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Aspectos gerais sobre a obtenção, estrutura, características e aplicações do quitosano

General aspects of obtaintion, structure, characteristics and applications of chitosan

Chitosan is a polysaccharide that can be extracted from fungi or obtained from the deacetylation of chitin present in the exoskeletons of animals, mainly marine. (Crabs, lobsters and shrimps) A major source of this material is the waste from the fishing industry. In order to obtain chitosan from exoskeletons, this material must go through two stages of processing, at the first chitin is isolated and at the second stage, chitin must be deacetylated to produce chitosan. This polysaccharide is formed by two units of different sugars bound β (1 \rightarrow 4), one N-acetyl-D-glucosamine and D-glucosamine, the last in greater proportion. It has a chemical structure, which is insoluble in pure water but disperses well in mediums with pH <6.5 due to a protonation of the amino groups favoring the electrostatic repulsion between the polysaccharide chains, thus allowing access of the solvent to the polymer. In solution, low concentrations of chitosan (0.5%), considerably increase the medium viscosity, and can act as thickener in several dispersed systems. As a low toxicity, biodegradable, and biocompatible substance (LD 16g.kg⁻¹) has been applied in several fields of study, especially in the pharmacy and food industry. In the pharmacy can be used as vehicle for controlled release of drugs and permeability promoters for dermatological assets. In the food industry with application in the production of biodegradable films for coatings, in the clarification of beverages among other uses. Most of the studies without food field investigate the behavior of the

polymer in acidified media with acetic and lactic acids, therefore, it is necessary to investigate the behavior of this biopolymer in different acidic media.