

### 13. Evaluation of the effectiveness of lactic acid produced by fermentation of selected vegetable wastes in the treatment of faecal sludge.

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#### Abstract

Soaps are potassium or sodium salts formed through the saponification reaction of triglycerides fatty acids. Bath soaps are used on daily basis in the households for cleaning human body, treating skin infections and promoting healthy skin. Consumers are preferring bath soaps containing natural ingredients including natural plant extracts and milk creams. Camel milk cream compared to other milk creams is rich in bioactive compounds with therapeutic and antiaging properties and moisturizing effects. However, there are limited studies on the effects of camel milk cream on the properties of the bath soaps. Therefore, this study aims to formulate bath soaps using camel milk cream and evaluate their physiochemical parameters such as pH, foam stability, moisture content, hardness, alcohol insoluble matter, total fatty content, alkali content, moisturizing effects, anti-microbial activity and shelf-life. Four soap samples were formulated with equal ratios of palm and coconut oils but with varying amounts of camel milk cream as follows; blank and three other soaps with 11.3%, 24.1% and 29.5% camel milk cream. The preliminary results showed that the pH did not change with increase in camel milk cream with an average pH value of 10.82, Hardness of soap samples decreased with an increase in camel milk cream from F0; 0.185 kpa, F1 (11.3%); 0.432 kpa, F2(24.1%) ; 0.228kpa and F3 (29.5%); 0.091kpa. Foam stability increased with an increase in camel milk cream. The moisture content increased with increase in camel milk cream as follows; F0 (13.2%), F1(13.82%), F2(15.76%) and F3(16.13%). The soap formulation with the highest cream, F3 (29.5%) with of pH of 10.82±0.16, hardness of 0.91kPa, foam stability of 96% and moisture content of 25.5 % exhibited the best properties compared to the other formulations.

**Keywords:** Camel milk cream, Bath soaps, Saponification, physiochemical parameters