

## Water Quality: Its Relationship to Livestock

Floron C. Faries Jr., John M. Sweeten and John C. Reagor

Safe supplies of water are absolutely essential for livestock. If livestock do not drink enough safe water every day, intake of feed (roughages and concentrates) will drop, production will fall and the livestock producer will lose money.

Water constitutes 60 to 70 percent of the body of livestock. Consuming water is more important than consuming food, the amount depending on the weather and the character of food consumed. Animals should be given all the water they can drink. Those that do not drink water may suffer stress or even dehydration.

Dry cows need about 8 to 10 gallons of water daily. Cows in their last 3 months of pregnancy may drink up to 15 gallons a day. Those in milk need about five times as much water as the volume of milk produced. And calves require much more water after weaning than before. Ignoring this fact may result in a growth check in calves from which they may never fully recover.

Livestock may have health problems resulting from substandard quality water. They may drink less or may ingest mineral or organic contaminants, which can cause poor performance and nonspecific disease conditions, although no major livestock health problems associated with water quality have been reported.

When evaluating the quality of water for livestock, consider whether livestock performance will be affected; whether water could serve as a carrier to spread disease; and whether the acceptability or safety of animal products for human consumption will be affected.

Several elements found in water seldom offer problems to livestock because they do



they are toxic only in excessive concentrations. Examples are iron, copper, cobalt, zinc, iodide and manganese. These elements do not seem to accumulate in meat or milk to the extent that they would cause a problem.

The most common water quality problems affecting livestock production are:

- ◆ High concentration of minerals (excess salinity);
- ◆ High nitrogen content (nitrates, nitrites); Bacterial contamination;
- ◆ Heavy growths of blue-green algae; and
- ◆ Accidental spills of petroleum, pesticides and fertilizers.

Livestock tolerance of minerals in water depends on many factors: kind, age, diet and physiological condition of the animal; season; climate; and kind of salts in the water. Livestock may drink less if the water tastes bad. Livestock restricted to waters with high salt content may suffer physiological upset or death.

Common compounds found in waters of excess salinity include sodium, chloride, calcium, magnesium, sulfate and bicarbonate. Bicarbonates and carbonates may contribute heavily

### Contact:

Lee Dudley  
CEA Ag & NR

(903) 693-0300 Ext 161  
jldudley@ag.tamu.edu

110 S. Sycamore St.  
Rm 104  
Carthage, TX 75633

### Upcoming Events:

**7/2:** Panola Master Gardeners

**8/1:** Quarterly Ag Industry Breakfast Meeting

**8/6:** Panola Master Gardeners

**8/13:** Panola Beef & Forage Planning Committee Breakfast

**8/15:** Panola Landowners Services Information Meeting

**8/20:** Panola Natural Resource Planning Committee Breakfast

**9/3:** Panola Master Gardeners

**9/26:** Harrison/Panola Wildlife Information Meeting

**9/27:** Deadline to turn in Forage Samples

**10/24:** Panola County Hay Show & Program

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When feed also is high in salt, lower water salinity would be desirable. Moreover, animals consuming high moisture forage can tolerate more saline waters than those grazing dry brush or scrub. Hard water without high salinity does not harm animals.

Sources of nitrates and nitrites include decaying animal or plant protein, animal metabolic waste, nitrogen fertilizers, silage juices and soil high in nitrogen-fixing bacteria. Nitrates and nitrites are water-soluble and may be leached away to the water table or into ponded water. Levels may be affected by runoff or by concentration caused by water evaporation from a pond or storage tank.

All surface waters must be assumed to carry bacteria. Keep livestock from contaminated water that has not been adequately oxygenated because of bacterial pathogens living there.

Most surface water sources have problems with algae growth as a result of high nutrient loading in runoff water. Avoid using waters bearing heavy growths of blue-green algae, as several species can produce animal toxins (poisons). To control algae in storage tanks, reduce the introduced organic pollution and exclude light. Disinfect water storage tanks by adding 1 ounce of chlorine bleach per 30 gallons of water, holding for 12 hours before draining, and then refilling with clean water. Chlorination can also control certain bacteria.

To evaluate water quality in relation to livestock health problems, it is imperative to obtain a thorough history, make accurate observations, ask intelligent questions and submit suspected water and properly prepared tissue specimens without delay to a qualified laboratory. Obtain assistance from a local veterinarian, county extension agent or the Texas Veterinary Medical Diagnostic Laboratory in College Station or Amarillo.

Generally speaking, animal health problems usually are NOT caused by poor water quality. Water-related health problems in livestock are usually stress problems caused by an inadequate water supply or by unpalatable water with a high level of dissolved substances.

Protect livestock from dangerous drinking water by providing alternative sources of safe water. Adequate rain dilutes dangerous surface waters. Livestock producers should provide sufficient safe water for animals by preventing contamination, minimizing evaporation and providing enough sources of supply year-round.

<b>Harrison/Panola</b>	
<b>Wildlife Information Meeting</b>	
<b><u>Thursday - September 26, 2019</u></b>	
<b>Marshall Civic Center</b>	
<b>Marshall, TX</b>	
<b>5:00 pm Doors Open</b>	
	<b>1 Laws &amp; Regs (CEU)</b>
	<b><u>No Charge To Attend</u></b>
<b>RSVP: September 20, 2019</b>	
<b>Panola AgriLife</b>	
<b>Extension Office @</b>	
<b>(903)693-0300 Ext 160</b>	

**Topics:**

**White Tail Deer Management:** Bobby Deeds (State Certified Wildlife Biologist and Record Rack Feed Consultant)

**Feral Pig Management and Control Techniques:** Dr. Jamie Sugg (Texas A&M AgriLife Extension Agent Rusk County)

## Tips to Avoid Heat Stress in Cattle

Area summer temperatures combined with high dew points can cause significant heat stress to cattle. Heat stress is magnified with high night time temperatures. The combination of high day and night time temperatures prevents cattle from cooling. Three days of these conditions can result in elevated heat stress levels. Here are some simple tips to make sure your cattle stay comfortable:

1. Avoid handling, transporting, moving, or processing cattle. If cattle must be handled, do so in the early morning hours using low stress handling techniques.
2. Provide additional water for cattle on pasture, especially if they only have access to one tank in the pasture. Also, it is critical to check water sources frequently for problems and provide additional tank capacity as water intake increase.
3. Observe cattle for abnormal behavior problems often occurring during stressful events. This can be done by watching cattle movement, location and behavior for indications of problems. Have a back-up plan ready if power or water systems fail.
4. Provide shade during heat stress days, shade is critical especially for dark-haired, fleshy, young and older cattle. Shade can easily be provided by allowing access to pasture with trees or providing access to open buildings, or through the use of shade curtains placed out in the pens.
5. Provide adequate ventilation if cattle are being fed and housed in an enclosed barn or building, use fans to move air out or through the building or open sides of the barn or provide access to an outside pen or pasture with shade. Using sprinklers in this situation will potentially intensify the problem and create more humidity without proper air movement to remove it from the building.

The first signs of heat stress is increased breathing followed by open mouth breathing (panting), and slobbering. As the heat stress becomes severe, cattle will tremble and lose coordination. If they go down, they

When the first signs of heat stress are observed, minimize the stress immediately with the tips above. Early intervention is the key to survival, especially providing intervention in the evening when cattle are trying to dissipate heat built up from the day.

Also be aware that heat could have implications which may not be seen immediately. If you are in breeding season with your cow herd, heat stress could result in greater losses in the first few weeks after conception. For bulls preparing for breeding season, the high temperatures could impact semen quality 2 to 4+ weeks later, resulting in lower conception rates a month after the heat stress event. These are additional reasons to keep your cow herd cool during times of high heat index weather.

### Panola County

## Landowners Information Meeting

**Thursday - August 15, 2019**

**Carthage Civic Center**

**Carthage, TX**

**5:00 pm Doors Open**

**No Charge To Attend**

**RSVP: August 9, 2019**

**Panola AgriLife**

**Extension Office @**

**(903)693-0300 Ext 160**

**Presentations By**

**Texas A&M AgriLife**

**Panola NRCS**

**Texas Forest Service**

**Panola Ag. Industry  
Breakfast Meeting  
August 1, 2019  
1 General CEU**

*Program Topic:*

*Armyworms*

*Location:*

*Panola County Court House*

*(Enter ground floor from Wellington St.)*

*Doors open 6:45 a.m.*

*Meeting Starts 7 a.m.*

*Coffee and Donuts Provided*

**Sampling Hay Bales and Pastures  
for Forage Analysis**

**T. L. Provin and J. L. Pitt**

**Extension Soil Chemist, and Extension Program Specialist**

**The Texas A&M University System**

Forage analysis can help you determine both the nutritive value and potential toxicity of forage, as well as the need for protein and mineral supplements. Accurate analysis requires that forage be sampled properly so that representative samples are delivered to the testing laboratory.

The common practice of pulling samples from the ends and edges of bales can cause the nutritive value of forage to be underestimated. Decayed and low-quality leached forages are often found on the outer edges of weathered hay bales. Cattle often reject this hay when they have access to more palatable forages in other parts of the bale.

The ideal method of sampling hay bales is to use a bale probe. A number of probes are available; most probes cut a 1-inch-diameter core from the bale. Consult your county extension agent for information on purchasing a bale probe.

**Round Bales**

Sample cores should be taken midway up the side of the bale and toward the center of the bale. Sampling near ends or bottoms of bales may not yield a representative sample.



Remove the outer 1/2 inch of the bale surface before sampling so the sample will not be contaminated by dust and debris from the field. Next, drill or core into the bale 12 to 18 inches deep. Carefully pour the sample into a container. Good sample containers include manila mailing envelopes, sealable plastic bags (only if dry) and small paper sacks (fertilizer and feed sacks are not appropriate sample containers). Continue sampling four to five other bales from the same field and cutting. Mix the samples thoroughly and submit this composite sample to the laboratory

**Sampling Hay Bales and Pastures  
for Forage Analysis**

**Field Sampling Pastures to be Grazed**

It is harder to obtain proper forage samples in the field than from hay bales. You must be aware of the height at which the hay will be harvested, the forage height after grazing, and differences in fertilization from one area of the pasture to another. Do not make a composite sample from areas of the field that have received different rates of manure or fertilizer because this will skew the final laboratory analysis. Trouble spots, areas under different management and fertilization practices, and areas with different types of grass should be sampled separately.

To gather a subsample, cut or tear the forage at the final forage height after grazing. Be careful not to pull the entire plant out of the ground. Gather subsamples from ten to fifteen areas within a given pasture or field (not to exceed 40 acres). Combine all subsamples and place them in an appropriate paper sack or envelope (do not use plastic bags, fertilizer bags or feed sacks, as these



containers may skew the analysis). Label the container with appropriate identification for the field and sample and submit it with the laboratory submittal form.

**Panola County Hay  
Show Forage  
Collection Deadline:  
9/27/2019**

**Submitting a Sample**

Reminder, all samples need to be turned into either the Panola County AgriLife Extension office or Panola NRSC office on or before the September 27th deadline. As in the past, your local Panola Soil and Water Conservation District Board will pay for two forage samples per producer. For assistance in collecting your samples please contact the AgriLife Extension Service at (903)693-0300 Ext 160.

**PANOLA COUNTY HAY SHOW  
ENTRY FORM**

Name: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Phone: \_\_\_\_\_

**Hay Sample Turned in (Check one)**

\_\_\_ 1) Hybrid Bermuda: Type \_\_\_\_\_

\_\_\_ 2) Coastal Bermuda (>50 % Coastal)

\_\_\_ 3) Bahia

\_\_\_ 4) Mixed (2 or more Species): Type \_\_\_\_\_  
\_\_\_\_\_

\_\_\_ 5) Other: Type \_\_\_\_\_

Fertilizer Used: \_\_\_\_\_

Rate/Acre: \_\_\_\_\_

Sample Cutting (Circle one) (1st 2nd 3rd 4th)

Texas A&M AgriLife Extension Service  
Panola County  
**110 Sycamore St rm104**  
Carthage, TX 75633

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