

Anaerobic Digestion of brown algae (*Saccharina japonica*) by nitrogen sources

정권수, 김초록, Charles Seo, 박권우, 장호남*
한국과학기술원
(hnchang@kaist.edu*)

In recent years, alternative energy sources have been steadily focused due to the depletion of fossil fuels. The volatile fatty acid (VFAs) as extracellular product is a mixture of acetic acid, propionic acid and butyric acid, which was obtained through the volatile fatty acids platform as anaerobic digestion. Moreover, the volatile fatty acids platform was adaptable to a wide variety of feedstock and aseptic process condition was not required. Therefore, there have been many attempts to raise the concentration and productivity of the volatile fatty acids. In this work, we studied how much the volatile fatty acids are affected by various nitrogen sources of the medium culture variables such as carbon sources, pH, and temperature. Several experiments with five different nitrogen sources were carried out. When using ammonium sulfate, the concentration of the volatile fatty acids reached 20.7g/L at a culture time of 11 days and a ratio of the volatile fatty acids was 7:2:1, which was different from general ratio (6:1:3). These results suggest that controlling the nitrogen sources used is an important asset to produce more needed volatile fatty acid than others.