# COMPARATIVE STUDIES ON SOME CONCENTRATES USED IN NON-ALCOHOLIC BEVERAGES

**BY**

**MOHAMED SALAH EL-DEIN OSMAN MOHAMED**
B.Sc.(Food Technology) , Faculty of Agriculture,
Ain shamsUniversity,(1981)

**A thesis submitted in partial fulfillment of the requirements for the degree of**



**MASTER OF SCIENCE**

**in**
**Agriculture**
**(Food Science and Technology)**

**Department of Food Science**
**Faculty of Agriculture**
**Ain Shams University**

**1998**

# COMPARATIVE STUDIES ON SOME CONCENTRATES USED IN NON-ALCOHOLIC BEVERAGES

**BY**
**MOHAMED SALAH EL-DEIN OSMAN MOHAMED**

**B.Sc.(Food Technology),Faculty of Agriculture,**
**Ain Shams University, (1981)**

**Under the supervision of :**

**DR. EL-SAYED IBRAHIM YOUSIF ABOU EL-SEOUD**
**Associate Professor of Food Science , Faculty of Agriculture, Ain Shams University.**

**DR . YOSRY AHMED ABD EL-DAIM**
**Associate Professor of Food Science , Faculty of Agriculture , Ain Shams University .**

Approval Sheet

# COMPARATIVE STUDIES ON SOME CONCENTRATES USED IN NON-ALCOHOLIC BEVERAGES


BY

**MOHAMED SALAH EL-DEIN OSMAN MOHAMED**

B.Sc.(Food Technology),Faculty of Agriculture .Ain shams University, (1981)


**This thesis for M.Sc.degree has been approved by:**

**PROF. DR . M. R.A.EL-SADANI**
Prof. of Food Science , Faculty of Agricultue , Moshtohor, Zagazeg University

**PROF. DR. R.M.MAHMOUD**
Prof. of Food Science , Faculty of Agriculture, Ain Shams University

**DR. E.I.Y.ABOU EL-SEOUD**
Associate Prof. of Food Science , Faculty of Agriculture, Ain Shams University ( Supervisor )

**Date / / 1998**

# ABSTRACT

Mohmed Salah El-Dein Osman Mohamed . Comparative studies on some concentrates used in non-alcoholic beverages . Unpublished Master of Science , Ain Shams University , Faculty of Agriculture , Department of Food Science (1998) .

The present investigation was carried out as an attempt to throw a light on the possibility of the utilization of orange , mandarin , lime , pomegranate , strawberry and mulberry juice concentrates in carbonated beverages as a natural flavoring , coloring agents and to increment the multritive value of the product , instead of artificial one , which may be harmful when used in carbonated beverages .

The obtained data could be summarized as follows : Significant difference in TTA of most of concentrated juice could be detected . The concentration techniques used in this research caused a considerable increase in the TSS and TS of the concentrates . Evaporation and vacuum evaporation methods results in obtaining concentrates characterized by lower total bacterial count . The presence of coliform bacteria can't be detected in any of the samples during storaged 5 °c ± 1 . The microbial quality of the treated water was found to be identical to the permissible levels recommended by ESS . The relation between the total ash and the individual constituents such as , potassium , sodium and phosphorus could be used for differentiation between the natural and artificial one . Significant differences are shown in TTA between the fresh carbonated beverages and those storage at room temperature up to six and nine weeks . No significant difference in gas volume of carbonated beverage which storage up to three or six weeks . All carbonated beverages were found to be free from coliform under all tested storage condition .

All the carbonated beverages made by using juices concentrated by evaporation or vacuum evaporation were characterized by acceptable sensory attributes up to nine weeks of storage at room temperature , except the samples which prepared by freezing concentration up to three weeks . Samples prepared from stored juice concentrated by evaporation or vacuum evaporation were found to free from yeast's , moulds and coliform under all tested storage conditions . Significant variations in sensory characteristics were found between all carbonated beverage which prepared from freshly concentrated juice or made from stored concentrates up to two or four or six months at 5 °c ± 1 .

Key words :-

Carbonated beverages - procedure of concentration - fruit juice concentrates - Orange - Mandarin - Strawberry - Mulberry juices - Physical indices - Chemical constituents - Microbiological analysis - Organoleptic evaluation - Storage stability

# ACKNOWLEDGEMENT

All praises are due to my God , who blessed me with kind professor and colleagues , and gave me the support to prepare this thesis.

The author wishes to express his sincere gratitude deep appreciation and infinite thanks to prof .Dr. A.S.M. Dabash , professor of Food Science and Technology , Faculty of Agriculture , Ain Shams University .for his valuable suggestions , and supervision from the beginning of this work till November 1995 .

Greateful acknowledgment should be also extended to Dr. E.I.Y. Abou El- Seoud , Associate professor of Food Science and Technology , Faculty of Agriculture , Ain Shams University , for every possible guidance , supervision and constructive criticism , he kindly offered through the whole work of this thesis .

Greateful acknowledgment should be also extended to Dr.Y.A. Abd El Daim , Associate professor of Food Science and Technology , Faculty of Agriculture , Ain Shams University for every possible guidance , supervision and constructive criticism , he kindly offered through the whole work of this thesis.

# CONTENTES

# *LIST OF TABLES*