

Jessadaporn Ruangmarerng 2006: Development of Scrub Cream with Silica from Rice Husk. Master of Science (Agro-Industrial Product Development), Major Field: Agro-Industrial Product Development, Department of Product Development. Thesis Advisor: Assistant Professor Hathairat Rimkeeree, Ph.D. 244 pages.  
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The aim of this research was to develop scrub cream with silica from rice husk. According to the consumer survey, 94.2 % of consumers were interested in buying this product because the product has natural ingredient and give another alternative for choosing the scrub products. In process development of silica production from rice husk using RSM technique, it was found that the optimum condition was boiling rice husk in 1 M HCl solution for 45 minutes and then incinerating to 590 °C for 6 hours. Silica from large scale production has 98.57 % purity and 14.62 % yield with appearance off- white color. The formulation of scrub cream with silica from rice husk consisted of following main ingredients : 0.27 % Carbopol polymer, 1.81 % alkyl phosphates and fatty alcohols, 2.71 % Cyclomethicone and Dimethiconol, 4.98 % silica, 0.45 % floral fruit scent and 0.27 % red color solution (0.1 % w/v). The qualities of scrub cream was 34,453 cP of viscosity, 6.01 of pH, soft pink color with L\* a\* b\* value of 61.41, 27.79, 8.04 and no separation of water phase and oil phase. The total plate count of bacteria and yeast/mold were less than 10 colony/g. The clinical test showed that this scrub cream formula gave 559.8 % increased skin hydration in a group of panel who has initial value of skin hydration less than 5.5 a.u., and can improved skin elasticity with significant value comparing between before and after application. Total cost of scrub cream with silica from rice husk was 33 baht/jar (50 g). The product was stable during 8 weeks storage at room temperature (30 °C), 35 °C and 45 °C because the qualities was changed less than 62 % of initial value. The consumer test showed that 86.7 % of consumers accepted the product and the overall liking was like moderately.

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