

ABSTRACT

A battery is a device that converts chemical energy into electrical energy through electrochemical reduction and oxidation reactions. It is divided into primary batteries (single-use) and secondary batteries (rechargeable). Earth batteries, activated by water, use simple electrodes like copper cathode and zinc anode in wet soil as an electrolyte. This study builds on Alexander Bain's 1840 idea, measuring the current, voltage, and power of earth batteries. Independent variables include Zn and Cu electrode types and their distances. The experiment also involves adding bacteria to the soil to enhance output. Three different soil media are evaluated for their influence on battery performance. Literature review, equipment preparation, testing, and data analysis are research stages. Results indicate that a 10 cm electrode distance produces optimal output. Humus and paddy soil support the best performance, yielding 0.07 amperes and 3.59 volts in humus soil. Compost fertilizer can increase output, with higher percentages resulting in larger current, voltage, and power. The conclusion states that a 10 cm distance and humus or paddy soil provide optimal results, while adding compost fertilizer enhances earth battery performance.

Keyword : Battery, Soil, Electrode, Compost Fertilizer, Current, Voltage