

PERMANENT

# STATUS OF MALNUTRITION AMONG THE PRESCHOOL CHILDREN URBAN, SUBURBAN AND RURAL AREA OF BATTICALOA REGION.

6413072  
JAY

PR

BY  
**VINAYAGAMOORTHY JEYAKANTHAN**

A RESEARCH REPORT  
SUBMITTED IN PARTIAL FULFILMENT OF  
THE ADVANCED COURSE  
IN  
**AGRICULTURAL CHEMISTRY**  
FOR THE AWARD OF THE DEGREE OF BACHELOR OF SCIENCE IN  
AGRICULTURE  
EASTEN UNIVERSITY

SRI LANKA  
DECEMBER 2002



FAG168  
  
Project Report  
Library - EUSL

*K. Premakumar*  
.....  
SUPERVISOR  
DR. PREMAKUMAR  
FACULTY OF AGRICULTURE  
EASTERN UNIVERSITY  
CHENKALADY  
SRI LANKA  
DATE 31/12/2002

APPROVED BY

48984

*T. Mahendran*  
.....  
DR. [MRS]. T. MAHENDRAN  
HEAD/DEPARTMENT OF AGRONOMY  
FACULTY OF AGRICULTURE  
EASTERN UNIVERSITY  
CHENKALADY  
SRI LANKA  
DATE 31/12/02

*K. PREMAKUMAR*  
Senior Lecturer in Food Science & Technology,  
B.Sc. Agric. (UPDN), Ph.D. (M.Sc.), (AIT, Bangkok)  
Ph.D. (IARI, New Delhi)

*Dr. (Mrs) T. Mahendran*  
HEAD  
Dept. of Agronomy  
Faculty of Agriculture  
Eastern University, Sri Lanka

## ABSTRACT

One of every three children under five years of age in developing countries is malnourished. This unacceptable state of malnutrition leads to a great deal of children suffering, both physical and emotional. It is major drain in Batticaloa region prospects for development. Because malnourished children require more intense care from this parents and are less physically and intellectually productive as adult. It is also violation of a child's human rights. While there is no question that malnutrition must come to an end, debates continue to flourish over what the most important causes of malnutrition are and what types of foods will be most successful in reducing it.

The number of malnourished children in the rural area of Batticaloa has remained fairly high percent. However, while the experience varies by region, the prevalence of malnutrition has been progressively increasing in urban, suburban and rural areas of Batticaloa region. In Batticaloa town 38% wasted, 36% stunted and 48% under weight children, in Arayampathy 52% wasted, 38% stunted and 48% underweight children and in Chenkalady 76% wasted, 88% stunted and 40% underweight children in Batticaloa region here been identified by this study. Hence, the number of malnourished children in the rural area of Batticaloa region has remained fairly high percent (it is recommended that) action must be taken immediately for reducing child malnutrition at the fastest pace now at over coming future years. Eleven factors are explored as the causes of malnutrition in this region; the first eight have direct influence on malnutrition. The eight ranked by their urbanization, low birth weight, breast feeding period and lack of breast milk, lack of weaning food, economic level,

# LIST OF CONTENTS

<b>Contents</b>	<b>page no</b>
Abstract	I
Acknowledgement	III
List of contents	IV
List of table	IX
List of figures	XI
<b>Chapter 1 Introduction</b>	<b>1</b>
1.1 Rational	1
1.2. Prevalence of malnutrition	2
1.2.1 Wasting and stunting	2
1.2.2 Statistics on child malnutrition	3
1.3 Objective of the study	6
1.4 Limitation of the study	6
<b>Chapter 2 Review of Literature</b>	<b>8</b>
2.1 What is malnutrition	8
2.2 Classification of malnutrition	10
2.2.1 Marasmus	10
2.2.2 Kwashiorkor	10
2.2.3 Kwashiorkor-Marasmus mix	10
2.3 Under nutrition	11
2.3.1 Energy	12
2.3.2 Protein and fat	13

2.3.3 Vitamin and minerals	13
2.3.4 Under nutrition in children aged 1-3 years	14
2.3.5 Under nutrition from 3-5 years of age	14
2.4 Over nutrition	15
2.4.1 Obesity	16
2.5 How to ensure a child becomes malnourished	17
2.6 Factors that contribute to malnutrition	20
2.6.1 Urbanization	20
2.6.2 Growth failure before birth	22
2.6.2.1 Causes of low birth weight	23
2.6.3 Lack of breast milk	23
2.6.4 Lack of weaning food	26
2.6.5 Infection	27
2.6.5.1 How to infection interfere with a child's nutrition	27
2.6.6 Economic level of income and poverty	28
2.6.6.1 The cycle of poverty and malnutrition	28
2.6.7 Education	29
2.6.7.1 Family planning	30
2.6.8 Social and cultural factors	30
2.6.8.1 Food Habits and their Origination	31
2.6.8.2 Traditional food habits	32
2.6.8.3 Food Taboos	32
2.6.9 Anatomical and Physiological factors	33
2.6.10 Psychological factors	34
2.6.11 Food fads	34

2.7 Risk of malnutrition	35
2.8 Effects of malnutrition	36
2.8.1 Structural effects of malnutrition	36
2.8.2 Intellectual effects of malnutrition	37
2.9 Disorders of malnutrition	38
2.9.1 Protein energy malnutrition	38
2.9.2 Kwashiorkor	39
2.9.2.1 Signs of kwashiorkor	39
2.9.3 Marasmus	40
2.9.3.1 Sign of Marasmus	40
2.9.4 Other disorders	40
<b>Chaper-3- Methodology</b>	<b>42</b>
3.1 Sampling	42
3.2 Data collection	42
3.3 Pilot study	43
3.4 Definitive study	43
3.5 Collecting data and Anthropometrics measurement	44
3.5.1 Anthropometrics measurements	44
3.5.1.1 Weight	44
3.5.1.2 Height	45
3.5.1.3 Mid Upper Arm Circumferents	45
3.6 Health status	46
3.7 Collecting of Dietary information	46
3.8 Gathering the Demographic details of child	47
3.9 Gathering the socio-economic details of parents or guardians	47

3.10 Calculating indicators and used cut-off value	47
3.11 Body Mass Index	48
3.12 Data management and analysis of data	48
<b>Chapter-4. Results and Discussion.</b>	<b>49</b>
4.1 Description of the study area	49
4.2 Demographic Details of the sample children	51
4.2.1 Age	51
4.2.2 Religion	51
4.2.3 Ethnic group	51
4.3 Socio economic Details of parents or guardians	52
4.3.1 Sex of the house hold head	52
4.3.2 Number of children live in the house hold	52
4.3.3 Number of person live in the house hold	53
4.3.4 Occupation of parents or guardians	54
4.3.5 Level of monthly income	55
4.3.6 Amount spend for food from monthly income	56
4.3.7 Education level of mother	57
4.4 Health status of the children	58
4.4.1 Birth weight	58
4.4.2 Breast feeding period	58
4.5 Dietary information	59
4.5.1 Dairy product	59
4.5.1.1 Milk powder and milk	59
4.5.1.2 Ice cream	60
4.5.1.3 Cheese and yogurts	60

4.5.2 Biscuits items	61
4.5.3 Animal products	61
4.5.3.1 Egg	61
4.5.3.2 Fish	62
4.5.3.3 Shell fish	62
4.5.3.4 White meat	63
4.5.3.5 Processed meat	63
4.5.3.6 Red meat	64
4.5.4 Tea and coffee	64
4.5.5 Chocolates	65
4.5.6 Fish oil supplement	65
4.5.7 Bread and fast food eaten	66
4.5.8 Vegetables	66
4.5.9 Legumes	67
4.5.10 Fruits	68
4.5.11 Rice	68
4.5.12 Other food items	70
4.6 Results of Anthropometrics measurements	70
<b>Chapter-5 Summary and conclusion.</b>	<b>71</b>
<b>Literature cited</b>	<b>73</b>
<b>Appendix</b>	