

PERMANENT REFERENCE

A STUDY ON EVALUATION OF WEANING FOODS

AVAILABLE IN SRI LANKA

BY

SOTHILUXMI SIVAPRAGASAM

A RESEARCH REPORT

SUBMITTED IN PARTIAL FULFILLMENT OF

THE REQUIREMENT OF THE

ADVANCED COURSE

IN

FOOD SCIENCE AND TECHNOLOGY

FOR

THE DEGREE OF

BACHELOR OF SCIENCE IN AGRICULTURE

FACULTY OF AGRICULTURE

EASTERN UNIVERSITY, SRI LANKA



001-40627
POT



FAG130

Project Report
Library - EUSL

1996

APPROVED BY

T. Mahendran

Dr. (Mrs.) T. Mahendran
Senior Lecturer and Supervisor
Faculty of Agriculture
Eastern University, Sri Lanka

Chenkalady.

Date 31/10/96

< 4389

T. Mahendran

Dr. (Mrs.) T. Mahendran
Head/Department of Agronomy
Faculty of Agriculture
Eastern University, Sri Lanka

Chenkalady.

Date 31/10/96

PROCESSED
Main Library, EUSL

ABSTRACT

Feeding of infant is an important consideration in human life. The breast milk is insufficient for the fulfillment of nutritional requirement beyond 3 months of infants. Traditional home prepared foods are not much suitable for the babies because of the consumption of time in preparation. The formulated feeding is recommended from 18th century. Several types of baby foods are available in Sri Lanka. The objective of this study is to evaluate and compare the available infant foods in Sri Lanka which are locally available and imported ones.

For this evaluation, formulated food products were selected and their chemical composition, Physical properties and sensory parameters were taken. In chemical composition, the amount of crude protein, total sugar, crude fat, minerals, acid insoluble ash, crude fibre and moisture were considered. For physical properties water binding capacity and water solubility index were determined. A sensory evaluation test was carried out for 9 main parameters such as appearance, colour, flavour, degree of liking and over all acceptability.

In all these characters, products significantly differ from each other. Product from Perera and Sons is best in most of physical, chemical and sensory parameters. In chemical composition minerals, crude fat, crude fibre and moisture are at the feasible level at the same time two of the physical properties are good. In sensory analyse, among the six parameters such as appearance, flavour, Degree of liking and over all acceptance are best in this product. Therefore, the product F is best, compared to other products and locally prepared with less expensive to the poor consumers.

CONTENTS

	PAGE
ABSTRACT	i
ACKNOWLEDGEMENT	ii
CONTENTS	iii
LIST OF FIGURES	vi
LIST OF TABLES	vii
CHAPTER 1 INTRODUCTION	1
CHAPTER 2 LITERATURE REVIEW	4
2.1 HISTORY OF INFANT FEEDING	4
2.2 INTRODUCTION OF SOLID FOODS TO THE INFANTS	6
2.2.1 IMPORTANCE OF FEEDING SUPPLEMENTARY FOODS	6
2.2.2 WHEN TO START SUPPLEMENTARY FOODS	7
2.2.3 WHY IT IS BETTER NOT TO START WEANING FOOD TOO EARLY	9
2.2.4 WHY IT IS BETTER NOT TO START WEANING FOODS TOO LATE	10
2.3 COMMERCIAL WEANING FOODS	11
2.4 THE PROBLEM OF BULK FOODS	12
2.5 ADVANTAGES OF THE FEEDING OF COMMERCIAL FOODS THAN TRADITIONAL FOODS	12
2.6 INFANT IS THE MOST VULNERABLE STAGE IN HUMAN LIFE REGARDING TO NUTRITION	13
2.7 NUTRITIONAL REQUIREMENT OF INFANTS	14
2.7.1 PROTEIN REQUIREMENT OF INFANTS	16
2.7.2 FAT REQUIREMENTS OF INFANTS	18
2.7.3 SUGARS IN INFANT FOODS	20
2.7.4 VITAMIN NEEDS OF INFANT	20
2.7.5 MINERAL NEEDS IN INFANT FOODS	21

2.7.6	IMPORTANCE OF FIBRE IN THE DIET	23
2.7.7	WATER HOLDING CAPACITY OF INFANT FOOD	24
2.8	SENSORY EVALUATION	25
2.8.1	DEFINITION	25
2.8.2	USES OF SENSORY ANALYSIS	26
2.8.3	PROBLEM ASSOCIATED WITH SENSORY ANALYSIS	27
2.8.4	THE FOLLOWING RULES SHOULD BE ESSENTIALY FOLLOWED DURING SENSORY EVALUATION	28
CHAPTER 3 MATERIALS AND METHODS		30
3.1	MATERIALS	30
3.2	METHODS	31
3.2.1	DETERMINATION OF MOISTURE	31
3.2.2	DETERMINATION OF ASH	31
3.2.3	DETERMINATION OF ACID INSOLUBLE ASH	32
3.2.4	DETERMINATION OF FAT	32
3.2.5	DETERMINATION OF CRUDE PROTEIN	33
3.2.6	DETERMINATION OF CRUDE FIBRE	34
3.2.7	DETERMINATION OF WATER BINDING CAPACITY	35
3.2.8	DETERMINATION OF WATER SOLUBILITY INDEX	36
3.2.9	DETERMINATION OF TOTAL SUGARS	36
	3.2.9.1 DETERMINATION OF REDUCING SUGARS	36
	3.2.9.2 DETERMINATION OF NON REDUCING SUGARS	37
3.2.10	TEST OF SENSORY EVALUATION	38
	3.2.10.1 ASSUMPTIONS	40
	3.2.10.2 HYPOTHESIS	40
	3.2.10.3 DECISION RULE	40
	3.2.10.4 SPECIMEN EVALUATION CARD FOR HEADONIC SCALE TEST	40
CHAPTER 4 RESULTS AND DISCUSSION		44
4.1	CHEMICAL PROPERTIES OF WEANING FOODS	44

4.1.1	MINERAL CONTENT IN WEANING FOODS	44
4.1.2	ACID INSOLUBLE ASH OF THE WEANING FOODS	46
4.1.3	CRUDE FIBRE IN WEANING FOOD PRODUCT	47
4.1.4	PROTEIN CONTENT OF THE WEANING FOODS	48
4.1.5	FAT CONTENT OF THE WEANING FOODS	50
4.1.6	MOISTURE IN INFANT FOODS	52
4.1.7	TOTAL SUGAR IN PRODUCTS	53
4.2	PHYSICAL PROPERTIES OF THE WEANING FOODS	55
4.2.1	WATER SOLUBILITY INDEX	55
4.2.2	WATER BINDING CAPACITY	57
4.3	SENSORY PROPERTIES OF THE WEANING FOOD	59
4.3.1	APPEARANCE	59
4.3.2	COLOUR	59
4.3.3	TEXTURE	60
4.3.4	FLAVOUR	60
4.3.5	DEGREE OF LIKINING	60
4.3.6	OVER ALL ACCEPTANCE	61
CHAPTER 6	CONCLUSION	62
	BIBLIOGRAPHY	64
	APPENDIX	69