

ABSTRACT

**STUDY ON CHARACTERIZATION OF NISIN MICROSPHERES
WITH ALGINATE-GELATINE MATRIX (1,5 : 1)%**

**(Prepared by Ionotropic Gelation Method and Aerosolization
Technique)**

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This study compare the effect of combination polymer alginate-gelatin (1,5 : 1,0)% and (2,5 : 0)% on the characteristic of nisin-alginate-gelatin microspheres. Nisin microspheres were made by ionotropic gelation method with aerosolization technique using sodium alginate and gelatin as polymer and calcium chloride (CaCl_2) as crosslinker. The type of alginate and gelatin used in this study were low viscosity alginate and gelatin type B. Microspheres formed were resuspended into lyoprotectant maltodextrin solution and were dried using freeze-dryer. The result of microspheres' evaluation includes examination of FTIR, SEM, X-Ray Diffraction, particle size distribution using optical microscopy, yield, moisture content, and swelling index. The microspheres' size showed the diameter size of particle was below $10\ \mu\text{m}$ therefore able to penetrate in the patches. The result yield and swelling index examination was influenced by increasing alginate and gelatin concentration significantly. On this study, the result of EE, PL and releasing rate did not yet investigated, it caused by the used method was not supported. So that in the next study, need to do improve the suite method for the best result.

Keyword : microspheres, nisin-microspheres, alginate-gelatin microspheres