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Effects of polyphenols and algae supplement on rabbit meat quality.

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Recently, natural extract has been studied as dietary supplement in animal feed for its antioxidant, anti-inflammatory, antiviral and antimicrobial properties. There is a growing interest on the use of natural supplements in rabbit nutrition in order to enhance meat quality, improving oxidative stability and nutritional parameters. Moreover, these nutritional strategies are able to support growth performances in rabbit antibiotic-free production, which is gaining increasing interest by producers and consumers. The aim of the study was to evaluate the effect of a dietary supplementation with natural extract mixture in growing male rabbit on Semimembranosus muscle quality parameters. One hundred and forty-four New Zealand White rabbits were housed in an antibiotic-free production system for 42 days and divided into 3 experimental groups (4 rabbits/cage) from weaning (35 days old) to slaughter. The first group fed a basal diet (C), the second (T1) and the third one (T2) received 0.3% and 0.6% of natural extract mixture containing polyphenols and brown seaweeds. At slaughter (average live weight 2.89 ± 0.33 kg) 10 carcases per groups were randomly selected, frozen and sent to lab for determination of meat quality and sensory parameters. Right thighs were selected and chemical parameters, pH, colour parameters, Vitamin E content, oxidative stability and sensory analyses were performed. Data on meat quality were analysed by one-way ANOVA and sensory parameters were analysed using three-way ANOVA. Physical and chemical parameters of Semimembranosus muscle did not differ ($p>.05$) among experimental groups. Vitamin E content was improved by dietary treatment (0.130 ± 0.001 mg/100 g C; 0.174 ± 0.001 mg/100 g T1; 0.164 ± 0.001 mg/100 g in T2; $p<.001$). However, oxidative stability was not affected by dietary treatments (0.136 ± 0.002 mg/kg C; 0.133 ± 0.001 mg/kg T1; 0.131 ± 0.002 mg/kg MDA in T2; $p>.05$). Sensory evaluation revealed that dietary supplementation with polyphenols and brown seaweed improved ($p<.05$) meat texture parameters and aroma. Overall, these results highlight that in rabbit antibiotic-free production, dietary supplementation with plant polyphenols and brown seaweeds, positively affects Semimembranosus muscle sensory parameters, enhancing Vitamin E content.

Acknowledgements: The research was funded by a grant of the University of Milan. The investigation was conducted with the collaboration and contribution of all co-authors.