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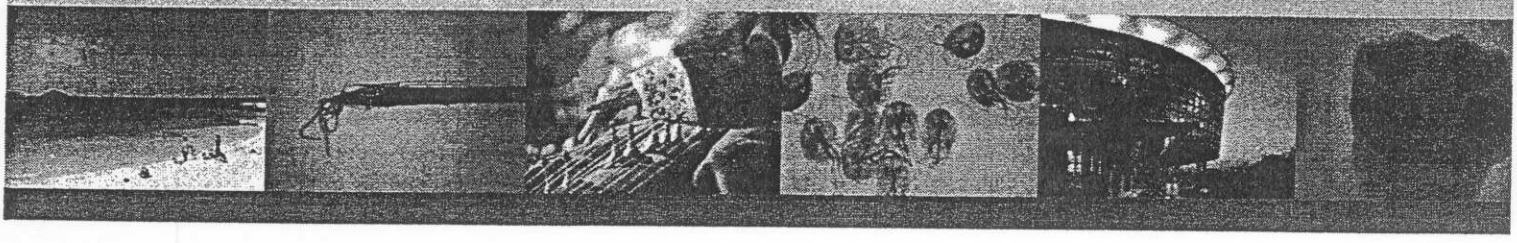

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Effect of surface salt on density and distribution of *Bithynia siamensis goniomphalos* in Khon kaen province, Thailand using geographic information system

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Bithynia siamensis goniomphalos the intermediate host of *Opisthorchis viverrini*, the human liver fluke is important causative agent of cholangiocarcinoma in north-eastern Thailand. The mollusk survey was carried out in 21 water reservoirs in Khon Kaen province, northeast Thailand for study distribution and density of *B. siamensis goniomphalos* by geographic information system. The water reservoirs were selected based on the data of Department of Land Development, Ministry of Agriculture and Cooperatives. Mollusk samples were selectively collected from 20 various ecological stations by manual or scoop collection at the water's edge and Ekman dredge in deep water. The samples were identified for species and examination for parasitic infection. Twelve localities presented with *B. siamensis goniomphalos* and 12 sympatric snail species were found. Density of *B. siamensis goniomphalos* was negative correlation with *Filopaludina* (*Siamopaludina*) *martensi* ($r=-0.18$, $p<0.05$) but positive correlation with salinity ($r=0.24$, $p<0.001$) and conductivity ($r=0.22$, $p<0.01$). Its normal habitats were in clear water at the water depth level up to 3 m, water temperatures 24.20-30.80 ℃, dissolved oxygen 0.23-7.8 ppm, conductivity 0.42-16.69 mS/cm, salinity 0.47-19.00 ppk, turbidity 0.93-213 NTU and pH 6.7-8.12. High density of *B. siamensis goniomphalos* was found in the area with salt surface *B. siamensis goniomphalos* and sympatric samples were fixed in 80% ethanol for ingested organism examination in the digestive content. The organisms in digestive tract of *B. siamensis goniomphalos* were in 4 Divisions of Cyanophyta, Chlorophyta, Euglenophyta and Chrysophyta.

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Efficacy of coproantigen detection and polymerase chain reaction for diagnosis of *Opisthorchis viverrini* infection

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Reliable diagnosis is an essential tool for parasite control particularly in opisthorchiasis since accurate identification and treatment of infected persons is beneficial not only in clearing worm burden but also reducing risk of hepatobiliary disease and cholangiocarcinoma. At present, there is need for better diagnostic method suitable for a majority of people with light infection where conventional diagnosis is often problematic. In this study efficacies of coproantigen detection by monoclonal antibody-based enzyme-linked immunosorbent asay (Mab-ELISA) and egg DNA detection by polymerase reaction (PCR) were compared, using the formalin-ethyl acetate concentration technique (FECT) as a reference method. Analysis of 127 faecal samples from an endemic area of opisthorchiasis in Khon Kaen, Thailand revealed that 63.8% had *Opisthorchis viverrini* as determined by FECT. Sample Analyses by Mab-ELISA gave a positive rate of 66.1% while the PCR showed a significantly higher positive rate of 78.7% ($p<0.01$). The sensitivity and specificity of Mab-ELISA were 69.1% and 39.1% and those for PCR were 100% and 59%, respectively. The major advantages of these two diagnostic methods are that positive cases were identified in egg-negative samples with the rates of 60.9% by Mab-ELISA and 41.3% by PCR. In cases of egg-positive, both methods were equally efficient. The higher sensitivity observed in this study suggests that these two methods are promising tools for diagnosis of light worm burden cases which are the majority of the infected population.