

ABSTRACT

Kholifah, Khusnul. 2012. **A Competence Test of *Scenedesmus* sp in the Degradation of Liquid Waste Pollutant of Tapioca.** Thesis. Biology Department, Science and Technology Faculty, Maulana Malik Ibrahim State Islamic University of Malang. Advisor I: Romaidi, M.Si., Advisor II: Ach. Nasichuddin, M.A.

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The more rapid development of industry in Indonesia like tapioca factory makes the bigger water contamination potential caused by the factory liquid waste. It is due to the tapioca liquid waste still has high organic substance such as carbohydrate, protein, fat, and dangerous inorganic compound like CN, nitrite, nitrate, ammonia, BOD, COD, pH and others. In the attempt of minimizing impact of contamination resulted, one of the methods recently developed is bioremediation. A microalga is water plant microorganism having potentials that can be developed. One of microalgae species potentially developed is *Scenedesmus* sp. *Scenedesmus* sp is a microalgae species having cosmopolitan characteristic and high growth rate. The fact becomes the basic for the use of sea microalgae *Scenedesmus* sp as an absorber contained in the water waste of tapioca industry. The goal of this research is to find the effect of *Scenedesmus* sp in the degradation of liquid waste pollutant of tapioca and its growth.

This research is conducted on July, 2012 in Ecology laboratory and Optic laboratory, Biology department, Science and Technology faculty, Maulana Malik Ibrahim State Islamic University of Malang. The content analysis of liquid waste pollutant of tapioca is done in Chemistry laboratory, Muhammadiyah University of Malang. Pollutant parameter observed includes BOD, COD, NH₄, NO₂, NO₃, and pH and also its growth. The data are analyzed by using qualitative descriptive.

Based on the finding of research, there is degradation of some observed pollutants according to the decided quality basic standard. The value of BOD is 62.981mg/l<quality basic (QB): 200 mg/l, COD: 137.6 mg/l<QB: 400 Mg/l, NH₄: 2.812 mg/l<QB: 4 mg/l, NO₂: 4.1322 mg/l<QB: 5 mg/l, and NO₃: 26.429 mg/l<QB: 30 mg/l. pH 4 becomes 8 and corresponds to the quality basic: 6-9. Microalgae *Scenedesmus* sp can grow well in tapioca liquid waste. It is indicated by the abundance of the *Scenedesmus* sp growth in the beginning of cultivation 47.188 cell/ml becomes 3 981.071 in the seventh day.