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THE INFLUENCE OF EXTRACTION CONDITIONS ON ASH CONTENT OF GELATIN OBTAINED FROM CATTLE BONE BY ACID PROCESS

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Gelatin is a protein hydrocolloid is obtained from partial hydrolysis of collagen in the connective tissues. It is a natural biopolymer with broad technological applications in the food industry and other industries as a gel-forming, stabilizer, emulsifier, purifying and sticky agent. Gelatin extracted from bone usually has higher amount of ash in comparison with the gelatin of the other raw materials such as skin. High ash content of gelatin makes technological problems e.g. turbidity and separation of phases in meat extracts and juices. Preparation of bones was performed by removing the fat of bone and dividing it into two diameters (1 and 3 mm), using hammer miller. Minerals were dissolved by hydrochloric acid at low temperatures. Gelatin was extracted by acid process and different temperatures (70 and 80 degrees C), pH (2 and 3) and extraction times (60, 90 and 120 min) were investigated by using a split unit factorial design based on randomized complete blocks. Results showed no effect of extraction time on the amount of ash but with increasing temperature, increasing pH and decreasing particle diameter, gelatin ash content decreased. Although the ash content of samples was higher than of the commercial sample but it did not affect to gel strength and transparency.

Keywords: Gelatin, bone, ash content, extraction conditions, acid process

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