

**HAND SOAP OUT OF LANTANA CAMARA L. EXTRACT AND
IT'S CHARACTERIZATION AND RESIDUE COUNTS
COMPARED WITH OTHER SOAPS**

Dr. Ma Victoria Magayon
Taytay Senior High School

Abstract

The phytochemical composition of *Lantana camara* (*Lantana camara* L.) has been extensively studied over the past few decades, revealing the presence of phenolic compounds, essential oils, alkaloids, proteins, carbohydrates, flavonoids, glycosides, phenylethanoids, iridoid glycosides, oligosaccharides, triterpenes, steroids, quinine, saponins, and tannins. In this study, the essential oil extracted from the flowers of *Lantana camara* L. was used as a key ingredient in the formulation of hand soap. The prototype soap was subsequently analyzed for its physicochemical properties, including pH, conductivity, salt content, and temperature. To test the physicochemical characteristics (pH level, conductivity, salt content, and temperature), a water quality tester was used. Residue counts were measured by filtering the samples with a coffee filter and weighing the residues using an analytical balance. Measures of central tendency were applied to compute the mean, while standard deviation was used to analyze the variability of the physicochemical characteristics and residue counts of the selected soaps. A two-way ANOVA without replication at $\alpha = 0.01$ was employed to determine the significant differences between the soaps. The results of the experimentation and data analysis showed that among the 11 soaps tested, Soap J exhibited the highest salt concentration at approximately 0.4%, while Soap K (*Lantana camara* L.) had the lowest level at around 0.07%. The recorded pH values indicated that most soaps were alkaline, with values exceeding 7, except for Soap J, which was strongly acidic (pH 3.96). Furthermore, the two-factor ANOVA without replication yielded a p-value of 0.461, which is greater than the significance level of 0.01. This indicates that the type of soap used had no statistically significant effect on the measured outcomes. Higher conductivity indicates higher water salinity, as conductivity is directly proportional to salinity. The electrical conductivity of soap is significantly influenced by its purity, with the presence of impurities potentially limiting the mobility of charges within the soap solution.

Keywords: *lantana camara* l, hand soap, residue counts