

In vitro anti *Candida* effect of Sri Lankan virgin coconut oil

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Coconut oil obtained from *Cocos nucifera* is commonly used in Sri Lankan food. It is also a skin and hair remedy in native medicine. *Candida* is a commensal fungus found in human mucosa and skin. Whereas, Sri Lanka is a leading coconut producer in the world Sri Lankan virgin coconut oil (VCO) has not been explored for anti-*Candida* effect. This study aimed to investigate anti *Candida* effect of Sri Lankan VCO.

VCO extracted by fermentation method was used for the study. Mature coconut kernel was scraped and allowed for fermentation under sterile conditions. Resultant oil was separated by heating at a controlled temperature. Thus extracted VCO was divided into two samples. One sample was used directly to check the anti-*Candida* effect while other sample was subjected to partial hydrolysis. Hydrolysis was done by reflux condensing on sand bath using methanolic sodium hydroxide. Hydrolyzed oil was neutralized and extracted in hexane. Anti-*Candida* effect for both unhydrolyzed and hydrolyzed samples were tested against five species of *Candida*; *Candida albicans* (ATCC90028), *Candida glabrata* (ATCC90030), *Candida krusei* (ATCC6258), *Candida parapsilosis* (ATCC22019), *Candida tropicalis* (ATCC13803). Several diffusion techniques on Sabouraud's agar including disk diffusion, well diffusion and direct drop method were used to demonstrate anti *Candida* effect.

Unhydrolyzed VCO did not produce any significant inhibition zones against any of the *Candida* species tested. In contrast, hydrolyzed VCO produced significant inhibition zones against all *Candida* species tested. *C. glabrata* showed the highest mean inhibition zone (40.88mm) followed by *C. Tropicalis* (36.00mm), *C. Parapsilosis* (32.11mm) *C.albicans* (28.22mm) and *C. krusei* (23.88mm).

This study demonstrates that partially hydrolyzed Sri Lankan VCO obtained from fermentation method have anti-*Candida* effects which could be used as an alternative to resistant *Candida* in the future. Use of hydrolyzed Sri Lankan VCO in skin remedies may help control *Candida* colonization.