

**DEVELOPMENT OF BLACK TEA INCORPORATED LIP  
BALM**

A dissertation submitted to the  
Faculty of Animal Science and Export Agriculture  
Uva Wellassa University

In partial fulfillment of the requirement for the awards of  
The Degree of Bachelor of Science in Tea Technology and Value Addition

By

MALLIKA BADALGE IVONI HIRANSHA GANGADEERA

**TEA TECHNOLOGY AND VALUE ADDITION DEGREE PROGRAM  
FACULTY OF ANIMAL SCIENCE AND EXPORT AGRICULTURE  
UVA WELLASSA UNIVERSITY OF SRI LANKA**

2017

## Abstract

There is a growing demand on natural cosmetic products due to health concerns and researchers are looking for new natural ingredients to be incorporated in new cosmetic products. This study was also focused on the possibility of developing a natural lip balm incorporating black tea. It utilized black tea waste as an attempt to add value and promote black tea based non-food products. During the process, Black tea waste was extracted with ethanol using soxhlet apparatus and extract was dried using rotary evaporator to obtain a powder. Polyphenol content of this extracted powder was determined using Folin-Ciocalteu method.

Bees wax, virgin coconut oil, lavender oil, flavor and vitamin E were mixed at different proportions and conducted sensory evaluations to select the most suitable lip balm base. Selected base contained 49% beeswax, 49% coconut oil, 0.5% lavender oil, 1% flavor and 0.5% vitamin E. Black tea extract was incorporated into this base at five different levels as 1g, 1.5g, 2g, 2.5g and 3g. A second sensory evaluation was conducted with above five treatments to select best black tea level to be incorporated.

Melting point, consistency, rancidity, stability, pH and total plate count were measured for the final product. Melting point, consistency and pH were recorded as 43.67°C, 0.009 and 5.374 respectively. There were no positive indications of rancidity or microbial contaminations of *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Aspergillus niger*, *Bacillus subtilis* according to the ISO 11930:2012 for evaluation of the antimicrobial protection of a cosmetic product. Except the consistency all the other parameters were according to the standards. Considering about the all the results, black tea incorporated lip balm can be promoted as a natural, safe and effective cosmetic product to the market by opening up new opportunities and develop the Ceylon tea sector.

*Key words* : natural, cosmetic, black tea extract