

## Efek antijamur minyak atsiri jahe putih kecil (*Zingiber officinale* var. *amarum*) terhadap *Candida albicans*

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### Abstrak

The side effects of many antifungal drugs make it necessary to find an herbal alternative with reduced side effects. Many herbals are known to have an antifungal effect, including ginger with its volatile oil composition. However, the specific antifungal effect and optimal concentration of the volatile oil from *Zingiber officinale* var. *amarum* against *C. albicans* is not yet known. This research was done to verify the antifungal effect of *Zingiber officinale* var. *amarum* volatile oil on *C. albicans*, to determine its optimal concentration, and to determine the relation between the volatile oil concentration and the inhibition zone.

material and method: The *C. albicans* strain was obtained from Department of Parasitology, Faculty of Medicine, University of Indonesia and the volatile oil was provided by water and steam distillation at BALITTRO, Bogor. The colonies were double counted in two steps. First, the volatile oil at concentrations of 100%, 50%, 25%, 12.5%, 6.25%, 3.125%, 1.56% and 0.78% were applied for treatment, whereas in the second step concentration of 100%, 90%, 80%, 70%, 60%, and 50% were used. In the disk diffusion method, the volatile oil concentrations of 100%, 70%, 60%, 50%, 25%, 12.5%, 6.25% and 3.125% were applied in triplicate in Petri dishes containing *C. albicans* by using 6 mm blank disks. Result: Mann-Whitney test showed the significant decrease of the colonies between 6.25% and 3.125% of the volatile oil concentration ( $\alpha = 0.021$ ), and also between the volatile oil concentration 6.25% and the control group ( $\alpha = 0.014$ ). The Spearman test showed a positive and strong correlation between the volatile oil of *Zingiber officinale* var. *amarum* and its inhibition zone ( $r = 0.91$ ). Conclusion: The volatile oil of *Zingiber officinale* var. *amarum* has an antifungal effect against *C. albicans* with an optimal concentration of 6.25%, and increasing volatile oil concentration is followed by increasing inhibition zone.