

SEASONAL VARIATION AND POTENTIAL SOURCES OF *CRYPTOSPORIDIUM* CONTAMINATION IN SURFACE WATERS OF CHAO PHRAYA RIVER AND BANG PU NATURE RESERVE PIER, THAILAND

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Abstract. Using molecular techniques, a longitudinal study was conducted with the aims at identifying the seasonal difference of *Cryptosporidium* contamination in surface water as well as analyzing the potential sources based on species information. One hundred forty-four water samples were collected, 72 samples from the Chao Phraya River, Thailand, collected in the summer, rainy and cool seasons and 72 samples from sea water at Bang Pu Nature Reserve pier, collected before, during and after the presence of migratory seagulls. Total prevalence of *Cryptosporidium* contamination in river and sea water locations was 11% and 6%, respectively. The highest prevalence was observed at the end of rainy season continuing into the cool season in river water (29%) and in sea water (12%). During the rainy season, prevalence of *Cryptosporidium* was 4% in river and sea water samples, but none in summer season. All positive samples from the river was *C. parvum*, while *C. meleagridis* (1), and *C. serpentis* (1) were obtained from sea water. To the best of our knowledge, this is the first genetic study in Thailand of *Cryptosporidium* spp contamination in river and sea water locations and the first report of *C. serpentis*, suggesting that humans, household pets, farm animals, wildlife and migratory birds may be the potential sources of the parasites. The findings are of use for implementing preventive measures to reduce the transmission of cryptosporidiosis to both humans and animals.

Keywords: *Cryptosporidium* species, river and sea waters, seasonal variation, potential sources, Thailand

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