

Effects of chitosan and alginate-based membranes with oregano essential oil and olive oil in the microbiota of sheep meat

Anestis Tsitsos¹, Vangelis Economou^{1*}, Eirini Chouliara², Alexandros Theodoridis³, Georgios Arsenos⁴, Ioannis Amvrosiadis²

¹ Laboratory of Hygiene of Food of Animal Origin – Veterinary Public Health, ² Laboratory of Technology of Food of Animal Origin, ³ Laboratory of Animal Production Economics, ⁴ Laboratory of Animal Husbandry School of Veterinary Medicine, Aristotle University of Thessaloniki, Greece

...te, chitosan and their essential oil emulsion form coatings in meat that offer ...n environmental and other contamination. The objective of this study was to ...microbiological properties and the survivability of *Staphylococcus aureus* and ...*monocytogenes* in sheep meat products after coating with these edible films.

...p meat were coated with 1.5% alginate or 1% chitosan films combined with ...ial oil or olive oil and stored aerobically or under vacuum at 4°C. Microbiological ...al mesophilic counts, total psychrophilic counts, lactic acid bacteria, *Brochothrix* ...*monocytogenes*) was performed weekly for 21 days. Meat pieces coated with chitosan were also ...h *S. aureus* and *L. monocytogenes* at an initial concentration of 10⁶ cfu/gr and ...kly for 21 days. Statistical analysis was performed by two-way repeated measures

...vacuum packaging significantly affected the total mesophilic and psychrophilic ...te-based emulsions positively affected the bacterial growth. The populations of *S. monocytogenes* were reduced by up to two logarithms by the chitosan films.

...e membranes combined with oregano essential oil and vacuum packaging resulted ...safety and quality of sheep meat. Sodium alginate edible coatings had non- ...ect on the microbial counts examined. Chitosan films negatively affected the ...*aureus* and *L. monocytogenes* in sheep meat.

...ormation boikonom@vet.auth.gr, +302310999875, +30 6948805241

