



Nutrient Recovery via Microalgae

EWTCOI researchers have shown that microalgae is effective in recycling wastewater from aquaculture. Not only does the treatment remove inorganic nitrogen and phosphorous compounds from secondary effluent, it also produces a potentially valuable biomass which has many uses. However, microalgae treatment is slow. Researchers are now working on a new method – co-cultivating microalgae with plant growth-promoting bacteria. This breakthrough solution can increase microalgae density by 50% which means higher treatment efficiency and higher microalgae yield. Researchers are presently studying various means of harvesting the microalgae for use as fish feed.

EWTCOI integrates different technologies to challenge the norms.

Key Features & Benefits

- Demonstration pilot plant showcasing the ability of treating and recycling aquaculture wastewater within a small footprint
- Reducing top-up water while generating a biomass that can be used as fish feed
- Increase of the microalgae biomass by at least 50% by co-cultivating with plant growth promoting bacteria (PGPB)
- Low cost and energy efficient system by using hollow fiber membranes to separate and concentrate microalgae biomass from the treated wastewater

Applications

- Fisheries & Aquaculture – food fish and/or ornamental fish
- Aquarium

Microalgae isolation and identification



Microalgae cultivation



Treatment of water with bacteria - microalgae co-cultivation process

