

PATHOGENIC MICROBES AND ENDOCRINE DISRUPTING CHEMICALS IN WATER AND *OREOCHROMIS NILOTICUS* IN LAKE VICTORIA, KENYA

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INTRODUCTION

The world's aquatic resources are undergoing continuous pollution

Water in Lake Victoria is contaminated by various pollutants

The microbes include bacteria, viruses and protozoa.

Contaminated water and fish.

Pathogenic bacteria and protozoa - cause infection in man and fish

LITERATURE REVIEW

Increased population - increased effluent loads (Oguttu *et al.*, 2008)

Microbiological and chemical contamination of aquatic environment

Water contaminated - The aquatic products contaminated

Water acts as a media for which bacteria, protozoa and viruses (Davis *et al.* 2005).

LITERATURE REVIEW cont.

Water-borne bacterial infections: cholera, typhoid fever and bacillary dysentery are wide-spread (Cabral, 2010).

Fish infections: *Aeromonas*, *Streptococcus iniae*,

Fish live in the water environment, any contamination of water contaminate the fish

Compromise in public health and food safety (Onyuka *et al.*, 2011).

LITERATURE REVIEW cont.

Microbial quality of fish is determined by the quality of water (Fafioye, 2011)

The quality of water is of paramount importance since the pathogens can be transmitted to man causing infections (Wandili, 2011)

Enterobacteriaceae were recovered in *fish* from Lake Victoria which included Salmonella, E. coli, Proteus, Enterobacter and Shigella (Onyango *et al.*, 2009)

LITERATURE REVIEW cont.

Antimicrobial resistance (AMR) and disinfectant resistance - an evolving phenomenon.

Bacteria causing common infections - developed resistance to new antibiotic - worldwide health threat.

Common and affordable disinfectants - rendered ineffective

LITERATURE REVIEW cont.

Protozoan enteroparasites : *Amoeba*, *Cryptosporidium* and *Giardia* - major waterborne pathogens.

Single-celled coccidian protozoan

Found in lakes and rivers, when water is contaminated with sewage and animal waste.

Mode of transmission – contaminated water & food (fish).

LITERATURE REVIEW cont.

Estrogenic/anti-androgenic compounds include:

the natural estrogen,

17- β estradiol (E2); the synthetic estrogen originating in oral contraceptives, ethynylestradiol (EE2);

Industrial EDC; Bisphenol-A (BPA)

Endocrine Disrupting Chemicals (EDCs) have been reported in sewage and various methods to detect them have been developed.