

Specification : Mixed Essential Oil from Thai Medicinal Plants for Anti-dandruff/
น้ำมันผสมจากสมุนไพรไทยใช้ขจัดรังแค (Manose RM-0108)

(Application : An active ingredient for anti-dandruff cosmetic products/
สารสำคัญในผลิตภัณฑ์เครื่องสำอางขจัดรังแค)

1. Name of the raw material : Mixed Essential Oil from Thai Medicinal Plants for Anti-dandruff
2. Active components : Eugenol, β -caryophyllene, α -humulene and eugenyl acetate from clove oil⁽¹⁾ / ar-turmerone, α -turmerone, curlone, β -sesquiphellandrene, α -zingiberene, terpinolene and β -bisabolene from turmeric oil⁽²⁾
3. Common and scientific name/ Family of the plant : Clove (*Syzygium aromaticum* (L.) Merr. & L.M.)/ MYRTACEAE and Turmeric (*Curcuma longa* L.)/ ZINGIBERACEAE
4. Physical appearance : Brownish-yellow liquid with specific odor
5. pH : 5.5
6. Standardization : HPLC fingerprint using eugenol as a marker
7. Solubility : Soluble in alcohol
8. Microbial contamination : No pathogenic microorganism with less than 1,000 cfu/g of the total plate count of bacteria, yeast and fungi which is conformed to the Thai FDA regulation
9. Biological activities :
 - Clove oil 2 mg showed antifungal (*Malassezia furfur*) activity with inhibition zone of 21.42 ± 0.35 mm (ketoconazole 0.2 mg = 30.74 ± 0.67 mm)⁽³⁾
 - Turmeric oil showed antifungal activity (inhibition zone = 68 mm, MIC 1.6 μ l/ml against *Trichophyton rubrum* and inhibition zone = 5 6mm, MIC 1.4 μ l/ml against *Microsporum gypsum*) (inhibition zone of

ketoconazole = 60 mm against *T. rubrum* and 26 mm against *M. gypseum*)

10. Animal / human : -
performance test
11. Safety : -
12. Pharmaceutical, food : Anti-dandruff cosmetic products
supplement or cosmetic applications
13. Recommended : 1-10 %w/w
concentrations in the product
14. Storage : Keep in tight container at cool place (4 °C) protected from light
15. Precautions : None
16. Cost per kg : Please request

References

1. Jirovetz L., Buchbauer G., Stoilova I., Stoyanova A., Krastanov A. and Schmidt E. Chemical composition and antioxidant properties of Clove leaf essential oil. **Journal of Agricultural and Food Chemistry**, 2006; 54(17): 6303-6307.
2. Jaiswal S.G. and Naik S.N. Turmeric oil: Composition, extraction, potential health benefits and other useful application. **Avicenna Journal of Medical Biochemistry**, 2021; 9(2): 93-106.
3. Manose In-house Project “Mixed Essential Oil from Thai Medicinal Plants for Anti-dandruff” **Manose Health and Beauty Research Center** (www.manose.co), unpublished, 2018.
4. Sharma M. and Sharma R. Synergistic antifungal activity of *Curcuma longa* (turmeric) and *Zingiber officinale* (ginger) essential oils against dermatophyte infections. **Journal of Essential Oil Bearing Plants**, 2011; 14: 1, 38-47.