



## HOT WEATHER WARNING

### What is heat stress?

Birds of all types and ages can become 'heat stressed' when they have difficulty in achieving a balance between body heat production and body heat loss. When the ambient temperature increases birds must lose heat by panting, this is a normal response to regulate the body temperature to remain close to 41°C.

### How do birds lose heat?

Heat can be lost in a variety of ways; birds will modify their behaviour to regulate body temperature.

- Radiation – Heat will be lost from the body by radiation if the surrounding surfaces are below bird surface temperature.
- Convection – heat loss will occur from the natural rise of warm air from around the body. Increasing air movement is important to assist convection.
- Conduction – transfer of heat from one surface to another, such as contact through the litter which may be cooler than the bird.

When the birds are no longer able to maintain its body heat balance by one of the three above methods, it must use "evaporative heat loss", or panting.

- Evaporation – This is very important at high temperatures as poultry do not sweat but depend on panting. This is only effective when the humidity is not too high. Hot, humid conditions are therefore much more stressful and life threatening to the bird than hot dry conditions.

### How do birds respond to an increase in temperature?

Birds will try to re-establish their heat balance with the surrounding by changing their normal behaviour.

- Move away from other birds.
- Move to cooler areas, such as shaded areas or against block walls and moving air streams, if housed.
- Raise their wings away from their bodies to reduce insulation and expose any areas of skin that have no feathers.
- Pant slowly.

- Rest to reduce heat generated by activity.
- Reduce feed intake.
- Increase water consumption.
- Divert blood from internal organs to the skin, which darkens skin colour.
- Begin fast panting.

### What are the consequences of panting?

- Heat is lost as moisture is evaporated from airways in the birds.
- Panting requires muscle activity, which in turn generates additional heat. The heat lost by evaporation must be greater than the additional heat generated by panting.
- Slow panting is a normal activity and can be sustained for extended periods of time.
- Respiration rate can increase by as much as 10 times the resting rate. Heavy panting can tire birds, reducing their ability to cope with extended periods of hot weather.
- Increased respiration rate results in loss of carbon dioxide and a rise in blood plasma pH (called respiratory alkalosis). Blood potassium and phosphates are depleted, sodium and chloride levels increase.
- Growth rate or egg production will reduce.

### Solutions from Agritech.

#### Why use Electro C™ during periods of stress?

- ✓ A liquid with electrolytes and vitamin C for use via drinking water for poultry and suitable for organic use.
- ✓ Contains aniseed flavour to stimulate water intake and cool the birds down.
- ✓ Replenishes the electrolytes lost such as chloride, potassium, sodium and magnesium.
- ✓ Has a source of vitamin C which is necessary for various biosynthesis such as regulation of body temperature and activation of immune system.
- ✓ Vitamin C requirement is higher during heat stress.
- ✓ Can be used with Breeze.

