ABSTRAK

Penelitian ini dilakukan untuk mengetahui pengaruh penambahan NaCl pada ekstrak belimbing wuluh dan EDTA-4Na sebagai larutan elektrolit terhadap nilai arus dan tegangan baterai. Variasi volume campuran belimbing wuluh dan larutan NaCl yang digunakan yaitu 350 mL belimbing wuluh + 150 mL larutan NaCl, 300 mL belimbing wuluh + 200 mL larutan NaCl, 250 mL belimbing wuluh + 250 mL larutan NaCl yang masing-masing ditambahkan NaCl sebanyak 10 gram, 20 gram, 30 gram, 40 gram, dan 50 gram. Pengujian yang dilakukan meliputi pengukuran nilai pH, arus dan tegangan baterai pada saat *charging* dan *discharging*. Hasil menunjukkan pH tertinggi pada campuran 250 mL belimbing wuluh + 250 mL larutan NaCl sebesar 2,81. Hasil Tegangan *charging* tertinggi dicapai pada variasi 250 mL belimbing wuluh + 250 mL larutan NaCl 10 gram sebesar 11,73 volt. Rata-rata arus *charging* tertinggi pada variasi 350 mL belimbing wuluh + 150 mL larutan NaCl 40 gram sebesar 946 mA. Rata-rata nilai arus tertinggi pada proses *discharging* dengan beban lampu 12V 5W diperoleh pada variasi 350 mL belimbing wuluh + 150 mL larutan NaCl 10 gram sebesar 325 mA, sedangkan nilai tegangan tertinggi pada variasi 250 mL belimbing wuluh + 250 mL larutan NaCl 10 gram sebesar 11,33 volt. Tegangan tertinggi *discharging* tanpa beban juga dicapai pada variasi yang sama sebesar 11,26 volt. Dari hasil penelitian diketahui bahwa penambahan NaCl meningkatkan nilai pH. Nilai pH yang semakin tinggi menghasilkan nilai arus dan tegangan yang semakin tinggi.

Kata Kunci : Belimbing Wuluh, NaCl, EDTA-4Na, Arus, Tegangan

ABSTRACK

This study was conducted to determine the effect of adding NaCl to Averrhoa bilimbi extract and EDTA-4Na as an electrolyte solution on the current and voltage values of the battery. Variations in the volume of the mixture of Averrhoa bilimbi and NaCl solution used were 350 mL of Averrhoa bilimbi + 150 mL of NaCl solution, 300 mL of Averrhoa bilimbi + 200 mL of NaCl solution, 250 mL of Averrhoa bilimbi + 250 mL of NaCl solution, each of which added NaCl as much as 10 grams, 20 grams, 30 grams, 40 grams, and 50 grams. Tests conducted include measurement of pH value, current and battery voltage at the time of charging and discharging. The results showed the highest pH in a mixture of 250 mL of Averrhoa bilimbi + 250 mL of NaCl solution of 2,81. The highest charging voltage was achieved in the variation of 250 mL of Averrhoa bilimbi + 250 mL of 10 gram NaCl solution of 11,73 volts. The highest average charging current in the variation of 350 mL Averrhoa bilimbi wuluh + 150 mL NaCl solution 40 grams of 946 mA. The highest average current value in the discharging process with a 12V 5W lamp load is obtained in the variation of 350 mL of Averrhoa bilimbi + 150 mL of NaCl solution 10 grams of 325 mA, while the highest voltage value in the variation of 250 mL of Averrhoa bilimbi + 250 mL of NaCl solution 10 grams of 11,33 volts. The highest voltage discharging without load is also achieved in the same variation of 11,26 volts. From the research results, it is known that the addition of NaCl increases the pH value. The higher pH value results in higher current and voltage values.

***Keywords**: Averrhoa bilimbi, NaCl, EDTA-4Na, Current, Voltage*