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EVALUATION OF MICROBIOLOGICAL QUALITY OF SOME PROCESSED FRUIT JUICES IN EGYPTIAN MARKETS

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ABSTRACT

The present study was performed to evaluation the microbiological quality of processed packed juices like mango, guava, apple and cocktail purchased from five different local companies in Egypt. The microbiological analysis including total plate count (T.P.C), total coliforms (T.C), faecal coliforms (F.C.), lactic acid bacteria (L.A.B), yeasts, *Escherichia coli*, *Staphylococcus aureus* and *Clostridium perfingins*. The effect of *leuconostoc mesenteroids* on growth of *E. coli* and *Staph aureus* in vitro was evaluated. The results revealed that microbiological counts in the examined samples were ranged from 1x10 to $5.5x10^5$ cfu/ml for T.P.C., 3x10 to $2.5x10^5$ cfu/ml for T.C, 1x10 to $10x10^5$ cfu/ml for yeasts. All the examined samples were negative for *E. coli*, *Staph aureus*, *Colostridium perfringins* and faecal coliforms. The treatment with *lecuonostoc mesenteroids* induced complete eliminate of *E. coli* in mango, apple and cocktail juices and *Staph aureus* in mango and apple juices. The bacteria density of the same microorganisms (*E. coli and Staph aureus)* were decreased on enrichment broth.

Keywords: fruit, juices , *leuoconostoc* ,pathogens

INTRODUCTION

Fruits juices are recognized as an emerging cause of food borne illness (Parish, 1997). A major contributing factor in these raw agriculture commodities are contamination by animal or human waste and consumption without a processing step that will kill or remove associated bacterial pathogens. While a single piece of contaminated produce may infect a single person, contaminated produce that is co-mingled juices and served may infect many individuals. One potential source of entry of microorganisms into fruits is by environmental exposure with uptake occurring through either specific morphological structures in the plant and or through breaks in tissues that occur as a result of punctures wounds cuts and splits. These insults to the fruit can occur during growing or harvesting, additionally processing conditions and improper handling contribute substantially to the entry of bacterial pathogens into the product, especially in juices prepared from the fruits. Processed juices made from fruits have a very high consumer preference both in terms of tats and healthy effects through the word, however, in the current past such juices especially unpasteurized juices have been shown to be a potential source of bacterial pathogens notably, *E. Coli* O157:H7, (Ryu and Beuchat 1998, Uljas and Ingham, 1998, Zhuang *et al.* 1995). Bacteria, yeasts and molds are the microorganisms that can spoil the quality of soft drinks, yeast often colonize foods with a high sugar content and contribute to spoilage fruits and juices with a low PH (Elke. , 2007).

Lactic acid bacteria are a groupe of gram positive bacteria including species like *leuoconostoc* and *Lactobacills* which are useful in some food