

ORL-AAQ-20**Dynamics of Red bloom Algae in Fish ponds and Management for Mitigation**

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Study was carried out to understand the overall phenomenon of red bloom in carp ponds, its impacts on water quality and to assess appropriate mitigation measure. The study consisted of a field survey and water quality monitoring and analyzing from eastern, central and western region of the country.

Water quality parameters such as total phosphorus (TP), total Kjeldal nitrogen (TKN), total dissolved solid (TDS), and conductivity were significantly higher ($p < 0.05$) in red bloom ponds than non-red bloom ponds indicated that red bloom algae have direct relationship with nutrients in pond water. Dissolved oxygen (DO) was found lower ($p < 0.05$) in red bloom ponds probably due to non-photosynthetic activity of *E. sanguinea*. First experiment was conducted to assess dynamics of red bloom algae in ponds without fish. Results showed that density of euglenophytes including *E. sanguinea* was significantly higher ($p < 0.05$) in red bloom pond with sunlight than non-red bloom pond and red bloom pond without sunlight. Second experiment was conducted to assess the effects of red bloom algae on growth and production of carps using two treatments with three replicates: i) carp polyculture in a non-red bloom pond and ii) carp polyculture in a red bloom pond.

Result showed that red bloom algae did not affect ($p > 0.05$) overall production of carp. Third experiment was conducted to evaluate effectiveness of mitigation measures for red bloom algae in carp ponds. The experiment included four treatments with three replicates, i) no mitigation (control), ii) skimming, iii) fertilization with urea and DAP and iv) liming. Results showed that urea and DAP, and agriculture lime decreased density of *E. sanguinea* significantly ($p < 0.05$) and maintained DO optimal but could not improve carp production. Regular skimming is the appropriate mitigation measures for small ponds because it maintains population of *E. sanguinea* at low level and has less environment effects.

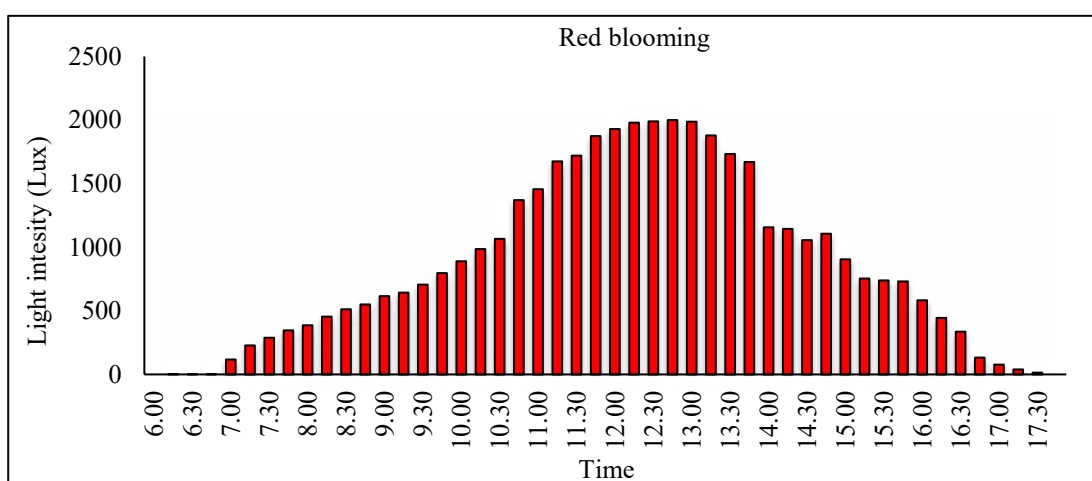


Figure: Increase and decrease of red bloom in fish pond in relation to light intensity