बिहार सरकार
पशु एवं मत्स्य संसाधन विभाग
पशुपालन निदेशालय
विकास भवन, नया सचिवालय, पटना-15

बिहार सरकार

पत्रांक– 14 आपदा 02/2024 ..... दिनांक– ...../...../2025

प्रेषक,

डॉ0 रजनी रमण श्रीवास्तव,
अपर निदेशक (पशु उत्पाद),
पशुपालन निदेशालय।

सेवा में,

सभी जिला पशुपालन पदाधिकारी,
बिहार।

विषय :– **Advisory for Management of Livestock during Heat Wave के संबंध में।**

महाशय,

निदेशानुसार उपर्युक्त विषयक पशुपालन आयुक्त, मत्स्यपालन, पशुपालन एवं डेयरी मंत्रालय, पशुपालन एवं डेयरी विभाग, भारत सरकार, नई दिल्ली के Do. No. K-11053/47/2024-AHD दिनांक 22.04.2025 पत्र की छायाप्रति संलग्न करते हुये कहना है कि पत्र में वर्णित दिशा–निर्देश के आलोक में जमीनी स्तर पर प्रभावी एवं कार्यान्वयन सुनिश्चित करने हेतु अपने अपने क्षेत्रांतर्गत पशुपालकों तक जानकारी प्रसारित कराना सुनिश्चित करें।

इसे अतिआवश्यक समझा जाय।

अनु0–यथोक्त।

विश्वासभाजन

ह0/–

अपर निदेशक (पशु उत्पाद)।

ज्ञापांक :– 14 आपदा 02/2024.....1848 (1)/ पटना–15, दिनांक ...16.../05.../2025

प्रतिलिपिः– विभागीय आई0 टी0 मैनेजर को विभागीय वेवसाईट पर अपलोड करने हेतु प्रेषित।

20/5/2025

अपर निदेशक (पशु उत्पाद)।

दूरभाष संख्या: 0612-2215962 ई-मेल: dirahd-bih@nic.in वेबसाइट: state.bihar.gov.in/ahd

डॉ. अभिजित मित्र
Dr. Abhijit Mitra
पशुपालन आयुक्त
Animal Husbandry Commissioner

सत्यमेव जयते

आज़ादी का अमृत महोत्सव

भारत सरकार
मत्स्यपालन, पशुपालन एवं डेयरी मंत्रालय
पशुपालन एवं डेयरी विभाग
नई दिल्ली–110001
Government of India
Ministry of Fisheries, Animal Husbandry & Dairying
Department of Animal Husbandry and Dairying
Krishi Bhawan, New Delhi-110001

D.O. No. K-11053/47/2024-AHD

Dated 22nd April, 2025

Dear Colleagues,

In light of the ongoing heatwave conditions forecasted across several parts of the country, it is imperative to address the heightened risk and vulnerability of livestock during this period. Heat stress can lead to significant impacts on animal health, productivity, and welfare, thereby affecting the livelihoods of livestock keepers and the overall animal husbandry sector.

As part of our continuous efforts to ensure the welfare of animals, the Department has developed an **Advisory for Management of Livestock during Heatwave**. This advisory outlines comprehensive guidelines and recommended best practices to mitigate the impact of extreme temperatures on livestock and support our farming communities during this challenging period.

The advisory is attached herewith for your kind reference and necessary action. You are requested to disseminate the information to all relevant field functionaries and stakeholders for effective implementation at the grassroots level.

We appreciate your continued cooperation and proactive efforts in safeguarding the well-being of livestock and strengthening our collective response to climatic challenges.

With warm regards

Yours sincerely

(Abhijit Mitra)

To

Additional Chief Secretary/ Principal Secretary/ Secretary, Animal Husbandry all States/UTs.

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(23)

Advisory on wake of Heat Wave Situation

Introduction

Heat wave is a condition of atmospheric temperature that leads to physiological stress, which sometimes can claim animal life. The temperature at a grid point may be 3° C or more than the normal temperature consecutively for 3 days or more. The temperature of any place if continues to be more than 45° C consecutively for two days or more, than it is called a heat wave condition.

Various mathematical formulas have been developed by researchers and research institutes to assess the severity of heat stress in livestock. These formulas typically assign a score on a 100-point scale, which is then compared using a standard Temperature Humidity Index (THI) chart. The THI chart helps evaluate the stress imposed by prevailing climatic conditions on livestock over time. One commonly used formula for quantifying heat stress in farm animals is the standard THI formula:

$$THI = db°F - \{(0.55 - 0.55RH) \times (db°F - 58)\}$$

Here, THI represents the Temperature Humidity Index, db°F denotes the dry bulb temperature in Fahrenheit, and RH stands for relative humidity (expressed as a decimal). The THI serves as a guide to measure heat stress by amalgamating the effects of temperature and humidity into a single value. Heat stress severity is categorized into three levels based on THI:

Livestock alert: 75-78 degrees Fahrenheit (23.9-25.6 degrees Celsius)
Livestock danger: 79-83 degrees Fahrenheit (26.1-28.3 degrees Celsius)
Livestock emergency: 84+ degrees Fahrenheit (28.9+ degrees Celsius)

Prevention and Acclimatization

Preventing heat-related illnesses in animals is paramount and largely achievable. The crucial intervention involves implementing appropriate prevention strategies and possessing a comprehensive understanding of effective preventive measures, first aid, and veterinary support.

Animals transitioning from cooler to hotter climates should be restricted from venturing outside during peak heat hours. It is essential to ensure they have access to abundant water. Acclimatization can be facilitated by gradually exposing them to the hot environment during heat waves.

Animals at High Risk:

1. Young and elderly animals
2. Dark coloured animals
3. Animals with prior history of respiratory, kidney and liver issues
4. Newly shorn sheep
5. Pregnant and Lactating animals
6. Heavily built animals

High metabolic rate animals (e.g., high milk yielders, pigs, dogs)

Signs of heat stress include but are not limited to:

- ***Physical Signs:*** Lying outstretched, Dry nose, Weakness, Muscle tremors, Salivation, Collapse, Swollen Abdomen

- ***General Behaviour and Activity Level:*** Reduction in movement, Change in posture, Hysteria, Increased drinking, Lack of appetite
- ***Respiratory and Breathing Changes:*** Panting, Rapid Panting with tongue out, Open beak panting (inpoultry)
- ***Temperature Regulation:*** Seeking shade constantly, prolonged access to water, Holding wings out (in poultry)
- ***Production:*** Decrease in Milk Production

The heat disorders with symptoms and first Aid are as under:

Heat Disorder	Symptoms	First Aid
Sunburn (Pigs and newly shorn Sheep more prone)	Redness, swelling, blisters, fever	Give water bath / shower, apply sterile dressing on blisters.
Heat Cramps	Spasms usually in leg and abdominal muscles with sweating	Move the animal to cool or shaded area and massage spasm.
Heat Exhaustion / stress	Heavy sweating, weakness, cold pale skin, panting, dry nose.	Keep the animal in cool shed under cooler / fan with drinking water availability. Decrease stocking rates of the animals
Heat stroke (lactating animals more prone) due to severe and/or prolonged heat exposure	High body temperature with hot, dry skin and rapid, strong pulse.	Move the animal to cooler environment with cool bath or sponging to reduce body temperature. Seekveterinary care at the earliest.

Preparedness and Response by State AHD

Awareness and Veterinary Care:
State shall ensure that the animal owners should be made aware of adverse effects of heat wave and wide publicity should be given regarding the preventive measures, Do's and Dont's during this period. State AHD should continue efforts on sensitization and capacity building of veterinary Officers, Para-veterinarians, staff/workers on heat related illness, its early recognition and management.

Veterinary infrastructure, procedures and expertise need to be arranged/upgraded which may also include:

- Maintain close coordination with the Meteorological Department (IMD) to relay daily heat information to local veterinary hospitals and dispensaries for proactive preparedness and response.
- Conducting mock drills in collaboration with SDRF to develop effective operational strategies tailored to local conditions and needs.
- Stocking veterinary hospitals with essential supplies such as mineral mixtures, life-saving drugs, fluids, and equipment at all times.
- Activating mobile veterinary units for swift response.
- Conducting awareness programs on animal and heat management.
- Establish disposal sites for deceased animals.

- Collaborating with other stakeholders/agencies for advanced preparedness related to transportation of animals/feed and fodder, power supply, water supply, sanitation, carcass disposal, disinfection, and zoonotic diseases.
- Exploring energy conservation measures and strategies to reduce indoor heat, such as cool/green roofs, window shades, rainwater harvesting, and recycling plants in veterinary hospitals and animal shelters.
- Administering deworming and vaccinations against Haemorrhagic Septicaemia, Enterotoxaemia, and Black Quarter to animals before the onset of heat waves.
- Ensuring nutritional support for animal owners, including Vitamin A and area-specific mineral mixtures.

Animal Care Guidelines:

- ***Shelter:*** Provide shaded areas for animals to rest during peak heat hours (11 am - 4 pm).
- ***Drinking Water Supply:*** Provide shaded areas for animals to rest during peak heat hours (11 am - 4 pm).
- ***Ventilation & Cooling:*** Improve ventilation in sheds, use sprinklers for cooling, and consider temporary shade during peak heat.
- ***Exercise & Care:*** Improve ventilation in sheds, use sprinklers for cooling, and consider temporary shade during peak heat.
- ***Cooling:*** Use cooling mats and avoid confining animals in areas with minimal shade or airflow.
- ***Transportation:*** Improve ventilation in sheds, use sprinklers for cooling, and consider temporary shade during peak heat.

Animal Health and Welfare:

- ***Hair removal:*** Consider trimming excess hair or wool to help with cooling..
- ***Heat stress Management:*** Avoid vaccinations or deworming during extreme heat. Monitor young, pregnant, or lactating animals closely..
- ***Bathing:*** Bath animals during cooler parts of the day to prevent overheating.

Housing Management:

- ***Ventilation:*** Keep animal shed doors and windows open for proper ventilation. In peak sunny hours, tie wet gunny bags in the animal shed. These bags act as natural evaporative coolers, providing relief from the heat.
- ***Overcrowding:*** Avoid overcrowding in animal housing and increase floor space during summer if possible.
- ***Roof & Insulation:*** Thatching the roof with materials like paddy straw etc, painting the roof with white paint, or providing false ceiling insulation will help provide a cooler environment.

- ***Cooling Systems:*** Misting/Fogging in the animal's surroundings with water for at least thrice an hour, combined with a fan, is beneficial in hot, dry conditions. An automated mister or fogger with mini pumps and cyclic timers is recommended. When using foggers, ensure adequate ventilation to prevent an increase in Temperature-Humidity Index (THI).
- ***Wallowing:*** Provide wallowing opportunities for species that are accustomed to it.

Feeding Management:

- ***Feed and Water Placement:*** Placing feed and waterers in cool/shaded places
- ***High-Quality Nutritional Feed:*** Alongside green fodder, ensure that animals receive high-quality feed. This includes balanced concentrates, grains, and supplements. Proper nutrition supports their immune system and resilience against heat stress.
- ***Split Feeding:*** Encourage split feeding by increasing the frequency of feeding and Shift feeding times to cooler parts of the day to avoid excessive metabolic heat.
- ***Energy feeding:*** High energy feeding must be completed well with coolest part of the day
- ***Grazing Time:*** Limit grazing to early mornings and late evenings to reduce heat exposure.
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- ***Electrolytes & Nutrition:*** Incorporate electrolytes into the animals' diet and provide nutrient-dense feed.
- ***Drinking water:*** Use non-metallic water containers and provide clean and cold (but not chilled) drinking water twice the normal requirement,
- ***Minerals & Salts:*** Add mineral mixture and common salt to the diet.

Awareness Creation:

- ***Awareness:*** Conduct awareness campaigns for farmers on managing heat stress in animals through community meetings, training sessions, and various media channels.
- ***Public Support:*** Encourage the public to place wide-mouthed water containers outside their homes for thirsty animals and birds.

Emergency Measures:

- ***Vigilance:*** Stay alert for signs of heat stress and move animals to cooler areas if needed.
- ***Veterinary Care:*** Seek professional veterinary assistance if there is no improvement in the animal's condition.
- ***Veterinary Supplies:*** Ensure veterinary facilities have ample supplies of essential medications, fluids, and electrolytes.
- ***External Support:*** Approach district authorities, NGOs, and animal welfare groups for support in establishing temporary water stations and alleviating the impact of heat on animals.