Effect of ammonia and salinity in inducing the formation of resting eggs (cysts) of rotifer, Brachionus plicatilis

The rotifer, *Brachionus plicatilis* is considered as a highly suitable live larval food for different larval stages of shrimp and finfish. However, unexpected population "crashes" occurs in rotifer mass cultures and therefore stock cultures have to be maintained for up scaling to mass cultures. *B. plicatilis* switches on to sexual (mictic) reproduction under certain conditions and produces resting eggs that could be stored, hatched and employed as the inoculum to obtain new cultures. The present study investigated the effect of increased total ammonia and increased and decreased salinity in the culture medium in inducing the production of resting eggs by *B . plicatilis* fed on the green alga, *Nanochloropsis oculata.*

Total ammonia was increased to 4.44 mgL-^{1} , 6.66 mg L-^{1} , 8.88 mg L-^{1} , 10.0 mg L-^{1} , 11.1 mg L-1 and 13.2 mg L-1; salinity was increased from 28g L-1 to 38g L-1, 48g L-1 and 58 g L-1 and salinity was decreased from 28 g L-1 to 18 gL-1, 8 g L-1 and 1 g L-1 in culture medium and samples from each treatment were observed for resting eggs. Sudden increase of total ammonia in the culture medium to 10 mgl-1 produced 2066±705.5 resting eggs l-1 which was significantly higher ($p<0.05$) than the number of resting eggs produced under other concentrations of ammonia. Increased salinity in the culture medium did not induce the production of resting eggs in *B. plicatilis*. Resting eggs were produced by *B. plicatilis* when the salinity was dropped suddenly from 28 gl-1 to 8 g L-1 (1741±44.1 resting eggs L-1) while sudden drop of salinity from 28 g L-1 to 1 g L-1 was detrimental to the rotifer. Sudden increase of total ammonia to10 mgL-1 resulted the greatest number of resting eggs which could be employed to obtain resting eggs of *B. plicatilis* to be stored.