

Large Animal Newsletter

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Water Requirements for Beef Cattle Under Summer Conditions

Recently, Southwest Nebraska and Northwest Kansas have been hit with hot 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 gallon 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

Fly Control

There are several external parasites that can be present in pasture and confinement situations. Of these, probably one of the most widespread and hardest to control would be that of the fly.

There are several different types of flies. Horn flies, face flies, houseflies, and stable flies are probably of biggest concern to this area.

Face flies and houseflies do not feed on blood. Face flies feed on lachrymal fluid (tears) and mucus around the eyes of animals. As the face fly feeds on the tears, their microscopic rasping mouthparts cause lesions in tender tissues around the eyes. This irritation causes more tears, thus providing more food for other flies. The lesions caused by face flies are also a route for the entry of pinkeye bacteria, which are mechanically carried by the face fly.

Horn flies and stable flies are both blood sucking flies that have piercing mouthparts. Thousands of horn flies can infest a single animal causing extreme nervousness and energy loss. Adult horn flies stay on the animal continuously and may feed 20

times or more in short periods per day.

Stable flies are a considerable pest to horses and cattle. Stable flies typically feed on the front legs of animals causing cattle to bunch in a circle to try to protect their front legs.

The economic losses for feeder cattle caused by stable fly infestations can be rather dramatic. Decreased weight gains of .1 to .48 pounds per day have been estimated. Losses are particularly acute when heat also occurs. The bunching behavior of cattle when being fed upon by stable flies will add to the heat stress.

Scientific evidence shows that fly infestations can cause economic losses both directly through reduced meat and milk production and indirectly, through decreased feed efficiency. Annoyance and irritation can also interfere with the animals feeding and resting times, interfering with the animals efficiency.

Heart rates, respiratory rates and urinary output increase when animals are exposed to 150-225 horn flies per head. Direct effects are often more difficult to document, however, research has shown that calves treated for horn flies increased in weight 11-14% more than non-treated calves. These weight increases translated into a return of ranging from \$2.16-\$8.38 for every \$1 invested for fly control. Treatment is economically feasible when fly populations reach 100-250 per head.

Fly control is difficult at best and no one method will work for all flies.

There are several treatment methods, these include: self-treatment devices, fly tags, pour-on and spot-ons, feed additives and parasitic wasps.

Self Treatment Devices

Self-treatment devices include backrubbers and dustbags. These devices are charged with a liquid insecticide with a diesel or light mineral oil carrier, or with an

insecticide dust. These devices work best when cattle are "forced" to use them. This can be accomplished by setting the devices in a position so that the cattle have to pass under them to get to their water or mineral sources.

Fly tags can also be used to help control flies. These tags have been impregnated with an insecticide. Two different classes of insecticides are currently used in fly tags. These include pyrethroids, or organophosphates. Widespread use of pyrethroid ear tags has induced hornfly resistance, thus producers should rotate insecticide classes of fly tags from year to year to keep resistance to a minimum.

Feed additives can be added to a ration or to mineral supplements to help reduce the emergence of fly larvae in manure. However, this method is probably most effective in arid regions where fresh manure is the only suitable breeding habitat for flies.

There are several pour-ons and spot-ons that do offer some fly protection, but this fly protection is often short lived. For the most part the cattle have to be run through working facility in order to apply the pour-on effectively, which may not always be feasible.

The use of parasitic wasps has become more and more popular. Parasitic wasps work best in confinement operations. Wasp larvae are placed strategically in areas where flies are most likely to lay their eggs (i.e. waste lagoons, outside of silage pits, drainage ditches, etc.). The wasp feed on the fly eggs. The wasp larvae have to be replaced every two weeks to a month.

One of the best forms of control in a confinement operation is that of proper manure management and sanitation. Regular removal of manure and other sources of fly breeding habitat is very important. Building mounds in the pens helps

provide efficient drainage in the pens during wet periods, and the wet edges of the mound can be scraped out into the lot to facilitate for rapid drying. The key is to remove any fly breeding habitat.

There is probably not *one* single method that will do a good job of controlling flies by itself. Chances are you will have to choose a combination of the mentioned methods that work best for your operation.

Kevin L. Cawthra, Animal Scientist, Twin Forks Clinic INC

Announcing Individualized Herd Health Protocols for your Cattle

We are pleased to announce a new service from our clinic — the Integrated Herd Health Planner (IHHP) from Pfizer Animal Health. The IHHP is an innovative new planning tool that allows us to efficiently customize a unique herd health protocol specifically for your operation. This customized protocol takes into consideration your personal management practices and individual herd challenges.

The first step toward enrolling in the IHHP is to answer a set of standardized questions about your current operation. Using the information you provide, we can then customize and identify dates for vaccinations, synchronizations, examinations and other herd health events throughout the year.

The IHHP will allow us to:

- Customize a unique animal health event calendar specifically for your herd.
- Develop a shopping list, which allows you to better plan your animal health product purchases.

- Improve our clinic's understanding of the unique health challenges of your operation.
- Provide better coordination of services, such as pregnancy and breeding soundness exams.

To find out more about this exciting new planning tool, please contact us. We'd be happy to tell you more about it, and to provide you with the initial questionnaire that will help us both get started.

Preg Check Early

By now, most bulls have been in with the herd for 45-60 days. The breeding season is almost over for many producers.

At Twin Forks Clinic, we have the ultrasound capabilities to preg check at 35 days or later. We have also acquired a monacle for our ultrasound machine. This is an eyepiece that the veterinarian wears that makes it easier see the image in field conditions.

Preg checking with the use of ultrasound is more expensive, but it allows us to find the pregnancy earlier. Many producers preg check 35 days after they pulled the bulls. The veterinarian can then preg check by palpation and then ultrasound any questionable ones. This gives us the advantage of being able to preg check early, while still keeping costs down

Replacements

Many producers turn the bull out with the replacement heifers about 2 weeks to 1 month prior to turning the bull out with the cows. While this helps make sure that the heifers get adequate attention during calving, it also provides an opportunity to preg check and market open heifers earlier.

Due to BSE in recent months, cattle that are above 30 months of age at

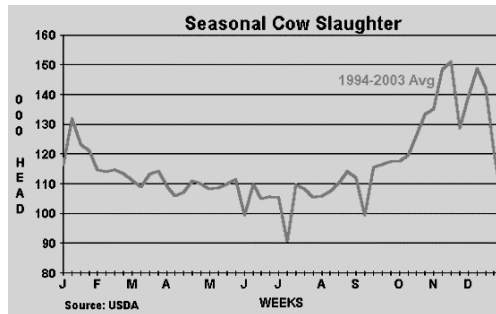
slaughter are marketed differently, thus returning less money than they would have if BSE were not a factor. The main reason for this is that it is believed that cattle, if infected, do not show signs of or transmit BSE until they are over 30 months of age. Long story short, the sooner we identify open heifers and get them finished for market, the better our chances of getting better price for them.

Another good reason for preg checking heifers early is that by doing this we are removing sub fertile females from the herd. Lifetime cow studies from Montana indicated that properly developed heifers that were exposed to fertile bulls, but did not become pregnant were often sub fertile compared to those heifers that did conceive. Further studies of those females that did not conceive in their first breeding season were followed throughout their lifetime; they averaged a 55% yearly calf crop. Despite the fact that reproduction is not a highly heritable trait, it makes sense to remove this genetic material from the herd so as not to proliferate females that are difficult to get bred.

The obvious reason to preg check and market the opens early is to reduce feeding costs. Aside from the

initial cost of the female, feed cost is the highest expense producers have. Even though marketing opens now will not have an impact on your overall grazing costs, it will have an impact on your fall and winter feed costs.

One final reason for preg checking early is the ability to market open cull cows before supplies hit their peak.



As you can see from the previous graph, seasonal cow slaughter supplies generally peaks in November, and December.

Conversely, utility cow prices normally start to decline towards the end of August and usually bottoms out in November or December. By selling cull cows earlier, you stand a better chance of getting a higher price/pound. Since marketing opens and cull cows usually makes up 15-

25% of the income for the typical cow calf operation, it makes sense to try to market them at the right time.

Kevin L. Cawthra, Animal Scientist, Twin Forks Clinic INC

Check Our Blog for Upcoming Meetings and Announcements from Twin Forks Clinic

This is just a reminder that all announcements and meetings are listed on our blog site at <http://blog.twinforksclinic.com/>. This site contains information on upcoming meetings, tradeshow, changes to our website, updates to the latest Large Animal Newsletter, and any other announcements that come up. There is also a link to this site from our homepage at www.twinforksclinic.com.

Also, if you would like to receive the Large Animal newsletter via email, just drop an email to tfcbenkelman@twinforksclinic.com and we will email the newest Large Animal Newsletter when it is available.

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