



Protecting Farm Animals in Extreme Heat

CATTLE, SHEEP, AND GOATS



As temperatures increase throughout the summer, it is important for farmers and ranchers to continually monitor their animals—in particular, beef and dairy cattle, sheep, and goats—for heat stress and to create a management plan to keep them cool and comfortable.

Heat stress occurs when the temperature rises above an animal's thermoneutral zone, which is the range of ambient temperatures in which an animal can maintain normal body temperature and stay warm or cool without expending extra energy. The temperature-humidity index (THI), which accounts for air temperature and relative humidity, is one of the most critical indicators of an increased risk of heat stress.

Susceptibility to heat stress depends on a number of factors, including species, age, reproductive status, weight, coat characteristics, and the animal's environment. Cattle have greater difficulty dissipating body heat compared to other animals, so they are more susceptible to heat stress. Additionally, cattle confined to feedlots, especially those that consist primarily of dirt and concrete surfaces, are at higher risk than pastured cattle that have greater access to shaded areas and air movement to cool themselves.

Other animals that are at an increased risk include high-producing dairy cattle, heavy feedlot cattle closest to market, very young and very old animals that do not produce enough energy to withstand prolonged periods of heat, animals with dark hides, and those with prior health problems. While sheep and goats are able to tolerate heat better than cattle, they can still experience heat stress and should be monitored accordingly.

The Animal Welfare Institute offers the following tips to keep farm animals cool during extra hot days:

→ To optimize animal welfare, it is important for farmers and ranchers to monitor for early signs of heat stress and deploy heat abatement and intervention strategies before more problematic signs begin to appear. One way



AWI FACT SHEET

to do so is by continually measuring and recording the animals' respiration rates. Signs of heat stress include panting, open-mouth breathing, excessive salivation, foaming around the mouth, decreased feed intake and rumination, and abnormal behavior such as restlessness, grouping together, and spending more time standing.

- Providing animals with shade is critical and should be the starting point for heat abatement. Shade can be provided using trees, buildings, or other sunshades. If shade is not available, other strategies for helping animals dissipate heat can be employed.
- Increased water intake is important to help alleviate heat stress. Ensure all animals have adequate access to clean water, and provide extra water tanks if necessary. At least 2 to 3 inches of trough space per head is recommended for cattle.
- Water intake decreases if the water temperature exceeds 80 degrees Fahrenheit. To keep water cool, make sure water lines are covered or are not exposed to the sun.
- Low-pressure sprinklers or soakers should be used to wet cattle, as such devices are highly effective in lowering body temperature and keeping the animals cool. Cattle should be sprayed in a shaded area at least every 15 minutes when ambient temperatures are high to consistently keep them cool throughout the day. Heat abatement can be enhanced by using sprinklers/soakers in conjunction with high-speed fans.
- High-pressure misters or foggers can also be used in climates with low humidity to lower the temperature in the animals' surrounding area and indirectly cool them.
- Provide adequate ventilation, including in calf hutches, and ensure air movement is unrestricted by using fans, opening up buildings and barns, and removing any windbreaks or barriers outdoors that would block air movement.
- Adjust the animals' feeding program by adding more fiber, fat, and higher-quality forages to the diet. This will help maintain rumination, increase energy content, and decrease heat produced during fermentation and digestion.
- Move feeding times to the cooler periods of the day. Provide a smaller portion of feed in the morning and a larger portion during the late afternoon or evening to allow rumen fermentation, which produces body heat, to occur during cooler night temperatures.
- Shear sheep in the spring to allow their fleece a chance to regrow a bit before the hot summer season. This will help keep the sheep cool and protect them from sun exposure.
- Avoid handling, moving, or transporting animals during high temperatures. As much as possible, animals should be handled when temperatures are lower, using low-stress techniques.