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MICROBIAL OIL PRODUCTION USING NEWLY ISOLATED *Wickerhamomyces subpelliculosus* 6 GROWN IN WASTE ROSE PULP

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Abstract

The pulp, remaining after the rose oil and rose water are extracted from the rose, are left around and cannot be utilized economically. It was aimed in this study to produce microbial oil for the first time by means of *W. Subpelliculosus* 6 in medium containing waste rose pulp as a carbon source. The aim of ceasing the high amount of rose pulp to be a pollutant and also making contribution to the biodiesel production, which is a cheap and environmentally friendly fuel for the national economy. Two applications were made on the waste rose pulp. One of them is that the waste rose pulp has been treated with water. In the second application, it was pretreated with 1% H₂SO₄. “Box Behnken Experimental Design Method”, having 3 variables with 2 replicates from 15 experimental points, was used in the optimization experiments with the response surface method of the lipid production parameters, containing temperature, and inoculum age and inoculum volume. Forty-five percentage oil yield was obtained from *W. subpelliculosus* with the waste rose pulp treated with acid and the microbial lipid was produced for the first time in this study. The profile of fatty acid produced was consists of 45% palmitic acid, 42.62% stearic acid and 7.38% oleic acid and its fatty acid composition is highly similar to the vegetable oil acids. It was considered to be a suitable material for biodiesel production.

Key words: fatty acid, microbial lipid, waste rose pulp, *Wickerhamomyces subpelliculosus*

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