

Optimization of shrimp shell waste deacetylation for chitosan production

ABSTRACT

Chitosan, a versatile natural polymer is an amino polysaccharide prepared by processing shrimp shell waste which involved deacetylation of chitin. To obtain high degree of deacetylation (DDA), several parameters should be performed during alkaline treatment. The present study was undertaken at different time of soaking treatment (once and twice) and temperature (60oC and 80oC) to optimize the deacetylation process to produce chitosan with high solubility and degree of deacetylation. It was observed that the highest solubility and degree of deacetylation were obtained when deacetylation process was repeated twice and temperature of 80oC, with 99.48% and 97.63%, respectively. It can be concluded that by repeating the deacetylation twice with the support of heating treatment, a better quality of chitosan with higher solubility and degree of deacetylation can be produced.