Analyzing the Effect of Preservatives on Microbial Growth in Expired and Unexpired Makeup Cosmetics

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Makeup is used worldwide, helping people feel more confident and serving as a tool of self expression. However, there are hygienic concerns regarding its use. This experiment aimed to test whether preservatives are more likely to inhibit microbial growth in expired cosmetics compared to unexpired cosmetics. Research was conducted through a four-week experiment, with optical observations both under the naked eye and through a microscope, alongside statistical analysis using a t-test. The study found no significant correlation between preservatives and microbial growth due to product expiration. This was supported by the t-test results, which yielded a p-value of 0.295, greater than the significance level of 0.05, indicating no statistically significant difference between expired and unexpired makeup products. These findings suggest that factors such as consumer hygiene, packaging, and storage conditions may have a greater impact on microbial growth than preservatives. Further research is needed to draw definitive conclusions, but this study implies that practices such as using clean hands when handling cosmetics and sanitizing surfaces could help reduce microbial contamination in makeup.

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