

Atcha Pankaew 2011: Harvest and Storage of *Thalassiosira* sp. for Shrimp Larval Feed. Master of Science (Marine Science), Major Field: Marine Science, Department of Marine Science. Thesis Advisor: Assistant Professor Jintana Salaenoi, Ph.D.
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Harvesting and storage of phytoplankton, *Thalassiosira* sp., for shrimp larval feed by partial filtration and flocculation using chitosan, alum and sodium hydroxide were evaluated in this study. The results showed that average harvesting efficiency of partial filtration was 95.1 ± 4.3 %. On the other hand, harvesting efficiency of three flocculating agents depended on harvesting duration and concentrations. Among three flocculating agents, alum had the highest capability to induce precipitation of *Thalassiosira* sp. cells in which the harvesting efficiency was $95.0 \pm 1.6\%$ with 100 ppm alum for the duration of 45 minutes. Survival rate of *Thalassiosira* sp. after partial filtration and alum precipitation was 87.5 and 82.3%, respectively. With cold storage at 4°C under dark condition, *Thalassiosira* sp. could survive for more than 2 weeks but survival rate of the harvested cells was substantially declined along with storage time. Total bacteria quantity in concentrated *Thalassiosira* sp. cells after filtration and alum flocculation were between 1.6×10^5 - 2.0×10^6 CFU/ml and 2.8×10^4 - 7.0×10^6 CFU/ml, respectively. Number of pathogenic bacteria *Vibrio* sp. in concentrated *Thalassiosira* sp. during 10 weeks storage were between 3.5×10^1 - 9.3×10^3 CFU/ml for partial filtration and 9.4×10^1 - 2.2×10^3 CFU/ml for alum flocculation. Specific growth rate of *Thalassiosira* sp. re-cultivated after 2 weeks of cold storage was 1.57 and 0.27 for partial filtration and alum flocculation, respectively. Alum harvested *Thalassiosira* sp. cells, after preservation for up to six weeks, was successfully used as shrimp (*Penaeus monodon*) feed in which the average shrimp survival rate of $78.0 \pm 7.2\%$ was not significant different with fresh *Thalassiosira* sp..

Student's signature

Thesis Advisor's signature