

# Betaine helps reduce heat stress in poultry

Betaine, a natural plant extract, can offset the negative effects of heat stress in poultry. New research by Danisco Animal Nutrition showed that by adding betaine to poultry diets it was possible to improve feed conversion ratio (FCR) by at least 6.5%

**T**rials in Greece and the Middle East, where birds were exposed to temperatures ranging from 26°C to 42°C, showed that feeds supplemented with betaine significantly improved FCR and bodyweight gain, by helping poultry stave off dehydration and maintain feed intake. The bird's mechanism for controlling water balance consumes relatively large amounts of energy. However, betaine is an osmolyte, which helps the bird retain water more efficiently. Therefore, with betaine in the feed, the bird is able to retain water allowing more energy for growth. In a university trial conducted in Greece, where temperatures reached 40°C, the 42-day FCR of broilers reared on a feed supplemented with betaine improved by 6.0% (control = 1.84 vs betaine = 1.73). Similarly, the body weight of the birds fed diets supplemented with betaine improved by 3.6% (Control = 1.92 kg vs betaine = 1.99kg). In a trial at an experimental poultry farm in Israel temperatures reached 34°C with 70% humidity. After 41 days, the FCR of broilers on feed with betaine-supplementation improved by 2.9% (control = 1.77 vs betaine = 1.72) and the body weight rose by 2.0% from 1.95kg to 1.99kg. Betaine also acts as a methyl donor, which can allow some added

methionine to be replaced in the broiler feed. In both of these trials, feeds containing betaine also contained reduced added methionine. As a result, the betaine supplemented feeds offered feed cost saving opportunities, in addition to the observed bird performance improvements.

In a further university trial conducted in Egypt, where temperatures ranged from 26°C to 42°C, broilers were fed diets containing different levels of betaine. After 49 days the results showed that betaine-supplemented feeds improved FCR by up to 11% (control = 2.01 vs betaine = 1.81). Final bodyweight also rose by up to 12.2% (control = 2.05kg vs betaine = 2.30kg). When asked to comment on the findings Dr Milan Hruby of Danisco Animal Nutrition said: "Losses in poultry performance due to heat stress can make the difference between profit and loss to



**Reducing the effect of heat stress improves bird performance dramatically.**

the producer, which makes dealing with high temperatures of critical importance. Betaine can be an extremely useful tool as part of a strategy that includes reviewing housing and management practices to combat the effects of heat stress." □

#### Key Words

Betaine, Betafin, Betafin (poultry), heat stress, broiler