MHA®

Optimization of the source of **Methionine to reduce heat stress**

What is MHA®?

MHA is a feed supplement proven to be an effective source of methionine. In dry granular powder form, MHA is the leading source of 2-hydroxy-4-(methylthio) butanoic acid (HMTBa) inclusions in premixes and farm feed mills. MHA delivers organic calcium, reduces nitrogen excretions and supports performance, especially during heat stress.

The fact that birds are unable to perspire makes them highly susceptible to heat stress. In cases of heat stress, birds decrease their activity and food intake to reduce metabolic heat production. They present signs of nutrient deficiency due to lower consumption.

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Birds lose heat through panting but when the panting becomes excessive, it can lead to an acid-base imbalance. The result of this imbalance is a smaller amount of available H + ions, leading to respiratory alkalosis.

Heat stress exacerbates feed intake, increases mortality and results in a loss of poultry production. Careful handling can counteract the negative effects of heat stress. As for nutrition, a methionine source can make a difference.

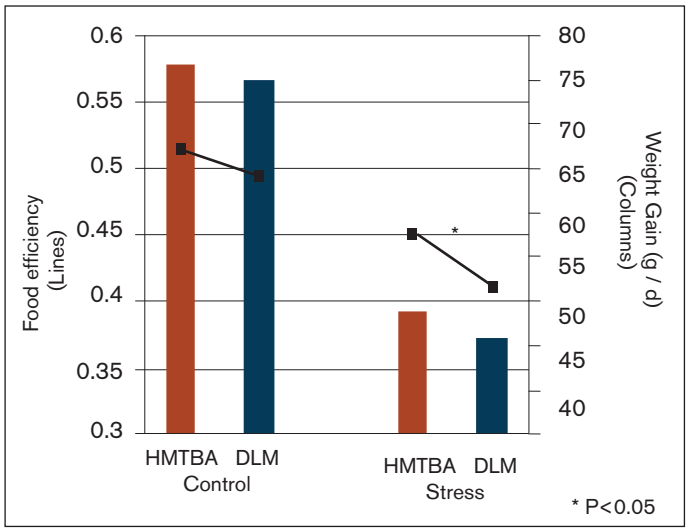
Research has shown that the absorption of DL-methionine is less efficient in birds exposed to heat stress (above 18 - 21°C). The absorption HMTBa (2-hydroxy-4-(methylthio) butanoic acid, a source of methionine) however, is not affected, resulting in an increased availability of methionine for growth and development.

Low feed intake is the main cause of loss in performance during high temperatures

Controlled feeding experiments with (pair-feeding) have shown that the reduction in food consumption is the main cause of drop in performance of broilers at high temperatures.

A number of studies have been done that demonstrate the advantage of using HTMBA compared with DL methionine in animals under heat stress.

Figure 1. HMTBa (Alimet, MHA) resulted in better performance than DL-methionine in conditions of heat stress



Knight et al (1994)

Figure 2: HMTBa gained more weight (P <0.05) than DL-methionine under heat stress (32o C) when the arginine: lysine ratio ranged from 1.03 to 1.34 (Balnave et al. 1999).

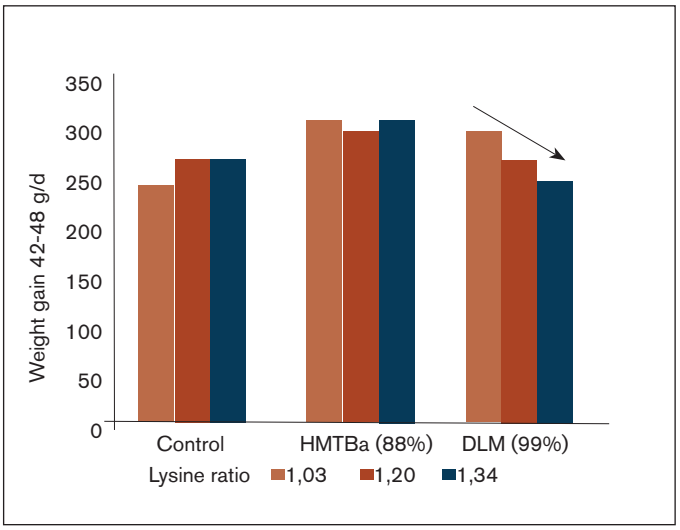


Figure 3: Lower mortality (%) using Alimet instead of DL-Methionine, 21 to 43 days

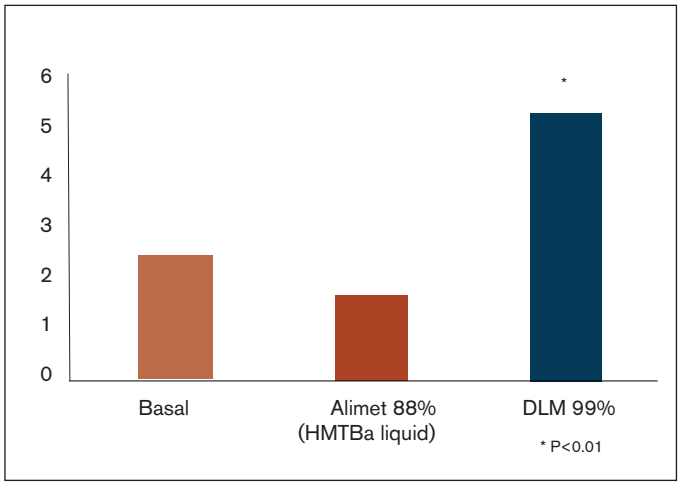
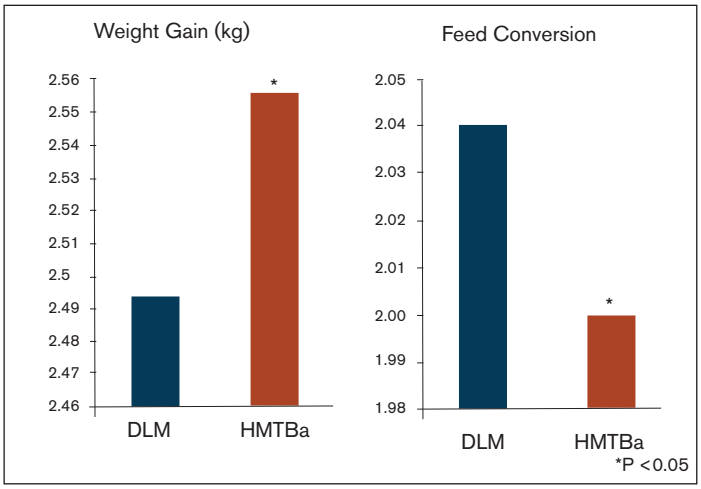


Figure 4: Improved performance of birds fed the methionine hydroxy analog (HMTBA) vs. DL-methionine (DLM)



Ribeiro et al. (2004)

*References available on request

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