

INHIBITORY EFFECT OF FORMULATED LEMONGRASS SHAMPOO ON *MALASSEZIA FURFUR*: A YEAST ASSOCIATED WITH DANDRUFF

Mansuang Wuthi-udomlert¹, Ployphand Chotipatoomwan², Sasikan Panyadee²
and Wandee Gritsanapan²

¹Department of Microbiology; ²Department of Pharmacognosy, Faculty of Pharmacy,
Mahidol University, Bangkok, Thailand

Abstract. Lemongrass (*Cymbopogon citratus* Stapf) has been used in cooking and in many traditional medicines; the essential oil contains citral as a major constituent. This study evaluated the antifungal activity of lemongrass oil against *Malassezia furfur*, an opportunistic yeast associated with dandruff, by using a broth dilution assay. From the minimum fungicidal concentration (MFC) obtained, the oil was then incorporated at different percentages into shampoo formulations. The formulated shampoos were kept at room temperature (28°-30°C) and under accelerated condition (45°C). At the end of the first and sixth weeks, after preparation, all formulations were tested again and the appearance was recorded. Selection of an appropriate formula was based on antifungal activity against *M. furfur*, the physical appearance, the chemical properties and stability of the formula. Two percent lemongrass oil shampoo provided the required qualities necessary for commercial use. After being kept for 6 weeks at 28°-30°C and 45°C, this formulated shampoo gave MFCs against *M. furfur* of 75 l/ml and 18.75 l/ml, respectively.

Keywords: *Cymbopogon citratus*, dandruff, herbal shampoo, lemongrass, *Malassezia furfur*

Correspondence: Wandee Gritsanapan, Department of Pharmacognosy, Faculty of Pharmacy, Mahidol University, Bangkok 10400, Thailand.
Tel/Fax: 66 (0) 2644 8701
E-mail: pywgs@mahidol.ac.th