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A study of the microorganisms in two ayurvedic medicated oil preparations with special reference to microbiological quality standards

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The basic ingredients of most herbal medicinal products are plant materials. All these materials contain a natural inherent microbial flora and also may become contaminated during processing. The World Health Assembly has emphasized the need to ensure the microbial quality standards of medicinal plant products. The main objective of this study was to determine microbial load and identify microorganisms in the market samples and to define a suitable microbial quality standard for these products.

Drug samples were taken from the open market in sealed packs. 36 Sarvavisade oil market samples and 27 Visarpahara oil samples of different manufacturers were tested for microbial load and for microorganisms present. Microbial load of the drug samples was studied using the pour plate technique and spread plate technique using Nutrient agar and Potato dextrose agar for bacteria and fungi respectively. Microbial load was measured as Colony Forming Units (cfu/ml). Presence of *Coliforms* and *Salmonella* were determined according to the international standards ISO 9308-2-1990 (E). Identification of microorganisms was done through the following biochemical tests; Gram stain, Spore stain, Motility testing, Catalase activity, Oxidase activity, Glucose acid test, Oxidative and fermentative activity, utilization of Arabinose, Mannitol, Xylose and Glucose, Methyl red test, Voges–proskauer reaction, Indole test, Starch hydrolysis, Gelatin hydrolysis, Casein hydrolysis, Growth in 7% Sodium chloride, Growth in 65^{0}C, and Growth in 45^{0}C. The microbial load for bacteria in Sarvavisadee oil and Visarpahara oil was in between 00-26 cfu/ml and 00-71 cfu/ml for bacteria and fungi respectively. Through the biochemical tests it was confirmed the Bacillus present in these oil preparations was *Bacillus pantothenticus* and *Bacillus brevis.* None of the drug samples was positive for *Coliforms* or *Salmonella*. The results showed that the tested oil samples were microbiologically safe and up to international microbial quality standards.

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