

ABSTRACT

Hasanudin, Muhammad. 2012. **An Influence of Light Intensity Difference to the Growth and Lipid Level of Microalgae *Scenedesmus* sp. Cultivated on Liquid Waste of Tapioca.** Advisor I: Romaidi, M.Si. Advisor II: Ach. Nashichuddin, M.A

Keywords: Light Intensity, Growth, Lipid Level, *Scenedesmus* sp.

Microalgae is known as a plant with full of nutrition and used as a source of biodiesel raw material. One of microalgae potentially developed as a biodiesel production is *Scenedesmus* sp. because it has very high lipid content of about 1-40% from the dry weight. *Scenedesmus* sp. can grow fast even grown in a medium from waste of certain product as liquid waste of tapioca. One of the factors influencing growth and lipid level of *Scenedesmus* sp. is light intensity because having important role in the process of photosynthesis. Optimization of the light intensity is expected to increase the growth and production of lipid level on *Scenedesmus* sp.

This research aims at finding an influence of giving different light intensity to the growth and lipid level of microalgae *Scenedesmus* sp. cultivated on the liquid waste of tapioca. The treatment is done by giving the different light intensity, they are 1.000 lux, 2.000 lux, 3.000 lux, 4.000 lux, dan 5.000 lux. The observed parameter is the amount of cell and lipid level produced by *Scenedesmus* sp.

The finding shows that the higher of giving the light intensity on the optimum turn limit is able to accelerate cell growth as well as increase lipid level production of *Scenedesmus* sp. cultivated on the liquid waste of tapioca. The growth and the production of the highest lipid level is resulted on giving light intensity of 5.000 luks by the growth average value is 5.375.000 cell/ml and lipid level average percentage is 35,077%. While the growth and the production of the lowest lipid level is resulted on giving light intensity of 1.000 luks with the growth average value is 1.965.000 cell/ml and the lipid level average percentage is 1,141 %.