

Summer Management
Protect your Birds From Heat
stress

Dr Rajendra B. Pawar

PDRC PUNE



Heat Stress

- Temperature of environment varies from 35°C to 48°C in different zones.
- This increase in temperature cause effect on Physiology of birds causing what is called heat stress.

Heat Stress

- When the environmental temperature rise above 30°C (86°F) the birds heat load (body heat + environmental heat) is more than the heat loss. This in turn, leads to increase in body temperature.

Clinical signs/symptoms of Heat stress

- Panting

Fast panting (from normal breathing of 25 breaths/minute to 250 breaths/minute) causes respiratory alkalosis as blood carbon dioxide levels diminish due to hyperventilation.

- Increased Thirst (water intake)

- Reduced appetite (lower Feed intake)

Panting



Clinical signs/symptoms of Heat stress

- Drop in egg production and reduction of egg size.
- Eggs shell quality (shell less eggs).
- Increased FCR.
- Increased cannibalism.



Clinical signs/symptoms of Heat stress

- Birds stand with wings spread.
- Fall on side.
- Increased body temperature.
- Mortality after 4 pm to 10 pm.
- Death.

Effect of Heat

- Decreases disease resistant.
- More respiratory diseased complex.
- Increased depletion during summer.

Postmortem Lesions

- Dehydrated carcass.
- Mucoid exudates in mouth.
- Pale/cyanotic comb.
- Pale keel or breast muscles.
- Increased body temperature.
- Congestion of lungs, trachea, liver, spleen, kidney.
- Fluid (watery) content of intestine.
- Rapid decomposition of carcass.

PM photo



Pale keel and breast muscles

Step to combat Heat Stress

Important note

Anticipate heat stress well in advance and start heat control measure before birds get stress.

Step to combat Heat stress

Water Management

- Use good quality of sanitizer.
- Provide clean and cool water to all birds.
- Provide electrolytes and Vitamin C,B-complex vitamin and vitamin E.
- Cover water tank with wet gunny bags to avoid direct exposure to heat.



Step to combat Heat stress

Water Management

- Increase number of drinkers.
- Increase frequencies of watering.
- In case of nipple- insulate nipple pipeline with wet gunny cloths.

Step to combat Heat stress

Feed Management

- Early Feeding-Before 6 am so that birds will eat feed before 10 am.
- (withdrawing feed six hours before peak warm temperature in the afternoon can lower the risk)
- Increase feeding frequencies.
- Stir the feed 4 to 5 time in a day for stimulating birds to eat.
- Wet mash feeding may be adopted with precaution of not to form feed cakes.

Step to combat Heat stress

Feed Management

- Do not offer any feed after 10 am to 4 pm (There is increase by 7-12% in body heat two hours after eating feed).
- Changes in feed formulation-Do not increase **Crude Protein** in feed.
- (heat generated by one gram of protein consumed is more than one gram of fat or carbohydrate consumed).

Step to combat Heat stress

Feed Management

- However increase the amount of lysine and methionine.
- Add 20 to 30% extra vitamin and minerals.
- Available Phosphorus content of the feed should be increased.

Step to combat Heat stress

Feed Management

- Vitamin-C is necessary to maintain integrity of blood vessels.
- Synthesis of Vitamin C by kidney is affecting during high temperature.
- Add Vitamin C @ 200 to 500 gram per ton of feed.
- Vitamin E is also beneficial during heat stress.

Step to combat Heat stress

Feed Management

- Feeding of Soda-bi-Carb.
- Excessive panting increases respiration release more CO_2 , can changes acid base balance in poultry, this result less availability of Bicarbonate for egg shell formation.
- Providing Soda-bi-Carb will reduce heat stress and improving egg shell quality.

Step to combat Heat stress

Feed Management

- Feeding of Betaine will also reduce heat stress.
- Betaine is trimethyl derivative of amino acid glycine.
- It is osmoprotectant-reduces cellular dehydration.
- Betaine is antiapoptotic and promote cell proliferation in hyper osmotic medium.

Step to combat Heat stress

Feed Management

- Betaine stimulates cell proliferation in the intestinal tissue, enlarged gut wall epithelium provides more surface area for nutrient absorption.
- Betaine increases water retention capacity of muscle tissue.
- Dose-500 gram to 1kg per ton of feed.

Step to combat Heat stress

General Management

- Roof Management.
- Thatching of roof with grass, paddy straws, palm leaves, coconut leaves, sugarcane dry leaves (Pachhat), gunny cloth.
- It reduces temperature by 5 to 7⁰C inside the shed.
- Provide micro sprinkler on roof every 5-6 feet on sprinkler.
- White washing of roof with lime and blue will reduce temperature by 5⁰F.

.Thatching of roof



Micro sprinkler on roof



Thatching of roof with grass & paddy straws



Step to combat Heat stress

General Management

- Wet Gunny curtain with drips both side of the farms.
- Very much effective to control hot air movement inside the shed.
- It will also maintain optimum humidity inside the shed.

Wet Gunny curtain with drips



Side curtain with drip



Step to combat Heat stress

General Management

- Wind breaker plants plantation at the compound of farm will prevent direct hot dusty wind on birds.
- Side Mandap (Pandal) at one side of the farm (minimum 5 to 6 feet side mandap).

Side Mandap (Pandal)



Step to combat Heat stress

General Management

- Do not over crowd the birds.
- Do not disturb birds during hot hours to minimize their activity.

Step to combat Heat stress

General Management

- Over Head Tank Management.
- Cover over head tank with gunny cloth or agri waste material.
- Cover outside pipe line with gunny cloth.

Step to combat Heat stress

General Management

Foggers

- It will reduce temperature by 10⁰C.
- Required less water.
- Use water sanitizer in fogging water.
- Do not use fogger when relative humidity is over 65%



Step to combat Heat stress

General Management

Ceiling fans

- Use ceiling fan for every 350 to 500 sq. feet.



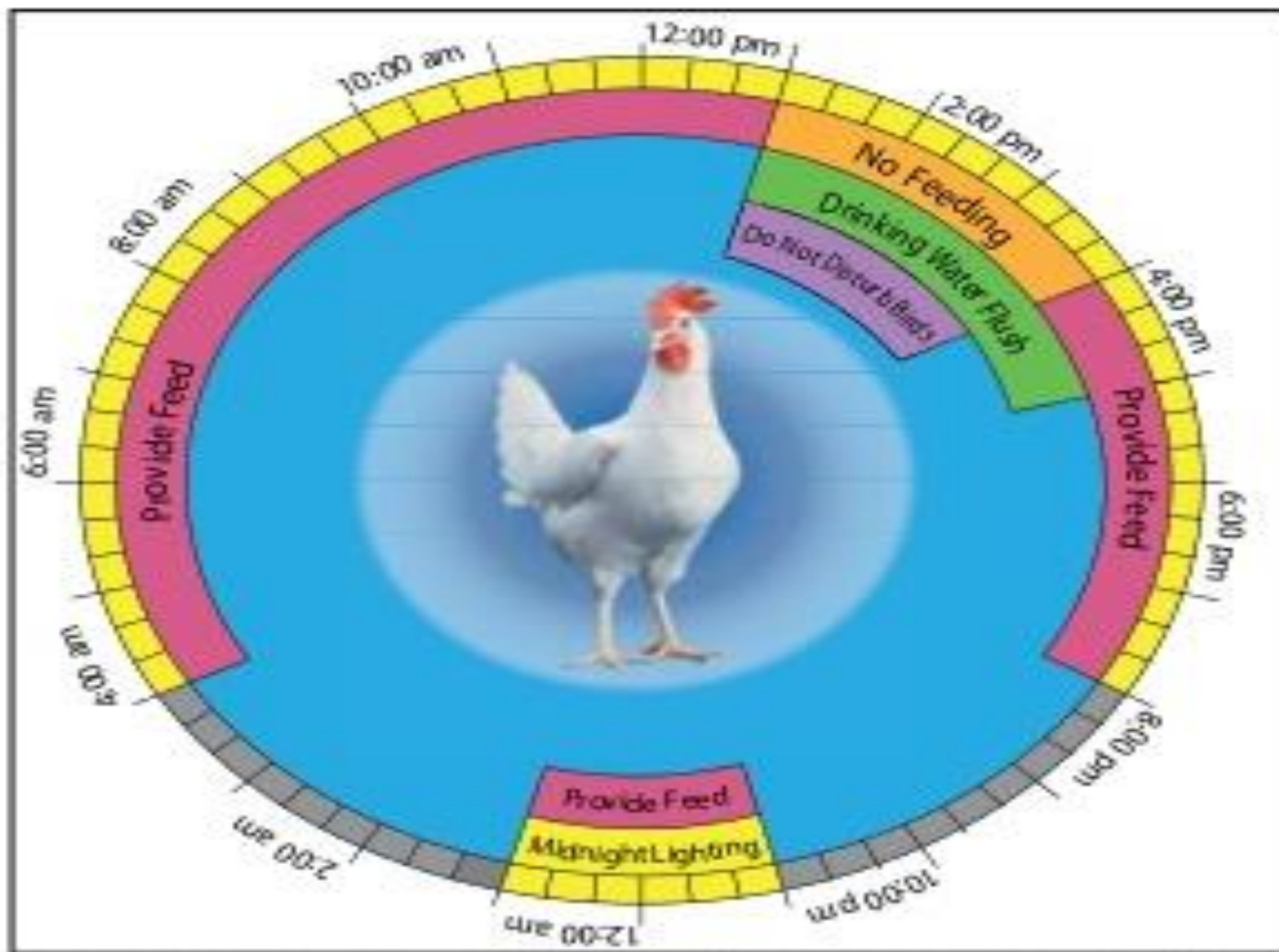
Step to combat Heat stress

General Management

- Birds severely heat stressed may be dipped in cold water for about 2 to 3 minutes, keeping their neck and head above water level.
- Keep these birds under ceiling fan.

Key points for summer management

- Provide space.
- No ceiling and double curtains.
- Afternoon time(1pm to 4pm) is very crucial, this period temperature may goes up to 45°C and humidity below 10%,birds will be more stressful in this time (Panting).
- Provide sufficient cool water in that period.
- No water scarcity at this time at any circumstances.



Thank you very much