

ABSTRAK

PEMANFAATAN EKSTRAK BUAH LERAK (*Sapindus rarak* De Candolle) PADA PEMBUATAN DETERGEN CAIR (Variasi Komposisi Ekstrak Buah Lerak dan Komposisi Surfaktan *Decyl Glucoside* : *Lauryl Glucoside*)

(Umi Saharani, 2025, 44 Halaman, 5 Tabel, 10 Gambar, 4 Lampiran)

Penggunaan bahan alami dalam produk pembersih menjadi alternatif untuk mengurangi dampak negatif detergen sintetis terhadap lingkungan. Penelitian ini bertujuan untuk mendapatkan kondisi variasi komposisi berat ekstrak buah lerak dan variasi komposisi surfaktan *decyl glucoside* dan *lauryl glucoside* yang optimal untuk pembuatan detergen cair dan mendapatkan karakteristik terbaik pada pembuatan detergen cair dari variasi komposisi berat ekstrak buah lerak dan variasi komposisi surfaktan *decyl glucoside* dan *lauryl glucoside* yang sesuai dengan SNI No. 4075-1:2017. Buah lerak mengandung saponin, senyawa aktif permukaan yang mampu menghasilkan busa dan memiliki kemampuan pembersih. Ekstraksi buah lerak dilakukan menggunakan metode maserasi dengan pelarut etanol 96%. Formulasi detergen diuji berdasarkan parameter mutu sesuai SNI 4075-1:2017, meliputi pH, kadar bahan tidak larut dalam air, total kadar surfaktan, *specific gravity*, stabilitas busa, dan uji organoleptik. Hasil terbaik diperoleh pada formulasi dengan 25 ml ekstrak buah lerak dan rasio surfaktan 2:1 (*decyl glucoside* : *lauryl glucoside*), menghasilkan pH 9,19, kadar bahan tidak larut 0,065%, total surfaktan 39,448%, *specific gravity* 1,034, dan stabilitas busa 94,67%. Seluruh formulasi memenuhi standar mutu nasional, menunjukkan potensi ekstrak buah lerak sebagai bahan aktif alami dalam formulasi detergen cair yang efektif dan ramah lingkungan.

Kata kunci: Detergen Cair, *Decyl Glucoside*, *Lauryl Glucoside*, Lerak, Saponin

ABSTRACT

UTILIZATION OF SOAP FRUIT EXTRACT (*Sapindus rarak* De Candole) IN THE MANUFACTURE OF LIQUID DETERGENT (Variations in Soap Fruit Extract Composition and Decyl Glucoside: Lauryl Glucoside Surfactant Composition)

(Umi Saharani, 2025, 44 Pages, 5 Tables, 10 Pictures, 4 Attachments)

The use of natural ingredients in cleaning products is an alternative to reduce the negative impact of synthetic detergents on the environment. This study aims to obtain the optimal conditions for variations in the weight composition of soapberry fruit extract and variations in the composition of decyl glucoside and lauryl glucoside surfactants for the manufacture of liquid detergents and to obtain the best characteristics in the manufacture of liquid detergents from variations in the weight composition of soapberry fruit extract and variations in the composition of decyl glucoside and lauryl glucoside surfactants in accordance with SNI No. 4075-1: 2017. Soapberry fruit contains saponins, surface active compounds that are able to produce foam and have cleaning properties. Soapberry fruit extraction was carried out using the maceration method with 96% ethanol solvent. The detergent formulation was tested based on quality parameters according to SNI 4075-1: 2017, including pH, levels of insoluble materials in water, total surfactant content, specific gravity, foam stability, and organoleptic tests. The best results were obtained with a formulation containing 25 ml of soapberry extract and a surfactant ratio of 2:1 (decyl glucoside : lauryl glucoside), resulting in a pH of 9.19, an insoluble matter content of 0.065%, a total surfactant content of 39.448%, a specific gravity of 1.034, and a foam stability of 94.67%. All formulations met national quality standards, demonstrating the potential of soapberry extract as a natural active ingredient in effective and environmentally friendly liquid detergent formulations.

Keywords: Liquid Detergent, Decyl Glucoside, Lauryl Glucoside, Soapberry, Saponin