

ABSTRACT

This study aims to develop a natural foaming shoe cleaner (PERBA) formulated with lime extract, coconut oil, baking soda, Castile soap, and distilled water as an eco-friendly alternative to conventional shoe cleaning products. Synthetic chemical-based shoe cleaners often contain substances that may damage shoe materials and cause skin irritation. Therefore, this research focuses on testing foam stability, cleaning effectiveness, material safety, and residue left after use. An experimental method was used to compare three different formulations, with lime extract as the main variable, along with a control consisting of a commercial product and a formulation without lime extract. The test results showed that the formulation with lime extract had better foam stability (up to 15 minutes), a pH range suitable for cleaning without damaging materials (7.83–9.24), and higher effectiveness in removing stains and odors compared to other formulations. Additionally, PERBA left less residue than the formulation without lime extract, indicating good rinsing ability. With effectiveness comparable to or even better than commercial cleaners, this product can serve as a safe, natural, and environmentally friendly alternative.

Keywords: natural, effective, safe, environmentally friendly, shoes