CURRENT RESEARCH AND DEVELOPMENT IN BIOTECHNOLOGY ENGINEERING AT IIUM

VOLUME II

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DATE SEED EXTRACT AS PRESERVATIVES

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ABSTRACT

The increasing demand for minimally-processed, extended shelflife foods and reports of chemical preservatives as having potential toxicity demands food manufacturers to find alternative sources of antimicrobial compounds. Food infection and intoxication are considered as the most common causes of foodborne diseases worldwide. Foodborne pathogens causing these diseases find their way in foods through cross contamination, improper handling and temperature abuse. Food spoilage microorganisms, on the other hand, cause products to lose their quality which renders them unacceptable to consumers. Short shelflife of food products because of spoilage is one of the major problems of the food industry. Examples of food spoilage microorganisms include *Pseudomonas aeruginosa*, *Bacillus subtilis*, *Lactobacillus sp.*, *Saccharomyces cerevisiae* and *Aspergillus niger*.

Keywords: Bacteria, date seeds, food, microorganisms

INTRODUCTION

Prevention of pathogenic and spoilage microorganisms in foods is usually achieved by using chemical preservatives. These chemical preservatives act as antimicrobial compounds which inhibit the growth of undesirable microorganisms. However, the onset of increased demand for minimally-processed, extended shelflife foods and reports of chemical preservatives as having potential toxicity demand food manufacturers to find alternative sources of antimicrobial compounds (Conner, 1993; Nychas, 1995). Bacterial resistance to currently used antibiotics is becoming a concern to public health (Monroe & Polk, 2000). The development of bacterial super resistant strains is resulting in currently used antibiotic agents failing to end many bacterial infections. Even though pharmacological industries have produced a number of new antibiotics in the last three decades, resistance to these drugs by microorganisms has increased. In general, bacteria have the genetic ability to transmit and acquire resistance to drugs, which are utilized as therapeutic agents (Cohen, 1992). Such a fact is cause for concern, because of the number of patients in hospitals who have suppressed immunity, and due to new bacterial strains, which are multi-resistant. Herbal medications in particular have seen a revival of interest