

## ABSTRACT

This study aims to determine the differences in the value of violence in the heat treatment process that is given cooling media in the form of fresh water, oil, salt water. In human life there are at least four main types of materials which are generally used by humans for making tools, namely land, stone, metal and wood or bamboo. The origin of the blacksmith's craft are many versions of its initial existence. Some say the blacksmith in Toloa comes from the land of Rencong / Aceh and another version says that blacksmiths are from the Java region. Blacksmiths in Toloa Village have three types of specimens tested by machetes made of steel material. The purpose of this study is to find out the value of the comparison of hardness in Heat Treatment specimens of fresh water and salt water, oil. Heat treatment results of hardness testing showed the hardness value of the average hardness freshwater specimens. (N / m<sup>2</sup> 82), (N / m<sup>2</sup> 84.4) and (N / m<sup>2</sup> 86.85). In the Heat Treatment specimens of oil and salt water, the hardness is better than the Heat Treatment of fresh water. The average value of Heat Treatment Specimens of salt water and its oil experienced an increase in hardness by an average (N / m<sup>2</sup> 93.9) and (N / m<sup>2</sup> 93) increased (N / m<sup>2</sup> 94.8).

Keywords: Heat Treatment of steel oil and salt water. Freshwater