

**APPLICATION OF NILAM ESSENTIAL OIL ON COTTON FABRIC
USING SOL-GEL METHOD**

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ABSTRACT

APPLICATION OF NILAM ESSENTIAL OIL ON COTTON FABRIC

The nilam essential oil was extracted using hydrodistillation method. In this study the sol-gel method was used to apply the fragrance on the fabric cotton. In the sol-gel solution, β -cyclodextrin was used to prepare the solution because β -cyclodextrin will form the inclusion complexes with the fragrance. The essential oil then was applied onto the fabric cotton to know whether the oil can adhere on the surface of the cotton or not. This method was applied using the padding mangle machine to padded the sol-gel solution and fragrance on the fabric cotton. The fabric cotton then evaluated after being washed for 3, 5 and 7 times. The results showed that the fabric with 3 times washed has strong smell. For the fabric with 5 and 7 times washed, they are still have the smell of the fragrance but not strong as for sample with 3 times washed. In general, the treated fabric cotton still has smell after being washed for 7 times. The surface of the cotton fabric then further analyzes using FESEM. From the FESEM image, there were some globules on the textile fiber for the treated fabric which shows that the sol-gel solution adheres on the cotton surface. There was also a thin film coated onto the surface of the treated cotton fabric when compared to the image of the untreated. Meanwhile, the surface of the untreated cotton is smooth and free from any additional.