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**PREVALENCE OF *NAEGLERIA* SPECIES IN WATER BODIES OF
MAHO AND NIKAWERATIYA DIVISIONAL SECRETARIAT
DIVISIONS**

A PROJECT REPORT PRESENTED BY

J. A. N. S. GUNARATHNA

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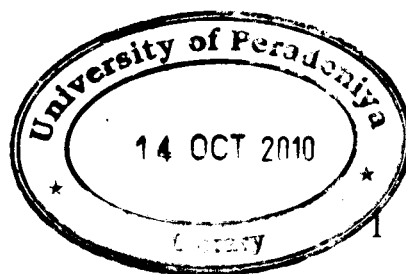
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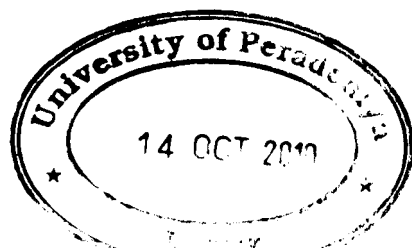


ABSTRACT

Free-living amoebae are ubiquitous protozoa that have been isolated from most regions of the world. These are widely distributed in the environment; as such, humans are likely to be frequently exposed to these organisms. Species *Naegleria*, *Acanthameba* and *Balamuthia* have been recognized as opportunistic pathogens of human beings and other animals and are known to cause a spectrum of infections in immunosuppressed individuals while some of these organisms cause disease in the immunocompetent as well.

In the genus *Naegleria*, one species *N. fowleri*, is pathogenic to humans. It can infect humans and cause significant disease. Although there are several species in this genus, to date, *N. fowleri* is the only species known to produce human disease. The organism penetrates the cribriform plate and cause fulminant and rapidly fatal primary amoebic meningoencephalitis (PAM). Disease is generally acquired while swimming, diving and total submersion for bathing in freshwater-lakes and ponds.

Sri Lanka is a tropical country and in the dry zone, large numbers of water bodies (known locally as "tanks") primarily meant for irrigation are also used by the people for their daily needs of washing and bathing. These water bodies offer ideal conditions for the growth of *Naegleria*. However, except for a single report of local isolation of the organism (Wijesundera *et al.* 1996), no systematic study has been carried out to document the prevalence of these organisms in water bodies of Sri Lanka. This is a current necessity as it is important in determining the possible risk of infection to the local community who use these water resources.



In this study an attempt is made to isolate *Naegleria* species from water bodies used by the people in Maho and Nikaweratiya Divisional Secretariat (D.S.) divisions, in the dry zone, in order to determine the prevalence of this organism in the risk environment.

Surface and deep water samples from 10 randomly selected freshwater bodies (tanks) from each D. S. division were cultured and examined. Further the prevalence of *Naegleria* in clear water and water made turbid due to use by animals was explored. The prevalence of *Naegleria* was 60% (6/10) and 40% (4/10) in the water bodies at Maho and Nikaweratiya, respectively. There was no significant difference in the prevalence of the organism in surface water versus deep water (p value = 0.059). Furthermore, no significant difference was seen in the prevalence between clear water and turbid water frequented by animals (p value = 0.353)

Overall, this study shows the prevalence of *Naegleria* spp. in local water bodies used for human bathing. However, further studies are needed to identify these isolates to species level in order to assess the risk of infection to humans.