

South Dakota State University
**Open PRAIRIE: Open Public Research Access Institutional
Repository and Information Exchange**

Animal Health MATTERS Newsletter

Veterinary and Biomedical Sciences

6-15-2006

Animal Health MATTERS

David H. Zeman
South Dakota State University

Follow this and additional works at: http://openprairie.sdstate.edu/vbs_news



Part of the [Veterinary Medicine Commons](#)

Recommended Citation

Zeman, David H., "Animal Health MATTERS" (2006). *Animal Health MATTERS Newsletter*. Paper 6.
http://openprairie.sdstate.edu/vbs_news/6

This Newsletter is brought to you for free and open access by the Veterinary and Biomedical Sciences at Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. It has been accepted for inclusion in Animal Health MATTERS Newsletter by an authorized administrator of Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. For more information, please contact michael.biondo@sdstate.edu.



Animal Health MATTERS



Vol. 9, Issue 2

June 2006

Head/Director's Message

David H. Zeman, DVM, PhD
Director, ADRDL

Associate Director Named and Quality Moves Forward at the ADRDL

I am pleased to announce that Dr. Tanya Graham has been named the *Associate Director* of the SD Animal Disease Research and Diagnostic Laboratory. Dr. Graham is an Associate Professor and has been a diagnostic veterinary pathologist with the laboratory since 2000. She is a Diplomate of the American College of Veterinary Pathologists. Tanya brings broad experience, unique insight and organizational skills to the position. Tanya will work on special projects on behalf of the lab. Currently she is heavily involved with Avian Influenza preparedness and Emergency Management preparedness efforts. Tanya lives in rural Brookings County with her husband, son and a large number of spoiled pets. Thank you Tanya for serving the ADRDL in this position!

In this issue you will find an article that describes in some detail the transitions in the Quality System of the ADRDL. All AAVLD accredited labs have been involved with a multi-year journey to transform their quality systems to match the new AAVLD accreditation standard. This standard meets international expectations as it is based upon the OIE guidelines for diagnostic testing. This transition is nearly complete for the ADRDL thanks to the hard efforts of all ADRDL diagnosticians and section leaders, under the guidance of our able Quality Manager, Rajesh Parmar. I hope you enjoy learning more about quality system management as you read his article. The ADRDL is dedicated to providing timely, reliable and quality test results for our clients. As always, it is a pleasure to serve.

Diagnostic News - SDSU ADRDL

Reminder: Changing Your Report Generator Password

The summer months are frequently the time of year in which veterinarians and other clinic personnel "move on to other opportunities." Sometimes, clinic employees that have left the practice are people who have had access to clinic laboratory results through the Vadds Report Generator. As a means of protecting sometimes sensitive information, clinic owners should consider changing their Report Generator password whenever significant changes in the makeup of their staff have occurred.

Getting your clinic's password changed is simple. Just contact Rita Miller or Jon Greseth at the ADRDL at (605) 688-5171 and they will fax you a password change form that you can fill out and fax back. Currently, the only person authorized to change passwords is the person who signed the original web access request form. As always, please contact us if you have any questions or suggestions for the Report Generator feature offered by the SDSU ADRDL.

ADRDL Quality System

Rajesh Parmar, Quality System Manager

ADRDL maintains a Quality System compliant to the American Association of Veterinary Laboratory Diagnosticians (AAVLD) standards. The AAVLD accreditation program is based on the OIE guidelines, and thus meets international trade expectations. The accreditation process helps us demonstrate and prove our abilities to provide quality diagnostic services to the animal owners of South Dakota and surrounding areas.

Our quality system has a simple rule.

**"SAY WHAT YOU DO.
DO WHAT YOU SAY.
& PROVE IT".**

Through this rule, we strive to make sure that the quality system policies and procedures established as per AAVLD standards are followed throughout from the time we receive samples to reporting results to the clients as fast as we can.

Animal Health Matters

The quality system policies and procedures followed at the ADRDL are briefly summarized as follows.

1. Employee integrity and confidentiality policy: It describes work ethics and confidentiality expectations from the employees in order to provide quality service to our clients.
2. Client confidentiality: This policy is intended to keep our client information confidential.
3. Contract review: This policy is designed to establish a service contract with our clients in such a way that we get appropriate information regarding the specimens being submitted and fulfill the diagnostic request in an orderly manner.
4. Outsourcing policy: This policy directs the employees as to where to refer specimens in case ADRDL is unable to meet the client request. ADRDL selects external laboratories in such a way so as not to compromise on the quality of the diagnostic service.
5. Accommodation and Environmental conditions: This policy provides guidelines to make sure that proper conditions are maintained during diagnostic work in order to provide reliable results to our clients.
6. Equipment maintenance and calibration: This policy is intended to keep equipment used in the diagnostic work well maintained and appropriately calibrated to ensure accuracy of testing.
7. Document Control: This procedure is designed to make sure that the employees are using correct and current protocols for diagnostic testing and related activities at all times.
8. Personnel Training: This procedure helps the ADRDL ensure that the diagnostic testing and related activities are performed by competent employees only.
9. Records management: The purpose of this procedure is to ensure that the information pertaining to a diagnostic case is captured in an orderly manner and is easily retrievable and safe for a specific period of time. ADRDL policy requires maintaining diagnostic records at least for 7 years.
10. Purchasing supplies: This procedure provides guidelines to procure materials needed for testing and related work from manufacturers / suppliers known for high quality standards.
11. Corrective / Preventive action policies: Per this procedure, the ADRDL is required to notify the clients of any non-conforming testing, if identified, and take necessary actions to prevent reoccurrences of such incidents.
12. Specimen submission: This procedure provides guidelines to help clients submit appropriate specimens through proper shipment and at appropriate times for efficient diagnostic service.
13. Test Method validation: This procedure is designed to provide guidelines to validate a diagnostic test before it is made available to the clients.
14. Internal Audit: This procedure is intended to check at regular intervals how closely the ADRDL quality system policies and procedures are being implemented in routine diagnostic work and discover and rectify any potential non-conformances.
15. Management Review: This procedure is designed to review overall effectiveness of the ADRDL quality system / client feed backs / audit findings and keep the system evolving.

We believe that “Quality is a journey and not a destination”. The above mentioned policies and procedures not only help us move forward in this journey but also present *opportunities for improvements*.

Holiday hours:

Tuesday, July 4 -- Independence Day
Monday, September 4 – Labor Day
Monday, October 9 – Native American Day

Extension News - SDSU ADRDL

Survey of Anthrax-affected Producers: Affected and Non-affected Pastures Summer 2005

Russ Daly, DVM, Extension Veterinarian, South Dakota State University

In December, 2005, questionnaires were mailed to producers identified by the SD Animal Industry Board as having lost animals due to confirmed anthrax infection during the summer of 2005.

Producers were asked to provide information about pastures on which affected cattle were found, along with information about pastures they ran cattle on that were not affected by anthrax, in an attempt to differentiate factors between anthrax-affected pastures and non-anthrax affected pastures.

Information that was requested about pastures and animals placed on pastures included:

- Location (county, township, section)
- Dates, numbers, and types of animals placed on and removed from pastures
- Presence of standing water
- Water sources and permanent waterways

- Excavation
- Mineral supplementation and supplemental feed
- Fly control practices
- Death losses
- Dates of vaccinations and treatments
- Previous year's placements on pasture and death losses

Information was obtained from a group of 15 anthrax-affected and 24 non-affected pastures from 14 producers who experienced anthrax losses during the summer of 2005.

Producers most frequently listed their local veterinarians as sources of information concerning anthrax. 64% of producers listed their vet as an information source. Other sources of information included:

Neighbors/fellow producers	43%
Newspaper articles	29%
SD Animal Industry Board	21%
SDSU Specialists	14%
Radio reports	14%
TV News reports	14%

Pasture Information

Of the information gathered, the pasture characteristic that was most significantly different from affected to non-affected pastures was the presence of standing water on the pasture on the date the cattle were placed on the pasture. 50% of the affected pastures reported standing water on the date of placement vs. 18% of the non-affected pastures (p -value = .108). The percentage of pastures reporting standing water on the date the cattle were removed dropped to 14% and 9% of affected and non-affected pastures, respectively.

This tendency would reinforce the hypothesis that flooding of pastures and the subsequent receding of the water may result in disruption of spores in pasture soil, making them more available to grazing animals.

None of the following pasture characteristics approached significant differences when comparing anthrax-affected and non-affected pastures: Acreage of pasture, date of placement or removal on pasture, presence of standing water on the date of removal from pasture, sources of drinking water, presence of permanent bodies of water (creeks, rivers, or lakes), or excavation on pastures.

Cattle management practices

The only one of the management practices that approached significance on anthrax-affected pastures vs. non-affected pastures was the feeding of concentrate ("cake") on pasture, 21% of affected pastures vs. 0% of non-affected pastures (p value = .110). However, respondents were simply asked whether animals received the feed or not; dates of feeding were not specified. Feeding practices, therefore, could have very well not commenced until after anthrax affected the cattle. The author is not aware of previous reports that implicate specific feeds or feeding practices in the occurrence of anthrax.

None of the following management characteristics approached significant differences when comparing affected with non-affected pastures: mineral supplementation; feeding

of grass or alfalfa hay, lick tabs, or grain; external parasite control; numbers of animals placed on pastures; pair density per acre.

Temporal relationship between death loss and vaccinations and treatments

A small subsample (13 herds) with complete death loss, vaccination, and treatment records was analyzed for the relationship between the dates of cattle death losses and the dates of interventions (vaccinations and treatments). Of 107 recorded deaths, 28 deaths (26%) occurred prior to any interventions. 79 deaths (74%) occurred from 8/12 herds in the days following the first dose of anthrax vaccine being administered. This number includes 54 animals lost in one herd that vaccinated twice but did not administer antibiotic. In South Dakota the common practice for producers who have anthrax confirmed as a cause of death is to immediately vaccinate animals for anthrax. As a result, it is not unusual to expect animals possibly still incubating the disease to succumb to anthrax shortly after primary vaccination. An interesting finding here, however, is that animals that died following the first dose of anthrax vaccine died an average of 6.9 cow-days (95% CI = 9.6-1.5 cow-days) after primary vaccination. This is a much longer interval than one would expect if most animals that died from anthrax died in spite of the primary vaccination due to prior incubation of the disease (currently thought to be of 1-2 days duration).

Treatment and booster vaccines seemed to be effective at preventing further losses from anthrax. Only 13 of the 107 deaths (12.1%, 3 herds of 8 that treated) occurred after antibiotic treatment, and only 2 out of the 107 (1.9%) (2/10 herds that gave boosters) deaths occurred following the booster dose. Deaths following treatment occurred an average of 11.6 cow-days following treatment. Of the eight herds that treated with antibiotics (all used long-acting tetracyclines), 4 gave antibiotics concurrently with the first dose of vaccine. Two of those herds lost animals following the antibiotic treatment: 4/10 (with an average of 5 cow-days later) and 4/5 (avg. 21.5 cow-days later) of the total death losses reported in those two herds. The other four herds did not give antibiotics concurrently. Antibiotics were given 1, 2, 3 and 6 days following primary vaccination in those herds, respectively. One out of those 4 herds (treated three days following primary vaccination) experienced losses following the treatment, 5 out of 11 total losses, an average of 9 cow-days later.

Several qualifiers need to be stated when considering the above information. The herds above represent a very small sample from which to make inferences. Misclassification bias may be present as well in this data. Producers listed death losses as due to anthrax when in fact, laboratory confirmation was not obtained in most of these cases. While sudden deaths on previously affected pastures can probably be classified as anthrax deaths, one cannot rule out the presence of other causes of death in these animals. Recall bias when remembering dates and numbers of animal deaths is also a possible source of bias in this data.

Anthrax Submissions: Sampling Guidelines

1. Preferred specimen is blood from the suspect animal. **Portions of ear are not suitable samples.**
 - Use a 12 cc syringe with 16 or 18 gauge 1 ½ inch needle attached.
 - Obtain 5-10 cc's blood from jugular vein.
 - If the jugular vein is difficult to find due to carcass swelling, try the tail vein.
2. Transfer the blood sample to a sterile blood tube aseptically. Only one tube per animal is necessary.
 - Do not fill tube more than half-full.
 - Stopper tightly.
 - Label tube clearly with animal ID.
3. Place blood tube in whirl-pak bag with absorbent material. Avoid soiling the outside of the package with blood.
4. Bag again with a second whirl-pak bag.
 - Write "Anthrax Suspect" on the outer bag.
5. Pack in an insulated container with enough ice packs to maintain refrigeration until the specimens reach the laboratory.
 - Do not place ice directly on tubes (to avoid freezing). Separate ice packs from specimen with crumpled newspaper.
6. If sample is expected to arrive at lab after regular hours, notify the lab at 605-688-5171. After hours contact information is available at this number.

Conclusion

Of interest is the finding that pastures affected by anthrax tended to be more likely to harbor standing water when animals were placed on pasture may be the basis for recommending anthrax vaccination in those herds placed on such pastures. More epidemiologic data and study would further confirm this finding.

Treatment of animals with antibiotic seemed to prevent further losses from anthrax within these affected herds, as did administration of the booster dose of anthrax vaccine. However, the effect of the booster vaccine is confounded in many cases by antibiotic treatment and the effect of time itself: booster doses by definition are given later (2-4 weeks is recommended) following primary vaccination, a timing that likely coincides with decreased risk of anthrax later on in the pasture season.

Attempts to place statistical significance on the results of this survey are made difficult by the small number of responses obtained. A comprehensive interview of each producer affected (as is being undertaken in North Dakota) instead of the mail survey used in this report, would yield more results with which to make stronger inferences about factors affecting the expression of anthrax mortality on individual pastures.

Further research could be applied to affected and non-affected pastures in the areas of climate (temperature, humidity, precipitation) and soil types.

"Pieces and Parts"

- **Thaler is new Animal & Range Sciences head** -- Longtime SDSU Extension Swine Specialist Bob Thaler has been named head of South Dakota State University's Department of Animal and Range Sciences. Thaler, a professor in the department, has been serving as interim department head since July 2005 when former department head Don Boggs went to Kansas State University to serve as Director of Academic Programs.

Thaler grew up on a diversified family farm near Wagner, S.D. He earned his bachelor's degree in animal science in 1982 and his master's in swine nutrition in 1984, both from SDSU. He earned his Ph.D. in swine nutrition/immunology from Kansas State University in 1988. Thaler served as an Extension assistant at Kansas State University before coming to SDSU as Extension swine specialist in November 1988. In 1996, he received a partial teaching appointment as well.

His many research-related publications focus especially on dietary management in swine, but he's also written about topics such as dust control in swine facilities, and the effectiveness of swine management training techniques. Thaler and his wife, Karen, have three children, Allyse, Sarah, and Noah.
- **Ullerich is new Extension equine specialist** -- Mark Ullerich is the new equine specialist for the South Dakota State University Cooperative Extension Service. Ullerich, who joined SDSU in 2004 as a range Extension associate, earned a Bachelor of Science degree from South Dakota State University and a Master of Science degree from the University of Nebraska-Lincoln, both in animal science.

His duties include teaching equine management and production classes for the equine minor option at SDSU. He's also responsible for developing equine Extension activities across South Dakota. He can be reached at (605) 688-5412, or by e-mail at mark.ullerich@sdstate.edu.
- **Loe is new SDSU Extension beef feedlot specialist** -- Erik Loe is the new Extension beef feedlot specialist for the South Dakota State University Cooperative Extension Service. Loe holds bachelor's and a master's degrees in animal sciences from North Dakota State University, and a doctoral degree in animal sciences and industry from Kansas State University. He was manager of the Kansas State University Beef Cattle Research Center for three years while working on his doctorate.

Loe's Extension and research efforts focus on feedlot cattle nutrition and management. Among his areas of emphasis are the effect of diet alterations on growth of cattle and carcass and meat quality. He also studies the effects of feedlot facilities on performance of feedlot cattle. Loe's teaching responsibilities will include feedlot operations and management. He can be reached at (605) 688-5460, or by e-mail at Erik.Loe@sdstate.edu.

- **Pork producers announce "PQA Plus"**
Announcement of a new certification program, Pork Quality Assurance Plus (PQA Plus), was made at the World Pork Expo in Des Moines, Iowa. Funded by the Pork Checkoff, the program is the result of more than a year of work by pork producers, packers/processors, restaurants and food retailers. In March 2005, representatives from all of these segments met to understand the needs and challenges of each segment of the pork chain.

Producers and the industry's customers eventually arrived at a solution that incorporates an animal well-being component, mainly the Pork Checkoff's Swine Welfare Assurance Program (SWAP), into the Pork Quality Assurance (PQA) certification program. The industry's solution is a continuous improvement system focused on producer education and premises assessment.

The program will be launched on July 1, 2007 and will have a three-year implementation period. Producers interested in testing the program and sharing their input and experiences are invited to do so by calling the Pork Checkoff Service Center at (800) 456- PORK.

Nitrates in Feedstuffs: Sampling Considerations

Russ Daly, DVM, Extension Veterinarian, South Dakota State University

Dry conditions in many parts of South Dakota early this summer have raised the question about drought-stressed forages. Drought conditions may cause many plants to accumulate nitrates. Excessive nitrates in feedstuffs are converted to nitrites in the rumen (cattle and sheep) or cecum (horses). Nitrites enter the bloodstream and convert hemoglobin to methemoglobin, reducing the oxygen-carrying capability of the blood.

Nitrate accumulation can take place in many plants when stressed due to conditions such as drought, over-fertilization, or improper herbicide application. Oat hay, pasture, and straw have been commonly involved with toxicity problems, but wheat, barley, rye, and corn, among others, can also accumulate high levels of nitrates in the right conditions. Of concern this past month has been drought-stressed wheat pastures that may be turned into hay or grazing land. Many weeds can accumulate nitrates in the right conditions, also;

this is a concern during summer months when animals may be placed in weedy lots with no other source of feed.

When these conditions are present, producers are encouraged to test their feedstuffs for nitrates. Here are some pointers regarding sampling for nitrates:

1. Pastures/grazing areas

- Realize that obtaining a representative sample from a pasture or field to be grazed is difficult at best.
- If stressed fields are considered for grazing, options such as baling the forage, ensiling the forage, or managed grazing (in which animals are only allowed access to the pasture for short periods of time) should also be considered.
- Baling forages will not reduce nitrate content, but ensiling will generally reduce nitrate levels by 35% when fermentation is complete.
- If pastures or fields are to be sampled, take 20 whole plant samples from stressed areas of the pasture. For some plants, it is not easy to determine the extent of the drought stress during mid-day when plants normally show the wilting effects of heat and low humidity. For this reason, the best time to visually determine whether plants look stressed is to evaluate them about a half-hour before sunrise.
- Place the plant samples in a tightly closed plastic or paper bag and send to the address below.

2. Baled, stacked, or chopped forages

- Test forage from each field separately
- Use a hay probe (Utah State or Penn State forage probes). Your local extension educator will usually have probes you can borrow.
- Take samples from 20-30 bales, or, for stacks or piles of chopped hay, take six samples from each stack or pile in different areas of the stack.
- Mix the samples together and place the composite sample in a tightly closed plastic or paper bag and send as directed below.

3. Ensiled forages

- Take grab samples from six areas of the feeding face of a bunker silo, mix together, and submit a sub-sample in a tightly closed plastic or paper bag.
- For upright silos, take grab samples for three days in a row, mix together, and submit in a tightly closed plastic or paper bag

Sending Samples:

A submission form may be downloaded at: <http://anserv.sdstate.edu>. Send samples to:

Analytical Services
Olson Biochemistry Labs
ASC 133
South Dakota State University
Box 2170
Brookings, SD 57007-1217

Results

It is important to understand potential differences in reporting of results between different laboratories. Olson Biochemistry Laboratory at SDSU reports nitrates as **nitrate-nitrogen content** on a **dry-matter basis**. Guides for interpretation are in the table below. Levels are listed on the report as safe, potentially toxic, or toxic. For levels above the “safe” level, a fact sheet (Forage Nitrate Poisoning) is included with the test results.

Nitrate Nitrogen Content (Moisture-Free basis)	Comment
0.0-0.15%:	<ul style="list-style-type: none"> This level is considered safe to feed under all conditions.
0.15-0.45%:	<ul style="list-style-type: none"> Feeds in this range vary from those safe to feed under most conditions to those for which the risk of poisoning is great. Feeds containing 0.15-0.3% nitrate nitrogen can be fed safely by limiting their daily use to 1/2 of the total dry matter in the ration. Feeds in the range of 0.3-0.45% should be limited daily to less than 1/4 of the total dry matter in the ration. Hay, straws, and fodders in this range should not be fed when damp.
Over 0.45%:	<ul style="list-style-type: none"> Forages containing over 0.45% nitrate nitrogen are all potentially toxic. It is recommended that they not be fed.

Other laboratories may report results as percentage nitrate ion or as potassium nitrate content. When one result is interpreted as another, potentially damaging consequences may result. For example, a level of .50 % as percent nitrate-nitrogen (what is reported by SDSU) is toxic, whereas .50% as percent nitrate ion is considered safe for non-pregnant animals. Conversion formulas for the different reporting methods are available (See Fact Sheet 420, “Forage Nitrate Poisoning” for the formulas).

What to do with high-nitrate feeds

High-nitrate feedstuffs can be utilized if properly managed. An excellent resource on this is SDSU Extension Extra 2034, “Incorporating High Nitrate Feeds into Feeding Programs” (see below for how to access the publication).

A Note About Prussic Acid

Prussic acid poisoning also occurs when certain plants undergo drought stress, but also after early frost. However, the types of plants affected by prussic acid are much less

numerous as those potentially affected by nitrates. Crops affected by prussic acid are commonly sorghum and sudan grass.

Prussic acid (hydrocyanic acid) also affects oxygen utilization by the animal by combining with hemoglobin. The resulting compound is cyanoglobin, which does not carry oxygen. In the case of prussic acid poisoning, the animals’ blood becomes a bright cherry red color, contrasted with that of nitrate poisoning, in which the blood takes on a chocolate-brown color.

Practitioners and producers should keep prussic acid potential in mind as harvest and utilization of potentially drought-affected sorghum and sudan grass commences later on this summer. Sampling procedures are much the same as outlined above for nitrate analysis. See the publications listed in “Sources” below for more information.

Sources:

All of these publications are available from your county extension office or online at <http://vetsci.sdstate.edu/vetext>.

- **Nitrates:**
 - “Forage Nitrate Poisoning” (SDSU Fact Sheet 420)
 - “Nitrate Poisoning of Livestock: Causes and Prevention (SDSU ExEx 4015)
 - “Incorporating High Nitrate Feeds Into Feeding Programs” (SDSU ExEx 2034)
 - “Obtain a Representative Plant Tissue Sample for Nitrate Testing” (SDSU ExEx 8145)
 - “Harvesting and Feeding Drought-Stressed Corn” (SDSU ExEx 4017)
- **Prussic Acid:**
 - “Prussic Acid Poisoning” (SDSU Fact Sheet 805)
 - “Prussic Acid Poisoning of Livestock: Causes and Prevention” (SDSU ExEx 4016)

Searching for Veterinary Information: Useful Websites

Russ Daly, DVM, Extension Veterinarian, South Dakota State University

1. **Pub Med.** <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?DB=pubmed>. PubMed is a service of the U.S. National Library of Medicine that includes over 16 million citations from life science journals for biomedical articles dating back to the 1950s. Some results include free full-text articles; for others, abstracts of the articles are available.
2. **Google Scholar.** <http://scholar.google.com/>. Google Scholar is simple to use and broad-based in its scope. Results obtained include citations not only from peer-reviewed papers, but also theses, books, university publications, articles from professional societies’ newsletters, and others.

3. **Google University Search.**

<http://www.google.com/options/universities.html>. Do you know that the resource or person you're looking for is at a certain veterinary school or university? Using Google University Search is often more productive than using search sites within the university's own home page.

4. **Pro-MED Mail.** <http://www.promedmail.org>. This stands for "Program for Monitoring Emerging Diseases" and is a good place to check for "breaking news" regarding emerging diseases worldwide that affect humans, animals, and even plants grown for food or animal feed. For example, a recent day found postings on a human measles outbreak, bovine anthrax, salmonella food poisoning, avian influenza, and an undiagnosed human disease in China. ProMED-mail postings are open-source and free of political constraints. A team of expert moderators screens, reviews, and investigates reports before posting to the network.

5. **Compendium of Veterinary Products.**

<http://avma.naccvp.com/>. Need an easy place to access product information, without searching through manufacturer's websites? AVMA members have free access to this service in which veterinary product labels can be accessed. Currently over 4800 pharmaceutical, biologic, and

other veterinary product labels are included, and can be retrieved by product name or manufacturer.

6. **Merck Veterinary Manual Online.**

<http://www.merckvetmanual.com/mvm/index.jsp>.

7. **SDSU Veterinary Extension.**

<http://vetsci.sdstate.edu/vetext/>. Resource for information on issues pertinent to veterinary practice in South Dakota and the region.

Veterinarians should realize that most of these resources are available not just to veterinarians, but also to the pet- and livestock-owning public. As the "democratizing" of information via the internet continues, the amount of veterinary information (good and bad) is increasingly available to our clients. It is a vital duty of our profession to make sure our clients get directed to solid sources of information, on the internet or otherwise. This cuts down on the time we spend correcting misinformation and ultimately benefits the animals and people we serve. As always, if there is a specific paper or information request that you need, please do not hesitate to contact SDSU Veterinary Extension, so that we can put to work the resources of the Cooperative Extension Service and university for you.

Calendar of Events

August 13-16, 2006 – South Dakota Veterinary Medical Association Annual Meeting, Ramkota Inn, Sioux Falls, SD Large and small animal sessions: Cow-calf biosecurity, calf-raising health and management; food supply veterinary medicine, companion animal geriatrics and pediatrics, canine hematology; equine surgery, much more.
605-688-6649 or www.sdvmed.org

July 26 - 28, 2006 – North Dakota Veterinary Medical Association Annual Meeting, International Inn, Minot, ND <http://www.ndvma.com>

August 3-5 – Academy of Veterinary Consultants Summer Meeting, Doublewood World Arena Hotel, Colorado Springs, CO <http://www.avc-beef.org/>

August 5, 2006 – George A. Young Swine Health and Management Conference, Marina Inn, South Sioux City, NE. scowser2@unl.edu

August 26-29, 2006 – Central Veterinary Conference Bartle Hall, Kansas City, MO <http://www.thecvc.com>

September 21-23, 2006 – American Association of Bovine Practitioners, RiverCentre, St. Paul, Minnesota
<http://www.aabp.org/meeting/default.asp>

September 23-26, 2006 – Allen D. Lemans Swine Conference, RiverCentre, St. Paul, Minnesota
<http://www.cvm.umn.edu/outreach>

September 27-29, 2006 – Iowa Veterinary Medical Association Annual Meeting, Scheman Center, Ames, IA
<http://www.iowavma.org/>

October 11-15, 2006 – Wild West Veterinary Conference Reno Hilton, Reno, NV www.wildwestvc.com

Printed by the Veterinary Science Department, South Dakota State University, David Zeman, Head/Director, VSD/ADRDL. South Dakota State University is an Affirmative Action/Equal Opportunity Employer (Male/Female) and offers all benefits, services, education and employment opportunities without regard for ancestry, age, race, citizenship, color, creed, religion, gender, disability, national origin, sexual preference, or Vietnam Era veteran status.

805 printed at a cost of \$.35each.

SOUTH DAKOTA STATE UNIVERSITY

Animal Health MATTERS

SDSU Veterinary Science Department
Animal Disease Research & Diagnostic Laboratory
Box 2175- North Campus Drive
Brookings, SD 57007-1396

Non-Profit Org.
U.S. Postage
PAID
Brookings, SD
Permit 24

Phone: (605) 688-5171 · Fax: (605) 688-6003 · Website: <http://vetsci.sdstate.edu>

The SDSU Veterinary Science Department conducts research, teaching, professional service, and extension service to South Dakota and the surrounding region. Entities within the department include the South Dakota Animal Disease Research and Diagnostic Laboratory, the Olson Biochemistry Laboratory, and the Center for Infectious Disease Research and Vaccinology.

The South Dakota Animal Disease Research and Diagnostic Laboratory is a full-service, all-species diagnostic laboratory accredited by the *American Association of Veterinary Laboratory Diagnosticians* (AAVLD). The AAVLD accreditation program complies with international expectations for quality diagnostic services under the guidance of the *World Organization for Animal Health* (the *OIE*). The ADRDL collaborates with the USDA National Veterinary Services Laboratory on many federal disease monitor and eradication programs and is a member of the National Animal Health Laboratory Network. For information regarding the laboratory's Quality System, contact Rajesh Parmar – ADRDL Quality Manager, at 605 688 4309.

Editor: Russ Daly, DVM

IN THIS ISSUE

Head/Director's Message

Associate Director Named and Quality Moves

Forward at the ADRDL 1

Diagnostic News

Reminder: Changing Your Report Generator

Password 1

ADRDL Quality System 1

Holiday Hours: 2

Extension News

Survey of Anthrax-affected Producers: Affected

and Non-affected Pastures Summer 2005 2

“Pieces and Parts” 4

Nitrates in Feedstuffs: Sampling Considerations 5

Searching for Veterinary Information: Useful

Websites 6

Calendar of Events 7