

Seasonal algal succession of reservoir waters in Hong Kong

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Abstract

This review focuses on the seasonal succession, composition and diversity of phytoplankton and trophic status of the three reservoir waters in Hong Kong, the High Island Reservoir, Plover Cove Reservoir and the Tai Lam Chung Reservoir. The taxonomic diversity of the algae groups were studied through extensive sampling (via depth sampling and phytoplankton net) from surface and different levels at monitoring stations of the reservoir, and the algal species were identified by microscopic analysis by the combined use of Utermohl sedimentation chamber and inverted microscope over four years. The tropical warm weather conditions in Hong Kong and the trophic status in the reservoirs water are favorable for the Cyanobacteria growth (Blue-green algae bloom), the blooms of *Microcystis*, *Anabaena*, *Pseudanabaena* and *Cylindrospermopsis* are common in summer to late summer time. The differences in source waters of the High Island Reservoir, mainly rainwater, and with that of the Plover Cove Reservoir and the Tai Lam Chung Reservoir, mainly Dongjiang water, have shown a significant difference in algal diversity. Although the review and findings show that the predominate species *Pseudanabaena* may produce the metabolite, a semi-volatile compound – 2-methyl isoborneol (MIB), which cause the taste and odour issue of the two later reservoirs in Hong Kong, much work remains to be done to identify the causative agent by molecular approach.