



# DIGEST

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# AI-UCOS: ANTIMICROBIAL INFUSED-USED COOKING OIL SHELLAC



Used cooking oils (UCO) are commonly obtained from the food processing business, as well as in homes. With less knowledge, people use the wrong way to dispose of UCO by lobbing it into the sink channelled into the drain, which later will cause the drain to clog and lead to flash floods, which cause the government to spend millions to clean these clogged drains. UCO may be reused in various ways, including producing soaps, candles, and renewable energy. Therefore, in this study, the UCO was used as one of the components in the formulation of antimicrobial-infused- UCO shellac (AI-UCOS) using dried citrus waste of orange (*Citrus sinensis*), lemon (*Citrus limon*) and key lime (*Citrus aurantifolia*). It was known that ascorbic acid possesses antimicrobial properties, and the highest concentration of ascorbic acid was found in lemon-AI-UCOS, resulting in the highest antibacterial activity.

Furthermore, lemon-AI-UCOS proved to have the ability to inhibit the growth of microbes within the most extended period. However, moisture in AI-UCOS may reduce the antibacterial properties and alter the characteristics, which may create a favourable environment for microbial growth; especially those that thrive in moist conditions such as fungi. Hence, AI-UCOS undergo an improvement process prior to commercialisation for public use. Nevertheless, AI-UCOS has economic, environmental, and social impacts, which may contribute to increasing the society's revenue and decreasing government spending on environmental issues.



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