inevitable, except from a vending machine.
- Make it idiot-proof, and someone will make a better idiot.
- If we aren't supposed to eat animals, why are they made of meat?

--As reported in *Florida Veterinary Scene*, Vol. 6, No. 6, June 1997, University of Florida, Gainesville, FL.

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