

Antifungal and Antibacterial Potential of Seaweed-Rice Extracts and use in Anti-dandruff Shampoo

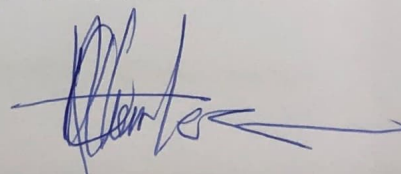
Daina Balan¹, Albert Linton Charles¹

¹Department of Tropical Agriculture and International Cooperation, National
Pingtung University of Science and Technology, Pingtung, Taiwan 91201

Abstract

Research claimed that *Malassezia* (*M. restricta*, *M. globosa* and *M. furfur*) fungus was related to dandruff. Then later, the association of *Staphylococcus* (*S. epidermidis*, *S. capitis* and *S. caprae*) bacteria was revealed. Both seaweed and rice have antimicrobial and antifungal activity. The study will thus test the capacity of *Gracilaria taiwanensis* seaweed and black glutinous rice to inhibit the growth of *Malassezia restricta* fungus and *Staphylococcus epidermidis* bacteria. The phytochemical and physicochemical evaluation of the respective extracts from samples will be conducted beforehand. Then, the inhibition by the combined (1:1) seaweed and rice extracts will be recorded. The efficacies of the combined extract will be compared to that of anti-dandruff shampoos (TARDAN, Nizoral A-D, Zdrave Tri-Active, and Neutrogena T/Gel Therapeutic Anti-Dandruff Shampoos) at different concentrations (10, 25, 50, 100, 150, 200, 500, 750, 1000 µl/ml), with zinc pyrithione as the positive control. Inhibition zones will be observed after conducting the antimicrobial and antifungal assays. The most effective concentration range of seaweed-rice extracts will be used along, with the appropriate cleansing agent, to prepare the anti-dandruff shampoo.

Keywords: anti-dandruff, *Malassezia*, natural extracts, shampoo, *Staphylococcus*



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