

ABSTRACT

Water is an essential material in life. Water is very necessary as a solvent and biochemical processes in the body, water is also used to support human life activities. Alkaline water is considered to provide benefits to the body. This is the background for the author to create a water ionizer product. This research aims to increase the pH in drinking water. One way to increase the pH of water can be done using the electrolysis method.

The focus of this research is to increase the pH of water using the electrolysis method. Electrolysis itself is the event of breaking down water compounds (H_2O) into oxygen (O_2) and hydrogen gas (H_2) using an electric current that passes through the water. The experiment was carried out by electrolyzing water for 30 minutes with a voltage of 220 V to increase the pH of the water to 9.

The results of this water electrolysis test show that water with a high TDS value will experience a large change in the TDS value after electrolysis. Meanwhile, water with a low TDS value does not change much. This is because the ability to conduct electricity from water with a high TDS value is better than water with a low TDS value. Water with high TDS tends to produce water with a higher pH than water with low TDS. For example, water with the brand "AM" with an initial TDS of 0 ppm and a pH of 7.26, after electrolysis for 30 minutes, the TDS becomes 5 ppm and the pH becomes 8.46. Meanwhile, water with the "NPL" brand had an initial TDS of 87 ppm and a pH of 7.18 after being electrolyzed for 30 minutes, the TDS value became 92 ppm and a pH of 9.1. This shows that the increase in the TDS value is directly proportional to the increase in pH in the water after electrolysis.

Keywords: *Humans, Drinking Water, Hydrogen, Solvents, Body Water, Electrolysis, Oxygen, Ions*