

Pilot Scale Deproteinization Study on Fish Scale Using Response Surface Methodology

Authors : Fatima Bellali, Mariem Kharroubi

Abstract : Fish scale wastes are one of the main sources of production of value-added products such as collagen. The main aim of this study is to investigate the optimization conditions of the sardine scale deproteinization using response surface methodology (RSM) on a pilot scale. In order to look for the optimal conditions, a Box-Behnken-based design of experiment (DOE) method was carried out. The model predicted values of product coal ash content were in good agreement with the experiment values ($R^2 = 0.9813$). Finally, model-based optimization was carried out to identify the operating parameters (reaction time=4h and the solid-liquid ratio= 1/10) and to obtain the lowest collagen content.

Keywords : pilot scale, Plackett and Burman design, fish waste, deproteinization

Conference Title : ICEBP 2023 : International Conference on Environmental Biotechnology and Pollution

Conference Location : Miami, United States

Conference Dates : March 16-17, 2023