

Abstract

This research focuses on the elemental analysis of selected elements (calcium, magnesium, and phosphorus) within the bones of various animal species, aiming to make comparative nutritional assessments. The obtained bone samples were subjected to mechanical grinding and then quantitatively weighed into collapsible cartridges. Using high-pressure microwave decomposition with the incorporation of nitric and hydrochloric acid, the samples were transformed into solution form, which was then appropriately diluted. The analysis of the liquid samples was carried out using a mass spectrometer with inductively coupled plasma. The observed composition for each sample was calculated using the calibration curve, accounting for both sample mass and dilution factors. All results obtained exceeded the detection limit for calcium 0.38 mg/l, magnesium 0.037 mg/l, and phosphorus 0.078 mg/l. The main finding of this research is the complete understanding of the elemental makeup present within the bones of distinct animal species.