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## Comparison of *Nannochloropsis* sp. cultivated in photobioreactor and open raceway pond

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Microalgae cultivation can be done with an enclosed system using photobioreactor and open system using raceway pond. Both systems have distinct advantages and disadvantages. The purpose of this research is to compare specific growth rate, biomass weight and microalgae doubling time used in photobioreactor and open raceway pond cultivation. The density result gained from open raceway pond has increased from  $6,64 \times 10^6$  cell/ml in day-0 to  $139,89 \times 10^6$  cell/ml in the 10<sup>th</sup> day of the observation. Specific growth rate in photobioreactor cultivation increased exponentially between day-0 and day-1 of the observation while open raceway pond cultivation has low specific growth rate. Specific growth rate in open raceway pond in the next day is higher than growth rate of *Nannochloropsis* sp. cells in photobioreactor. *Nannochloropsis* sp. in photobioreactor cultivation was faster to reach death phase compared to *Nannochloropsis* sp. cells in open raceway pond. Biomass weight of *Nannochloropsis* sp. cells in photobioreactor has decreased from 0.2-0.16 gr/l from day 0-10. Biomass weight of *Nannochloropsis* sp. cells in open raceway pond has increased from 0.21-0.33 gr/l from day 0-10. *Nannochloropsis* sp. cultivated in open raceway pond has doubling time of 2.27 while doubling time of *Nannochloropsis* sp. cultivated in photobioreactor is 3.51.

### Biography

Mujizat Kawaroe is a Lecturer in Marine Science and Technology Department of Bogor Agricultural University. She is also active as Senior Researcher of Algae Division in Surfactant and Bioenergy Research Center; Bogor Agriculture University, Indonesia. She has focused in research on bioenergy from algae both micro and macro algae since 2007 until today. She is also an Active Member of Western Pacific (WESTPAC), Asia-Pacific Region under the auspices of the Asia-Pacific Society for Applied Phycology (APSAP) and the Asian Productivity Organization (APO). She has published her own Indonesian language book with team entitled Microalgae for Biofuel in 2010.

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