

INFLUENCE OF CHITOSAN ON MICROBIOLOGICAL DATA AND QUALITY CHARACTERISTICS OF SPREADABLE CURD CHEESE AND MAYONNAISE

Algirdas Liutkevičius¹, Vilma Speičienė¹, Gitana Alenčikienė¹, Dalia Sekmokienė², Renata Žvirdauskienė¹, Aldona Mieželiienė¹

¹Food Institute, Kaunas University of Technology

Taikos 92, LT-51180 Kaunas; Phone +370 37 312 153; Fax. +370 37 312 393

E-mail: Algirdas.Liutkevicus@ktu.lt

²Veterinary Academy of the Lithuanian University of Health Sciences

Tilžės 18, LT-47181 Kaunas; Phone +370 37 362 695; E-mail: dalsek@lva.lt

Abstract. The studies of the usage of prebiotic dietary fibre (PDF) chitosan (further chitosan) in food industry, and especially its effect on safety and complex quality characteristics of food products are insufficient. Therefore, this paper represents the results obtained on the influence of chitosan on microbiological, physical and sensory data of food products, such as spreadable curd cheese and mayonnaise.

It has been established that the addition of chitosan showed the tendency to reduce the total plate count in the samples of spreadable curd cheese during storage. However the addition of chitosan did not have any effect on the growth of yeast and moulds in the above mentioned products.

Chitosan significantly increased the values of active acidity of spreadable curd cheese, and mayonnaise, but did not affect the spreadability of these products.

Chitosan did not demonstrate any effects on the texture and colour properties of fresh and 6-month stored samples of spreadable curd cheese and mayonnaise, however, it had negative effect on the sensory properties of the products: reduced general odour and flavour balance in fresh samples, decreased gloss and distribution in the mouth, and drying taste and sandy feeling appeared. Chitosan reduced thickness and creaminess of spreadable curd cheese during storage, however both control and test samples were evaluated as acceptable after 20 days of storage.

Enrichment of mayonnaise with chitosan reduced certain flavours and slightly changed texture properties of the products. The best test results of the sensory characteristics of mayonnaise enriched by chitosan were established after 4 months of storage.

Keywords: chitosan, spreadable cheese, mayonnaise, microbiological, sensory properties