

## CHICKEN BONE GELATIN AND ITS FUNCTIONAL PROPERTIES IN COMPARISON WITH COMMERCIAL GELATINS

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Porcine skins and bones are the most common raw materials in gelatin manufacturing, which are refused by Muslim and Jewish communities. Therefore, alternative raw materials have been recently on focus of many scientific studies. In this study, use of chicken bone in gelatin manufacturing was investigated. For this purpose, chicken bone called 'tibia' was used as raw material, its protein rich organic part was first isolated, followed by a multi step extraction procedure at varying extraction conditions. The results showed that chicken bone was constituted of about 55% water, 10% fat, 16% protein, and 15% mineral. In pretreatment procedure designed for removal of minerals and fats, about 88% of mineral and 57% of fat were successfully removed along with 19% and 15% loss in protein and hydroxyproline, respectively, with respect to the initial concentrations of the corresponding components. In multi-step extraction procedure, the total of 50% protein recovery was reached. At the end of two consecutive extractions, about 12% extraction yield was obtained with a protein ratio over 70% based on the weight of the dry material. Gelatins obtained at these two consecutive extractions were compared with commercially available gelatins from different sources for their quality and the functional properties. The results showed that chicken bone can successfully be used in gelatin manufacturing as an alternative raw material.

Keywords: Chicken bone, gelatin, extraction, functional properties

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