REDUCING HEAT STRESS IN BROILERS

Most poultry production involves large numbers of birds (high stocking density), living in controlled environment housing. Under supervision of the farmer, the house provides everything the birds need to maintain their welfare and performance, including protection from the weather.

However, high ambient temperatures, especially when coupled with high humidity, can have a major impact on performance. Heat stress not only causes suffering and death in the birds, it also results in reduced or lost production that adversely affects profit.

Therefore, there is a need to protect the birds so that heat stress is minimised. An easy solution is to supplement ADD'AQUA® Heat Relief through the drinking water.

HEAT STRESS

Birds are heat stressed if they have difficulty achieving a balance between body heat production and body heat loss. Above the upper critical temperature (Tc = 41°C), birds must actively lose heat by panting. Failing to do so correctly, when the body temperature rises more than 4°C above the Tc the birds will die. Birds respond to increasing temperature by lifting their wings away from their bodies to reduce insulation and expose any area of skin that has no feathers; by resting to reduce activity generated heat; and by diverting blood from internal organs to the skin. They also respond by reducing their feed intake and increasing their water intake. The latter has a huge impact on performance. Hence, the best solution is to provide cool drinking water and supplementing an additive to it in order to support the animal coping better with the increased ambient temperature.

THE SOLUTION

A trial was conducted with a total of 120 day-old Cobb broiler chickens, until 28 days of age. Birds were challenged by increasing the ambient temperature to induce heat stress from day 21 until day 28. The replicates were grouped by treatment and arranged in sets of four cages to allow drinking water supplementation per cage set. ADD'AQUA Heat Relief was added to the drinking water at 0.5L/1000L.

Heat stressed animals supplemented with ADD'AQUA Heat Relief demonstrated better numerical performances, both in terms of feed intake and in growth. Biomarkers for stress were determined in the blood. Chicken leucocyte changes in response to stress have been a reliable indicator.

In several studies, it has been reported that psychological and physical stressors result in an altered ratio of heterophil to lymphocyte (H/L). Moreover, H/L ratio has been shown to be highly heritable and a reliable index for determining stress in poultry. Hence this parameter has been used over the years to select for more heat stress resistant animals over time.

Numerical differences were found in H/L ratio and total lymphocyte, thrombocyte and eosinophil concentration due to heat stress. Addition of ADD'AQUA Heat Relief compensated for these differences.

Based upon the above mentioned results one can easily conclude that supplementation of ADD'AQUA Heat Relief resulted in increased feed intake and growth therefore alleviating heat stress negative impact on animal performance. Moreover, physiological changes due to heat stress in blood plasma parameters were all compensated thanks to ADD'AQUA Heat Relief efficiency against heat stress.

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