

Large Animal Newsletter

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Water Requirements for Beef Cattle Under Summer Conditions

Recently, the Great Plains have been hit with hot and sometimes windy weather. During this time of year it becomes increasingly important to provide a clean and adequate supply of water for all livestock. Water constitutes about 98% of all molecules in the body. Water is needed for regulation of body temperature as well as growth, reproduction, lactation, digestion, metabolism, excretion, lubrication of joints, along with many other bodily functions. Individual water requirements by animals are influenced by several factors including rate of gain, pregnancy, lactation, physical activity, salt and dry matter intake, type of diet, and environmental temperature.

These factors affect the speed in which bodily moisture is lost. The ways bodily moisture are lost include: urine, feces, sweat, or evaporation from the lungs or skin.

Not all water that is consumed by the animal is consumed by drinking. Feeds like silages, green chop, and grass are usually high in moisture while grains and hays are low in moisture. Grasses tend to decrease in moisture as they mature, thus making it more important to keep tanks full.

Water requirements have been observed as follows for this time of year....

Cows w/calves	16.5-17.5 gal./day
Bulls	18-19 gal./day
Growing Cattle	6.5-15 gal./day
Finishing Cattle	9.5-23 gal./day
Dairy Cattle	10-30 gal./day
Horses	8-12 gal./day
Sheep/Goats	1-4 gal./day

As mentioned earlier in this discussion, water requirements are affected by many different factors so these numbers are recommended for use as a guide only.

There are several ways heat stress caused by lack of water can be avoided.

Have ample water available.

There should be enough water storage available to provide the animals adequate water for 3 to 7 days if you are using a windmill or solar pump and 2 to 3 days if you are using a "hard wired" electric pump.

Calculating this figure is pretty easy, just take the number of head in the pasture times the number of gallons they drink per day times the number of days of storage necessary.

From this we can figure how big of a tank we need. The formula for calculating the storage capacity of a tank is: $23.5 \times (\text{radius}^2) \times \text{depth}$ of the tank. But where most tanks are 2 foot in depth, here is a little cheat sheet for you to go by.

Tank diameter (feet)	Capacity (gallons)
8	752
9	952
10	1,175
12	1,692
15	2,644
20	4,700
30	10,575

Keep waterers and water tanks clean. Keep all storage tanks free of moss, dirt and anything that may have blown into to the tank. All animals perform better when they have access to clean water. There have been studies in Montana and Alberta, Canada that show a 5-30 percent weight advantage in calves and yearlings that had access to higher quality, clean water in tanks.

One way of controlling moss in tanks is by using copper sulfate. One pound of copper sulfate will treat 1,000 to 2,000 gallons of water. It is important to make sure that the copper sulfate dissolves completely, especially in metal bottomed tanks as it will cause them to rust quicker. One way to help this process along is by stirring the copper sulfate in a 5 gallon bucket of water about a day before you add it to the tank. One final note, do not use copper sulfate in water that may be consumed by sheep. Copper is toxic to sheep.

Avoid working cattle if possible. If you must work cattle during these hot days, work them early in the morning while it is still cool. This will keep the cattle from getting too hot, and give them a little time to recuperate before the weather heats up. Working cattle early is also easier on the crew working them.

Make sure water delivery is sufficient and that the cattle are drinking the water. Make sure that the equipment that you use to provide water is in good enough shape to provide adequate water to the animals at all times. Also make sure that the animals know where the water is located and are drinking from it. For instance, if you use automatic waterers, and you receive a group of

calves that have never seen a waterer in their life, those cattle aren't going to know what those waterers are for, let alone drink from them. It may be a good idea to provide a tank with water in it until the cattle figure the waterers out.

Kevin L. Cawthra, Animal Scientist, Twin Forks Clinic

Fall Trade Show 2009

Twin Forks Clinic will again be sponsoring the Trade Show. It will give producers the opportunity to discuss herd needs and book the products needed in advance before the busy fall season. It will be held Saturday, August 15th, 2009 in the Exhibit Hall at the Fair Grounds in Benkelman from 10:00 A.M. till 2:00 P.M. MT. Lunch will be served. Sponsors will be available to discuss products specifically. This trade show will be informative and offer you the ability to order some of your products at a cost **savings!!**

If you will be unable to attend, please feel free to stop in at either clinic between August 10th and August 21st to discuss your fall needs with a veterinarian. Booking specials will apply.

Your sponsors will be:

Twin Forks Clinic
Pfizer Animal Health
Intervet/Schering
Bayer Animal Health
Fort Dodge
Boehringer Ingelheim Newport
AgriLabs

Hope to see You there!

7 Things You Didn't Know About HSUS

1) The Humane Society of the United States (HSUS) is a "humane society" in name only, since it doesn't operate a single pet shelter or pet adoption facility anywhere in the United States. During 2007, HSUS contributed only 3.64 percent of its budget to organizations that operate hands-on

dog and cat shelters. In reality, HSUS is a wealthy animal-rights lobbying organization (the largest and richest on earth) that agitates for the same goals as PETA and other radical groups.

2) Beginning on the day of NFL quarterback Michael Vick's 2007 dogfighting indictment, HSUS raised money online with the false promise that it would "care for the dogs seized in the Michael Vick case." The New York Times later reported that HSUS wasn't caring for Vick's dogs at all. And HSUS president Wayne Pacelle told the Times that his group recommended that government officials "put down" (that is, kill) the dogs rather than adopt them out to suitable homes. HSUS later quietly altered its Internet fundraising pitch.

3) HSUS's senior management includes a former spokesman for the Animal Liberation Front (ALF), a criminal group designated as "terrorists" by the FBI. HSUS president Wayne Pacelle hired John "J.P." Goodwin in 1997, the same year Goodwin described himself as "spokesperson for the ALF" while he fielded media calls in the wake of an ALF arson attack at a California veal processing plant. In 1997, when asked by reporters for a reaction to an ALF arson fire at a farmer's feed co-op in Utah (which nearly killed a family sleeping on the premises), Goodwin replied, "We're ecstatic." That same year, Goodwin was arrested at a UC Davis protest celebrating the 10-year anniversary of an ALF arson at the university that caused \$5 million in damage. And in 1998, Goodwin described himself publicly as a "former member of ALF."

4) According to a 2008 Los Angeles Times investigation, less than 12 percent of money raised for HSUS by California telemarketers actually ends up in HSUS's bank account. The rest is kept by professional fundraisers. And if you exclude two campaigns run for HSUS by the "Build-a-Bear Workshop" retail chain, which consisted of the sale of surplus

stuffed animals (not really “fundraising”), HSUS’s yield number shrinks to just 3 percent. Sadly, this appears typical. In 2004, HSUS ran a telemarketing campaign in Connecticut with fundraisers who promised to return a minimum of zero percent of the proceeds. The campaign raised over \$1.4 million. Not only did absolutely none of that money go to HSUS, but the group paid \$175,000 for the telemarketing work.

5) Research shows that HSUS’s heavily promoted U.S. “boycott” of Canadian seafood—announced in 2005 as a protest against Canada’s annual seal hunt—is a phony exercise in media manipulation. A 2006 investigation found that 78 percent of the restaurants and seafood distributors described by HSUS as “boycotters” weren’t participating at all. Nearly two-thirds of them told surveyors they were completely unaware HSUS was using their names in connection with an international boycott campaign. Canada’s federal government is on record about this deception, saying: “Some animal rights groups have been misleading the public for years ... it’s no surprise at all that the richest of them would mislead the public with a phony seafood boycott.”

6) HSUS raised a reported \$34 million in the wake of Hurricane Katrina, supposedly to help reunite lost pets with their owners. But comparatively little of that money was spent for its intended purpose. Louisiana’s Attorney General shuttered his 18-month-long investigation into where most of these millions went, shortly after HSUS announced its plan to contribute \$600,000 toward the construction of an animal shelter on the grounds of a state prison. Public disclosures of the disposition of the \$34 million in Katrina-related donations add up to less than \$7 million.

7) After gathering undercover video footage of improper animal handling at a Chino, CA slaughterhouse during

November of 2007, HSUS sat on its video evidence for three months, even refusing to share it with the U.S. Department of Agriculture. HSUS’s Dr. Michael Greger testified before Congress that the San Bernardino County (CA) District Attorney’s office asked the group “to hold on to the information while they completed their investigation.” But the District Attorney’s office quickly denied that account, even declaring that HSUS refused to make its undercover spy available to investigators if the USDA were present at those meetings. Ultimately, HSUS chose to release its video footage at a more politically opportune time, as it prepared to launch a livestock-related ballot campaign in California. Meanwhile, meat from the slaughterhouse continued to flow into the U.S. food supply for months.

The Center for Consumer Freedom, April 17th 2009

Immunoglobulin A Decreased in Animals with Pinkeye

For many spring-calving cow/calf producers, summer time is synonymous with pinkeye season. The pesky bacteria (*Moraxella bovis* and *Branhamella ovis*) most often incriminated with the problem seem to thrive in the summer months, when in reality this is just the primary time when (1) we have a susceptible new group of calves on the ground, and (2) the bacteria are most effectively transmitted from animal to animal by the seasonal presence of face flies and house flies as they feed on tears and the moisture around the eyes of calves.

A 3-year study from Iowa State* involving natural infection in a beef herd experiencing a 40% annual incidence of disease found that a specific immune factor (Immunoglobulin A, or IgA) was significantly diminished in animals with the disease. This suggests that elevated levels of IgA are necessary

for protecting animals from clinical disease. Knowledge of this situation is important because most of the pinkeye bacterins commercially available today do a poor or very short-term job of stimulating IgA production. This helps explain why pinkeye bacterins sometimes seem to have limited effectiveness. Because of the short half-life of IgA, it also means that for vaccination with a pinkeye bacterin to have a chance to work, the vaccination program needs to be completed very shortly before the time when pinkeye problems are historically expected to start.

Lack of a consistently effective vaccination program causes many producers to continue to rely more on other management tools – timely fly control, dust control, reducing other sources of mechanical irritants that might allow the infection to gain a foothold in the eye, etc. Armed with the knowledge gained from this research study, it may be possible to develop a more consistently effective vaccine in the future.

*A summary of the study can be found at:

<http://www.ag.iastate.edu/farms/05reports/mc/InfectiousBovineKeratocon.pdf> Larry C. Hollis, D.V.M., M.Ag., extension beef veterinarian

Blister Beetle Management in Alfalfa

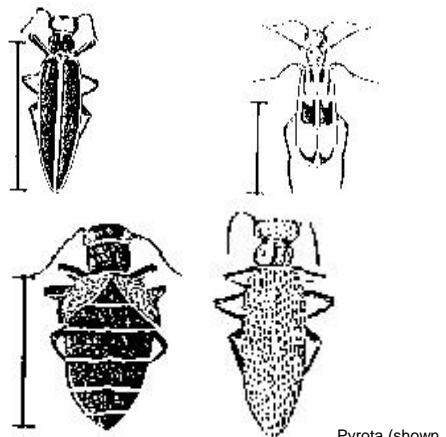
Blister beetles are an infrequent pest to this part of the country. Blister beetles cause limited plant damage to soybeans and alfalfa. However, when these beetles are ingested by livestock, especially horses, the results can be disastrous.

Blister beetles produce a highly toxic substance called cantharadin. Cantharadin causes severe irritation of the mucousal membranes of the digestive and urinary tracts. Horses that have consumed cantharadin will usually show signs of colic, changes in gait, kidney dysfunction, oral ulcerations, diarrhea, elevations in

heart and respiration rates, and dehydration. Often, if the horse does not receive veterinary care immediately, it will usually die.

Cantharadin is produced in the beetles hemolymph (insect blood) and can be ingested if the beetle is eaten, or if cantharadin is excreted from the beetle by crushing the beetle during harvesting. A major concern is that cantharidin is very stable and can have long term effects long after the alfalfa has been harvested Blister beetles are in the family Meloidae and are common throughout the United States. In Nebraska, several species can be found feeding on alfalfa during the growing season.

These beetles range from 1/2 to 1 inch in length and are readily identified by their characteristic shape; narrow, cylindrical, soft-body with a distinct "neck like" appearance when viewed from above. Their colors range from black to gray to brown and some species have orange stripes.



Pyrota (shown above), are long winged blister beetles. Most beetles in this group are black with narrow red stripes in the wing margins. Other species in this group are yellowish with moderately large brown or black spots. Meloe (bottom left) are a black blister beetle with very short wings. Epicauta (bottom right), are a long narrow winged blister beetle. These are widely distributed. Species in this group are solid colors or marked with tiny black spots.

Blister beetles usually have one generation per year. Females lay eggs into the soil in late summer and early fall. The eggs are laid in clusters and hatch in about two weeks. The larvae then move over the soil and feed on grasshopper or bee eggs. The larvae overwinter in the soil and, depending on the species, emerge as adults in June, July, or August.

Infestations of blister beetles often occur following weather conditions that encourage frequent grasshopper outbreaks. In Nebraska, few if any blister beetles will be found in first

cutting hay. However, it is still important to scout the field regularly, and have any suspect insects identified by your crop consultant, or extension agent.

Blister beetles, depending on species and sex, contain different concentrations of cantharidin. Therefore, determining a threshold in which blister beetles needed to be controlled to avoid cantharidin poisoning in horses is impossible. Also, research has shown that raking hay will remove most of the blister beetles before the hay is baled. The main problem with this is that the beetles that may have been crushed during the harvesting process could have excreted cantharadin into the hay before they were "raked" out. Thus, beetle free hay may not be cantharadin free hay.

There are several ways to treat alfalfa to kill blister beetles. It has been shown that when blister beetles are sprayed, they will die and fall to the ground surface below the reach of hay harvesting equipment. Blister beetles can be killed with different concentrations of Sevin or Parathion. Different formulations of these products are available and it is required that the field be sprayed 1 to 2 weeks prior to harvesting. Please see your crop consultant for details and always read and follow label directions.

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