

Correlation of Traditional and One-Step Irradiation Process for Chitosan Production from *Charybdis Hellerii* Crab Shells

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Chitosan is a polysaccharide obtained from chitin's molecule deacetylation, which is the main composition of certain fungi species and crustaceans and insects exoskeleton. The amino groups present in chitosan give it important biological properties such as biodegradability and biocompatibility, activity/immunological effects and antibacterial healing. The deacetylation of chitin is an aggressive process, which reaction processes in 6 to 8 h under hot concentrated alkali solution. In this work, *Charybdis hellerii* crab shells were fragmented and pretreated for chitosan production and each conversion step, from in natura material pretreatment to final chitosan, were investigated in detail. It was observed dose and dose rate applied as in natura as pretreated chitin influence neither pretreatment process nor chitin deacetylation step; at 20 kGy (from γ or electron beam sources), the conversion process was performed in 60 minutes. The obtained chitosan presented low weight and deacetylation degree compared to standard chitosan, considering specific irradiation conditions.