

Growth and Lipid Profiles of Melosira sp. in response to Different Salinity Levels.

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Abstract	<p>The Diatom of Melosira sp. is one of the potential microalgae candidates for future biofuel resource due to its high lipid profile and fatty acid content, high growth rate, and a quick deposition rate. Salinity stress is one of the environmental factors affecting the growth of microalgae and their lipid content. This research was conducted to identify the response of Melosira sp. treated with different salinity levels on the cell growth rate, biomass productivity, and lipid production. The microalgae cells were incubated for 8 days in 1 liter of F/2 growth medium with different salinity levels from 10 ppt to 35 ppt. Cell growth, SGR, biomass, lipid, and water quality factors were measured during incubation. This study revealed that the growth pattern of Melosira sp. cells under various salinities was customarily similar. Observation in the 35 ppt salt presenting the biomass productivity was 711.04 ± 69.38 mg.L-1 with lipid productivity which was 60.49 ± 1.72 mg.L-1. On the other hand, the observation of the lowest salt concentration displaying the biomass productivity was 316.64 ± 16.66 mg.L-1 with the lipid productivity which was 41.46 ± 6.94 mg.L-1. Hence, the results demonstrated that the lower salinity stress in 10 ppt enabled significant cell lipid production than the higher salinity of Melosira sp. in F/2 medium. Furthermore, lipid productivity was uncorrelation with biomass production pattern. This information may be useful in optimizing Melosira sp. lipid performance as a supporting knowledge.</p>
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