THE SCIENCE WORLD
A Monthly e Magazine
ISSN:2583-2212
Popular Article
March, 2026 Vol.6(3), 677-680

Strategies For Effective Summer Management in Buffaloes

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doi.org/10.5281/ScienceWorld.19294129

Heat stress is the response of animal's body to the high external temperature that causes thermoregulatory alterations. During extreme hot humid or dry weather, the thermoregulatory ability to release heat by sweating and panting is hampered leading to heat stress. Commonly observed in animals during the months of March to June (peak summer in May in Telangana), when the temperature rises over the critical temperature (36°C for buffaloes). Highest recorded temperature was 45.3°C in Jagtial district, Telanagana.

Buffaloes are more prone to heat stress though live in the tropics and subtropics because they have poor heat resistance when compared to cattle and other animals, resulting in severe suffering in hot weather. Buffaloes have a very poor heat regulating mechanism than cattle due to their black skin, which absorbs more solar radiation and has fewer sweat glands, diminishing heat dissipation by evaporative heat loss. Furthermore, the thyroid-adrenal mechanism in buffaloes is less efficient than in other dairy animals.

Summer heat in buffaloes results increased levels of cortisol, reduced thyroid activity, decreased reproductive hormones like LH/FSH causing "Summer infertility", higher anti-diuretic hormones and lowered growth hormones.

Clinical signs include:

- rise in body temperature (106 – 108°F)
- rapid and weak pulse
- rapid but shallow breathing
- unusual salivation
- capillary refill is very fast

- increased peripheral blood flow
- decreased feed intake and
- increased water intake
- dull and cold skin
- sudden death

Economic importance - Heat stress causes production loss, lower breeding efficiency, and in extreme situations death. Every year major decline in milk production occur owing to heat stress, resulting in massive financial losses. Heat stress has a negative impact on reproduction by reducing oestrus expression and conception rate, while extending the length of service and dry period

Treatment - Immediate veterinary aid should be provided to the suffering animal. In meantime, the animal shall be moved to a cooler place, splash animal body with cold water or wrapped in wet sheets and provided with fan.

Management of heat stress –

- The animals are to be kept under shades. Most effective source of shade is trees (Neem, Kanuga, Mulberry, Banyan, Peepal, Arjun, etc). If shade trees are not available, thatched roof of a minimum height of 9 feet should be provided. • Agri-nets with 20% perforation are also useful.
- Thatching the roof with materials like paddy straw, palm leaves, thunga, etc or painting the roof with white paint provides cool environment.
- Barriers against the hot winds using thatched wall or wet gunny bags or Mulberry trees can be useful measure.
- Microclimate alteration devices like Misting/Fogging of water in animal house thrice in an hour along with a fan in the afternoon is useful in hot dry weather. Auto Mister/ Fogger with minipumps & cyclic timers preferable. Fans/ blowers to be used to induce evaporation from the skin of animals. This method can work both in hot dry and hot humid condition.
- Adequate cool drinking water to animals, to be provided under shade. Increased mineral supplementation during hot weather to meet the increased demand of minerals. Especially, Potassium rich mineral mixture is preferred.
- Heat stress can also be managed by spraying/ sprinkling water directly on the body of animals for a period of 1 to 5 minutes at an interval of 10- 30 minutes.

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Published 25/03/2026

- The most effective way of combating heat stress in buffalo is wallowing in the water pond.
- Feeding should be practiced during cooler hours of the day - early morning, evening &night. Grazing to be done during early morning & late evening hours to avoid the scorching heat.
- Diets with low-fibre and high fermentable carbohydrate have lower dietary heat increment compared to high fibre diets.

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Published 25/03/2026