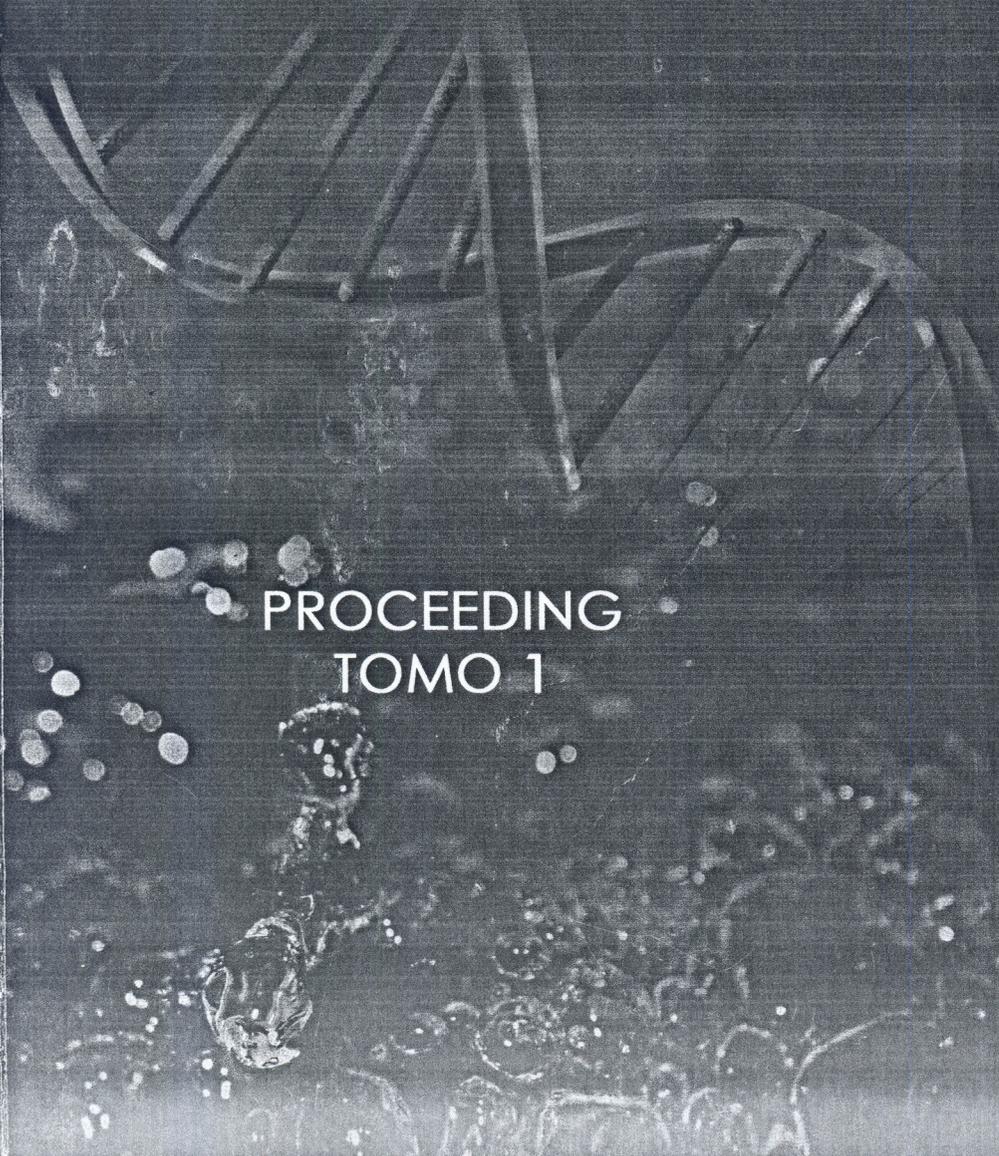
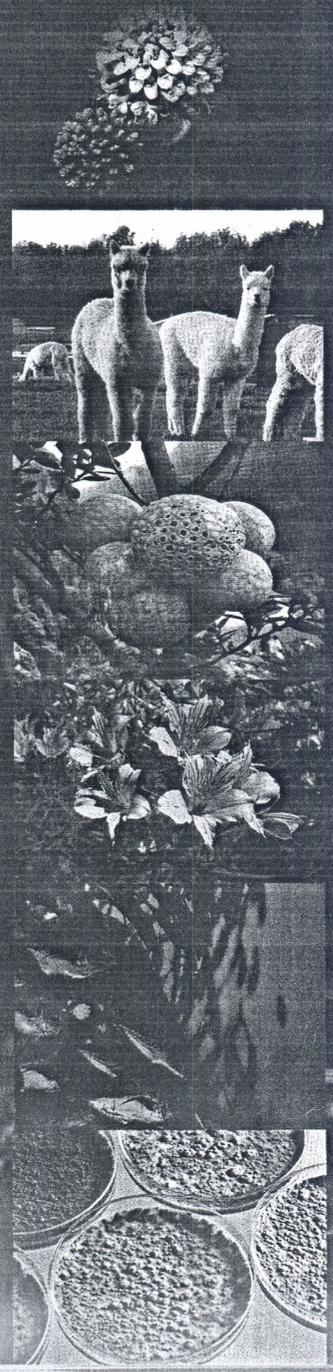




Simposio de Recursos Genéticos para América Latina y el Caribe



PROCEEDING
TOMO 1



PROCEEDING



VII Simposio de Recursos Genéticos
para América Latina y el Caribe

Pucón, Chile

28-30 Octubre
2009

FITOGENÉTICOS

VII Simposio de Recursos Genéticos para América Latina y el Caribe

BIOPOLYMERS FOR EDIBLE FOOD COATINGS

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The use of edible or non edible coatings in order to improve vegetable and fruit shelf life it is not a new process and has been reported since the thirteen century in China, where mineral oils were used to preserve citrus fruits and other pericible products which were transported for long distances. However the name «edible coatings» as we know now is more recent and have emerged since the 1970 decade, with the expansion in the offer of the minimally processed food.

The technology of applying biobased edible polymers on *in natura* or freshly cut surfaces is quite dependent on the coating material and it has as the main aiming offer an alternative method of controlling and extending the quality and shelf life during storage.

Our group has been working in processing and characterization of flexible and non-toxic films and their compatibility to organic surfaces. The main activity of such coatings is to act as barrier medium reducing the respiratory activity while preserving for longer the physiological characteristics. Antimicrobial activity is also desirable and possible to be attained for some formulations. Polysaccharides from animal and vegetal origin, hydrophobic maze proteins and gums, and its combinations, are the materials under investigation.

A whole sequence of extracting zein from corn gluten meal was developed and will be presented. Relevant results are attained, for example, by using zein formulation prepared with plasticizer in preserving pears. Coated samples maintain organoleptic quality and extended self-life over to 12 days in non-controlled storage conditions (room temperature, natural light and RH at 76%). Good results are also observed on apples in nature. A complete characterization of zein coating on macadamia nuts and avoiding fat oxidation (rancidity) will presented and discussed by means of high resolution NMR. Gums showed to be appropriate for preserving guava by reducing water loss and NMR imaging. Chitosan and its derivatives (water-soluble salts) are indicated as antifungal agent on apples, and on lightly processed products. It is worth mentioning that there is no a «universal» coating. Each product there is a characteristic physiological behavior specific response to coating distinctly.

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