

Microencapsulation of amino acids for prawn feed additives

ABSTRACT

This study investigated the microencapsulation methods developed in food industry to make a new form of prawn feed additives. Lysine (crystalline amino acid), one of the important substances in the prawn diet formulation was encapsulated by three potential wall polymers which were dextrins, starch and α -cyclodextrin. Dextrins and starch were abandoned for further testings due to their high viscosity and cold water insoluble microcapsules properties. The molecular inclusion of α -cyclodextrin with lysine however, had been successfully carried out and the physical properties of the capsules and leaching rate were measured as a function of coating technique (lysine: α -cyclodextrin, with ratios of 1:1, 1:2 and 1:3 were prepared). Under the microscope, sparkling particles bounded inside the irregular microcapsules were observed when lysine was encapsulated by α -cyclodextrin and this had indicated that lysine was successfully incorporated. Moreover, analysis in UV spectrophotometer had also further confirmed this remark.

Keyword: Microencapsulation; Lysine; α -cyclodextrin; Dextrins and starch; Prawn feed additives