

Abstract

This research project has developed the prototype products, 2 in 1 baby sunscreen and mosquito repellent products for children, multipurpose ointment for wound dressing for children, body firming and skin rejuvenation lotion for mothers. The literature review plant from highland was studied to apply in products for mom and kids. The various oils and plant extracts were studied. The avocado oil, perilla oil, litsea oil and geranium oil can be used in 2 in 1 baby sunscreen and mosquito repellent products for children. Miang tea leaf extract for anti-bacterial, cell toxicity and cell migration activities and chamomile extract for anti-inflammatory activity can be used in multipurpose ointment for wound dressing for children. The Miang tea leaf extract, Karen chilli extract and coffee extract for lipolysis activity can be used in body firming and skin rejuvenation lotion for mothers. The extracts were tested for the relevant effect of each product in order to select the high potent extract to develop as prototype products. Then, the developed formulas that have good physical characteristics were selected for further stability study, 2 in 1 baby sunscreen and mosquito repellent products for children formula 33, multipurpose ointment for wound dressing for children formula 6 and body firming and skin rejuvenation lotion for mother formula 6. All best formulas were tested for the stability for 3 months and in accelerated conditions. All 3 types of products have good stability throughout the study period and in an accelerated state. In the test of the effectiveness of the products, the developed 2 in 1 baby sunscreen and mosquito repellent products for children can increase the moisture of the skin similar to the commercial product. The developed formulation showed the effective waterproof / sweat-resistant, and can use baby head to toe wash product to wash off without leaving stains left on the skin. It has SPF and PA as specified and be effective in preventing mosquitoes similar to commercial product which can prevent mosquitoes for 240 minutes or 4 hours. For the multipurpose ointment for wound dressing for children developed in the project, it has antibacterial (*S. aureus* and *E. coli*) activity and time usage for rash heal and small open wounds heal similar to the commercial product. For the developed body firming and skin rejuvenation lotion for mothers can significantly reduce the size of the upper arm circumference and the amount of melanin on the skin significantly in

comparing to the commercial product. Both developed and commercial product body body firming and skin rejuvenation lotion for mothers can significantly increase the moisture content in the skin in comparing to the initial. All prototype products do not cause any skin irritation. Moreover, the cost of 1 kilogram of chemical preparation of each product, 2 in 1 baby sunscreen and mosquito repellent products for children, multipurpose ointment for wound dressing for children and body firming and skin rejuvenation lotion for mothers were 851.47, 1,168.17 and 1,080.95 baht per kilogram, respectively. The results from this study showed not only the potential of plant extracts to be developed as prototypes of mom and kids products, but also the competitiveness with other commercial products. These results can be technology transferred to be developed as the commercial production resulting in the income increasing of highlands farmers, the creation of highland plants economic value, the conservation of forest, biodiversity and also the ecosystem.

