

Beat the Heat

With summer in full force and temperatures rising to the mid to high 90's, it is important that livestock producers keep in mind the dangers of heat and humidity. When these factors are high, losses can occur from "Hot Weather Stress". Heat stress can greatly impact cattle producers through decreased milk production and subsequent calf growth, decreased reproductive performance in cows and bulls, and decreased stocker and feeder performance. It's estimated that heat-stress has cost the cattle industry over \$75 million in the past 10 years.

Beef cattle prefer temperatures that are between 41° F and 77° F. When temperatures exceed this comfort zone, cattle are at risk of heat stress. Many environmental factors affect the potential for heat stress, including relative humidity, wind speed, solar radiation, ground cover, access to water, diet (grazing endophyte-infected fescue), shade and nighttime temperatures. In addition, individual animal characteristics can contribute to heat stress. These include hide color, breed, health, adaptation, hair coat length and disposition. When a combination of these factors and ambient temperature cause an animal's heat load to exceed its ability to dissipate that heat, heat stress occurs. Hot weather stress is of particular importance to confined livestock (hauling) and those being worked.

Identifying Heat Stress—When heat stressed, cattle exhibit many physical and behavioral changes. Heat-stressed animals will have increased body temperatures, increased water consumption, decreased feed consumption and decreased weight gains. The most obvious are cattle congregating in shady areas or standing in ponds, and decreased grazing activity. You may also notice cattle panting. Cattle with more than 90 breaths per minute is an indication of heat stress, and a respiration rate over 110 indicates a dangerous heat stress level.

Managing Heat Stress— Always provide fresh, clean water to cattle at all times. Water intake increases during times of heat stress, so make sure that you have enough clean fresh water to keep up with cattle demand. If ponds are the only source of water, monitor water quality throughout hot, dry periods. Ensure that cattle have access to shade. If shade area is limited, heat stress can be compounded by animals crowding together.



If possible, avoid working and transporting cattle during periods of heat stress. If cattle must be worked or rotated to a new pasture, do it as early as possible in the morning. Livestock producers need to be flexible when making plans to work and move livestock during these dangerous periods. Producers can adjust ventilation and bedding according to the temperature. When transporting livestock during hot weather, use bedding in trailers such as sand, sawdust, or wood shaving and "wet" the bedding. Avoid using straw, as it tends to insulate and trap heat. Use "wet" bedding in "short-sleeve" weather. It is also advisable to sprinkle animals that are in confined spaces.

Heat stress can also affect the reproductive performance of cows and bulls. Cows and heifers are more likely to have lower fertility, fewer visible signs of heat and shorter heats. It is not uncommon to have early bred cows to have increased embryonic loss during excessive heat stress. Also, do not forget about the bull. He will have lower libido, lower sperm production and decreased semen quality. Keep in mind that heat stress can impact semen quality for up to eight weeks. May all you cows calve.

Source: David Hoffman, *Livestock Specialist*

Summer Weeds of Pastures and Hayfields

Now that hay season is (mostly) over, it's time to start thinking about getting pastures and hayfields into the best possible condition going into the summer and fall. Several things need to be considered: fertility, avoiding overgrazing, stockpiling, overseeding legumes, and maybe even a complete pasture renovation. One management practice that should not be overlooked is summer weed control.

1. Musk Thistle – Musk thistle is a common weed that nearly everyone recognizes when it's in bloom this time of year. It's also the weed that extension specialists receive the most calls about, typically from individuals complaining that their neighbors are not doing anything to control the weed. Unfortunately, there's not a whole lot to be done about thistles when they are in bloom. Spraying at this time does not provide good control. Mowing may only spread the seed further. One option is to cut the flower heads off by hand and destroy them but this is extremely time consuming and inefficient. The best thing for this time of year is to hope that the musk thistle weevil is working on the plant. Musk thistle control is best achieved by spraying rosettes in the spring or fall.



2. Johnsongrass – Is johnsongrass a weed or isn't it? Early in the spring, when johnsongrass is young, it has a forage quality similar to that of tall fescue. As it matures, it becomes more of a problem. It is capable of accumulating high levels of nitrates on fields that have been heavily fertilized. In the fall, it can produce high levels of prussic acid when stressed due to freezing temperatures. It is also an aggressive spreader that can quickly take over large sections of pastures. Unfortunately, there are not selective herbicide options on cool-season grass pastures. Outrider is often mentioned as an option but there are specific label restrictions regarding its use on certain forages. Glyphosate used as a spot spray or with a weed wiper is effective, but has limited utility.

3. Sericea Lespedeza – Sericea lespedeza is rapidly becoming a major problem throughout the region. A single plant has dozens of stems and each of those stems can produce up to 10,000 seeds, making a small problem this year a big problem in future years. There are two times when sericea lespedeza can be effectively controlled with herbicides: when it 12 or more inches in height (June) or when it is in the bud to flowering stages (late August to early September). Sericea lespedeza should not be sprayed when the plant is under drought stress, as the herbicides will not be effective. Seed in the ground will make multiple years of spraying a necessity to achieving good control.

4. Poison Hemlock – Poison hemlock is not a summer weed, but it is a weed that was especially prevalent this past spring. Much like musk thistle, poison hemlock is a biennial and is best controlled by spraying the rosette in the fall or early spring. Poison

hemlock is of somewhat greater concern than musk thistle because of its toxic properties. Ingestion of a relatively small amount can easily kill a cow. Grazing animals are unlikely to selectively consume the plant in a pasture setting, as long as other forage is available. However, they will eat it in a bale of hay and the plant remains toxic long after the hay has been put in the barn.

A lot of farmers will tell me that they don't want to spray their pastures because they don't want to kill their legumes. If weed pressure is severe enough, I tell them not to worry about the legumes as they are relatively cheap and easy to reestablish. However, depending on the herbicide that was used, there may be plant-back restrictions of several months up to a few years for legumes and other forage species.

For more information, see MU Extension's Pasture Weed and Brush Control Guide or contact your local county extension office.

Source: *Travis Harper, Agronomy Specialist*

When Ticks Bite

Ticks are second only to mosquitoes as transmitters of human disease. There are more than 800 species worldwide, including the common hard ticks, soft ticks and a third family consisting of a single African species.

Ticks eat only blood, and they can transmit pathogens acquired from one host when feeding on the next host. They spend 95 percent of their lives off of their hosts. Ticks can withstand long periods of starvation, with some studies showing that they can survive more than a year without a host.

Ticks require moisture, which is why they are generally found in humid, cool environments. They find their hosts by “questing,” or climbing onto vegetation and clinging, head down, to grass or branches. They wait for a host to pass and then they latch onto the host.

Only six of the 800-plus known tick species are commonly associated with human disease in Missouri, and most of these are hard ticks.



The lone star tick is common in Missouri and uses mammals and birds as hosts. Whitetail deer are its preferred host.

Credit: Photo by James Gathany, Centers for Disease Control and Prevention

To prevent being a tick host, it is recommended to tuck pant legs into socks or taping them closed before going into tick-infested areas, and spraying tick repellent onto clothing and skin.

Check for infestation immediately after leaving a wooded area rather than waiting to feel a tick bite. **Transmission of many diseases takes up to 24 hours of attachment and feeding**, so prompt inspection is critical. Wash clothing immediately. While ticks can sometimes survive hot water, they can survive in a hot dryer for only an hour.

After removing a tick, treat the area with alcohol, disinfectant or topical antibiotics to reduce the risk of secondary infection. Save the tick in a small plastic vial (for up to two weeks) in case there is a need to examine it later. Record the date of removal and the location on your body from which the tick was removed.

Finally, watch for signs and symptoms of a tick-borne disease. General symptoms include **headache, fever, muscle pain, joint pain, nausea, vomiting and diarrhea**.

If you develop a rash or fever within several weeks of removing a tick, see your doctor. Be sure to tell the doctor about your recent tick bite, including when it occurred and where you most likely acquired the tick.

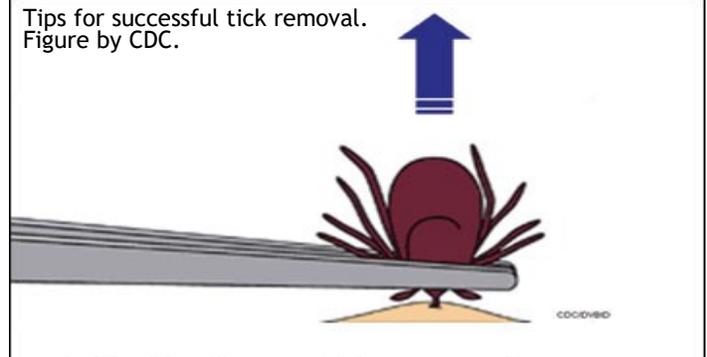
In most cases, if you have symptoms of a tick-borne disease and have noted the date of tick removal and brought the tick specimen with you, a doctor will start antibiotic treatments. Antibiotics are very effective at combating tick-borne illnesses. If antibiotics are administered when the symptoms first appear, the symptoms disappear and long-term or chronic effects are rare.

However, if you do not see a doctor and do not take antibiotics, the symptoms will eventually pass, but you are at risk of experiencing of long-term effects such as chronic headaches, fever, muscle or joint pain, nausea or diarrhea. These chronic symptoms do not respond to treatment.

Preventive antibiotic treatments have generally not been recommended in the U.S. because they are not necessary in most tick bite cases.

This article was taken from the MU Extension “Guide to Ticks and Tick-Borne Diseases”. This is available at our county extension centers or as a free download at extension.missouri.edu/p/ipm1032

Tips for successful tick removal.
Figure by CDC.



1. Use blunt curved forceps or tweezers.
2. Grasp the tick as close to the skin surface as possible and pull upward with steady even pressure.
3. Do not twist or jerk the tick.
4. Do not squeeze or crush the body of the tick as its fluids may also be infective.
5. Do not handle the tick with bare hands.
6. Thoroughly irrigate the bite site after tick removal, and wash with soap and water.
7. Ticks may be safely disposed of by placing in a container of alcohol or flushing down toilet.

Ag workers at high risk of heat illnesses

Agriculture workers are 20 times more likely than other workers to die from heat.

Heat deaths are 100 percent preventable with water, rest and shade. Workers in farming, fishing and forestry are at high risk of heat illness because heat builds in the body during hard work. Heat illness occurs when the body can no longer cope and physical and mental functions start to break down. Farmers should be aware that heat stroke occurs when temperatures may not seem abnormally high.

Heat stroke doesn't only affect you on those 105-degree days. You can be in danger when temperatures are over 80 degrees and humidity is over 75 percent. Acclimate yourself to blistering temperatures and be especially cautious if you work in direct sunlight.

Many heat illnesses are misdiagnosed. By the time workers reach an emergency room, symptoms may resemble those of a heart attack. Signs of heat exhaustion include dizziness, headache, sweaty skin, weakness, cramps, nausea, vomiting and a fast heartbeat. Symptoms of heat stroke include red, hot, dry skin, high temperature, confusion, convulsions and fainting. NIOSH offers a free app to track the heat index. Download it at cdc.gov/niosh/topics/heatstress.

Suggestions to avoid heat illness:

- Drink water every 15 minutes. Do not wait until you are thirsty. By then, it is too late.
- Rest in the shade to cool down.
- Wear a hat and light-colored clothing.
- Keep an eye on fellow workers and family members. Ask them to watch for you.
- Start working in the heat gradually. Acclimate yourself to the heat.



Find more resources at www.osha.gov/heat.

Story source: Karen Funkenbusch, Health and Safety specialist