

**CURRENT RESEARCH
AND DEVELOPMENT IN
BIOTECHNOLOGY
ENGINEERING
AT IIUM**

VOLUME I

Editors:

Suleyman Aremu Muyibi
Mohammed Saedi Jami
Zaki Zainudin



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(VOLUME I)

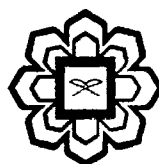
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CHAPTER 26

NATURAL DISINFECTANTS FOR WATER TREATMENT

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ABSTRACT

In recent years, potable water has become a vital natural resource whose quality and increasing scarcity are paramount for the survival of flora and fauna globally. Several human activities such as mining, construction and agriculture around surface water bodies contribute markedly to extensive particulate matter erosion, fugitive dust dissemination, exposure to and deposition into those water bodies. In addition to the undesirable, high water turbidity, particulate matter entrainment in rivers and streams, bacterial and other pathogens can sometimes create disease and even epidemics problems due to the perennial presence of polluted waters, some of which may comprise disinfection-resistant microorganisms.

Keywords: disinfectant, microorganisms, nahar seed oil, water, turbidity.

INTRODUCTION

Water supply is one of the key natural resource bases that are inevitable for sustainability of human and environmental health. There is a strong and direct link between people's health and the development of communities. Gleick (2002) and WHO (2003) summarized these links as: poor health reduces life expectancy and educational achievement; it reduces investment and returns from investment (as production, productivity and employment decrease); it reduces parental investment in children (and decreases the fertility rate); it increases health inequity and poverty; and it reduces social and political stability. Inadequate water services together with sanitation to the rural poor are among the most serious challenges facing the developing world. Every year, approximately 3.4 million people die due to water-borne diseases, with the greatest health burden falling on children (UN-Habitat, 2003).

Conventional water treatment reagents include chemical aids, such as synthetic low molecular weight, charged polymers (poly-electrolytes) or lime, ferric sulphate, activated silica, alum and other inorganic aluminium poly-cation salts as coagulants, as well as chemical compounds like chlorine, ozone, ultra-violet light and so on as disinfectants. The