

Πρόγραμμα Θαλής-«Αξιοποίηση Φυσικών Αντιοξειδωτικών στην Εκτροφή των Αγροτικών Ζώων για Παραγωγή Προϊόντων Ποιότητας»

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Αξιοποίηση Φυσικών Αντιοξειδωτικών στην Εκτροφή των Αγροτικών Ζώων για Παραγωγή Προϊόντων Ποιότητας

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**EFFECTS OF FLAVONOIDS DIETARY SUPPLEMENTATION ON MILK ANTIOXIDANT CAPACITY IN SHEEP**

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## EFFECTS OF FLAVONOIDS DIETARY SUPPLEMENTATION ON MILK ANTIOXIDANT CAPACITY IN SHEEP

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### Abstract

#### Objective

Hesperidin and naringin are bioflavonoids known for their antioxidant properties. They are abundant in inexpensive by-products of citrus cultivation such as citrus pulp which often are treated as waste. An experiment was conducted to examine the effects of dietary hesperidin or naringin supplementation on lactating ewes' milk antioxidant capacity.

#### Methodology

Thirty-six multiparous ewes were assigned into 4 experimental groups of 9 ewes each. One of the groups served as control (C) and was given a commercial basal diet, without bioflavonoid supplementation, whereas the other three groups were given the same diet further supplemented with hesperidin at 6 g/kg (H) or naringin at 6 g/kg (N) or  $\alpha$ -tocopheryl acetate at 0.2 g/kg (E) of concentrated feed. Measurements of milk antioxidant capacity were performed at 7, 14 and 28 days after the beginning of the experiment.

#### Results

Oxidative stability of milk, expressed as ng MDA/ml milk was significantly improved in the hesperidin and naringin compared to the control group after 14 days of dietary supplementation (10.9, 9.1 and 18.0 ng MDA/ml, respectively;  $P < 0.05$ ). This improvement was comparable to that of  $\alpha$ -tocopheryl acetate dietary supplemented group (13.5 ng MDA/ml). Lower MDA values for H, N and E groups compared to C group were also obtained at the 28 d of the experiment. However, significant differences were detected for C compared to N and E groups ( $P < 0.05$ ) and not between C and H groups.



## Conclusion

According to the findings of the present study, flavonoids seem to be a promising natural agent for improving the quality and shelf-life of ewe milk. However, further research is required in evaluating the efficiency of citrus pulp as a dietary agent that may improve ewe milk quality and extend shelf-life.

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### Η Επιτροπή Πιστοποίησης Παραδοτέων

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