

Improvement of muscle oxidative stability and processing yield in relation with dietary methionine sources.

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The aim of this work was to compare the effect of dietary methionine sources (DLM/HMTBA) used separately or in combination, on technological traits of broiler Pectoralis muscle (PM). 672 male Ross broilers were distributed in three different treatments: DL-Methionine (DLM, Rhodimet NP99®), DL-methionine hydroxy-analogue (HMTBA; Rhodimet AT88®) and a 50% DL-Methionine + 50% DL-Methionine hydroxy-analogue (Met-Mix). Broilers were fed a wheat-corn-soybean meal based diet with soya oil as the unique lipid source.

42-d feed conversion ratio did not differ significantly between treatments. Meat quality parameters (pHu, color L*a*b*) and drip loss have been measured on Pectoralis major muscles. Moreover, Napole yield (Ham processing yield) and lipid oxidation (TBA-RS) were determined at D3, D6 and D9 after slaughter.

No significant differences between treatments were observed on breast meat yield, thigh meat yield, fat pad and color parameters at D1. Conversely, a significantly higher pHu value ($p < 0.001$) was observed with Met-Mix treatment compared to respectively DLM or HMTBA treatment (6.03 vs 5.94 and 5.98). Moreover, Met-Mix treatment showed significantly lower drip loss ($p < 0.05$) than other treatments (0.75 vs 0.92 %). The Napole yield appeared also significantly higher ($p < 0.05$) in Met-Mix treatment (84.5%) compared to 82.9 and 82.8 % respectively for HMTBA and DLM fed birds. TBA-RS were significantly ($p < 0.05$) reduced with HMTBA and Met-Mix treatments suggesting a reduced lipid oxidation until 6 days after slaughter compared to DLM treatment.

The present results demonstrate that dietary methionine supplementation with either only hydroxy-analogue or combination methionine and hydroxy-analogue can significantly improve meat quality and technological properties of broiler pectoralis muscle.

Key words: DL-Methionine; DL-HMTBA; Quality; TBA-RS; Napole yield