

VIRGINIA-MARYLAND  
REGIONAL COLLEGE  
OF  
VETERINARY MEDICINE

# VIRGINIA VETERINARY NOTES



May-June, 1985

No. 15

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BLACKSBURG, VA

Kent C. Roberts, DVM  
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## PRACTITIONERS NEEDED TO ASSIST ATROPHIC RHINITIS RESEARCH

Dr. Hugo Veit and his research associates are actively involved with atrophic rhinitis research funded by USDA and the Virginia Pork Industry Commission. They would like to work with veterinarians who have clients with some herds experiencing atrophic rhinitis problems. Dr. Veit is particularly interested in obtaining nasal swabs and/or lung samples for bacteriologic evaluation. He would provide supplies and bacteriologic services for selected herds at no charge to the practitioner or producer.

The research at the Virginia-Maryland Regional College of Veterinary Medicine (VMRCVM) has shown considerable variation in the ability of strains of Bordetella bronchiseptica to cause atrophic rhinitis in neonatal pigs. Research by other investigators recently has shown considerable variation in the ability of strains of Pasteurella multocida to cause atrophic rhinitis in pigs. The strain variation of both of these species may also relate to their respective ability to cause bronchopneumonia in swine.

The VMRCVM team will determine if there are any structural, biochemical or physiological relationships between the various isolates of these two bacteria, and their particular pathogenicity in swine. To accomplish this task, a number of field isolates from swine with atrophic rhinitis and/or bronchopneumonia are needed. Veterinary practitioners could provide important assistance in this work, while also assisting their clients. The research data collected should be useful for diagnostic and herd health strategies, as well as improved vaccine production.--  
**Dr. Hugo Veit can be contacted by calling at work (703-961-7666) or at home (703-382-8640) or by writing to him at the VA-MD Regional College of Veterinary Medicine, Blacksburg, VA 24061.**

## RESEARCH LINKS SHRINK WITH SHIPPING FEVER

Research published by Texas A&M University shows a strong relationship between market-transit weight loss and subsequent incidence of bovine respiratory disease.

This could be used in evaluating buying programs and in planning feedlot treatment, the researchers say. For example, a knowledge of the percentage shrink a load of cattle experienced during marketing, combined with historical data on the shrink and incidence of BRD for comparable calves, could give the feedlot operator a basis for deciding between mass medicating or double vaccinating, versus individual diagnosis and calf removal after they have been penned.

T.H. Camp, R.A. Stermer, D.G. Stevens and J.P. Anthony conducted the study of 10 shipments over a five-year period. Feeder cattle were purchased and handled by three methods to cover a variety of marketing channels, including: (1) from farm to a simulated auction market to an order buyer's facility and then shipped 1,600 km; (2) from graded feeder calf auction to order buyer's facility and then shipped 1,600 km; and (3) from scattered auction markets to a central holding facility and then shipped 1,780 km.

Shrink was computed as the difference between the purchase weight and the weight upon arrival at the feedlot. Calves with an 11% shrink suffered from the highest (71%) incidence of BRD and a 14% death loss. Where shrink was held to 3.3%, BRD incidence was 21% and death loss was 4%.--**Feedlot Management, Jan. 1983, p. 35. Veterinary Newsletter, Utah State University, September 1984.**

## THYROID FUNCTION TESTING IN DOGS

Accurate diagnosis of primary hypothyroidism in dogs is complicated by the wide variety of cutaneous changes associated with this disorder, and the number of factors which affect circulating levels of triiodothyronine ( $T_3$ ) and thyroxine ( $T_4$ ).

Veterinarians using circulating levels of  $T_3$  and  $T_4$  to diagnose hypothyroidism should be aware that baseline levels vary within the normal range between individual dogs, undergo daily fluctuations in individual animals, and may be depressed by extra-thyroidal factors including debilitating non-thyroidal illness, prolonged stress or anorexia, and drug therapy, most notably with corticosteroids or phenobarbital.

Confirmation of a diagnosis of hypothyroidism through baseline  $T_3$  and  $T_4$  testing alone should be complemented by the recognition of historical and clinical signs strongly suggestive of the disease, the exclusion of extra-thyroidal factors which could be the cause of the clinical signs and the depression of  $T_3$  and  $T_4$  levels, levels of  $T_3$  and  $T_4$  which are below the normal range, and observation of a specific clinical response to a properly administered course of thyroid hormone over a 12 week period.

Patients with  $T_3$  and  $T_4$  levels in the low-normal range may either be subjected to a carefully monitored therapeutic trial with thyroid hormone, or undergo a TSH response test to further clarify thyroid function. The author prefers to use the TSH-response test to screen dogs by primary hypothyroidism (rather than baseline  $T_3$  and  $T_4$  levels) to avoid these difficulties in interpretation.—**John R. August, B.Vet.Med., M.S., M.R.C.V.S., Diplomate, A.C.V.I.M., VA-MD Regional College of Veterinary Medicine, Blacksburg, VA.**

## MMA IN SOWS -- A VITAMIN E-SELENIUM DEFICIENCY

The disease MMA (mastitis, metritis, and agalactia) in sows at farrowing is a serious and economically important problem to swine producers. The cause of the problem is in dispute, although it has existed for over 25 years. In recent years more emphasis has been given to the importance of the agalactia--the total or partial lack of milk production. This results in poor growth, starvation, and pigs that are susceptible to infections and toxicities. It has been reported to be the greatest and most difficult problem in pig practice. The financial losses to the U.S. swine industry are estimated to be over \$150 million annually. In previous reports of feeding experiments and field observations, it has been suggested that the disease was caused by a vitamin E-selenium (Se) deficiency.

A gestation-lactation experiment involving sows fed a practical corn-soybean meal basal diet unsupplemented and supplemented with vitamin E and selenium was conducted by Michigan State University researchers to determine the aspects of MMA in sows and pigs at farrowing and during lactation.

Their research provides additional evidence that MMA in sows is related to a vitamin E-Se deficiency. The experimental production of a disease is an important basic and fundamental contribution to obtaining additional information and the understanding of it. Additional research can now be conducted that will provide additional information that will aid in the prevention and control of an important problem in swine production.—(Gilbert R. Hollis, Extension Specialist, Swine, as printed in the MSU Report of Swine Research, 1983, and the SWINE REPORT, University of Illinois at Urbana-Champaign, No. 69, March, 1984). University of Georgia Veterinary Newsletter, March 1985.

## ALTERNATIVES TO ADULTICIDE THERAPY IN DIROFILARIASIS

Canine dirofilariasis is a difficult disease to treat. Dirofilaria immitis adults are extremely resistant to drug therapy and the only efficacious adulticide is thiacetarsamide (Caparsolate). As with most arsenical drugs, it has a relatively low therapeutic index (i.e. the toxic dose and the therapeutic dose are very close). Hepatic and renal failure following the use of this drug are far too common. This is especially true in older patients which have subclinical or clinical hepatic or renal dysfunction at the time of dirofilariasis therapy.

A routine pretreatment screen, including BUN, creatinine and SGPT, should be run. If abnormal test results are obtained the practitioner has a dilemma concerning therapy. If thiacetarsamide is given, a severe reaction or death could occur. Without therapy, dirofilariasis will eventually produce right-sided heart failure and death.

In the older patient which is not a safe candidate for thiacetarsamide, it is now possible to offer therapeutic alternatives.

Heartworms cause atherosclerosis within the pulmonary arteries by facilitating the deposition of platelets onto the damaged intima of these vessels. The platelets and macrophages release growth factors which cause the artery walls to thicken, resulting in endarteritis which causes pulmonary hypertension. The platelet growth factor release is controlled by platelet prostaglandin synthesis.

It has been demonstrated that aspirin, because of its antiprostaglandin activity, will decrease the size of vascular lesions in dirofilariasis. It not only stops the progression of arterial thickening but has been shown to allow regression of pre-existing arteriosclerotic plaques in heartworm disease.

Aspirin (5 mg SID) will stop the course of circulatory deterioration and other pathology due to dirofilariasis.

The patient can still be a source of infection for other dogs because it has circulatory microfilaria. Therefore, it should be confined indoors during mosquito season or sterilization of the adult worms should be attempted. Levamisole, 8-10 mg/kg daily for 4-5 days, may render the female D. immitis sterile without producing an adverse reaction in the patient. If this sterility is induced, the patient may be started on heartworm preventative medication. It must be remembered that both levamisole and diethylcarbamazine can exasperate the hepatic and renal dysfunction.

This therapeutic plan, if successful, will allow the patient to maintain an acceptable quality of life. Specific therapy for the hepatic and renal disease must also be instituted. It is important to stress that this plan is an alternative to thiacetarsamide therapy in the diseased older patient. If the dog is in good health aside from dirofilariasis, then the traditional therapy should be used.--  
**James C. Keith, Jr., D.V.M., Ph.D., VA-MD Regional College of Veterinary Medicine.**

### THOUGHT FOR THE MONTH

Freedom is obedience to self generated rules.

Aristotle

**REPTILIAN PRACTICE PROBLEMS**  
Anorexia/Cachexia

Loss of appetite is probably the most common presenting complaint for reptilian patients. Solving the problem must always start with a thorough history and a discussion of the animal's environment and diet. Attempt to accurately determine when the patient last ate.

Turtles and lizards should eat every day or every other day. Small snakes should eat once or twice each week while large boas and pythons can thrive on a schedule of one feeding every 4-8 weeks.

A reptile's appetite is controlled by its metabolism which in turn is under the influence of the environmental temperature. An anorexia problem can often be resolved by merely increasing the ambient temperature. The species of patient is the key to determining optimal temperature. A box turtle native to Virginia should function well at 75-85°F.

It is important to know the animal's natural diet and what is being fed. Snakes will not eat vegetables and iguanas will not eat mice. Owners should be encouraged to vary the diet frequently to keep the animal interested in its food.

If husbandry problems can be eliminated as a cause of anorexia, focus on localized or systemic illness. A thorough physical examination, including fecal, is indicated.

Whether or not the underlying cause is found, therapy for the patient may consist of one or more of the following treatments:

- 1) forced feeding
- 2) increased environmental temperature
- 3) dietary change
- 3) parenteral vitamin B complex
- 5) anabolic steroids

**Donald K. Nichols, D.V.M., National Zoological Park, Washington, D.C.**

**CHANGES IN PER CAPITA CONSUMPTION OF POULTRY, PORK, BEEF, VEAL AND LAMB  
IN THE UNITED STATES 1963 TO 1982**

	Pounds Consumed Per Capita - Retail Weight				
	Combined Chicken/ Turkey	Beef	Veal	Pork	Lamb and Mutton
1963	37.5	69.0	4.0	63.3	4.4
1982	63.7	77.3	1.6	59.0	1.5
Percent of Change from 1963 to 1982	+69.9%	+12.0%	-70.0%	-6.8%	-65.9%

## SUCCESS IS NO ACCIDENT

Most practitioners earn a comfortable living by providing competent veterinary service to the community in which they live. This service fulfills a real need recognized by the animal owning public and is met through long hours of hard work by dedicated veterinarians.

There is another important need in almost all communities that the practitioner is often well qualified to meet. That is the need for leadership in community service.

Many veterinarians have further demonstrated their commitment to service by providing this needed leadership. Governing bodies, school boards, community centers, service clubs, humane societies and youth groups are examples of organizations which regularly benefit from practitioner participation and leadership. Involvement is invariably rewarding and another good indication of the individual's interest in the community's welfare.

Take time to support worthwhile community activities in your practice area. Contribute your time and talents and see if it doesn't pay dividends.—**Kent Roberts, D.V.M., VA-ND Regional College of Veterinary Medicine.**

## TREATMENT OF EXUBERANT GRANULATION TISSUE IN HORSES

In a recent study, healing time for bilateral surgically-created granulating wounds was observed. Wounds treated by excision only or cryosurgery and then exposed to air, did not produce exuberant granulation tissue that necessitated further excision. Wound treatments exposed to air healed in an average of 12 to 15 weeks, versus healing time averages of 17 to 19 weeks for wound treatments of bandaging or plaster casting. Wounds treated with bandaging or casting also produced granulation tissue requiring excision by the 4th week, and weekly thereafter (or at cast changes), until healing was complete.

Exposing granulating wounds to air, with or without cryosurgery, inhibits granulation tissue production and promotes rapid healing. Plaster casts should be reserved for wounds that need granulation tissue to fill a defect, or have been sutured and need support or immobilization.—**From Oregon Extension Veterinary Notes, 5/84., Kansas State University Extension Notes, Nov., 1984.**

## REQUEST FOR SAMPLES: SUSPECT CASES OF EQUINE LEUKOENCEPHALOMALACIA

Dr. Bill Ley and Dr. Germille Colmano are interested in receiving samples from cases suspected of ELEM; five ml. of plasma (EDTA anticoagulant) stored and shipped frozen and small aliquots of suspect feed (.25-.5 kg) should be provided, as well as samples from normal or unaffected source for simultaneous comparison studies. Samples should be clearly marked as to identity, source, date and contact person(s). Send to:

Drs. Colmano/Ley  
V.M.R.C.V.M.  
Virginia Tech  
Blacksburg, VA 24061

Marked: Perishable Open at Once

**SUGGESTED RECOMMENDATIONS FOR THE USE OF FELINE LEUKEMIA VIRUS VACCINE  
(LEUKOCELL) AT THE UNIVERSITY OF GEORGIA**

1. The feline leukemia vaccine is an inactivated vaccine, but it has a tendency to produce allergic reactions.
2. The manufacturer recommends vaccinating kittens beginning at 9 weeks of age, the second 2-3 weeks later, and the last vaccination 2-3 months later.
3. The schedule for kittens follows: (Vaccines in parentheses indicate possible variations)

Date	
_____	6-8 weeks (FVR-C-P)
_____	9-11 weeks FVR-C-P + Leukocell (+ Feline Leukemia Test)
_____	12-15 weeks FVR-C-P + Leukocell (+ Rabies)
_____	5-6 months Leukocell + Rabies
_____	Annual boosters FVR-C-P + Leukocell (+ Rabies)
_____	Triennial boosters Rabies

4. The schedule for adult cats to receive their initial Leukocell Vaccination is:

_____	Initial visit	Leukocell + FVR-C-P	+ Feline Leukemia Test
	(Rabies if booster time)		
_____	Second Leukocell:	2-3 weeks later	
_____	Third Leukocell:	2-3 months later	
_____	Boosters Annually thereafter:	FVR-C-P	Leukocell (Rabies)
_____	Triennially	Rabies	

5. All cats with a positive Feline leukemia test on their first visit should not receive Leukocell on subsequent visits. They should be retreated in 2-3 months and only be vaccinated if they are negative.
6. All cats receiving leukocell will be given it intramuscularly at one site. They should be observed for 10 to 15 minutes after vaccination in the hospital and for 24 hours at home, inside by the owner.
7. Reactions to the leukocell vaccine have been as follows:
  - local pain (immediate): 9%
  - systemic (24 hr-listless, depressed, fever): 3.6%
  - hypersensitivity (15 min-anaphylaxis, dermal edema, vomiting, diarrhea) 0.3%

### CONTINUING EDUCATION OPPORTUNITIES

May 3, 1985	Food Animal Medicine Seminar Holiday Inn - Harrisonburg, VA
May 5, 1985	Canine Nutrition Seminar - Dr. Kallfelz Howard Johnson Midtown - Richmond, VA
June 13-15, 1985	VVMA Summer Mini-convention Bernards Landing - Smith Mountain Lake
June 16-19, 1985	Avian Medicine Conference Columbia Inn - Columbia, MD
October 11, 1985	Equine Practitioners Seminar Equine Medical Center - Leesburg, VA
October 25-26, 1985	Surgery of the GI Tract Lecture/Wet Lab - Blacksburg, VA
November 15-16, 1985	Orthopedic Surgery of the Canine Hind Limb Lecture/Wet Lab - Blacksburg, VA

For more information on these meetings, contact:  
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