

Lemon Grass and Kaffir Lime Essential Oils for Mouthwash

Tuesday, 17 May 2016 WIB, By: Marwati




Candidiasis is a fungal infection that is often found in society. One of the candidiasis types that is often found is oral candidiasis that occurs due to oral cavity infection because of abnormal growth of *Candida albicans*.

This happens due to weakening immunity that may be caused by chemotherapy, use of antibiotics in a long term, as well as high intake of sugar.

Meta Juniatic, a student at the Faculty of Pharmacy, UGM, said on Monday (16/5) that oral candidiasis therapy can be given with mouthwash that has an anti-candida effect. Previous research showed that lemon grass and kaffir lime essential oils were proven to have anti-fungi properties working against *Candida albicans*.

Along with fellow students from the Faculty of Pharmacy—Khoirunnissa Hidayati, Fransisca Priskaningtyas Wulandari, Na'imatul Munawaroh, and Nurul Pangestuti—Meta tried to formulate a combination of essential oils of lemon grass and kaffir lime to treat the effects of *Candida albicans* in the form of a mouthwash.



“To get a mouthwash formula that is clear and stable, a combination of lemon grass and kaffir lime essential oils can be made into a nanoemulsion sample preparation,” she explained.

The nanoemulsion was formulated using the Water Titration Method. They optimised the combined oils and VCO to get a clear and stable nanoemulsion.

“The best formula is characterised along with maintenance of the chemical compounds of essential oils in the formula, and testing is conducted on anticandida activities,” she added.

It proved that the nanoemulsion of lemon grass and kaffir lime essential oils takes action that hampers the fungal growth in the mouth cavity. The nanoemulsion formula is more effective in inhibiting the growth of *Candida albicans* than single or combined oils before being formulated.

“The nanoemulsion formula, which is a combination of the two oils, was proven to inhibit *Candida albicans* seven times more effectively than the control group,” said Nurul.

The mouthwash made by the students has a fresh flavour and fragrance. “This mouthwash does not use alcohol, either, so it is safe,” she added.

Nurul said further tests on the formula were still needed, for example, a primary irritation test and a toxicity test, to make it an oral candidiasis therapy alternative which is safe, effective and refreshing.

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