

## Utilization of fish bone as soluble calcium source

김세권, 박표잠, 정원교, 제재영

Department of chemistry, Pukyong National University, Busan, 608-737

Tel.: (051) 620-6375, Fax.: (051) 628-8147

### ABSTRACT

Calcium is an essential element for a variety of physiological functions and for the maintenance of bone formation and nervous system. In order to utilize inedible parts of fish as calcium source, fish bone was recovered from the hoki (*Johnius belengerii*) frame discarded on fishery processing according to the method of Kim *et al.* (in pressing) and the bone was frozen in liquid nitrogen and crushed into a fine powder. The bone powder was dissolved in edible citric acid, malic acid, lactic acid and commercial fermented vinegars for an effective extraction of calcium associated with collagen fiber in bone tissue. The amount of soluble calcium in acid solutions was measured by flame atomic absorption spectroscopy (FAAS). In the results, it was shown that dissolutions in 10% 3' (3 fold conc.) brewing vinegar and 50% citric acid result in the high rate of soluble calcium recovery under the optimum condition (ratio of acid/bone powder; 25:1(v/w), 2 h) and the rates were 80.7% and 75.33%, respectively.