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This is number ninety-nine of a continuing series of multispecies quarterly reviews and practice tips for veterinarians in Texas. Information in the *Veterinary Quarterly Review* is intended to be timely, concise and of practical value. Ideas and input from practicing veterinarians are encouraged. Sources of abstracts, articles or practice tips will be credited. Questions/comments may be directed to blawhorn@cvm.tamu.edu.

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BEEF CATTLE PRACTICE

Multi-Paddock Grazing Provides Efficiency and Profits for Ranchers

Short grazing periods on multiple paddocks within a pasture can restore not only forage conditions, but also profit margins, according to a Texas AgriLife Research scientist. Dr. Richard Teague, AgriLife Research range ecologist in Vernon, has been studying the benefits of multi-paddock grazing for the past 8 years.

Ranchers need to know answers to practical questions such as:

- How good is this management option?
- Where is it successful?
- What does it take to make it work as well as possible?

Teague compared ranches that successfully used multi-paddock grazing management to ranches using the more traditional continuous grazing methods. Factors studied included soil impact, vegetation,

hydrological function and profitability. Ranches using multi-paddock grazing that achieved excellent livestock and vegetation results were compared to areas grazed continuously at either light or heavy stocking rates.

His study found that the ranches managed under higher stocking rates with continuous grazing had a higher degree of soil compaction, more bare

ground, lower soil carbon, poorer grass composition, more weeds and lower forage production than those under multi-paddock management at high stocking rates or the continuous grazing at low stocking rates.

“The reason the multi-paddock grazers were able to achieve these positive results is they aimed at managing to give the best vegetation and animal performance,” Teague said.

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“The key to doing this is to match animal numbers with available forage at all times to avoid overgrazing and poor animal performance.”

To achieve top plant and animal performance, cattle must be left on the paddock for a short enough amount of time to prevent a second bite, to defoliate the forage moderately during the growing season and to allow adequate recovery time before grazing again. Using these guidelines, the range will improve over time so the highest possible condition is attained.

Research shows that potential grazing income is four times higher on pastures in excellent range condition compared to those in poor condition. The problem is that in order to maximize profit, pastures must be stocked at a rate that will decrease range conditions; whereas to improve range conditions, pastures must be stocked at a rate that will lower overall income.

Teague said that past research has shown that to improve range condition under continuous grazing, at least 1,000 to 1,500 pounds of forage per acre must be left at the end of the season. At least 800 pounds per acre must remain just to maintain range conditions.

Multi-paddock grazing management offers a more sustainable and productive alternative, but it requires goal setting, monitoring and flexibility. It allows better distribution, better control of the use of palatable plants, adjustments to recovery periods, increased percentage of green leaf and less seasonal fluctuation in the diet.

Plan and manage for success by creating sound, achievable goals. The plan should consider income and expenses as well as a biological plan. It will require monitoring, control and replanning. Flexible stocking rates must be matched with forage availability.

Under continuous grazing in

large pastures, cattle tend to concentrate in areas close to rivers or other sources of water and the more palatable plants. Even under light or moderate stocking, these areas are more heavily grazed, while the rest of the paddock is under-grazed during the growing season. This concentration weakens the plants on the heavily grazed areas so they produce less and are harmed more during dry years.

Subdividing existing paddocks with electric fencing and providing water points are modest investments that enable a manager to graze a larger portion of the ranch. More of the ranch is used, and the plants are not overgrazed. If conducted properly, this strategy improves the rangeland as well as both productivity and profitability, as indicated by many ranchers.

Successful multi-paddock managers plan grazing and finances to improve the composition and production of forage species, minimize the impact of drought, reduce costs, improve work efficiency and increase profits.

Multi-paddock managers who have succeeded have received training and coaching and have practiced to improve their skills. They report that changing to a multi-paddock management has simplified their job and allowed them to be more efficient.

Producers considering multi-paddock grazing should base their decisions on goals set in advance. These goals need to include desired landscape, profit and quality-of-life elements to guide all management decisions. Land restoration, animal performance and wildlife needs should be incorporated into the grazing part of the plan each year.

The management plan must regularly assess the forage on hand to adjust livestock numbers or area grazed. Grazing periods should be based on different recovery dur-

ing periods of fast or slow growth. In dry areas, the rest period will be 90 or more days; in wetter areas, 40 to 60 days. Such management can provide recovery on all areas of the ranch for 340 or more days each year.

Animal performance can be high without damaging the grasses if the forage is allowed to defoliate only moderately during the growing season, the grazing periods are short, the forage is allowed to recover before regrazing, and it is grazed again before it gets too mature,

When planned multi-paddock grazing is managed to give the best vegetation and animal performance, it has the potential to produce superior conservation and restoration of resources, and to increase ranch profitability, Teague said.

From Dec. 21, 2009, AgNMore News release, “Multi-paddock grazing provides efficiency and profits for ranchers,” written by Kay Ledbetter. (806) 677-5600, SKledbetter@ag.tamu.edu. Content expert Dr. Richard Teague, Texas Agrilife Research Scientist and Range Ecologist, The Texas A&M University System, Vernon, Texas. (940) 552-9941; r-teague@tamu.edu.

Publication B-6222, *Estimating Acreage for Cattle, Available*

Research using cattle fitted with GPS collars has shed light on how cattle behave in response to different landscape features such as brush, rock cover, slope, water, forage and grazing land accessibility. This publication explains how to use aerial maps, ecological site descriptions and ground inventories to determine the amount of actual acreage available for cattle to graze. This information can help producers with difficult stocking decisions.

Print copies are available for \$2 each. Go to <https://agrilifebookstore.org> to order.

From Jason C. Holt, Natural Resources Conservation Service; and Robert K. Lyons and C. Wayne Hanselka, Professors and Extension Range Specialists, and David McKown, Extension Assistant, The Texas A&M University System.

GENERAL PRACTICE

Veterinary Accreditation Renewal

The U.S. Department of Agriculture is revising the National Veterinary Accreditation Program. Under the revised program, veterinarians accredited before Feb. 1, 2010, must reapply for accreditation. Application must be made before August 2010. If a veterinarian does not submit an application, his or her previous USDA accreditation will expire. Complete VS Form 136 A and follow the instructions.

For questions, contact Lynette Victor at USDA in Austin, Texas, (512) 383-2413. For more information, visit www.aphis.gov/newsroom/content/2009/12/updatevet.shtml, www.aphis.gov/animal_health/vet_accreditation/av_participate.shtml and www.aphis.usda.gov/animal_health/vet_accreditation/faq.shtml.

From the Texas Animal Health Commission home page www.tahc.state.tx.us.

Publication B-6208, *Brush and Weeds of Texas Rangelands, Available*

This field guide will help landowners and rangeland managers identify the brush and weed species of greatest concern in their areas. It includes plant descriptions, identifying characteristics, range maps, and multiple color photos for 99 species. Whether the land is being managed for livestock, for wildlife, or for recreation, this handbook will enable the readers to identify problem species (216 pages; Nov. 4, 2008).

Visit <https://agrillifebookstore.org> to order single copies for \$25 and orders of 25 or more for \$20 each.

From Charles R. Hart, Barron S. Rector, C. Wayne Hanselka, Robert K. Lyons and Allen McGinty, The Texas A&M University System.

Publication E-558, *Carbon Markets: A Potential Source of Income for Farmers and Ranchers, is Available*

Agricultural producers may be able to increase their earnings by selling carbon credits to large carbon emitters. This publication explains the origins of carbon markets, the types of projects that agri-

culturists can undertake, and the steps and requirements for participating in the carbon credits marketplace (9 pages, 2 tables, 2 figures: March 10, 2009).

Copies are available in electronic format at <https://agrillifebookstore.org>.

From Luis Ribera, Assistant Professor and Extension Economist—Management, and Bruce McCarl, Distinguished Professor of Agricultural Economics, The Texas A&M University System.

Veterinary Continuing Education Seminars College of Veterinary Medicine & Biomedical Sciences Texas A&M University, 2010

*May 22–23, 2010.....	Canine Paramedicine Conference (Dr. James Barr)
*June 4–6, 2010	19th Annual Food Animal Conference (Drs. John Davidson and Glennon Mays)
*June 25–27, 2010.....	Pain Management & Physical Rehabilitation (Dr. Gwen Carroll)
*July–December, 2010.....	Feline Internal Medicine Monthly Grand Rounds (Dr. John August)
*July 17–18, 2010	Dentistry for the Small Animal Practitioner (Dr. Bert Dodd)
*July 23–25, 2010.....	Donkey/Mule Conference (Dr. Nora Matthews)
*Aug. 21, 2010.....	Orthopedics Conference (Dr. Don Hulse)
*Aug. 10–13, 2010.....	AAEP 360 Meeting (Drs. Dickson Varner and Cleet Griffen)
*Aug. 27–29, 2010.....	2nd Annual Canine Conference (Dr. Audrey Cook)
*Oct. 1–3, 2010	Annual Equine Conference (Chair to be determined)
*Oct. 8–10, 2010.....	Small Animal Emergency Medicine & Critical Care (Dr. James Barr)
*Oct. 22–24, 2010	Small Animal Anesthesia Conference (Chair to be determined)
*Nov. 12–14, 2010.....	6th Annual Neurology Conference (Dr. Jonathan Levine)

*Confirmed
Calendar is subject to revision.

For more information on these programs of self-study and personalized continuing education opportunities, please call (979) 845-9102; fax (979) 862-2832; or e-mail: ceoffice@cvm.tamu.edu. Visit our Web site at <http://www.cvm.tamu.edu/vtce>.

From the Office of Veterinary Continuing Education, Texas Veterinary Medical Center, College Station, Texas.

SWINE PRACTICE



New Publication E-251, *Gastric Ulcers in Swine*, Available

Swine gastric ulcers are a common and very serious medical problem in weaned pigs through adult animals. This 2-page fact sheet discusses the causes, clinical signs observed, diagnosis and treatments used by veterinarians and possible prevention ideas. It is "must have" information for anyone involved in raising show swine.

Released March 30, the publication is available in electronic format at <https://agrilifebookstore.org>.

From Bruce Lawhorn, DVM, MS, Visiting Professor, Swine Practice, Food Animal Section, Department of Veterinary Large Animal Clinical Sciences, College of Veterinary Medicine and Biomedical Sciences, The Texas A&M University System, College Station, Texas 77843-4475.

Updated *Swine Disease Manual* Available

The fourth edition of the *Swine Disease Manual*, edited by Drs Eric Neumann, Alex Ramirez and Kent Schwartz, is now available. This version has been completely revised and updated and includes new information on clostridial diseases, salmonellosis, porcine circovirus and more.

The *Swine Disease Manual* provides a concise overview of diseases and syndromes affecting swine, and serves as an informative reference for students, instructors, practitioners, technicians and anyone working in the swine industry.

This 170-page soft-cover book groups diseases by etiologic agent. For each disease, it includes information on the occurrence, history, etiology, epidemiology, pathogenesis, clinical signs, lesions, diagnosis, treatment and control. Also included are a set of tables to aid in arriving at a differential diagno-

sis and a quick overview of diseases affecting a single body system.

The *Swine Disease Manual* is available for \$25 per copy, plus shipping and handling. Orders may be placed online at <http://ecom.aasv.org/sdm>. For orders of 20 or more copies prepaid and shipped to a single address, the discounted rate is \$20 per copy plus shipping and handling. Contact the American Association of Swine Veterinarians to place your order and receive this special pricing.

From Sue Schulteis, American Association of Swine Veterinarians, 830 26th St., Perry, Iowa 50220; phone: (515) 465-5255; fax: (515) 465-3832; Web page: aasv@aasv.org.

CANINE PRACTICE



A Comparison of Recovery Time from Anesthesia with Isoflurane, Sevoflurane or Desflurane in Healthy Dogs

A recent study in 11 dogs compared the speed and quality of recovery from anesthesia induced with propofol and maintained with isoflurane, sevoflurane or desflurane.

The recovery times (from least to most) until standing were dogs in the desflurane group (11.7 plus or minus 5.1 minutes), followed by the sevoflurane group (18.6 plus or minus 7.5 minutes) and then the isoflurane group (26.3 plus or minus 7.2 minutes), respectively. The quality of recovery did not differ among groups.

These results suggest that desflurane is the best selection of anesthesia for the shortest time until standing, followed by desflurane, then isoflurane.

Abstracted from L. A. Lopez et al., *American Journal of Veterinary Research*, 2009; 70:1339-1344.

FELINE PRACTICE



Safety of Propofol for Anesthesia in Cats with Primary Hepatic Lipidosis

A recent study looked at the medical records of 44 cats with presumed hepatic lipidosis that were anesthetized for feeding tube placement. The study found no significant differences in the 27 cats receiving propofol and those receiving other anesthetics. The parameters measured were the number of hours in intensive care, need for blood products and outcome.

Even though propofol is metabolized by the liver and the concern has been raised about its use for anesthesia to place feeding tubes in debilitated cats with hepatic lipidosis, this study failed to demonstrate any increased risk for morbidity or mortality. Therefore, it is suggested that propofol can be used in cats with primary hepatic lipidosis for placement of feeding tubes.

Abstracted from L. P. Posner, M. Asakawa and H. N. Erb. "Use of Propofol for Anesthesia in Cats with Primary Hepatic Lipidosis: 44 Cases (1995-2004)," *Journal of the American Veterinary Medical Association*, Volume 232, Number 12, June 15, 2008, 1841-1843.

EQUINE PRACTICE



Comparison of Analgesia of Butorphanol and Phenylbutazone Administered Alone and in Combination in Colts Undergoing Routine Castration

A recent study compared the analgesic effect of administration of butorphanol tartrate, phenylbutazone, or both drugs in 36 young horses undergoing routine castration under xylazine/ketamine anesthesia plus intratesticular lidocaine injection.

Horses received butorphanol alone (0.05mg/kg [0.023mg/lb] IM, before and every 4 hours for 24 hours), phenylbutazone alone (4.4 mg/kg [2.0 mg/lb] IV, before surgery and then 2.2 mg/kg [1.0 mg/lb], PO every 12 hours for 3 days, or butorphanol and phenylbutazone at the aforementioned dosages. There were 12 horses per group.

The single-drug-treated colts received appropriate placebos to balance treatment protocols among groups. Physical and physiological variables, plasma cortisol, body

weight and water consumption were assessed before and at intervals after surgery. Induction and recovery from anesthesia were subjectively described. Signs of pain were rated by use of a visual analogue and a numerical rating scale.

Compared to presurgery values, significant changes in gastrointestinal sounds, fecal output and plasma cortisol concentrations were evident in each of the three treatment groups over time. However, at any measured time point, assessed variables and signs of pain

did not differ significantly among groups, although time till standing after surgery was the longest for the butorphanol-phenylbutazone-treated horses.

In conclusion, there was no difference in analgesic effect from butorphanol or phenylbutazone alone or in combination in young horses undergoing routine anesthesia in this study.

Abstracted from M. G. Sanz, D. C. Sellon, J. Al Cary et al., "Analgesic Effects of Butorphanol Tartrate and Phenylbutazone Administered Alone and in Combination in Young Horses Undergoing Routine Castration," *Journal of the American Veterinary Medical Association*, Volume 235, Number 10, Nov. 15, 2009, 1194–1203.

