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Development of Filtration Membranes of Biomass Plastics for Filtration of Sea Water

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Summary

Removal of bacteria by filtration is one of the key technologies to produce more safe food materials from sea water and maintain the production equipments. We developed and evaluated microfiltration membranes of biomass plastics to apply the sea water filtration. Biomass plastics membranes can dispose in composting facilities after clogging of the membranes. Among the membranes prepared in this study, membranes of poly(1,4-butylene succinate) by mixed method of non-solvent induced phase separation and thermally induced phase separation showed high performance in bacterial suspensions of *Lactobacillus plantarum* ($0.7\phi \times 2.5 \mu\text{m}$). The membrane also showed low filtration resistance and high bacteria reduction ($> 99\%$, $\text{LRV} > 2$) in 3.4% saline and sea water.