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Comparative microbiological study between traditional and modern cosmetics in Saudi Arabia

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Cosmetic products support microbial growth due to the presence of variable amounts of nutrients. The most bacterial contaminants that were found in cosmetic products *Staphylococcus*, *Pseudomonas*, *Klebsiella*, *Achromobacter* and *Alcaligenes*. Mostly due to contaminated water. So this study aimed to determine and compare between the microbial contamination of traditional products such as Athmad (kohl), Henna (*Lawsonia inermis*), (Ocimum), Sedr (*Rhamnus*), Musk, Derum (*Juglan regia* L.), Mshat (*Alcea*) and Magic rouge in addition to modern cosmetic products from cheap and valuable trade mark such as Mascara, Eyeliner, Rouge, Plusher, Face powder and Foundation in two different states of use (intact and in-use). In this study, 67 traditional and modern cosmetic products analyzed microbiologically, the result revealed that *Salmonella* was the predominant isolates from intact and used collected samples with an equal incidence 76% equal to the incidence of *Staph*, epidermis from used samples followed by *Staph*, epidermis with an incidence of 57% from intact isolates while the incidences of *Staph aureus* were 43% and 16% from intact and used samples respectively. Among intact and used samples *E. coli* was isolated from only 2 samples with low incidence 0.02% and 0.04% respectively. The incidence of microbial contamination was higher in modern cosmetics than traditional cosmetics especially in Athmed (kohl) samples, also microbial contamination was high in incidence in mascara, plusher and eye shadow as modern cosmetics, so it could be concluded that cosmetic products produced in Riyadh, can be contaminated during the production process and they can serve as vehicles for the transmission of these pathogenic organisms. Therefore it is important to take precautions during the production process in order to prevent infections due to microbial contamination.

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