Efficiency of centrifugation on harvesting of the microalgae *Nannochloropsis*

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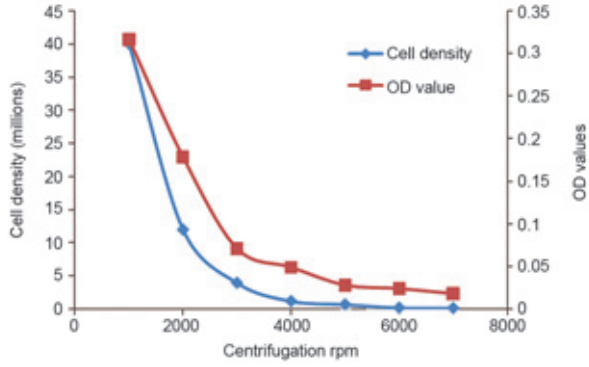
The production of small sized fish larvae like grouper requires cultivation of appropriate live organisms and is based on the establishment of an artificial food chain. This includes production of primary producers like microalgae as well as small zooplankton like rotifers to feed the fish larvae. Among the microalgae used to feed rotifers, the eustigmatophyte *Nannochloropsis* is identified as suitable and is required in large quantity to support high rates of rotifer production required in finfish hatcheries. Most of the finfish seed production is done in the summer months, as higher temperature plays a favorable role in the tropical fish seed production. However, the microalgal production in outdoor culture system is more difficult during summer months since the microalgae grow better in low temperatures. Hence, most of the efforts for micro algal production may focus on the winter



season and concentrated micro-algal paste can be produced and preserved for use in rotifer culture during the summer months of fish seed production. This offers a solution for ensuring rotifer production during summer months without the shortage of microalgae on which it feeds.

Based on this, an attempt was made to harvest *Nannochloropsis* by centrifugation at different speeds ranging from 1000-7000 rpm for 5 minutes. *Nannochloropsis* culture (log phase /exponential stage) with a cell count of 60 x 10^6 cells /ml was selected for algal paste preparation by centrifugation. The cell density as well as optical density from the supernatant was observed for determination of harvesting efficiency at different centrifugation speeds (rpm). The cell density (millions/ml) was determined using haemocytometer (Improved Neubauer, ROHEM, INDIA) and the optical density (750nm) with UV spectrophotometer (UV-VIS Spectrophotometer 118, Systronics). It was observed that the harvesting efficiency varied from 66.66 % to 99.6% and the maximum harvesting efficiency was observed with 7000 rpm (99.60%). The cell density as well as optical density values in the supernatant showed an inverse trend with increase in rpm during the centrifugation. The supernatant was collected and inoculated further to observe the reviability of the suspended cells. The concentrated paste was collected and stored by chilling as well as freezing in order to conduct further feeding trials in rotifer culture.