

ABSTRACT

STUDY OF Ca, Si AND Fe LEVELS ON BONE AND WOOD FOSSIL SAMPLE THROUGH X-RAY FLOURESCENCE (XRF) METHOD

Fossil is one way to find out information about the life of living beings. Bone and wood that has been long buried in the ground will undergo a process of exchange of minerals because of the fossilization process. Generally, calcium is the main structure of bone formation and structure of wood formation. The purpose of this study is to find the relationship between the age and the level of the percentage distribution of the calcium (Ca), iron (Fe) and silicon (Si) elements in samples of bone and wood. This research has been done with it determines the age of bone and wood fossil with absolute method that is radiocarbon dating methods (radiocarbon dating) in which this method is based on carbon-14 to air carbon is relatively unchanged and analyzed by means of counter ¹⁴C. Identify the elements by using the method of X-ray Flourescence (XRF) is elemental analysis technique that forms a material with a basic X-ray interactions with the analyte material. Results of the analysis showed that the fossil of bone from the age 9450 to 1.2 million years the calcium levels is 35.91% and 21.15% on the wane but instead of silicon and iron increasingly growing. But there are differences in the levels result of Ca, Si and Fe which are obtained on wood samples compared with samples of bone. This is due to differences of the main elements in the formation structure of calcium, silicon and iron in samples of bone and wood. Thereby the age increasing both of bone or wood fossil, the level of calcium will decrease but instead of silicon and iron continues to grow. The study indicates that the degree of relatedness between the age comparison with the percentage distribution of elements in samples of bone and wood.

Keywords: radiocarbon; fossilization; calcium; silicon; iron.