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Good options for handling cattle during drought

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As drought continues throughout most of Kansas, producers are asking how they should handle their cattle. There is a lot of drought-related information for veterinarians and producers, but practitioners are often in a good place to work with producers and help them make rational business decisions.This article describes several options for them to consider.

Early weaning of calves

One way to reduce the nutrient requirement of lactating cows is to remove calves early. This allows more efficient use of limited feed resources, helps cows maintain body condition, and reduces winter supplemental feed bills. If cows are decreasing milk production because of limited feed, intentional weaning forces calves to work harder away from their mothers to keep their bellies full. Additional early weaning information can be found at:

www.ansi.okstate.edu/exten/cc-corner/Earlyweaning.html

www.noble.org/ag/livestock/earlyweaning/index.htm

www.ag.ndsu.nodak.edu/drought/ds-8-97.htm

Early sale of calves

Selling early weaned calves is another way to save as much remaining pasture as possible for cow use. When the calf weight/calf price slide is considered, producers can sometimes make the same number of dollars per head (or more) by selling lighter calves at a higher price per 100 lbs body weight. With currently high-priced feeder cattle, some cattle feeders/feedlots prefer to work with the lighter weight calves in order to own the cattle long enough to make them profitable by the time they finish feeding out. Also, shipping and selling calves into market areas with plenty of available grass and knowledgeable stocker operators may net more dollars than selling at local markets. Compare market conditions both locally and in areas where there is plenty of grass available.

Early pregnancy checking

Early pregnancy checking will help find those animals that can be sold earlier, thus saving remaining pasture for cows the producer wants to carry through winter. Selling late-calving cows or heifers offers an opportunity to tighten up the calving season and produce a more uniform calf crop in coming years. Shipping and selling late bred cows and heifers into market areas with plenty of available grass will probably net more dollars than selling at local markets. Producers may want to consider placing bred heifers on growing diets in feedlots and saving available grass for cows. Holding back older bred cows that can be roughed through the winter more easily and selling bred heifers may also be a strategy that works to enhance cash flow and help pay the feed bill for remaining females.

Hard culling

Now is the time to make sure that any cow that is kept has the capacity to produce a calf that will pay for her keep. Pay particular attention to feet, legs, eyes and teeth when cows are being pregnancy checked. Also, if there are some cows that look a lot different than the rest of the herd (oddballs – bad disposition, wrong color, too big, too little, thin-boned, horned, etc.), now is an excellent time to remove them from the herd. For producers with good records who are trying to decide between cows that are roughly the same age and stage of pregnancy, the cow that has consistently produced the better calf should be retained. For producers without good records, now is a good time to reinforce the need for records as a management decision-making tool.

Supplementing on pasture with ethanol by-products

The growing number of ethanol plants and resulting by-products offer opportunities to supplement range diets and provide needed protein. Supplementation recommendations for corn gluten feed, distillers

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KSU unveils bird flu Web site

If you are getting requests for information on bird flu, K-State has a new Web site dedicated to that purpose. The site is *www.avianflu.ksu.edu* Feel free to check this site for updated information, or refer your clients to the site.

Also in this issue

Thank you to the Pfizer Animal Health Group, Livestock Division, Cattle Products Group, for financial assistance in publishing this newsletter.

New techniques prompt name changes of veterinary bacterial pathogens

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Advances in molecular techniques have changed the names of many microorganisms. Bacterial chromosomal DNA restriction enzyme analysis, 16 SrRNA sequence and comparison to databases in computer banks, amplification of DNA of intracellular organisms and polymerase chain reaction (PCR) are some procedures that have advanced taxonomic change, relevant to veterinary medicine.

New Designation	Previous Designation	Most Infectious Condition
Abiotrophia adiacens	Nutritionally variant streptococci	Corneal ulcers
Abiotrophia defectiva	Nutritionally variant streptococci	Endocarditis
Achromobacter xylosoxidans	*Alcaligenes xylosoxidans*	Pneumonia
Actinobaculum suis	*Eubacterium suis*	Swine pyelonephritis
Aeromonas punctata	*Aeromonas caviae*	Lab animals
Afipia felis	Cat scratch disease bacillus	Human lymphadnopathy
Anaplasma phagocytophilum	*Ehrlichia equi*	Equine and canine blood
Anaplasma platys	*Ehrlichia platys*	Canine blood
Arcanobacterium pyogenes	*Actinomyces pyogenes*	Pyogenic infections
Bacteroides nodosus	*Fusiformis nodosus*	Footrot sheep
Brachyspira alvinipulli	*Serpulina alvinipulli*	Bird enteropathogen
Brachyspira hyodysenteriae	*S. hyodysenteriae*	Swine dysentery
Brachyspira innocens	*S. innocens*	Porcine intestine spirochete
Brachyspira pilosicoli	*S. pilosicola*	Porcine intestine spirochete
Brucella pinnipediae	New	Brucellosis in marine mammals
Capnocytophaga canimorsus	DF-2	Dog bites
Chlamydophila abortus	*Chlamydia psittaci*	Ovine abortions
Chlamydophila pecorum	*C. psittaci*	Ruminant chlamydia abortions
Chlamydophila felis	*C. psittaci*	Feline infections
Chryseobacterium indologenes	*Flavobacterium indologenes*	Gram negative infections
Chryseobacterium meningosepticum	*F. meningosepticum*	Gram negative infections
Clostridium piliforme	*Bacillus piliformis*	Tyzzer's
Gallibacterium anatis	*Pasteurella anatis*	Avian infections
Histophilus somni	*Haemophilus somnus*	Bovine infections
Leptospira borgpetersenii serovar hardjo-bovis	*L. interrogans*	Bovine leptospirosis
L. interrogans serovar hardjo-prajitno	*L. interrogans*	Bovine vaccines
L. kirschneri serovar grippotyphgo	*L. interrogans*	Leptospirosis
Macrorhabdus ornithogaster	Megabacteria	Birds, probable yeast
Mannheimia haemolytica	*Pasteurella haemolytica*	Bovine pneumonia
Moraxella caprae	*Moraxella bovis-like*	Keratoconjunctivitis, goat
Moraxella equi	New	Keratoconjunctivitis, equine
Moraxella ovis	*Branhamella ovis*	Keratoconjunctivitis, sheep
Mycoplasma haemocanis	*Haemobartonella canis*	Canine blood
Mycoplasma haemofelis	*H. felis*	Feline blood (FIA)
Mycoplasma haemosuis	*Eperythrozoan suis*	Porcine blood
Subsp. paratuberculosis	*M. paratuberculosis*	Johnes' disease
Neorickettsia risticii	*Ehrlichia risticii*	Patomac horse fever

New Designation	Previous Designation	Most Infectious Condition
Pasteurella avium	*Haemophilus avium*	Avian diseases
Prevotella melaninogenica	*Bacteroides melaninogenica*	Anaerobic infections
Prevotella bivia	*B. bivia*	Anaerobic infections
Riemerella antipestifer	*Pasteurella antipestifer*	Avian infection
Taylorella equigenitalis	*Haemophilus equigenitalis*	CEM horses
Taylorella asinigenitalis	New	Genital tracts, donkeys

Sudden death caused by yew poisoning in eastern Kansas cattle herd

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A five-year old crossbred cow was presented to the Kansas State Veterinary Diagnostic laboratory for necropsy in March. This cow was the fifth in a herd of 20 animals, including two other adults, a 4-month-old calf and a heifer, found dead in a three-day period. These animals had been in the same pasture for at least a month. The heifer had a history of collapsing, then getting up and acting normally approximately 12 hours before death. No clinical signs were observed in the other animals. The only gross lesion found by field postmortem examination of the first two dead cows was pulmonary edema.

With a history of adults and young animals dying with no clinical signs and nonspecific gross lesions, a toxic agent was on the top of the differential list. Consulting with the owner we learned that a neighbor had trimmed some hedges and was given permission to toss the trimmings into the pasture. The hedges were composed of evergreen shrubs with dark green, linear, closely spaced leaves on a woody stem. At this point we were highly suspicious of yew toxicity and were asked to confirm this diagnosis with gross necropsy examination. The cow was in good body condition with mild postmortem autolysis. There was abundant pink foam coming from the mouth and within the trachea, and the lungs were diffusely wet with separation of the interlobular septa with edema. These lesions are consistent with severe diffuse pulmonary edema. The rumen and reticulum contained multiple stems and leaves characteristic of the evergreen plant, yew, Taxus sp. (Figure 1), which confirmed our diagnosis of yew toxicity.

Yew plants are common ornamental shrubs planted around homes and are found throughout North America. They contain a toxic alkaloid that affects the heart by inhibiting normal sodium and calcium exchange across the cardiac myocytes, which causes arrhythmias. All parts of the plant, green or dried, are toxic except the fruit. The highest levels of alkaloids are found in the leaf in the winter, but toxicities can occur year round.

Usually there are no postmortem lesions found with yew poisoning, but in this case there was pulmonary edema. Finding the yew leaves and stems in the rumen at necropsy is diagnostic but can be difficult if the leaves are finely chewed. Taxine can be detected by mass spectrometry of rumen contents if toxicity is suspected but the characteristic leaves cannot be found.

Frequently there are no clinical signs associated with yew toxicity; however, in this case the heifer had a history of collapse, potentially due to a fainting episode. Therefore the diagnosis of yew toxicity in cattle is usually based on history of access to yew plants, and ruling out other causes of sudden death such as lightning, bloat, Clostridial toxins and hypomagnesia. Thorough questioning of the herd owner led us to the presumptive diagnosis of yew toxicity. The most common histories associated with exposure to yew plants include exposure to hedge clippings, grazing on ornamental shrubs planted adjacent to the fence, and access to shrubs around the house after going through an open gate or a down fence.

Figure 1: Piece of yew (Taxus sp) found in the rumen of an acutely dead cow.

This case emphasizes the importance of a thorough history along with a complete gross necropsy to diagnose sudden death in cattle. Although most seasoned ranchers are familiar with the toxicity of the yew plant, many novice ranchers are not. Education on various plant toxicities affecting ruminants in Kansas is important. Please refer to "Plants that may be Hazardous to Livestock this Fall" by FW Oehme and JA Pickrell in the Fall 2004, *Kansas Veterinary Quarterly* newsletter for a list of potentially toxic plants.

References

Knight AP, Walter RG. A guide to Plant Poisoning of Animals in North America, Jackson, WY: Teton NewMedia: 2001

Thompson GW, Barker JK. Japanese Yew poisoning in cattle. Can Vet J 1978, 19:320-321.

Stable flies, horn flies or face flies? Cattle behavior tells what flies are biting

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Cattle are not passive hosts to the various flies pestering them. They do fight back. Defensive behaviors are reactions to specific flies in the pasture. Each fly species has a preferred landing site. You can tell what kind of flies are attacking cattle by their reactions and the distribution of flies over their bodies.

Responses depend on the annoyance and pain inflicted by the pest. Stable flies possess a large bloodsucking proboscis, feed once or twice a day, and inflict a bite many times more painful than that of a mosquito. They prefer to bite cattle's legs and bellies. Cattle react by foot stomping, tail switching, bunching, and spending a long time in water to try to protect themselves.

Stable flies remain on hosts long enough to feed, but because of the painful bites and cattle's defensive reactions, feeding is often interrupted. Each fly has to visit the same or different hosts several times to obtain a full blood meal.

Horn fly mouthparts, also developed for blood sucking, are smaller than those of stable flies. Each female horn fly feeds up to 40 times a day, inserting its proboscis into the skin at least that many times. Horn flies spend all of their time on their hosts, leaving for short periods to lay eggs on fecal pats just deposited by their hosts.

Flies that spend a long time on cattle can be controlled by applying insecticide to the body. In the summer as temperatures rise throughout the day, horn flies move down cattle's sides. Small clouds of flies rise over their backs causing them to switch their tails or toss their heads. Disturbed into flight, horn flies land on the same or neighboring cattle with many flies exchanged among them. Consequently, not all members of the herd need to be treated with insecticides because every fly eventually lands on a treated host and is killed. Cattle react to horn fly attack by switching tails over backs (rump), throwing heads over shoulders, and bunching.

Bunching caused by stable flies differs from that caused by horn flies. Cattle bunched by horn flies throw their heads over their backs, while cattle bunched by stable flies do a lot of foot stomping. In addition, stable fly attacks most often result in cattle bunching at corners of pastures, a behavior seldom seen in cattle attacked by horn flies. The shorter time stable flies spend on their hosts makes protection from them difficult. Horn flies' closer association with their host makes it easier to control them with insecticides.

Face flies are indistinguishable from houseflies. They possess sponging mouthparts and cannot obtain food by sucking blood from their hosts. They can only feed on serum/blood secretions from pre-existing wounds. After landing on the host's face, face flies move immediately to the eyes; houseflies move to the nostrils and mouth. However, face flies' mouthparts are armed with sharp teeth used for scraping conjunctival tissues. This increases production of tears that run down cattle cheeks and are visible when dust collects on them. Face flies visit their hosts one to two times a day for short periods of time. This behavior and the sensitive body areas visited make insecticidal control difficult. Cattle pestered by face flies react by flapping ears and shaking their heads from side to side. Houseflies do not harm cattle and cause little defensive behavior.

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dry grains, distillers wet grains, etc., on native pasture have been developed and offer a lot of potential cost saving per unit of nutrient provided. However, don't cut too many corners and forget to supplement the diet and balance for mineral content and things like vitamin A. When there is nothing green to eat, vitamin A shortages often get overlooked. For additional by-product feeding information, excellent resources are located at:

www.oznet.ksu.edu/drought/

www.extension.iastate.edu/Publications/IBC26.pdf

Ammoniated wheat straw

Ammoniation of wheat straw to increase the protein level is another way to use an abundant, underutilized forage resource to help meet the needs of cattle. However, when producers consider the current high price of ammonia, the hazards of working with ammonia, and the relatively affordable price of ethanol by-products, ammoniation may not be an attractive option at this time. For additional information about ammoniating wheat straw, excellent resources are located at:

agebb.missouri.edu/drought/cropres.htm

www.ag.ndsu.edu/drought/ds-9-97.htm

Water

During periods of drought, water requirements of cattle are higher because of the heat and the fact that they are not getting any appreciable moisture from plants in their diet. A clean, abundant source of water is critical. As ponds dry up, non-volatile substances in the water tend to concentrate, increasing the potential for toxicity. Water high in total dissolved solids actually increases cattle's thirst, reduces appetite, and decreases performance on available forages. Water with high sulfate levels, especially when combined with sulfur-extracted ethanol by-product feeding, can result in cases of polioencephalomalacia while on native pasture. As sulfate levels from all sources combined begin to exceed 0.3% of total daily dry matter intake, polio problems may occur. Also, as ponds dry up, blue-green algae has a greater tendency to bloom and cause toxicity problems. Death losses associated with blue-green algae toxicity have already been reported in Nebraska this summer. For additional water-related information go to:

www.oznet.ksu.edu/library/lvstk2/mf2672.pdf. or www.angusjournal.com/drought/links.html

Excellent drought-related information is available at:

www.oznet.ksu.edu/drought/

Continuing Education

September 2-7
Joint Meeting of The 20th American Society for Rickettsiology (ASR) Conference and the 5th International Conference on Bartonella as Emerging Pathogens

September 30
16th Annual Equine Fall Conference on Performance Horse Lameness

September 30
Progressive Practice Management Conference

March 3, 2007
Veterinary Technicians Conference

For the most complete, up-to-date conference information visit our Web site at: *www.vet.ksu.edu* and click on Continuing Education, or contact: Linda M. Johnson, Ph.D., at 785-532-5696 or *johnson@vet.ksu.edu*

Upcoming Events

August 18-20
Flint Hills Beef Fest, Emporia

August 26
State 4-H Livestock Judging Contest, Weber Arena, Manhattan

September 28
KSU Stocker Field Day, Manhattan

November 16
KSU Swine Day, Manhattan

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