REDUCING THE RISK OF HEAT STRESS IN BROILERS!

What is Heat Stress in Broilers?

Heat stress is a term generally used to describe sudden, spiking mortality in broilers during periods of hot weather. It occurs when birds' internal body temperatures rise above normal and they are unable to shed this excess heat effectively. It may be confused with other causes of sudden mortality such as hypogylcaemia (low blood sugar due to lack of feed), heart failure (flip-overs), and some infectious causes e.g. *E. coli*, Gumboro. It is important to try and achieve an accurate diagnosis in order to put in place the best future prevention strategy.

The modern broiler has been bred to grow rapidly with a high metabolic rate. A by-product of a high metabolic rate is greater heat generation in the birds. This means that modern broilers are at particular risk of heat stress[1]. Heat stress can occur at any age; however, it is more commonly seen in older birds when their growth and metabolic rates are at their peak.

At this time, the birds' surface to mass ratios are smaller, meaning that heat is less easily shed. In addition, the greater size of the birds means that they are in closer proximity to others. This results in heat being more easily transferred between birds and less easily dispersed from the flock.

What does it look like?

Clinical signs in the shed: Panting, mouth breathing, increased water intake, reduced feed intake, reduced feathering/broken feather shafts (chronic heat stress), death.

Post-mortem signs: Cyanosis (bluish discoloration) of featherless areas of head, venous congestion throughout carcass (blood pooling), flaccid (floppy) paralysis[2].

Tips to minimise the risk of spiking mortality due to heat stress:

1. **Shed temperature and humidity should be managed to breed standards for the age of birds.** High humidity even at lower temperatures can lead to birds over-heating, and appropriate ventilation replaces humid air with dry air, even on very warm days.
2. **Use the correct lighting pattern for the age of birds.** The dark period is very important to rest the gastro-intestinal system and minimise the risk of hypoglycaemic events.
3. **Minimise stress.** Stress leads to increased activity and therefore raises the metabolic rate and increases heat production. Thinning is a significant source of stress and should be managed with great care; ideally avoiding the hotter times of day and ventilating to cool the house as much as possible beforehand.
4. **Avoid feed outages.** Feed outages can lead to hypoglycaemia and stress and predispose birds that are growing fast to over-heating.
5. **Consider using sugars** (such as dextrose), vitamin C and/or electrolytes in water around stressful time periods such as thinning or periods of hot weather. Ideally these should be added at least 12 hours before such an event is expected.
6. **Keep water lines well maintained** and fully functional to ensure fresh water is always freely available.

An excellent source of more detailed information and practical advice can be found here:

Defra (2005). Heat Stress in Poultry; Solving the Problem.

https://www.gov.uk/government/publications/heat-stress-in-poultry-solving-the-problem

1. Lara LJ & Marcos MH. (2013) Impact of Heat Stress on Poultry Production, Animals, 3, pp. 356-369; doi:10.3390/ani3020356. **2.** Pattison, McMullin, Bradbury and Alexander (2008). Poultry Diseases. Saunders Elsevier. pp. 537-538.

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