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PREECHA PACHUNCHAI: COMPARISON OF PLANKTON COMMUNITY STRUCTURE OCCURING IN MAHIDOL UNIVERSITY, SALAYA CAMPUS AND AN AGRICULTURAL AREA, PHUTTHAMONTHON DISTRICT, NAKHON PATHOM PROVINCE. THESIS ADVISORS: VITHYA SRIMANOBHAS D.Sc., SUBPHACHAI SUKARAWAN M.S., CHAMLONG ARUNLERTAREE PhD., 169 P. ISBN 974-663-339-2

Hypothesis that community structures of plankton living in Salaya campus differ from those living in an agricultural area outside the campus in term of abundance, diversity and similarity. In this study, a community approach and the water qualities both in terms of spatial and temporal scales of two areas were selected for comparative study. The water areas in Salaya campus and an agricultural area near the campus as a representative for an agricultural habitat have been proposed as study sites. The samples were collected twice times in September 1997 and April 1998.

This study finds that there is no significant difference in the mass of plankton of the agricultural area and Salaya campus by using univariate analysis. In terms of taxonomy of plankton, *Lyngbya* were the dominant genus in the agricultural area, while *Oscillatoria* were the dominant genus in Salaya campus. Copepod nauplii were the dominant group of zooplanktons in the agricultural area, while *Brachionus* was the dominant group in the campus. This finding indicates that an agricultural area is different from the campus. The relationship between water quality and plankton, water temperature, conductivity and ortho-phosphate affect phytoplankton in Salaya campus. Whereas in an agricultural area, water temperature, free carbon dioxide and nitrate affect phytoplankton. Water temperature, pH and ammonia affect zooplankton in Salaya campus. The affecting variables in the agricultural area are water temperature, conductivity, dissolved oxygen, nitrite and ammonia.