

"A SURVEY ON FRESH JUICE PRODUCTION METHODS"

by :

Constantinos Sofocleous

Project Report Submitted to the Department of
Mechanical Engineering of the
Higher Technical Institute
Nicosia, Cyprus

in partial fulfillment of the requirements
for the diploma of

TECHNICIAN ENGINEER

in

MECHANICAL ENGINEERING

JUNE 1990

HIGHER TECHNICAL INSTITUTE	PROJECT NO. 1693
----------------------------------	---------------------

ABSTRACT

The purpose for compiling this project is to conduct an investigation into the various methods of large scale fresh Juice production, to describe with reference to drawings and diagrams each method stating design, construtional and operational characteristics, to describe with reference to drawings and diagrams a particular plant layout with its production processes and to prepare an economic assessment of the plant operation.

Chapter 1 describes the methods used from the several companies in Cyprus for producing fresh juices.

Chapter 2 deals with analytical description of "Lanitis Bross" method for producing fresh juices.

Chapter 3 represents an economic assessment of the plant operation of chapter 2.

CONTENTS

	Page
<u>CHAPTER 1 : FRESH JUICE PRODUCTION METHODS</u>	
Sterilization	1
Concentration	2
Pasteurization	3
Production of "KEAN" juices	4
Block Diagram of "KEAN" method	5
Block Diagram explanation	6
Production of "LANITIS" juices	7
Block Diagram of "LANITIS" method	8
Block Diagram explanation	9
Production of "CYPRINA" juices	10
Block Diagram of "CYPRINA" juices	12
Block Diagram explanation	13
Production of "SWS" juices	14
Block Diagram of "SWS" method	15
Block Diagram explanation	16
<u>CHAPTER 2 : DESCRIPTION OF "LANITIS BROSS" METHOD</u>	
Stages of the plant	17
Polycitrus process	18
Pacilac therm process	20
Function of plate heat exchanger	22
Cleaning	25
Tetra brik aseptic process	26
Dimensions of the machine	27
Parts of the machine	28
Passage of packaging material	29
Function of each part	30
Carton terms	35
Strip applicator	38
Peroxide system	39
Peroxide bath	40
Air knife	42
Cleaning programme	43

	Pages
Final packaging process	44
Tetra tray with TPMC machine informations	45
Preparations	46
Starting of the machine	50
Production	51
Stop the machine	53
Maintenance work	54
Tetra shrink with TPMC machine informations	57
Preparations	58
Starting of the machine	61
Production	62
Stop the machine	63
Maintenance work	65
Straw applicator machine informations.....	67
Preparations	68
Starting of the machine	70
Production	71
Stop the machine	73
Maintenance work	74

CHAPTER 3 : ECONOMIC ASSESSMENT OF THE PLANT

Running costs	75
Appendix I	93
Appendix II	94
Appendix III	95
Appendix IV	96
Suggestions for improvement	98