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

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

Γεωπονικό Πανεπιστήμιο Αθηνών
Εργαστήριο Ζωοτεχνίας

MIS 380231

Δράση 5η: Ποιότητα γάλακτος και γαλακτοκομικών προϊόντων

Παραδοτέα: D5_PUBL_3

**EFFECTS OF FLAVONOID DIETARY SUPPLEMENTATION ON STRAINED YOGHURT ANTIOXIDANT CAPACITY**

Παρουσίαση (poster) στο «66th Annual Meeting of the European Federation of Animal Science (EAAP)», που διοργανώθηκε στη Βαρσοβία, Πολωνία από 31 Αυγούστου έως 4 Σεπτεμβρίου 2015.
Effects of flavonoids dietary supplementation on strained yoghurt antioxidant capacity
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Abstract
An experiment was conducted to examine the effects of dietary hesperidin or naringin supplementation on strained yoghurt antioxidant capacity. Hesperidin and naringin are bioflavonoids that are abundant in inexpensive by-products of citrus cultivation such as citrus pulp. Thirty-six multiparous ewes (in their second lactation period) 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 α-tocopheryl acetate at 0.2 g/kg (E) of concentrated feed. Strained yoghurt was manufactured by milk collected from ewes after 0, 7 and 21 days of dietary supplementation. Apart from the immediate determination of colour parameters, pH values and rheological characteristics, measurements of antioxidant capacity were performed in yoghurt samples after refrigerated storage at 4°C for 10 and 20 days. In general, oxidative stability of yoghurt, expressed as ng MDA/ml milk, was not influenced by the bioflavonoids’ dietary supplementation. According to the findings of the present study, flavonoids do not seem to improve the quality characteristics of strained yoghurt.

* This research project was implemented within the framework of the Project “Thalis – The effects of antioxidant’s dietary supplementation on animal product quality”, MIS 380231, Funding Body: Hellenic State and European Union.
Effects of flavonoids dietary supplementation on yoghurt antioxidant capacity

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Introduction
Naringin and hesperidin are natural occurring flavonoids, well known for their antioxidant and anti-inflammatory properties. They are contained in citrus pulp that represents a cheap, but rich source of energy, fiber and calcium for sheep diets around the Mediterranean.

Aim
The aim of the present study was to investigate the effects of dietary supplementation with naringin and hesperidin on quality characteristics (colour, pH, syneresis and texture) and oxidative stability (MDA assay) of yoghurt manufactured by ewe milk.

Materials & Methods
36 ewes were assigned into 4 experimental groups: 1.(C), without supplementation 2.(H), supplemented with hesperidin at 6 g/kg 3.(N), supplemented with naringin at 6 g/kg 4.(E), supplemented with α-tocopheryl acetate at 0.2 g/kg Yoghurt was manufactured by milk collected from ewes after 6, 7 & 21 days of dietary supplementation. Apart from the direct determination of colour, pH, syneresis and texture, measurements of antioxidant capacity (MDA assay) were performed in yoghurt samples after refrigerated storage at 4°C for 10 and 20 days.

Conclusions
Hesperidin and naringin dietary supplementation do not seem to improve the quality characteristics and the antioxidant capacity of sheep milk yoghurt. The process of yoghurt manufacturing possibly influence the action of bioflavonoids (and their metabolites) and no significant effect is observed (in contrast with ewe milk).

Results

Effect of naringin and hesperidin on yoghurt quality characteristics after 9, 17 and 21 days of dietary supplementation

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Η Επιτροπή Πιστοποίησης Παραδοτέων

Π. Σιμιτζής
Λέκτορας

Μ. Χαρισμιάδου
Λέκτορας

Π. Ζουμπουλάκης
Ερευνητής