Habitual Food Intake of Adults Aged 18 to 59 Years

MANS 2003

Volume 7

Malaysian Adult Nutrition Survey 2003

Habitual Food Intake of Adults Aged 18 to 59 Years

Ministry of Health Malaysia

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The completion and success of this survey was due to the hard work and dedication of the scouting team, survey team and the Technical Committee for the Malaysian Adult Nutrition Survey. The latter was responsible for the development of the survey design and the survey questionnaire, monitoring the quality of the survey data, analyzing the data and preparing this report. Throughout this period the survey team and the Technical Committee members showed a high level of professionalism and team spirit.

The Technical Committee comprised of members from several divisions in the Ministry of Health, the Health Departments of the states of Johor and Selangor, the Institute for Public Health, the Institute of Medical Research, the Institute for Health Systems Research, as well as academicians from the local universities. Their commitment and contribution is highly acknowledged. We would like to acknowledge support from the Directors of the State Health Department, Director of the Institute for Public Health, Director of the Institute of Medical Research, Director of the Institute for Health Systems Research, Heads of Departments of Nutrition and Dietetic, of the Universiti Kebangsaan Malaysia and Universiti Putra Malaysia and the Dean, School of Health Sciences, Universiti Sains Malaysia for their support and cooperation.

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The report of this survey has been written in nine volumes which are:

Volume 1: Methodology

Volume 2: General Findings

Volume 3: Nutritional Status of Adults Aged 18 to 59 Years

Volume 4: Meal Pattern of Adults Aged 18 to 59 Years

Volume 5: Dietary Intake of Adults Aged 18 to 59 Years

Volume 6: Physical Activity of Adults Aged 18 to 59 Years

Volume 7: Habitual Food Intake of Adults Aged 18 to 59 Years

Volume 8: Dietary Supplement Use among Adults Aged 18 to 59 Years

Volume 9: The Field Survey and Data Support Team

VOLUME 7

Habitual Food Intake of Adults Aged 18 to 59 Years

Malaysian Adult Nutrition Survey 2003

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FOREWORD BY DIRECTOR GENERAL OF HEALTH MALAYSIA

This report and the results of the Malaysian Adult Nutrition Survey 2003 mark the outcome of five years of planning, development, field work and analysis. This was brought about by a successful collaboration between the Ministry of Health and the local universities.

This report provides definitive information on the nutritional status of Malaysian adults. For the first time, a detailed food and nutrient intake information of the adult population in various parts of the country, whether urban or rural, and of the various ethnic groups. Findings from this survey of a representative sample of the population indicate the magnitude of the nutrition problems in this country, for example, the estimated number of adults who are overweight and obese, those who are sedentary, not consuming adequate energy or over consuming calories from fats.

This report is timely, as it coincides with our 9th Malaysia Plan mid-term review, and thus provides useful guidance in the development of policies regarding health, nutrition, food safety, agriculture and trade. This will place Malaysia at par with the developed countries, an important milestone in our quest for standard setting and evidence-based planning of programmes.

The information obtained from this survey is essential in keeping up with the changing eating habits due to globalisation and urbanisation. I, therefore, hope similar surveys will be continued on a regular basis, and that future surveys cover other age groups such as infants, children, adolescents and the elderly.

The Ministry of Health Malaysia would like to congratulate the Family Health Development Division, Ministry of Health Malaysia and everyone involved in making this study a success. Special thanks to the Technical Committee for the Malaysian Adult Nutrition Survey, all State Health Departments and universities for their commendable effort in coming up with this extremely important document for planning of Public Health programmes.

Thank you.

Tan Sri Dato' Seri Dr. Hj Mohd. Ismail Merican
Director General of Health Malaysia

FOREWORD BY DEPUTY DIRECTOR GENERAL OF HEALTH (PUBLIC HEALTH)

The increase in diet-related diseases during the last few decades in Malaysia has prompted the government to recognize the important role that nutrition plays in the promotion of good health. To achieve the goal of healthy population, Malaysians must have access to a nutritionally adequate diet, safe foods and a sustainable healthy living environment.

The publication of the Malaysian Adult Nutrition Survey (MANS) 2003 would generate much interest amongst all health and nutrition care stakeholders in the country. Data and information gathered by these surveys are extremely valuable to all decision makers at the national, state and districts level as well as those interested in the nutritional status of the Malaysian population.

Results of the MANS 2003 can be utilised as indicators to evaluate the achievements of the targets in the National Plan of Action for Nutrition (2006-2015). The outcome of this survey can also be used to measure the impact of current nutrition intervention programmes as well as to plan future activities to cater for the unique needs of the various target population. This report will serve as a useful reference for future research and helps in improving the availability of local data sources.

I would like to take this opportunity to congratulate and thank the Director of Family Health Development Division and the Principal Investigator MANS 2003, all those directly involved in the conduct of the survey, the Technical Committee Members and research field survey teams for their dedication and tenacious efforts in completing this survey and publishing this invaluable report.

Dato' Dr. Hj. Ramlee Hj. Rahmat
Deputy Director General of Health (Public Health)
Ministry of Health Malaysia

FOREWORD BY DIRECTOR OF FAMILY HEALTH DEVELOPMENT DIVISION

I am very happy with the successful completion of this report of the Malaysian Adult Nutrition Survey (MANS) 2003. I appreciate the concerted effort, persistence and endurance of the officers who have been involved in this survey. I am extra proud of the report which is the first National Adult Survey of its kind conducted in this country.

This survey provides the data for action and policies, as well as the direction for further research efforts towards improving the nutritional well-being of the population in line with the objectives of the National Nutrition Policy of Malaysia.

I believe this survey report is an important document to provide guidance in the implementation and evaluation of nutrition programmes and activities in the country under the Ninth and Tenth Malaysia Plans.

The results of this study have given us a more comprehensive and up-to-date picture of the nutritional status, dietary intake and physical activity of the adult population as well as their use of food supplements. The report will also be valuable in assisting with the decision making for research, services or training.

I would like to take this opportunity to thank the immediate past Director Family Health Development Division Dato' Dr Narimah Awin, whose support was instrumental in making this study a success. I must congratulate Datin Dr Safiah Mohd Yusof the Principal Investigator and the research team members whom with passion, dedication and hardwork, have successfully undertaken and completed this study. I would also like to thank all individuals and agencies who have directly or indirectly, contributed towards the completion of this study.

Dr. Hjh Safurah Hj. Jaafar
Director of Family Health Development Division
Ministry of Health Malaysia

FOREWORD BY PRINCIPAL INVESTIGATOR

A nutrition survey involves measuring multiple variables that are interrelated. Moreover, a person's food intake or physical activity can change from time to time. However, this type of information and others to asses the nutritional status of the Malaysian population is urgently needed to develop food and nutrition policies, intervention and educational programmes as well as to monitor the country's nutrition situation.

This is the first time that a cross-sectional nutrition survey has been conducted nationwide, covering Peninsular Malaysia, Sabah and Sarawak. The main objective of this survey is to determine the nutritional status, food consumption and physical activity pattern of Malaysian adults from 18 to 59 years old.

It is my sincere wish that the results of this study be maximally utilized by all stakeholders of nutrition and health services in the country, including programme managers of the Ministry of Health Malaysia, academicians, food manufacturers, private health institutions and individuals concerned. The results should be used for the betterment of the nation, directly or indirectly in nutrition planning, prioritisation, research or training.

I would like to take this opportunity to thank the Director General of Health Malaysia, Tan Sri Dato' Seri Dr. Hj Mohd Ismail Merican for giving valuable support in this survey.

A note of gratitude goes to the Deputy Director General of Health Malaysia (Public Health), Dato' Dr. Hj. Ramlee Hj. Rahmat as an advisor to Technical Committee for this survey for his patience, understanding and guidance to ensure the success of this survey.

I would like to acknowledge support from the Director of the Family Health Development Division, Directors of all the State Health Departments, Director of the Institute for Public Health, Director of the Institute of Medical Research, Director of the Institute for Health Systems Research, Heads of Nutrition Departments of Universiti Kebangsaan Malaysia and Universiti Putra Malaysia and the Dean, School of Health Sciences, Universiti Sains Malaysia for their support and cooperation. Their commitment and contribution is highly appreciated.

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This survey would not have been possible without the understanding, commitment and participation of our respondents. I offer my deepest gratitude to the nearly 7000 Malaysians who welcomed us into their homes and made this Adult Nutrition Survey a success.

Datin Dr. Safiah Mohd Yusof
Principal Investigator
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TABLE OF CONTENTS

	Contents	Page
	Foreword by Director General of Health Malaysia	x
	Foreword by Deputy Director General of Health (Public Health)	xi
	Foreword by Director of Family Health Development Division	xii
	Foreword by Principal Investigator	xiii
	LIST OF TABLES	
	LIST OF FIGURES	
	LIST OF APPENDICES	
	EXECUTIVE SUMMARY	xxiv
7.1	INTRODUCTION	1
7.2	LITERATURE REVIEW	2
7.3	OBJECTIVES	2
	7.3.1 General Objective	2
	7.3.2 Specific Objectives	2
7.4	METHODOLOGY	3
	7.4.1 Sampling design and sample size	3
	7.4.2 The food frequency questionnaire	3
	7.4.3 List of food items	4
	7.4.4 Frequency of food intake	4
	7.4.5 Serving size	5
	7.4.6 Conversion of FFQ to amount of food intake	5
	7.4.7 Data analysis	7
	7.4.8 The 95% Confidence Interval (CI) charts	7
7.5	FINDINGS	7
	7.5.1 Mean frequency and prevalence of top ten food items consumed (daily) by the Malaysian adult population	7
	7.5.2 Most frequently consumed beverage (daily) by the Malaysian adult population	17

Contents **Page**

7.5.3	Mean frequency and prevalence of top ten food items consumed (weekly) by the Malaysian adult population	20
7.5.4	Consumption pattern of ten food items consumed per day by a majority of the Malaysian adult population	30
7.5.5	Comparison of mean food intake per day of ten food items consumed by most adult by zones, strata, sex and age groups	31
7.5.5.1	Mean food intake by zone	32
7.5.5.2	Mean food intake by strata	41
7.5.5.3	Mean food intake among men and women	47
7.5.5.4	Mean food intake in various age groups	51
7.5.5.5	Mean food intake among men and women in various age groups	54
7.5.6	Comparison of daily food intake with the recommendations of the Malaysian food pyramid	57
7.5.6.1	A comparison between the recommendations of the Malaysian Food Pyramid and the habitual food intake, among adult men and women in Malaysia	59
7.5.6.2	A comparison between the Malaysian Food Pyramid recommended servings per day and the habitual food intake of adults, by zone	60
7.5.6.3	A comparison between the Malaysian Food Pyramid recommended servings per day and the habitual food intake of adults in urban and rural areas	62
7.5.6.4	A comparison between the Malaysian Food Pyramid recommended servings per day and the habitual food intake of adults in various ethnic groups	63
7.5.6.5	A comparison between the Malaysian Food Pyramid recommended servings per day and the habitual food intake of adults in various age groups	65
7.6	DISCUSSIONS	66
7.6.1	Habitual food intake	67
7.6.2	Habitual beverage intake	68
7.6.3	Meeting the Malaysian Food Pyramid recommendation	68
7.7	CONCLUSIONS	69
7.8	REFERENCES	71
7.9	APPENDIX	73

LIST OF TABLES

Tables	Title of Tables	Page
7.4.1	The conversion factor used to estimate food intake was based on frequency of intake	6
7.5.1	Mean food intake (g) of the ten most popularly consumed food items daily or weekly (amount taken per day)	30
7.5.2	A comparison between the recommended servings to be taken per day and actual servings consumed by the adult population	58
7.5.3	Source of protein among the adult population	59
7.5.4	Mean number of servings per day of four food groups and comparing it to the Malaysian Food Pyramid recommendations, in men and women	59
7.5.5	Source of protein intake for men and women	60
7.5.6	Mean number of servings per day of four food groups and comparing it to the Malaysian Food Pyramid recommendation in various zones	61
7.5.7	Source of protein intake in various zones	62
7.5.8	Mean number of servings per day of four food groups and comparing it to the Malaysian Food Pyramid recommendations by strata	63
7.5.9	Source of protein intake among urban and rural adults	63
7.5.10	Mean number of servings per day of four food groups and comparing it to the Malaysian Food Pyramid recommendations, by ethnic group	64
7.5.11	Source of protein intake for various ethnic groups	65
7.5.12	Mean number of servings per day of four food groups and comparing it to the Malaysian Food Pyramid recommendations by age group	65
7.5.13	Source of protein intake in various age groups	66

LIST OF FIGURES

Figures	Title of Figures	Page
7.5.1	Mean frequency and prevalence of the top ten food items consumed daily by the adult population	8
7.5.2	Mean frequency and prevalence of the top ten food items consumed daily in the Southern zone	8
7.5.3	Mean frequency and prevalence of the top ten food items consumed daily in the Central zone	9
7.5.4	Mean frequency and prevalence of the top ten food items consumed daily in the East coast zone	9
7.5.5	Mean frequency and prevalence of the top ten food items consumed daily in the Northern zone	10
7.5.6	Mean frequency and prevalence of the top ten food items consumed daily in Sabah	10
7.5.7	Mean frequency and prevalence of the top ten food items consumed daily in the Sarawak	11
7.5.8	Mean frequency and prevalence of the top ten food items consumed daily in the urban area	12
7.5.9	Mean frequency and prevalence of the top ten food items consumed daily in the rural area	12
7.5.10	Mean frequency and prevalence of the top ten food items consumed daily among men	13
7.5.11	Mean frequency and prevalence of the top ten food items consumed daily among women	13
7.5.12	Mean frequency and prevalence of the top ten food items consumed daily among age group 18 to 19 years	14
7.5.13	Mean frequency and prevalence of the top ten food items consumed daily among age group 20 to 29 years	15
7.5.14	Mean frequency and prevalence of the top ten food items consumed daily among age group 30 to 39 years	15
7.5.15	Mean frequency and prevalence of the top ten food items consumed daily among age group 40 to 49 years	16
7.5.16	Mean frequency and prevalence of the top ten food items consumed daily among age group 50 to 59 years	16

Figures	Title of Figures	Page
7.5.17	Mean frequency of beverages consumed daily by the adults	17
7.5.18	Mean frequency of beverages consumed daily by urban and rural adults	18
7.5.19	Mean frequency of beverages consumed daily in various zones	18
7.5.20	Mean frequency of beverages consumed daily by men and women	19
7.5.21	Mean frequency of beverages consumed daily in different age groups	19
7.5.22	Mean frequency and prevalence of the top ten food item consumed weekly by the adult population	20
7.5.23	Mean frequency and prevalence of the top ten food item consumed weekly in the Southern zone	21
7.5.24	Mean frequency and prevalence of the top ten food item consumed weekly in the Central zone	21
7.5.25	Mean frequency and prevalence of the top ten food item consumed weekly in the East coast zone	22
7.5.26	Mean frequency and prevalence of the top ten food item consumed weekly in the Northern zone	22
7.5.27	Mean frequency and prevalence of the top ten food item consumed weekly in Sabah	23
7.5.28	Mean frequency and prevalence of the top ten food item consumed weekly in Sarawak	23
7.5.29	Mean frequency and prevalence of the top ten food item consumed weekly in the urban area	24
7.5.30	Mean frequency and prevalence of the top ten food item consumed weekly in the rural area	25
7.5.31	Mean frequency and prevalence of the top ten food item consumed weekly among men	26
7.5.32	Mean frequency and prevalence of the top ten food item consumed weekly among women	26
7.5.33	Mean frequency and prevalence of the top ten food item consumed weekly among age group 18 to 19 years	27
7.5.34	Mean frequency and prevalence of the top ten food item consumed weekly among age group 20 to 29 years	28
7.5.35	Mean frequency and prevalence of the top ten food item consumed weekly among age group 30 to 39 years	28

Figures	Title of Figures	Page
7.5.36	Mean frequency and prevalence of the top ten food item consumed weekly among age group 40 to 49 years	29
7.5.37	Mean frequency and prevalence of the top ten food item consumed weekly among age group 50 to 59 years	29
7.5.38	Rice intake and 95 % CI in various zones	32
7.5.39	Rice intake and 95 % CI among men and women in various zones	32
7.5.40	Green leafy vegetables intake and 95 % CI in various zones	33
7.5.41	Green leafy vegetables intake and 95 % CI among men and women in various zones	33
7.5.42	Marine fish intake and 95 % CI in various zones	34
7.5.43	Marine fish intake and 95 % CI among men and women in various zones	34
7.5.44	Egg intake and 95 % CI in various zones	35
7.5.45	Egg intake and 95 % CI among men and women in various zones	35
7.5.46	Chicken intake and 95 % CI in various zones	36
7.5.47	Chicken intake and 95 % CI among men and women in various zones	36
7.5.48	Local *kuih* intake and 95 % CI in various zones	37
7.5.49	Local *kuih* intake and 95 % CI among men and women in various zones	37
7.5.50	Wheat noodles intake and 95 % CI in various zones	38
7.5.51	Wheat noodles intake and 95 % CI among men and women in various zones	38
7.5.52	Rice noodles intake and 95 % CI in various zones	39
7.5.53	Rice noodles intake and 95 % CI among men and women in various zones	39
7.5.54	Non leafy vegetables intake and 95 % CI in various zones	40
7.5.55	Non leafy vegetables intake and 95 % CI among men and women in various zones	40
7.5.56	Rice intake and 95 % CI by strata	41

Figures	Title of Figures	Page
7.5.57	Green leafy vegetables intake and 95 % CI by strata	41
7.5.58	Marine fish intake and 95 % CI by strata	42
7.5.59	Chicken egg intake and 95 % CI by strata	42
7.5.60	Chicken intake and 95 % CI by strata	42
7.5.61	Local *kuih* intake and 95 % CI by strata	43
7.5.62	Wheat noodles intake and 95 % CI by strata	43
7.5.63	Rice noodles intake and 95 % CI by strata	43
7.5.64	Non leafy vegetables intake and 95 % CI by strata	44
7.5.65	Rice intake and 95 % CI by strata and sex	44
7.5.66	Green leafy vegetables intake and 95 % CI by strata and sex	45
7.5.67	Marine fish intake and 95 % CI by strata and sex	45
7.5.68	Chicken egg intake and 95 % CI by strata and sex	45
7.5.69	Chicken intake and 95 % CI by strata and sex	46
7.5.70	Local *kuih* intake and 95 % CI by strata and sex	46
7.5.71	Wheat noodles intake and 95 % CI by strata and sex	46
7.5.72	Rice noodles intake and 95 % CI by strata and sex	47
7.5.73	Non leafy vegetables intake and 95 % CI by strata and sex	47
7.5.74	Rice intake and 95 % CI among men and women	48
7.5.75	Green leafy vegetables intake and 95 % CI among men and women	48
7.5.76	Marine fish intake and 95 % CI among men and women	48
7.5.77	Chicken egg intake and 95 % CI among men and women	49
7.5.78	Chicken intake and 95 % CI among men and women	49
7.5.79	Local *kuih* intake and 95 % CI among men and women	49
7.5.80	Wheat noodles intake and 95 % CI among men and women	50

Figures	Title of Figures	Page
7.5.81	Rice noodles intake and 95 % CI among men and women	50
7.5.82	Non leafy vegetables intake and 95 % CI among men and women	50
7.5.83	Rice intake and 95 % CI by age group	51
7.5.84	Green leafy vegetables intake and 95 % CI by age group	51
7.5.85	Marine fish intake and 95 % CI by age group	52
7.5.86	Chicken egg intake and 95 % CI by age group	52
7.5.87	Chicken intake and 95 % CI by age group	52
7.5.88	Local *kuih* intake and 95 % CI by age group	53
7.5.89	Wheat noodles intake and 95 % CI by age group	53
7.5.90	Rice noodles intake and 95 % CI by age group	53
7.5.91	Non-leafy vegetables intake and 95 % CI by age group	54
7.5.92	Rice intake and 95 % CI among men and women in various age groups	54
7.5.93	Wheat noodles intake and 95 % CI among men and women in various age groups	55
7.5.94	Rice noodles intake and 95 % CI among men and women in various age groups	55
7.5.95	Green leafy vegetables intake and 95 % CI among men and women in various age groups	55
7.5.96	Marine fish intake and 95 % CI among men and women in various age groups	56
7.5.97	Non leafy vegetables intake and 95 % CI among men and women in various age groups	56
7.5.98	Local *kuih* intake and 95 % CI among men and women in various age groups	56
7.5.99	Chicken egg intake and 95 % CI among men and women in various age groups	57
7.5.100	Chicken intake and 95 % CI among men and women in various age groups	57

LIST OF APPENDICES

Table	Title of appendix	Page
1	Serving size and weight (g)	80
2	Mean frequency boiled rice daily by socio-demographic characteristics	84
3	Mean frequency sugar daily by socio-demographic characteristics	85
4	Mean frequency marine fish daily by socio-demographic characteristics	86
5	Mean frequency green leafy vegetables daily by socio-demographic characteristics	87
6	Mean frequency sweeten condensed milk daily by socio-demographic characteristics	88
7	Mean frequency full cream milk daily by socio-demographic characteristics	89
8	Mean frequency bread daily by socio-demographic characteristics	90
9	Mean frequency biscuits daily by socio-demographic characteristics	91
10	Mean frequency local kueh daily by socio-demographic characteristics	92
11	Mean frequency anchovy daily by socio-demographic characteristics	93
12	Mean frequency plain water daily by socio-demographic characteristics	94
13	Mean frequency tea daily by socio-demographic characteristics	95
14	Mean frequency coffee daily by socio-demographic characteristics	96
15	Mean frequency cocoa daily by socio-demographic characteristics	97
16	Mean frequency cordial daily by socio-demographic characteristics	98
17	Mean frequency green leafy vegetables weekly by socio-demographic characteristics	99
18	Mean frequency chicken egg weekly by socio-demographic characteristics	100
19	Mean frequency chicken meat weekly by socio-demographic characteristics	101
20	Mean frequency cabbage weekly by socio-demographic characteristics	102
21	Mean frequency local kueh weekly by socio-demographic characteristics	103

Table	Title of appendix	Page
22	Mean frequency noodles weekly by socio-demographic characteristics	104
23	Mean frequency rice noodles weekly by socio-demographic characteristics	105
24	Mean frequency bread weekly by socio-demographic characteristics	106
25	Mean frequency anchovy weekly by socio-demographic characteristics	107
26	Mean frequency tuber vegetables weekly by socio-demographic characteristics	108
27	Mean frequency soybean drink weekly by socio-demographic characteristics	109
28	Mean frequency cocoa weekly by socio-demographic characteristics	110
29	Mean frequency cordial weekly by socio-demographic characteristics	111
30	Mean frequency fruit juices weekly by socio-demographic characteristics	112
31	Mean frequency tea weekly by socio-demographic characteristics	113
32	Food Consumption Pattern among Malaysian Adults	114
33	Cereal, cereal products and tubers by socio-demographic characteristics	120
34	Meat and product by socio-demographic characteristics	121
35	Fish and seafood daily by socio-demographic characteristics	122
36	Egg by socio-demographic characteristics	123
37	Legumes and products by socio-demographic characteristics	124
38	Milk and dairy products by socio-demographic characteristics	125
39	Meat, poultry, fish, legumes and products by socio-demographic characteristics	126
40	Fruits and vegetables by socio-demographic characteristics	127

EXCUTIVE SUMMARY

This report presents the findings of the habitual food intake of Malaysian adults in the Malaysian Adult Nutrition Survey (MANS) carried out between October 2002 to December 2003. A total of 6,928 subjects participated in this survey. Data on these subjects had been used in the analysis which represented an estimated weighted adult population of 14,178,135.

A validated food frequency questionnaire which consisted of 126 food items was used to evaluate the habitual intake of the respondents.

The results showed that there were many food items which Malaysians consumed daily. However there were only two food items which were eaten every day by more than 50% of the population. Cooked rice (*nasi putih*) was eaten by 97% of the population twice on a daily basis and on average amount eaten was 2½ plates of rice per day. The other food item was sugar which was taken by 59% of population everyday, on average four teaspoons per day usually added to their tea, coffee or chocolate based milk. Other food items eaten daily were fish, particularly marine fish (one medium fish), green leafy vegetables (two-third cups) and sweetened condensed milk (three teaspoons per day). It should be recognized that Malaysian adults ate almost similar foods when compared by zones, strata, sex and even age groups. The top four food items frequently eaten were comparable. However subtle differences were observed.

Among the rural and urban populations, the frequency of intake of common food items such as rice, sugar, leafy vegetables, marine fish, sweetened condensed milk, local *kueh*, anchovy and biscuits were higher in the rural than the urban. In contrast urban dwellers consumed chicken and eggs more frequently. The same results were shown among men, whereby they ate chicken and eggs more frequently than women.

Irrespective of age groups, the common food items consumed daily were rice, sugar, fish, particularly marine fish and green leafy vegetables. Among the age group below 20 years, chicken was consumed at least once a day, while this pattern of intake was not shown in the older age groups. Our findings showed that full cream milk was consumed daily among those aged above 20 years old, however the amount consumed was below the recommendations.

Our results also demonstrated that Malaysian adults had a satisfactory habit of drinking plain water. It was shown that on average the population consumed at least six glasses of

plain water daily. It should be noted that the water intake recommendation included plain water, other beverages, water from fruits and vegetable as well as soups. Other beverages consumed daily were tea, coffee, chocolate based drinks and cordial. Soft drinks or carbonated drinks were not listed as the top five beverages consumed everyday. Our study showed that people in the rural, in the east coast and Sarawak, women and the teenagers (less than 20 years) drank less plain water. Alternatively, these groups consumed more beverages such as tea, coffee, chocolate based drink and cordial.

The results from this survey indicated that generally Malaysians fulfilled some of the Malaysian Dietary Guidelines. They met the recommendations for cereal group, fruits and vegetable groups and meat group. On the other hand, Malaysians were well below in meeting suggested intake for the milk group. The two food groups which should be of concern were the meat and milk group. While the consumption of meat group definitely fulfilled the recommendation, however the number of servings consumed per day was very much beyond the suggested intake. Malaysians consumed almost nine servings of meat group per day (recommendation only two to three servings per day).

Generally milk consumption was not met by the general population, whether they were from rural or urban, from all zones in Malaysia, all ethnic groups, both sexes and all age groups. Malaysians tended to consume milk in the form of sweetened condensed milk which was habitually added to beverages such as *teh tarik, kopi and* chocolate flavoured beverages. Our results showed that on average Malaysians consumed about 30 gm sweetened condensed milk (equivalent to three teaspoons) per day and 21 gm sugar (equivalent to four teaspoons) per day, amounting to approximately seven teaspoons of sugar per day.

There were three main areas of concern which could be highlighted from this Malaysian adult nutrition survey. Firstly, this survey demonstrated that our population were taking as much as seven teaspoons of sugar per day, contributing to about 6% of total caloric intake daily from refined sugar. Secondly, this survey also found that Malaysians consumed too much meat in their diet. Although meat is a good source of protein, it also provides fats, cholesterol and sodium to the diet. This excessive intake of sugar, fats, cholesterol and sodium may increase the risk of non communicable diseases such as diabetes, hypertension, cancer and heart disease. Thirdly, while the sugar and meat consumption were excessive, the population did not drink enough milk.

Overall, majority of the Malaysian population met the Malaysian Dietary Guidelines for most food groups except for the milk. The group which needed particular attention was the

Orang Asli which did not fulfill the recommendation intake of all the food groups dietary guideline (cereal group, fruits and vegetables and milk group) except for the meat group. Thus this group would be the most vulnerable to nutrient deficiencies.

Despite efforts by the Ministry of Health in creating awareness and providing nutrition education to the community through their Healthy Lifestyle Campaigns since fifteen years ago, the results from this survey showed that the population did not show much improvement in their eating habits. Hence, simple effective nutrition strategies need to be identified to continuously educate and improve nutrition knowledge and awareness of the population as well as to motivate a change in nutrition behaviour.

Habitual Food Intake of Adults Aged 18 to 59 Years

VOLUME 7

7.1 INTRODUCTION

Food consumption data provide estimation on the quantity of each prepared food consumed by individuals. Food consumption data vary considerably from country to country and even within a country due to variations in ethnicity, geographical areas, age and sex. The World Health Organization (WHO) recommends that individual countries should estimate their own food consumption pattern. This is because data collected from the food consumption pattern can be used for the following purposes:

- To examine the dietary pattern
- To assess the adequacy of nutrient intake
- To assess the intake and exposure of various contaminants and additives through food and
- To establish policies in agriculture, food production, trade and health

The food frequency questionnaire has been widely used to evaluate habitual food intake of population-based epidemiological studies. It is usually the preferred method because it is cheap, easy to administer and requires minimal effort from the subjects (Subar, 2004). In food consumption surveys, the food frequency questionnaire can provide estimates in the frequency and quantity of foods consumed by individuals. In many food consumption surveys, for example in countries such as Singapore, New Zealand and Thailand, the food frequency questionnaire had been used to assess food intake in their national surveys.

This document reports the habitual food intake of the Malaysian population using the food frequency questionnaire. The data contained in this chapter is part of the results of the Malaysian Adult Nutrition Survey (MANS) conducted by the Family Health and Development Division, Ministry of Health Malaysia from October 2002 to December 2003. The survey was planned, designed and developed by the Technical Committee for Malaysian Dietary Study set up under the Nutrition Section, Family Health Development Division, Ministry of Health Malaysia.

7.2 LITERATURE REVIEW

In food consumption surveys, various types of dietary assessment methods can be used, for example the 24-hour dietary recall, 3-day dietary record, food checklist and the food frequency questionnaire. The evaluation technique selected and used for any national consumption surveys usually depended on the objective of the survey.

The food frequency questionnaire is a useful method to evaluate mean population intake or to categorize intake of individuals based on their food consumption (Kelemen *et al*., 2003; Kubena, 2000). It has also been used to assess dietary intake of individuals or population in the prevention of diseases. More significantly, according to some earlier studies (Fu *et al*., 1998; Kim *et al*., 2003), the food frequency questionnaire could evaluate the habitual energy and nutrient intake to determine the relationship between changes in food habits and chronic diseases.

In the Malaysian Adult Nutrition Survey, the food frequency questionnaire was used to evaluate the habitual food intake of the Malaysian population. Thus a suitable FFQ had to be applied to ensure the assessment reflected the habitual intake of the population. The food frequency questionnaires which had been developed and calibrated for use among the Malay (Noor Azia, 2002) and Chinese Malaysian adults (Chong & Norimah, 2002**)** were adapted. The adapted the food frequency questionnaire was pre tested, improved and finally used as the assessment method to meet the objective of this study.

7.3 OBJECTIVES

7.3.1 General objective

To evaluate the habitual food intake of the Malaysian population

7.3.2 Specific objectives

i. To determine the foods frequently or regularly consumed daily and weekly according to sex, zones, strata, ethnic and age groups.

ii. To determine the beverages frequently or regularly consumed daily according to sex, zones, strata, ethnic and age groups.

iii. To determine the consumption pattern of the ten food items consumed per day by a majority of the population according to sex, zones, strata, ethnic and age groups.

7.4 METHODOLOGY

This study was part of the Malaysian Adult Nutrition Survey conducted nation-wide between October 2002 and July 2003. It was a cross-sectional population household survey, covering Peninsular Malaysia, Sabah and Sarawak. The survey was designed to provide nationally representative reference data and prevalence estimates for numerous nutrition measures. Complex, stratified, multistage probability sampling was used to select a representative sample of adults aged between 18 to 59 years old.

7.4.1 Sampling design and sample size

A stratified random sampling was used for this survey which covered six zones in Malaysia. They were the Southern, Central, East coast and Northern zones of Peninsular Malaysia, Sabah and Sarawak. The sampling units were the Enumeration Blocks (EB) and Living Quarters (LQ). The number of units sampled was determined based on proportionate to population size. The EBs and LQs were provided by the Department of Statistics, Malaysia. The eligible respondents were Malaysian adults aged 18 to 59 years. One adult was chosen from each household.

A detailed description of the methodology is described in Volume 1 – Methodology of this report series.

7.4.2 The Food Frequency Questionnaire

The Food Frequency Questionnaire (FFQ) used in the survey consisted of 126 food items which were listed into 15 food groups. The FFQ consisted of seven pages and was administered by interview on a one-to-one basis, where respondents were asked on the frequency of intake of each food item either per day, per week, per month, per year or never on the food items listed. Respondents were also requested to respond on the number of servings consumed each time they ate the food. The frequency of intake was based on the habitual intake of the past year. There were four main columns in the FFQ. The first column listed down the list of food items while the second column described the various categories of frequency of intake. The third column was the serving size of each food item while the fourth column asked the number of servings consumed each time the food item was eaten.

7.4.3 List of food items

There were 15 food groups included in the FFQ and they are listed below;

A. Cereals and cereal products

B. Meat and meat products

C. Fish and seafood

D. Eggs

E. Legumes and products

F. Milk and milk products

G. Vegetables

H. Fruits

I. Beverages

J. Alcoholic beverages

K. Confectioneries

L. Spreads

M. Condiments/Miscellaneous

7.4.4 Frequency of food intake

There were five options for frequency of intake categories. These options would reflect the frequency of intake responded by the respondents as number of times per day, number of times per week, number of times per month, number of times per year or never. The respondent was required to answer only one option. However for food items which were consumed on a seasonal basis, for example during the fruit seasons or festive seasons, the respondents would respond to the frequency of intake at that time (for example eating 10 *rambutans,20 gram per rambutan,* three times a week for a month only) as well as the duration of that intake.

7.4.5 Serving size

Each food item listed was given a standard serving size based on the *Album Saiz Sajian Makanan Malaysia* (Food Serving Size Album of Malaysia, which had pictures of various foods, their portion sizes and weights in grams) and also the list of food items and their weight in household measures. The serving size was based on the medium size. Some of the serving sizes used were piece, one whole fruit, match box size, cups and spoons and others **(Appendix, Table 1).**

7.4.6 Conversion of food frequency to amount of food intake

The conversion from frequency food intake to the amount of food consumed per day (averaged over the past year) was carried out using the following formula:

Amount of food consumed per day (gm) = conversion factor (y) multiply by the serving size multiply by the total number of servings multiply by the weight of food in one serving (Wessex Institute of Public Health, University of Southampton, 1995).

For example, eating rambutan 3 times per week for 4 weeks. The amount of rambutan consumed per day would be:

3 times per week X 4 weeks X 20 grams X 10 rambutans = 2400 grams per year

i.e. 2400 grams / 365 days = 7 grams rambutan per day ~ 1/3 rambutan per day

Table 7.4.1: The conversion factor used to estimate food intake was based on frequency of intake

Frequency of intake	Frequency	Conversion factor (y)
Per day	once	1
	twice	2
	3 times	3
Per week	once	$^1/_7$
	twice	$^2/_7$
	3 times	$^3/_7$
	4 times	$^4/_7$
Per month	once	$^1/_{30}$
	twice	$^2/_{30}$
	3 times	$^3/_{30}$

Example of calculation to estimate the intake per day based on the frequency of intake over the past one year:

White bread, eaten two times a week, two pieces each time: White bread - serving size is one slice, 34 gm.

Amount of white bread consumed per day = $^2/_7$ x 2 x 34 gm = 19.43 gm ~ $^1/_2$ slice of bread.

7.4.7 Data analysis

This survey was based on a complex, multi-stage sample design. Data analysis for this survey had taken into account the sample weights and the complex survey design. Weighting of sample data had enabled us to produce estimates of statistics that would have been obtained if the entire sampling frame had been surveyed. Appropriate sample weights were needed to estimate means, standard error, confidence interval and other statistics. Sample weights were used to produce correct population estimates because each respondent does not have the same chance of being selected. The sample weights compensated for unequal probabilities of selection, adjustment for non-response and also post stratification was done for stratum, age and sex.

7.4.8 The 95% Confidence Interval (CI) charts

The CI chart presents the mean intake of a particular food item, which is shown as a dot in the middle of a vertical line. The upper and lower limits of the 95% confidence interval are shown as horizontal bars on the lower and upper ends of the vertical line respectively.

When comparing the means of two or more groups, the CI charts give excellent graphic presentation of whether the mean of a group is significantly different from the others and vice versa. For example, if the lower bar one vertical line overlaps with the upper bar of the other vertical line, this indicates no significant difference between the means of the two groups. On the other hand, if the lower limit of 95% CI of one group do not overlap with the upper limit 95% CI of another group, there is a significant difference between means of the two groups.

7.5 FINDINGS

7.5.1 Mean frequency and prevalence of top ten food items consumed (daily) by the Malaysian adult population

Figure 7.5.1 shows the mean frequency of the top ten food items frequently consumed by the population on a daily basis. Two main food items namely cooked rice and sugar (not shown in figure) were consumed twice daily by 97.1% and 58.5% of the population respectively. Other food items such as marine fish, sweetened condensed milk, green leafy vegetables, full cream milk, biscuits, bread, anchovy and local *kuih* were consumed on average between 1.15 times to 1.60 times per day.

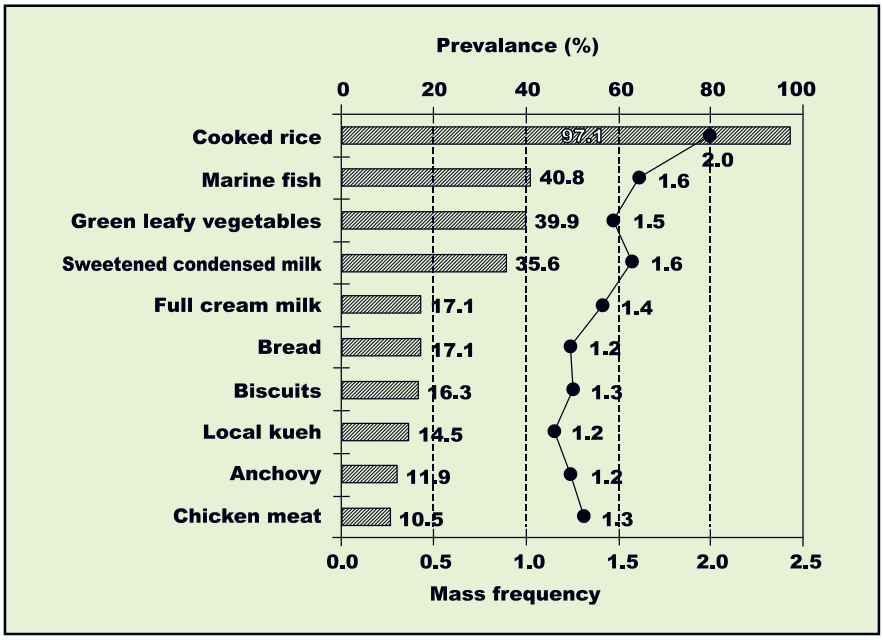

Figure 7.5.1: Mean frequency and prevalence of the top ten food items consumed daily by the adult population

Food consumption pattern in the various zones (Figures 7.5.2 to 7.5.7) demonstrated subtle variations. Although cooked rice, sugar, green leafy vegetables and marine fish were eaten by the majority of the population, more adults in the east coast consumed *budu* and *ulam* (Figure 7.5.4). In contrast, more adults in Sarawak than the other zones consumed chili sauce and tomato sauce, (Figure 7.5.7).

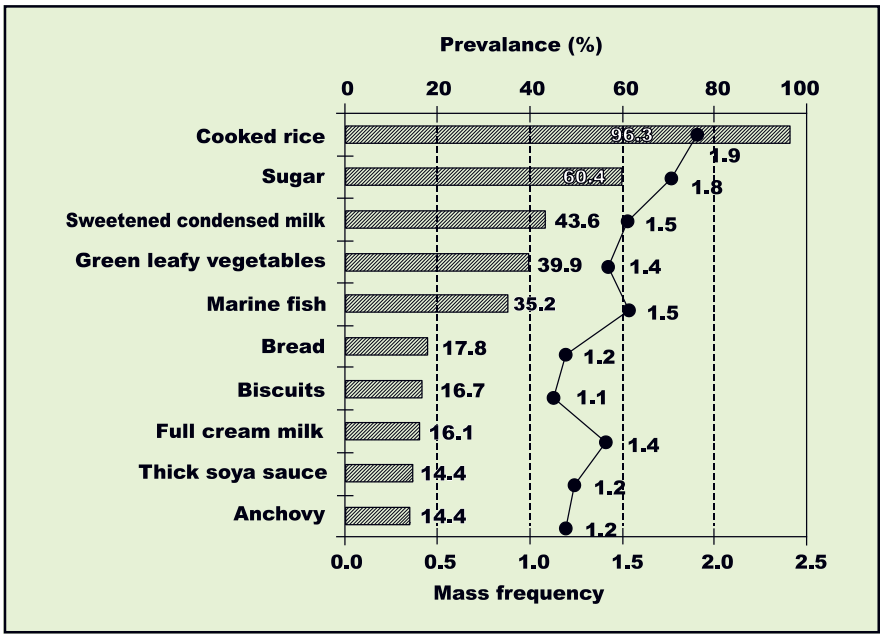

Figure 7.5.2: Mean frequency and prevalence of the top ten food items consumed daily in the Southern zone

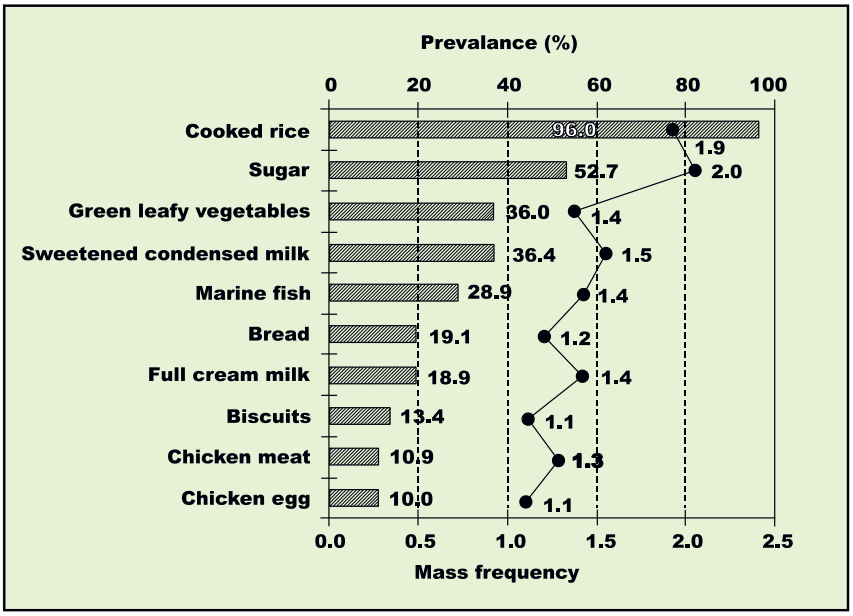

Figure 7.5.3: Mean frequency and prevalence of the top ten food items cosumed daily in the Central zone

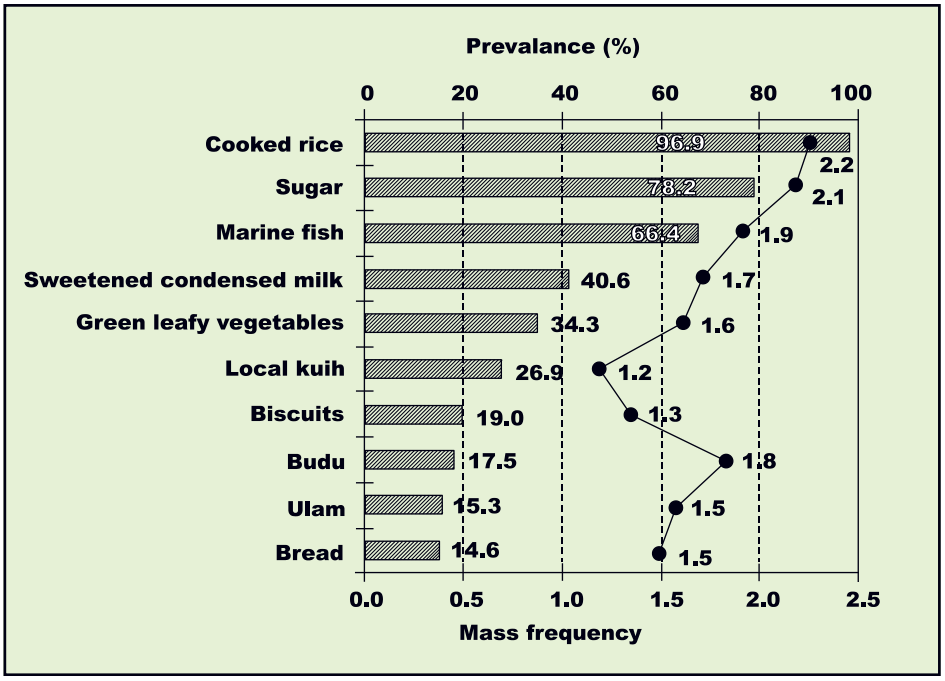

Figure 7.5. 4: Mean frequency and prevalence of the top ten food items consumed daily in the East coast zone

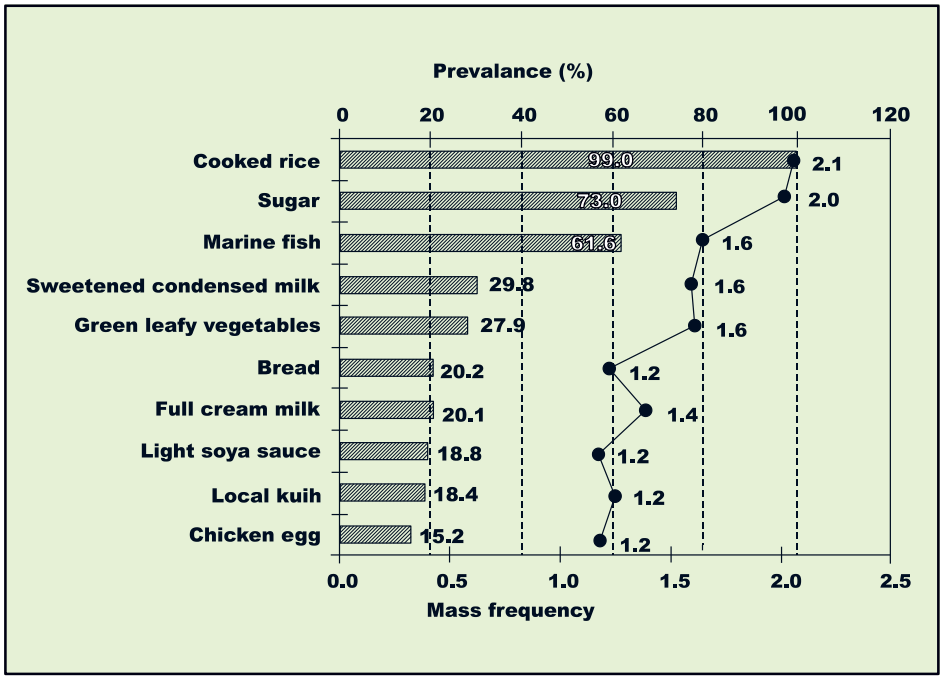

Figure 7.5. 5: Mean frequency and prevalence of the top ten food items consumed daily in the Northern zone

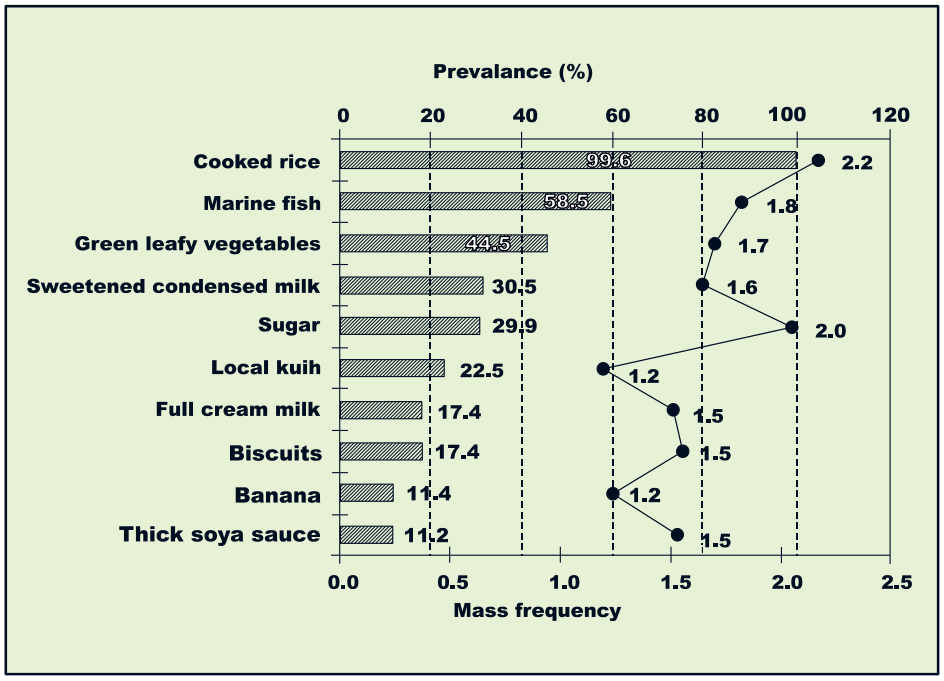

Figure 7.5.6: Mean frequency and prevalence of the top ten food items consumed daily in Sabah

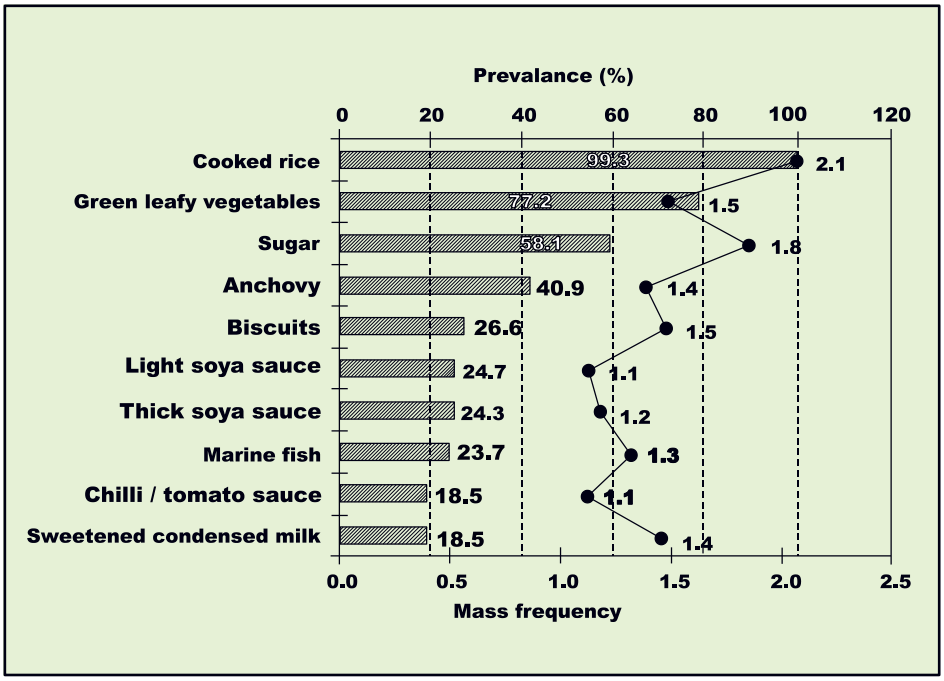

Figure 7.5.7: Mean frequency and prevalence of the top ten food items consumed daily in Sarawak

More adults in the rural area (Figure 7.5.9) consumed food items such as cooked rice, sugar, marine fish, sweetened condensed milk and biscuits compared to their urban counterparts (Figure 7.5.8). On the other hand, two food items consumed by more adults in the urban areas were chicken and eggs while in the rural area, anchovy and local kueh.

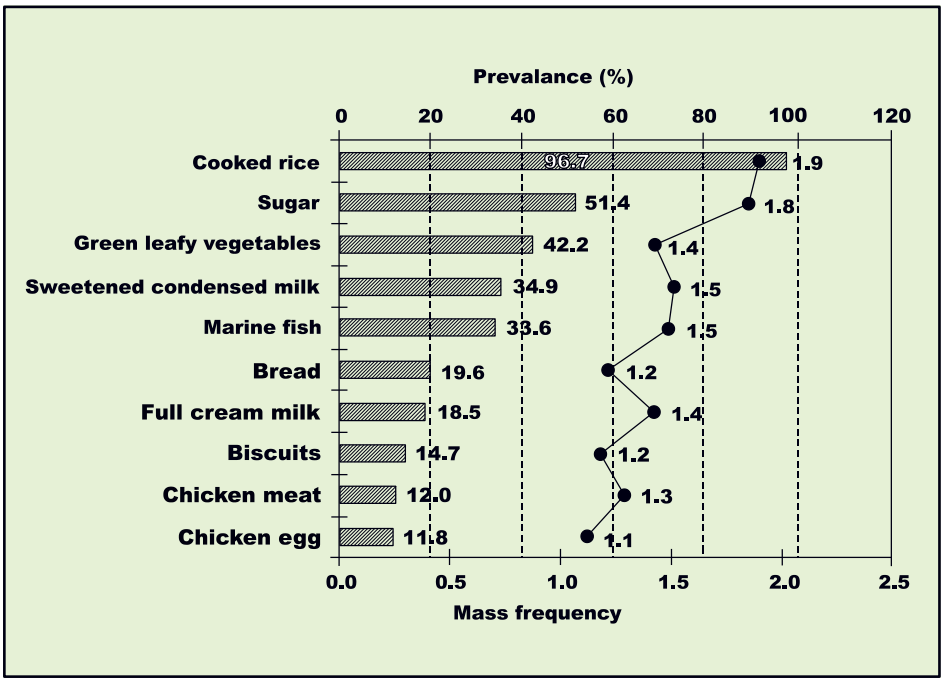

Figure 7.5.8: Mean frequency and prevalence of the top ten food items consumed daily in the urban area

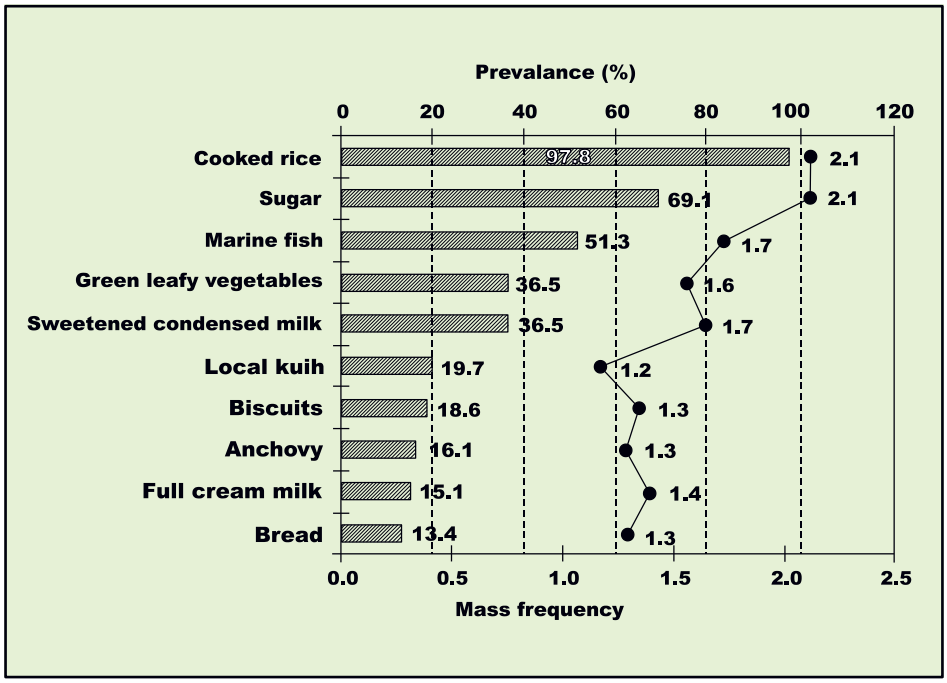

Figure 7.5.9: Mean frequency and prevalence of the top ten food items consumed daily in the rural area

Men and women had eight similar food items consumed daily. The two food items which were different were chicken and eggs only among men (Figure 7.5.10), and full cream milk and anchovy only among women (Figure 7.5.11).

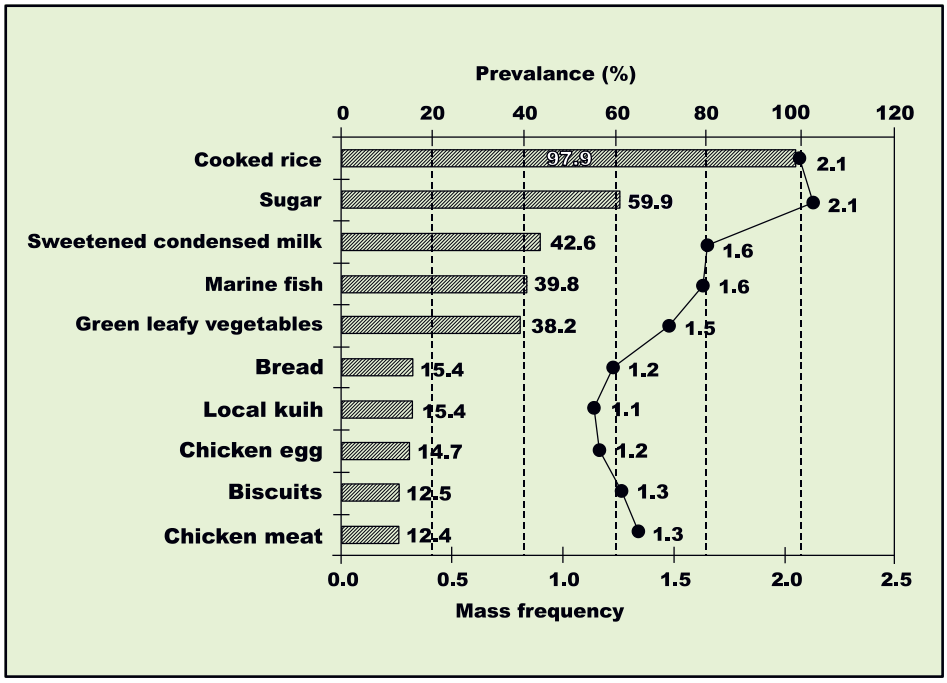

Figure 7.5.10: Mean frequency and prevalence of the top ten food items consumed daily among men

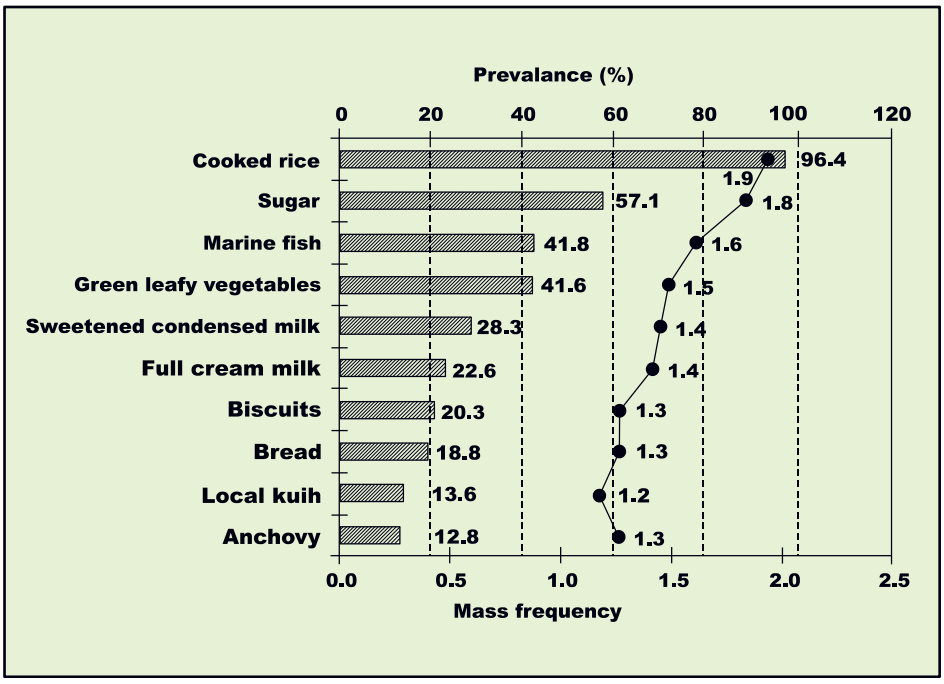

Figure 7.5.11: Mean frequency and prevalence of the top ten food items consumed daily among women

Food items consumed by different age groups are shown in Figures 7.5.12 through to 7.5.16. The age groups were categorized as follows; 18 to 19 years, 20 to 29 years, 30 to 39 years, 40 to 49 years and 50 to 59 years old. The 10 food items which were the most eaten among adults in the age group 20 to 50 years were very similar. However differences could be observed between these older groups and the 18 to19 year-olds. Although the young adults had eight similar food items in their most consumed foods as the older age group, more young adults ate chicken and sweets. More older adults on the other hand consumed sugar and full cream milk.

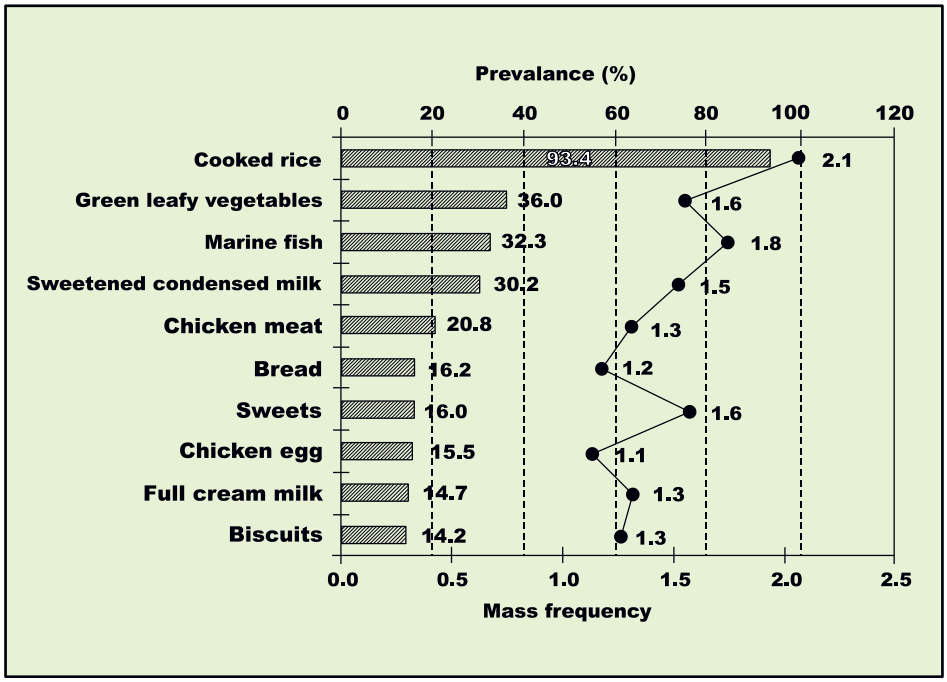

Figure 7.5.12: Mean frequency and prevalence of the top ten food items consumed daily among age group 18 to 19 years

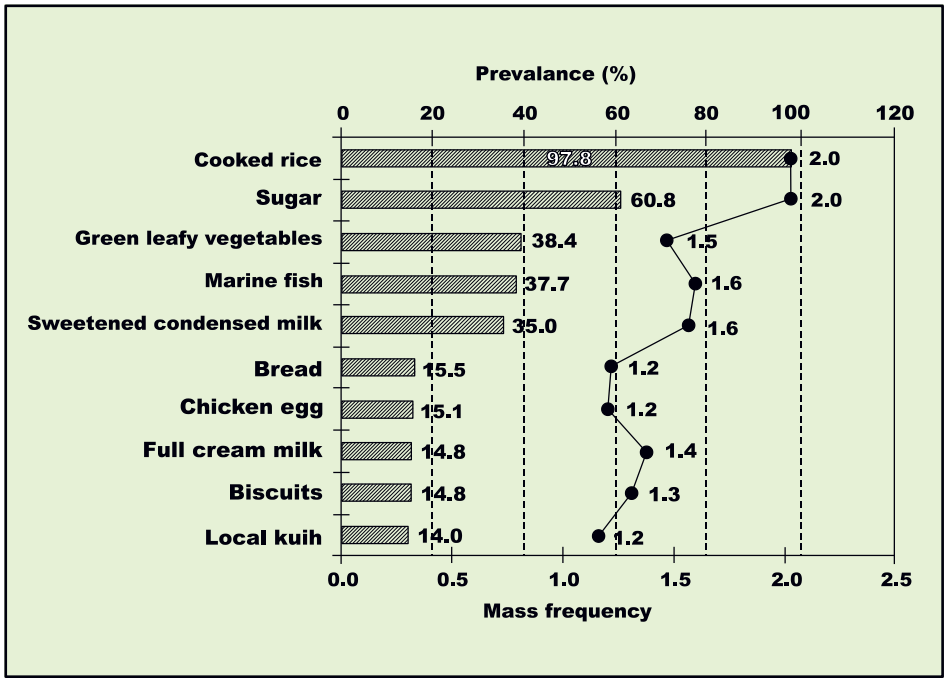

Figure 7.5.13: Mean frequency and prevalence of the top ten food items consumed daily among age group 20 to 29 years

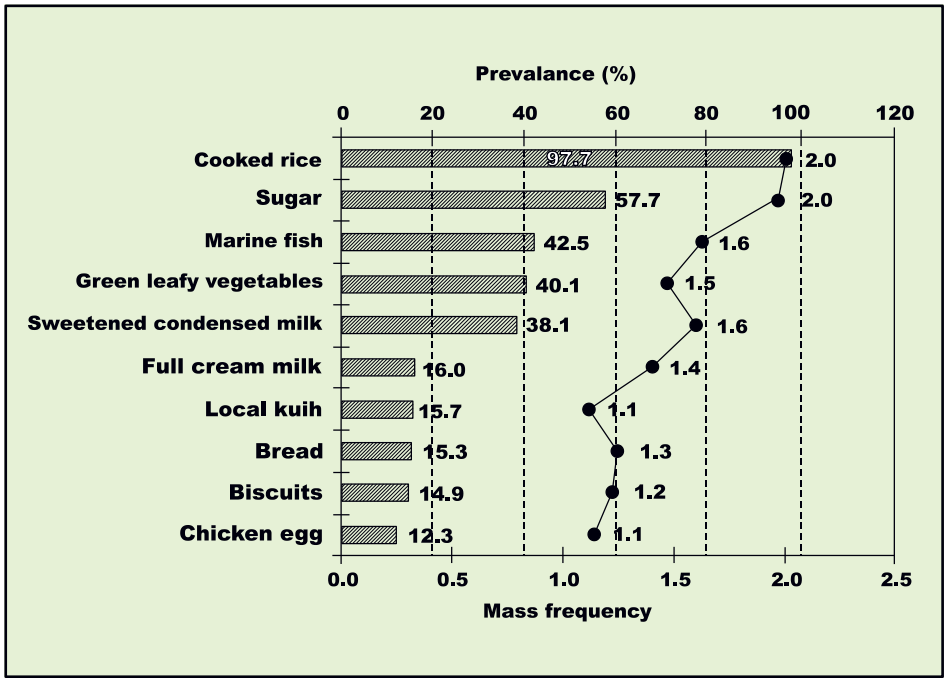

Figure 7.5.14: Mean frequency and prevalence of the top ten food items consumed daily among age group 30 to 39 years

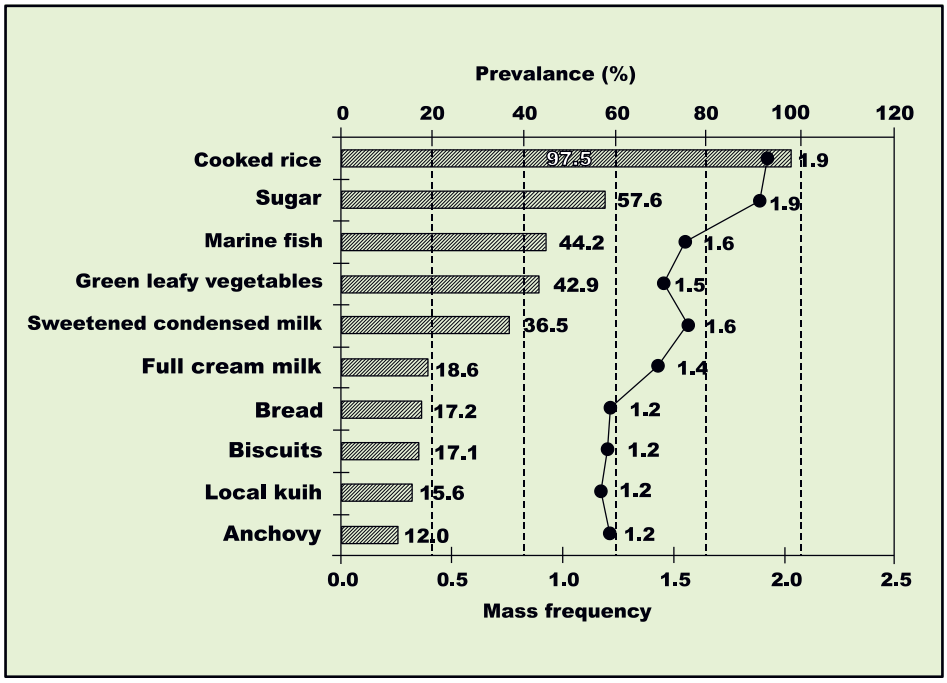

Figure 7.5.15: Mean frequency and prevalence of the top ten food items consumed daily among age group 40 to 49 years

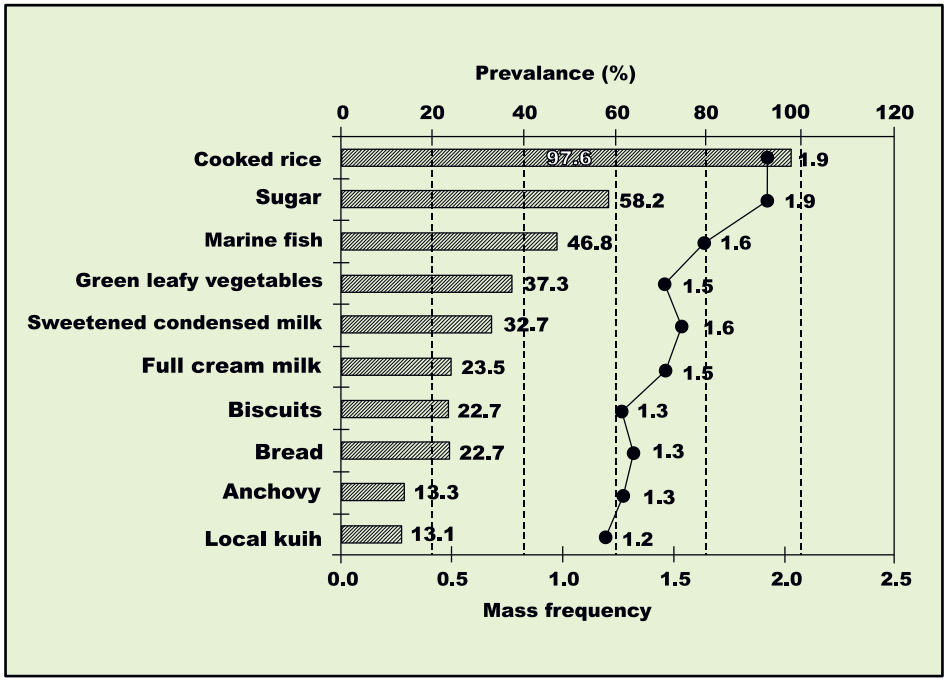

Figure 7.5.16: Mean frequency and prevalence of the top ten food items consumed daily among age group 50 to 59 years

7.5.2 Most frequently consumed beverage (daily) by the Malaysian adult population

Figure 7.5.17 shows the most daily consumed beverages by the population. Plain water was the most consumed beverage and a majority of the population drank it at least six times daily. Other beverages such as tea, coffee, chocolate flavoured drink, and cordial in descending order were consumed between 1.8 times to 1.4 times a day. Soft drinks consumption was not in the most daily consumed list. A similar pattern was also demonstrated in the types of beverages consumed and their frequencies either in the urban or rural area (Figure 7.5.18). Between zones, there were subtle differences in the frequency of intake of beverages except for plain water (Figure 7.5.19). The east coast and Sarawak population drank at least five times per day, one time less than the other zones. Meanwhile between men and women, also between age groups, there were very subtle differences in the frequency of intake of all the beverages (Figures 7.5.20 and 7.5.21).

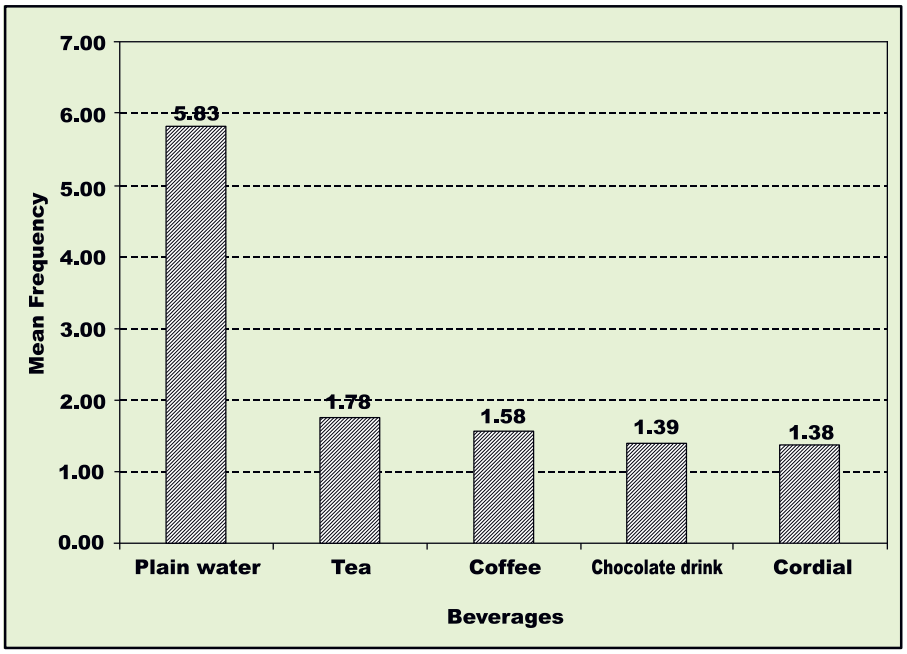

Figure 7.5.17: Mean frequency of beverages consumed daily by the adults

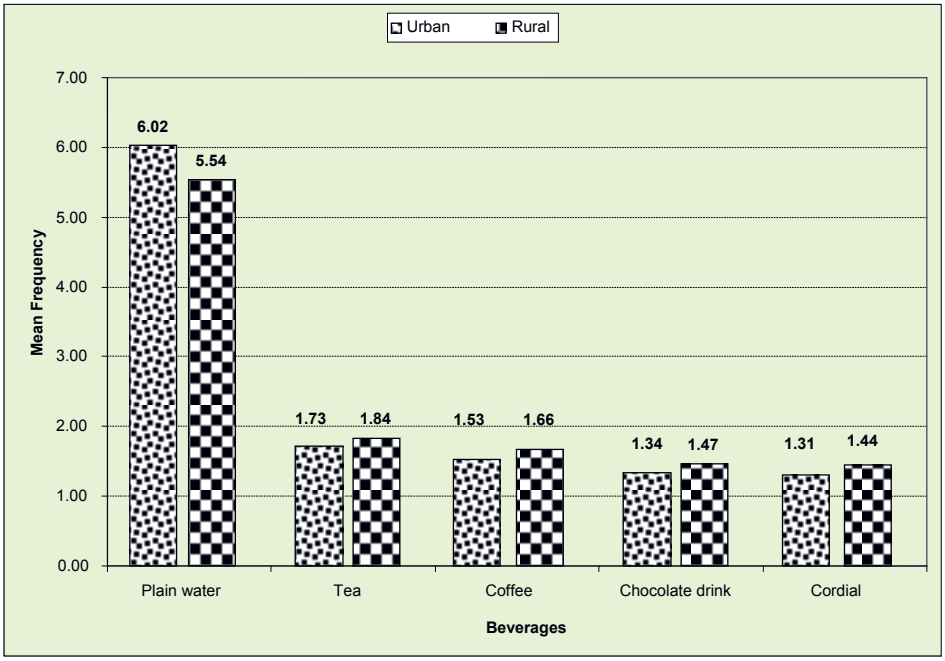

Figure 7.5.18: Mean frequency of beverages consumed daily by urban and rural adults

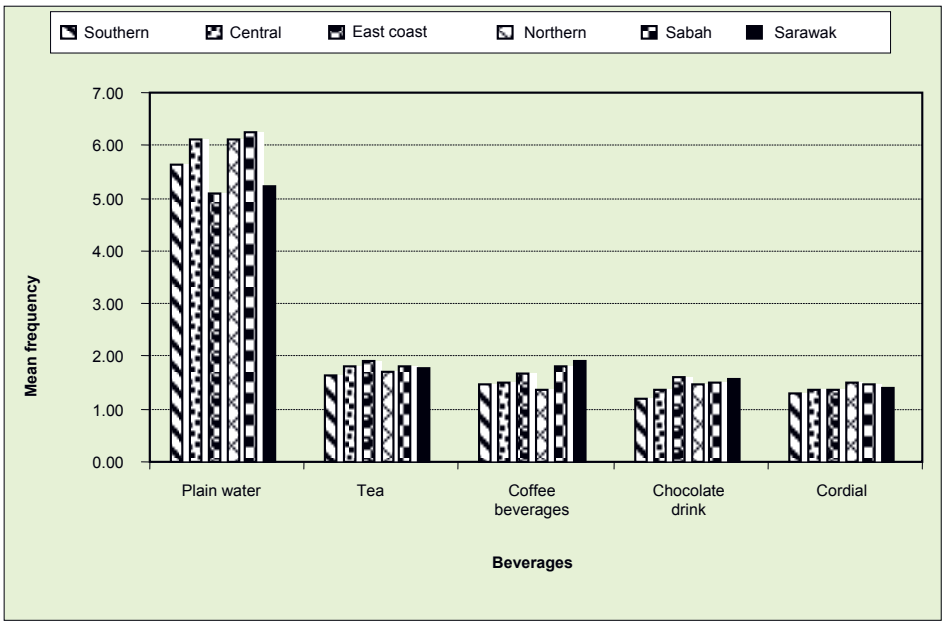

Figure 7.5.19: Mean frequency of beverages consumed daily in various zones

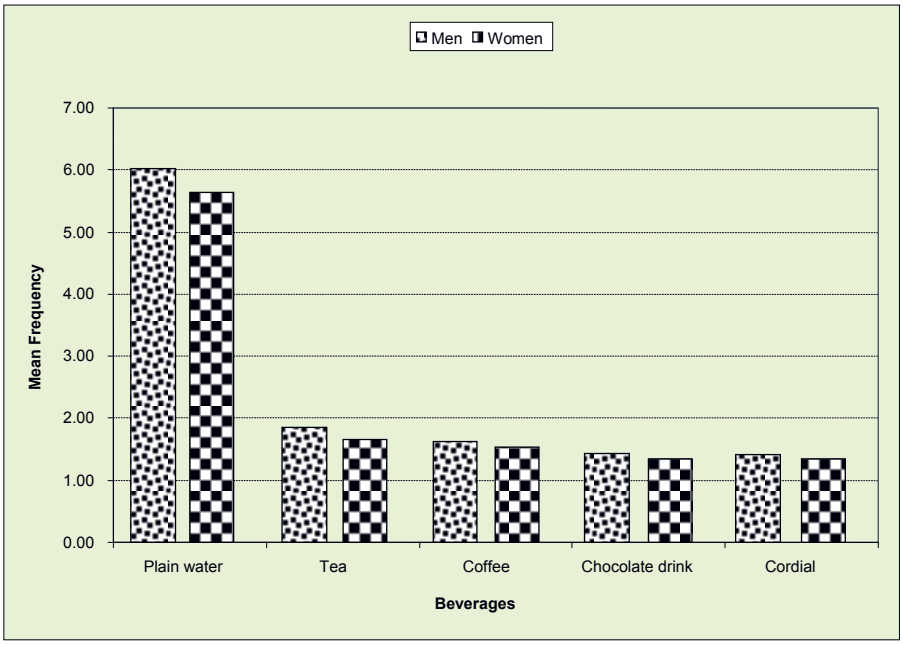

Figure 7.5.20: Mean frequency of beverages consumed daily by men and women

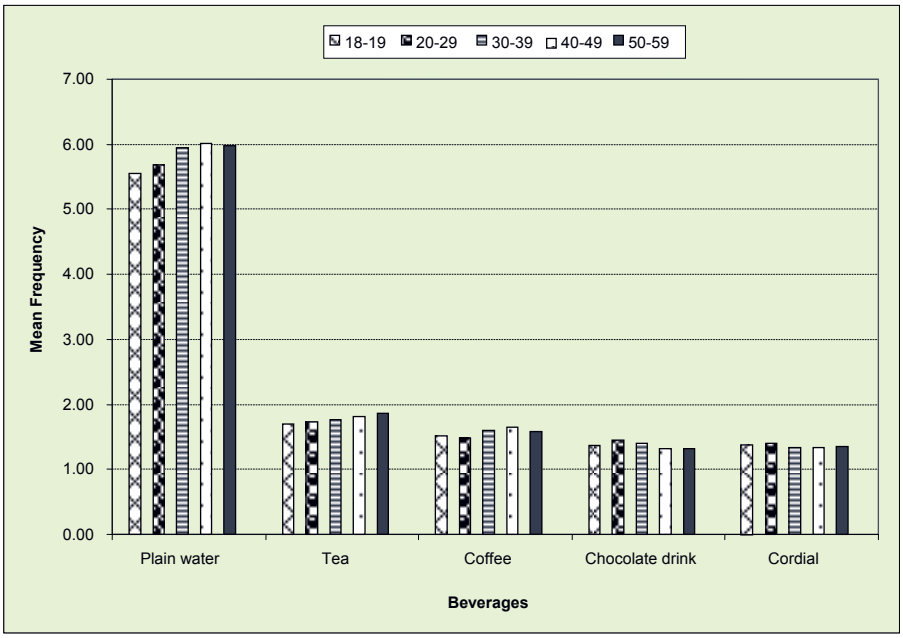

Figure 7.5.21: Mean frequency of beverages consumed daily in different age-groups

7.5.3 Mean frequency and prevalence of top ten food items consumed (weekly) by the Malaysian adult population

Some of the food items eaten weekly by the population overlapped with those eaten daily. These food items were green leafy vegetables, bread, anchovy and local *kuih* (refer to Figure 7.5.1). However the mean frequency consumed weekly was at least two to three times a week (Figure 7.5.22). Other food items which were most eaten weekly by the population were tuber vegetables, rice noodles, wheat noodles, chicken, eggs and cabbage.

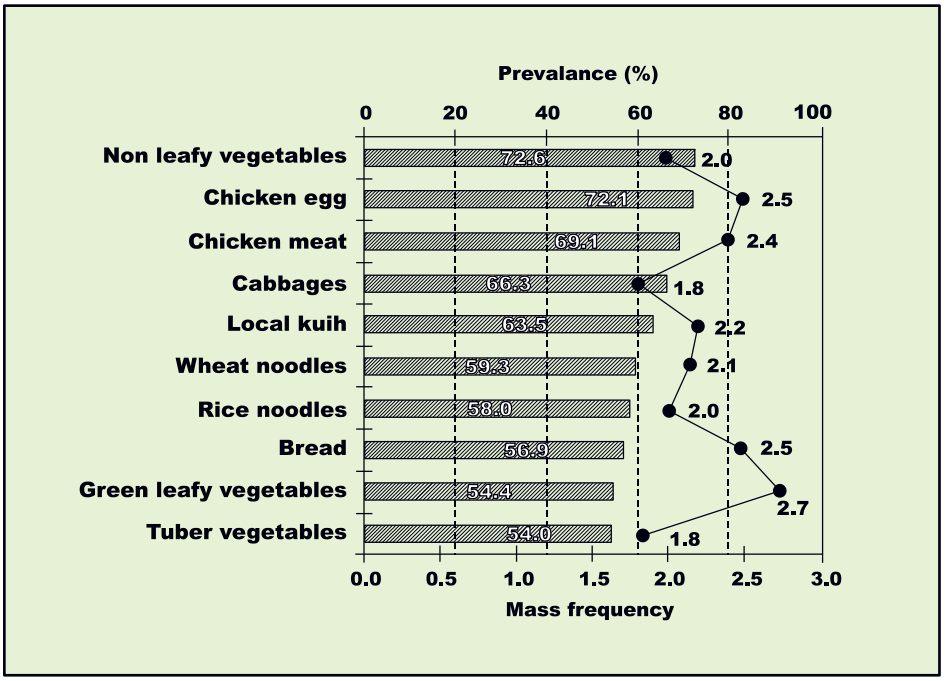

Figure 7.5.22: Mean frequency and prevalence of the top ten food item consumed weekly by the adult population

The list of food items consumed weekly did not differ much between zones, (Figures 7.5.23 to 7.5.28). However some food items were eaten more frequently weekly in specific zones. For example, it should be noted that the population in the southern ate tofu almost twice weekly but not in the other zones (Figure 7.5.23). In the central zone, the population consumed marine fish three times weekly (Figure 7.5.24). Chili sauce or tomato sauce were taken twice weekly in the east coast (Figure 7.5.25). Meanwhile in the northern, bean sprout was consumed almost twice weekly (Figure 7.5.26). The population in Sabah (Figure 7.5.27) and Sarawak (Figure 7.5.28) ate pumpkin, cucumber or similar type and bananas twice weekly. This pattern of intake was unique in these respective zones.

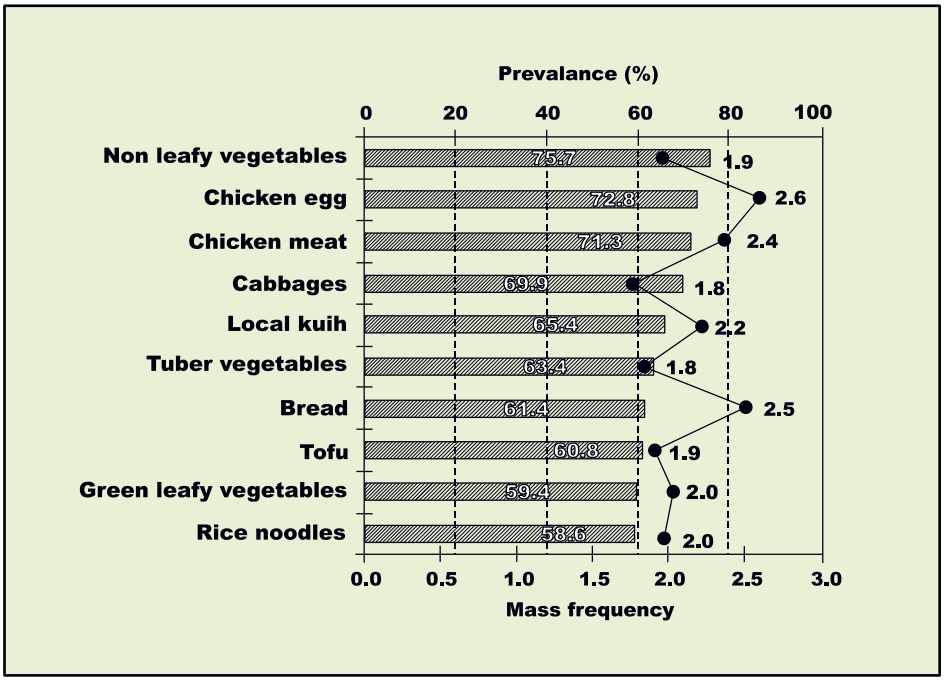

Figure 7.5.23: Mean frequency and prevalence of the top ten food item consumed weekly in the Southern zone

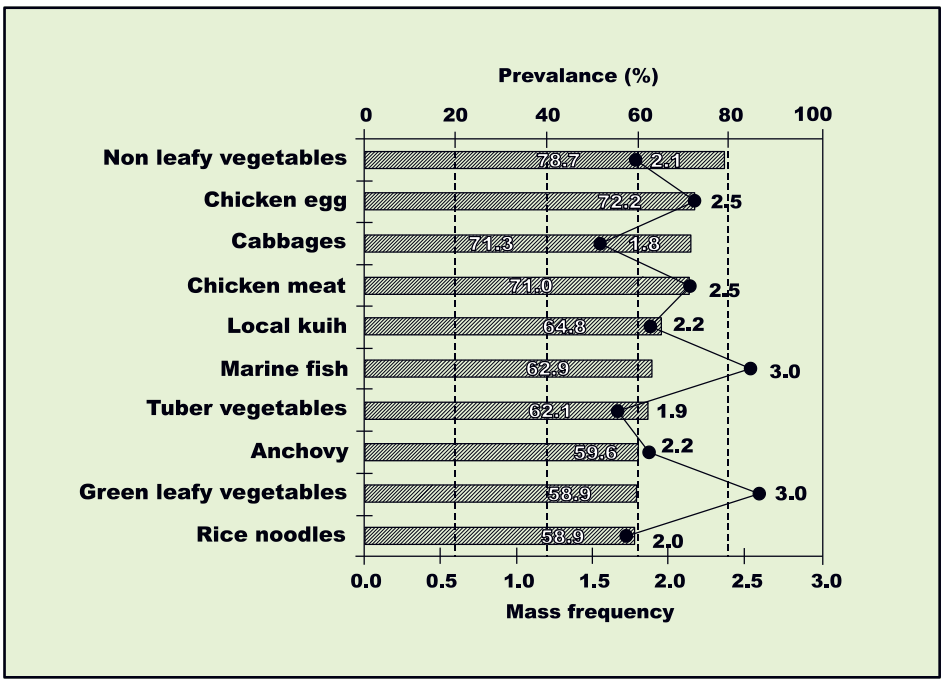

Figure 7.5.24: Mean frequency and prevalence of the top ten food item consumed weekly in the Central zone

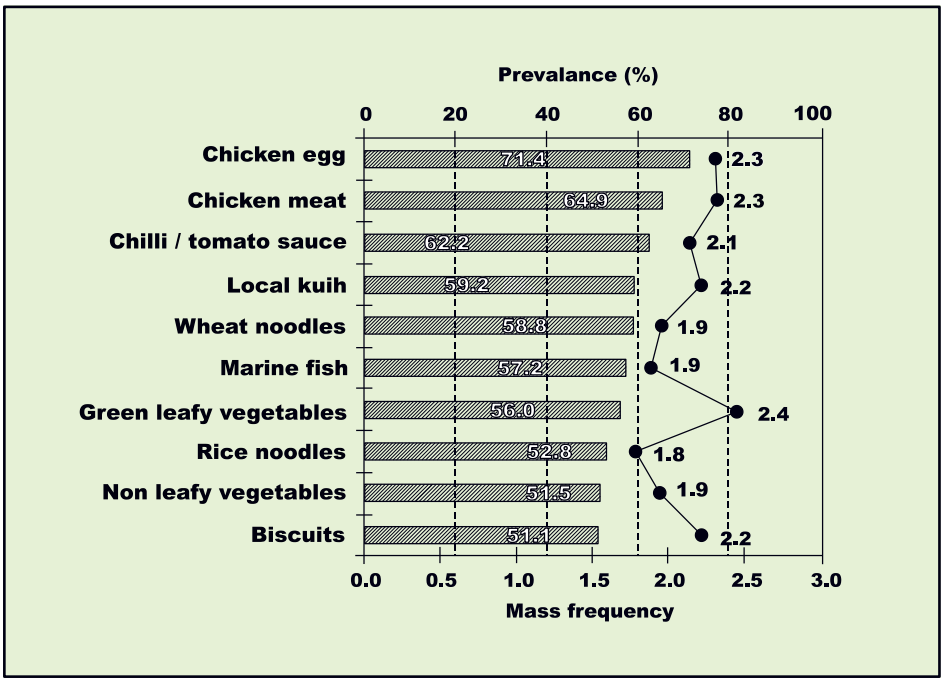

Figure 7.5.25: Mean frequency and prevalence of the top ten food item consumed weekly in the East Coast zone

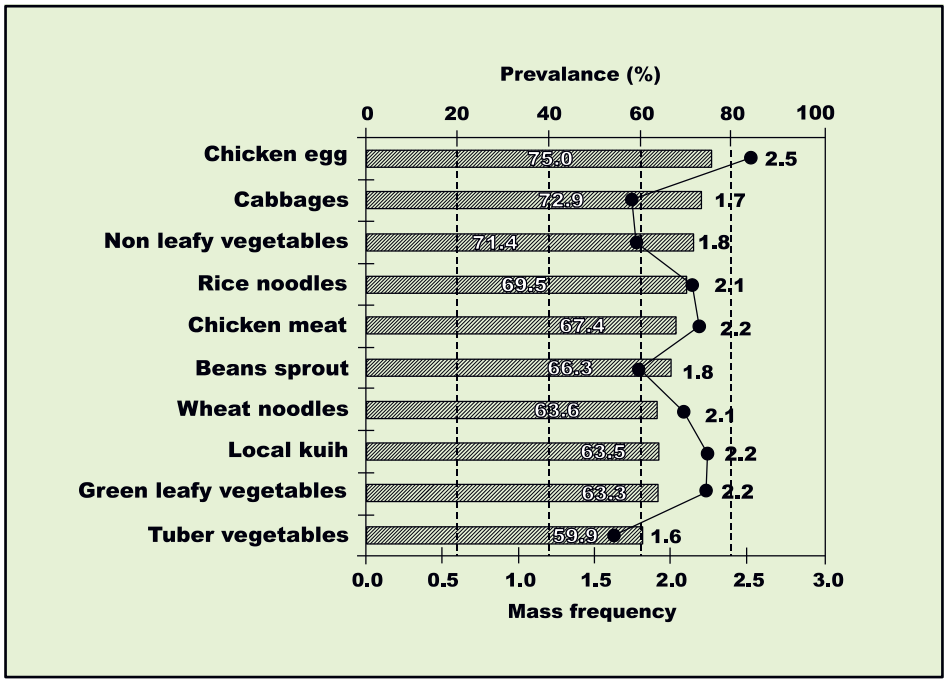

Figure 7.5.26: Mean frequency and prevalence of the top ten food item consumed weekly in the Northern zone

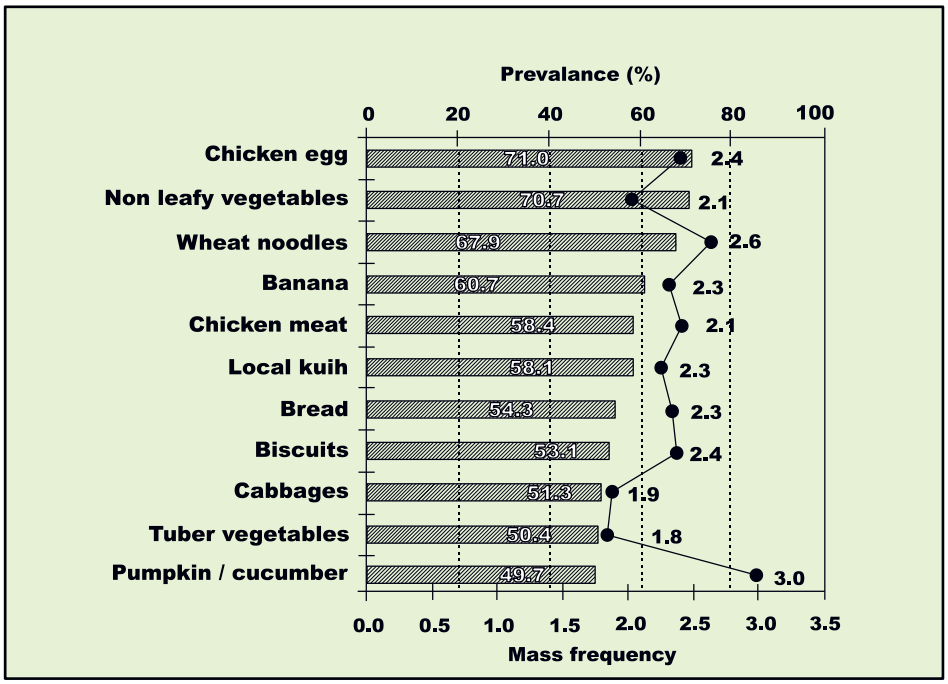

Figure 7.5.27: Mean frequency and prevalence of the top ten food item consumed weekly in Sabah

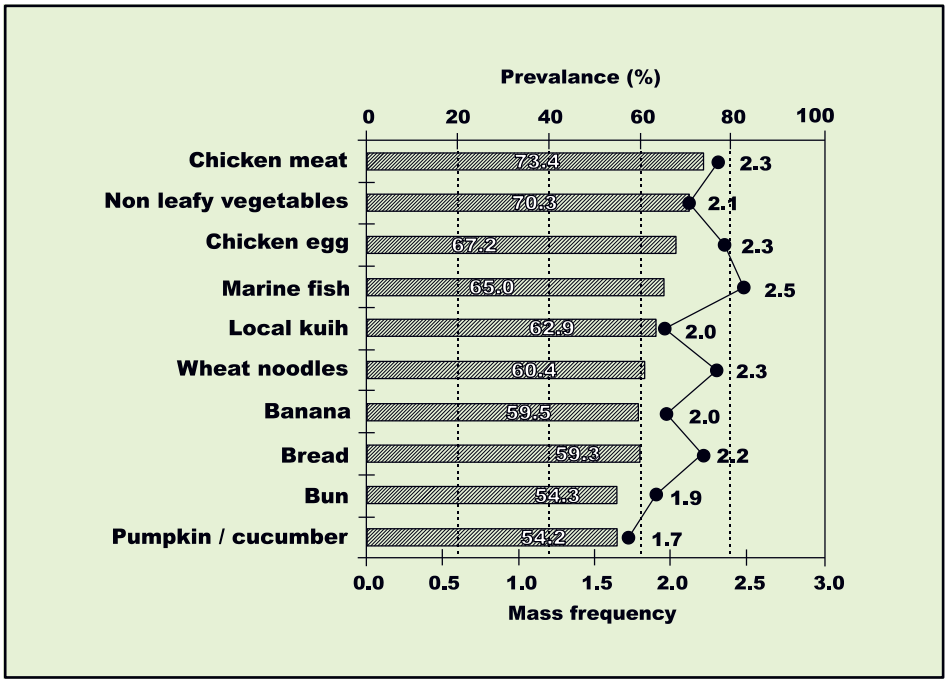

Figure 7.5.28: Mean frequency and prevalence of the top ten food item consumed weekly in Sarawak

When comparing intake between the urban and rural populations, the food items most consumed weekly did not differ much (Figures 7.5.29 and 7.5.30). On average the food items were consumed at least twice weekly. The differences were that people in the urban area were more weekly eaters of marine fish, consuming almost three times a week and vegetable tubers almost twice weekly. In contrast, the rural population ate chili sauce or tomato sauce twice weekly.

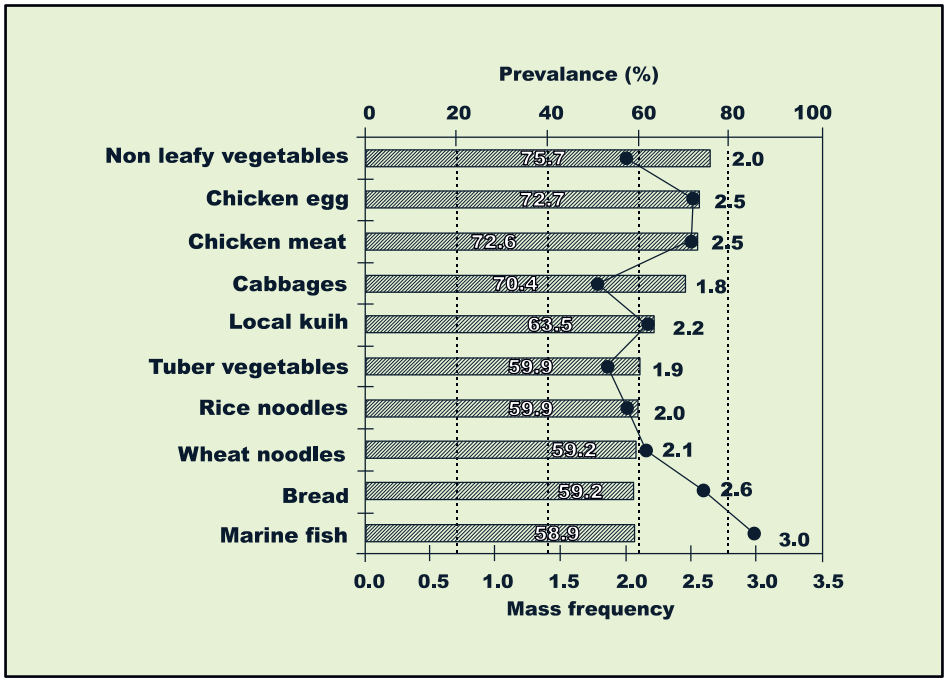

Figure 7.5.29: Mean frequency and prevalence of the top ten food item consumed weekly in the urban area

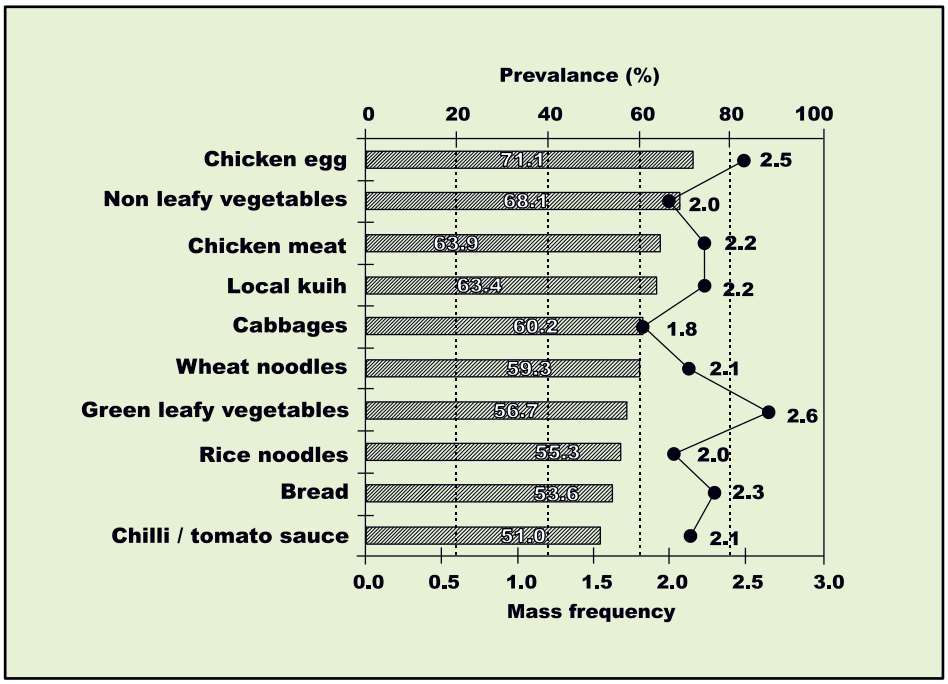

Figure 7.5.30: Mean frequency and prevalence of the top ten food item consumed weekly in the rural area

The list of food items most consumed weekly also did not differ much between the men and women (Figures 7.5.31 and 7.5.32). On average the food items were consumed at least twice weekly. The differences were that men were more weekly eaters of marine fish and green leafy vegetables, consuming almost three times a week. On the other hand women ate vegetable tubers and bean sprout almost twice weekly.

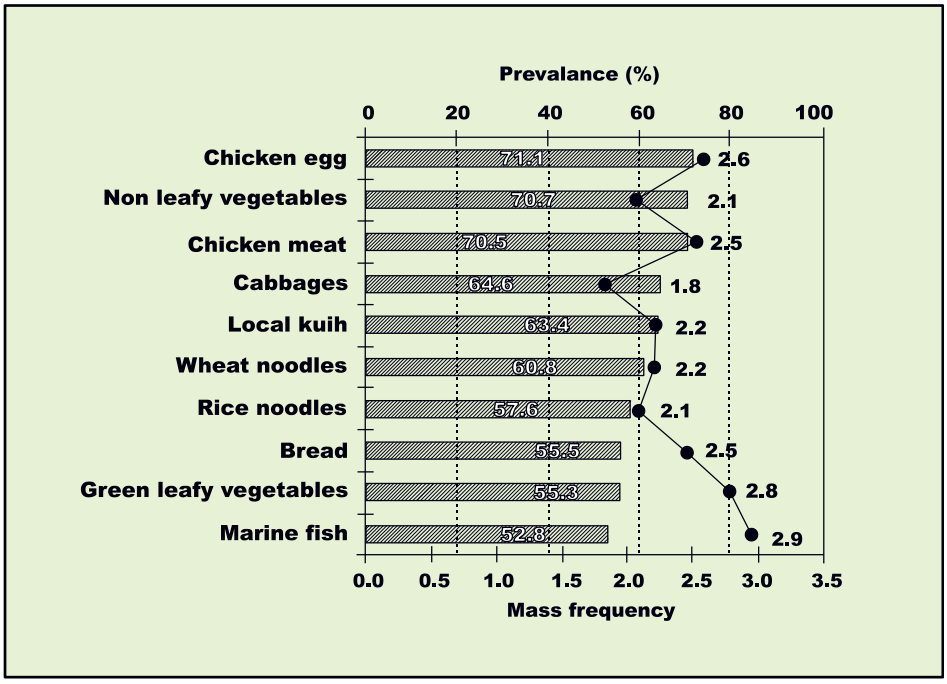

Figure 7.5.31: Mean frequency and prevalence of the top ten food item consumed weekly among men

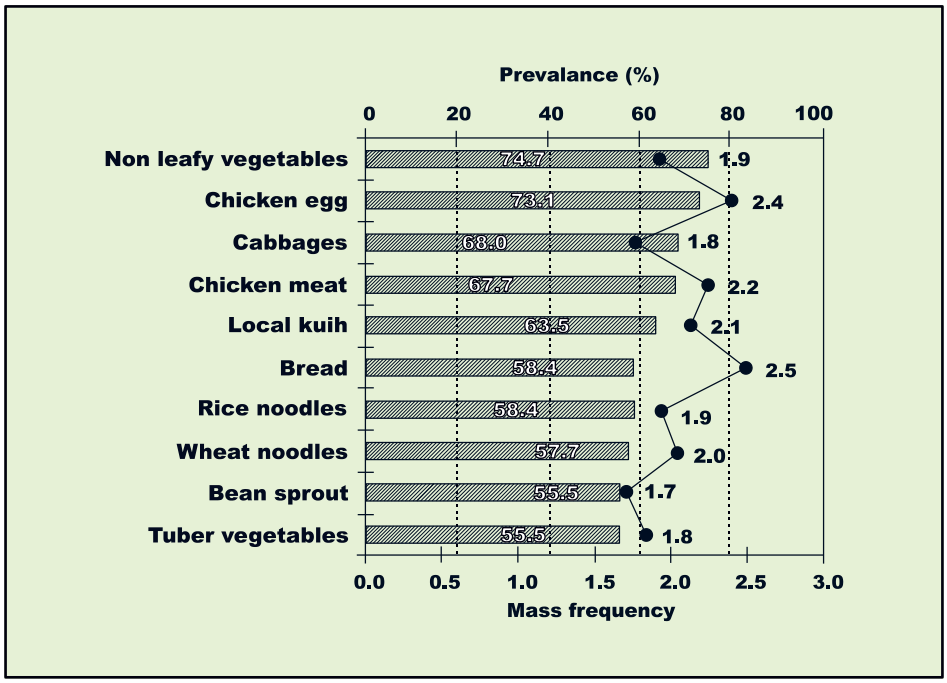

Figure 7.5.32: Mean frequency and prevalence of the top ten food item consumed weekly among women

When comparing between the various age groups, there were subtle differences in the list of food items consumed weekly (Figures 7.5.33 through to 7.5.37). No difference was shown between the 18 to19 years age group (Figure 7.5.33) and the 20 to 29 years age group (Figure 7.5.34) in the food items that they consumed weekly. In the 30 to 40 years age group (Figures 7.5.35 and 7.5.36) they consumed vegetable tubers almost twice a week, which did not show in the other age groups. The 50 to 59 years old age group (Figure 7.5.37) was the only group which ate tofu almost twice weekly.

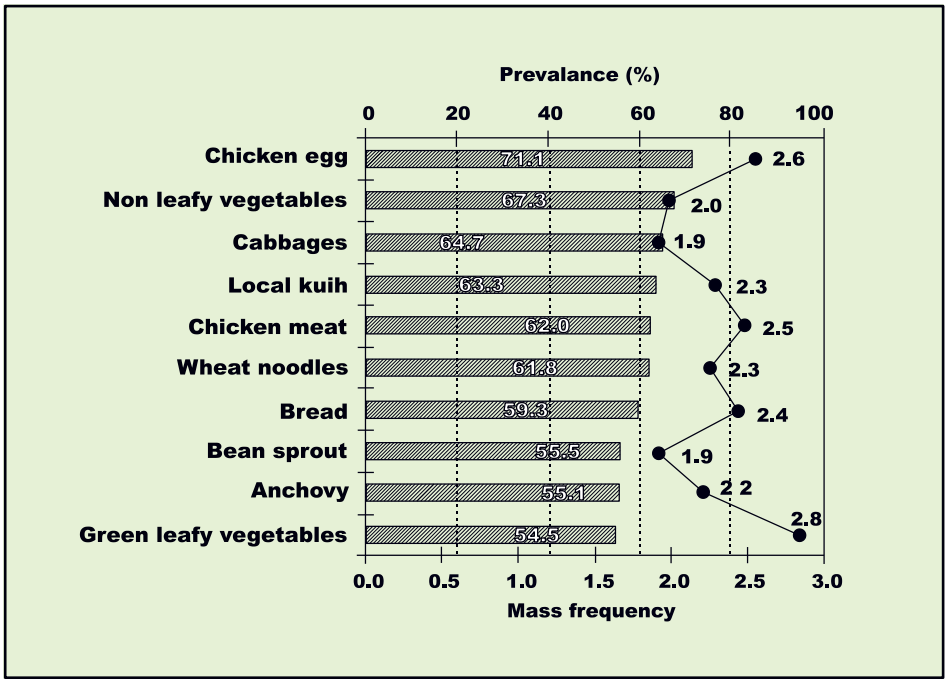

Figure 7.5.33: Mean frequency and prevalence of the top ten food item consumed weekly among age group 18 to 19 years

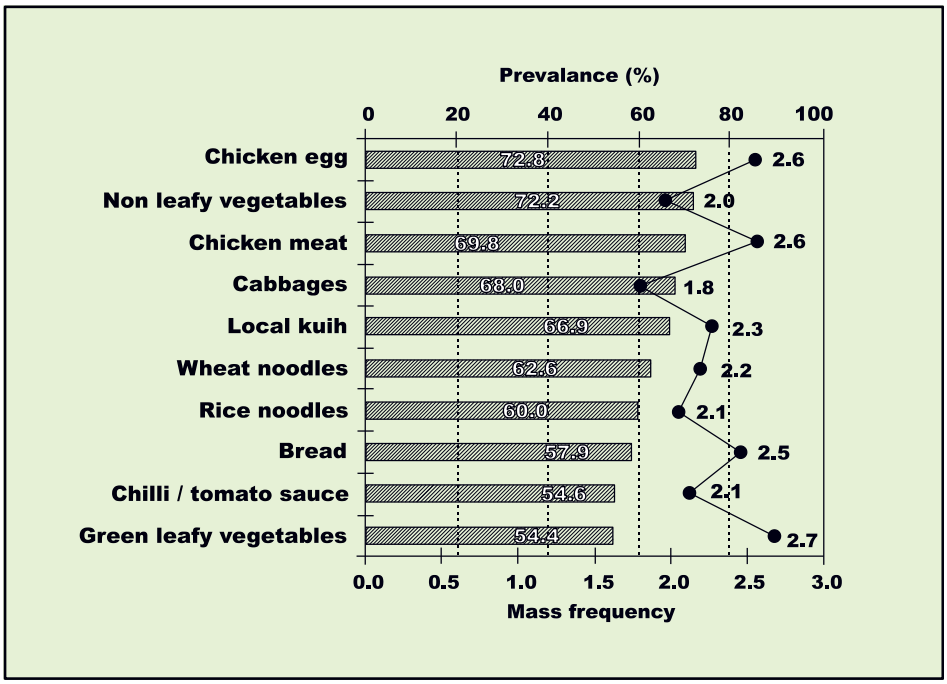

Figure 7.5.34: Mean frequency and prevalence of the top ten food item consumed weekly among age group 20 to 29 years

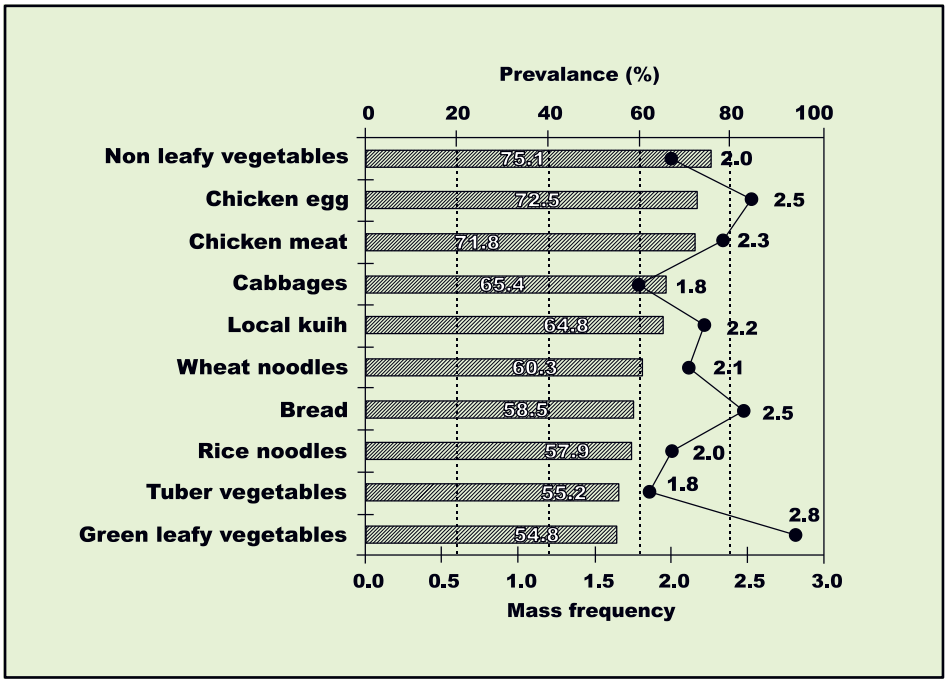

Figure 7.5.35: Mean frequency and prevalence of the top ten food item consumed weekly among age group 30 to 39 years

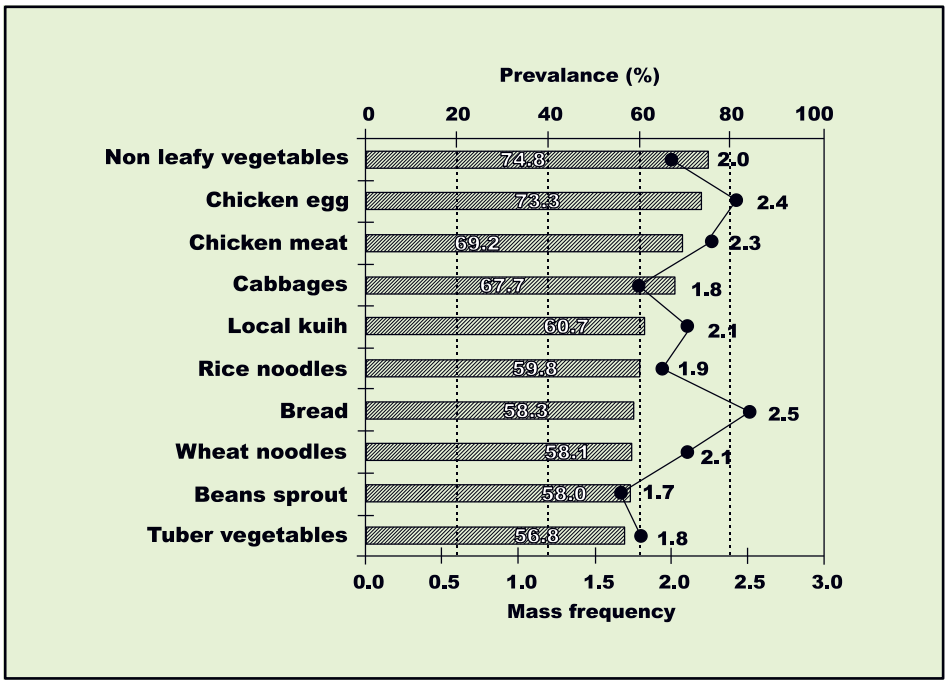

Figure 7.5.36: Mean frequency and prevalence of the top ten food item consumed weekly among age group 40 to 49 years

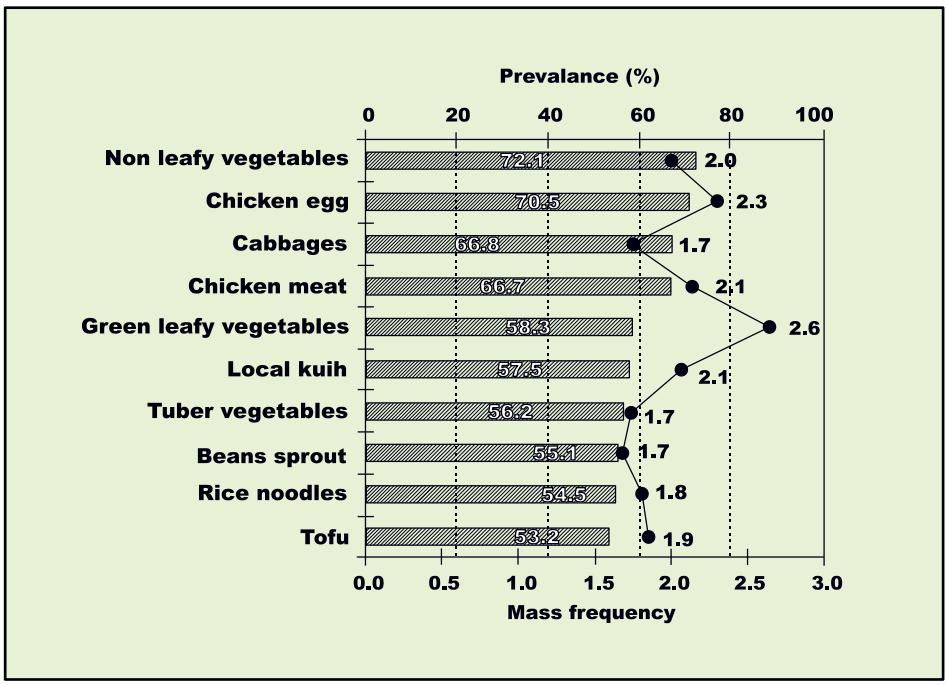

Figure 7.5.37: Mean frequency and prevalence of the top ten food item consumed weekly among age group 50 to 59 years

7.5.4 Consumption pattern of the ten food items consumed by a majority of the Malaysian adult population

Table 7.5.1 shows the average intake per day of ten food items by a majority of the Malaysian adults. Generally 98% of them consumed cooked rice twice a day and on average they ate 2½ plates of rice per day. Next was green leafy vegetables which was eaten by 96% of the population once a day with mean intake of ⅔ cups per day. While 95% of the population consumed on average one medium sized marine fish once a day, 93% of the population ate ⅔ piece of local *kuih* each time as frequent as three to four times per week. Eggs and chicken were also eaten on average 3 to 4 times a week. The serving size consumed was half an egg or half piece of chicken and eaten by 93% of the population. Wheat noodles were eaten by 92% of the population twice a week and in amounts equivalent to ¼ plate. Rice noodles were consumed by 91% of the population, as much as $^{1}/_{5}$ plate each time. However the frequency of consumption was 1 to 2 times a week. Legume vegetables and cabbage were consumed by about 89% of the population and their intake amounted to about $^{1}/_{5}$ cup each time, at the frequency of twice a week respectively.

Table 7.5.1: Mean food intake (g) of the ten most popularly consumed food items daily or weekly (amount taken per day)

Type of food	Mean frequency of intake	Mean intake(gm/day)	Household measure and weight of serving size	Number of servings consumed per day	Prevalence (%)
Rice	2.13	289.9	Plate,120g	2½ plates	97.5
Green leafy Vegetables	0.91	50.7	Cup, 80g	$^{2}/_{3}$ cups	95.7
Marine Fish	0.98	60.7	Medium whole, 64g	1 whole medium	94.7
Local *Kuih*	0.42	21.6	Piece, 30g	$^{2}/_{3}$ piece	92.5

Type of food	Mean frequency of intake	Mean intake(gm/day)	Household measure and weight of serving size	Number of servings consumed per day	Prevalence (%)
Chicken Egg	0.45	25.2	Medium whole, 54g	1/2 egg	93.4
Chicken	0.44	31.7	Piece, 59g	1/2 piece	92.8
Wheat Noodles	0.31	66.3	Plate, 288g	1/4 plate	92.1
Rice Noodles	0.25	66.6	Plate, 330g	1/5 plate	90.6
Legume Vegetables	0.34	16.4	Cup, 72g	1/5 cup	89.7
Cabbage	0.27	18.2	Cup, 100g	1/5 cup	88.5

7.5.5 Comparison of mean food intake per day of the ten food items consumed by most adult by zones, strata, sex and age groups

The mean food intake per day (averaged over the past one year) has been presented in another report (Food Consumption Statistics, MOH 2006). This section has been extracted from the report and highlights the mean intake per day of ten food items consumed by a majority of the population according to zone, strata, sex and age groups, (Appendix Tables 2 to 31). The food items reported were rice, green leafy vegetables, marine fish, eggs, chicken, local *kui*h, wheat noodles, rice noodles and non-leafy vegetables. The results are presented as mean intake and 95% confidence interval. Level of significance of intake at $p<0.05$ is accepted if the mean and confidence interval do not overlap, while overlapping of confidence interval is rejected, indicating no significant difference between means of intake.

7.5.5.1 Mean food intake by zone

Comparing intakes between the various zones, generally the population in all zones ate about the same amount of rice except in Sabah where they consumed significantly more rice, and in the southern zone where they ate significantly less rice than the other zones, (Figure 7.5.38). Men consumed significantly more rice in the southern, central, east coast, northern, Sabah and Sarawak zones compared to women, (Figure 7.5.39).

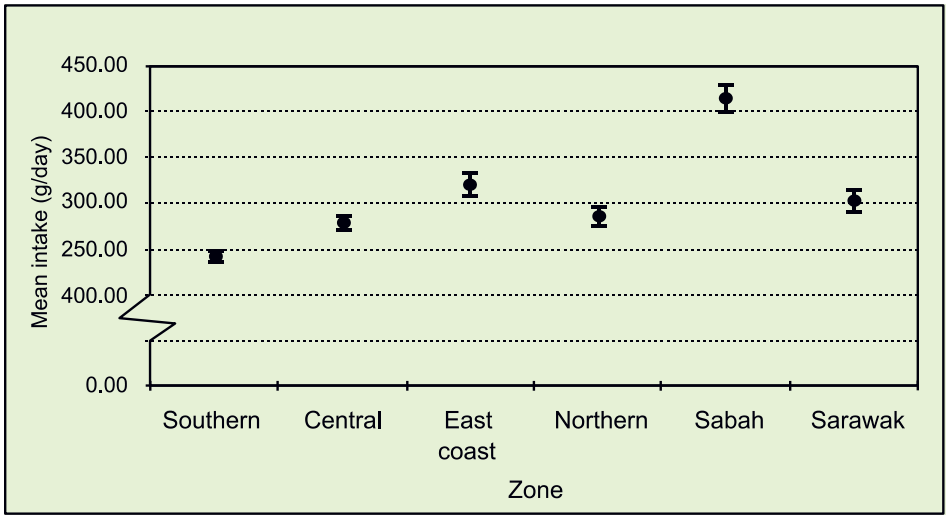

Figure 7.5.38: Rice intake and 95 % CI in various zones

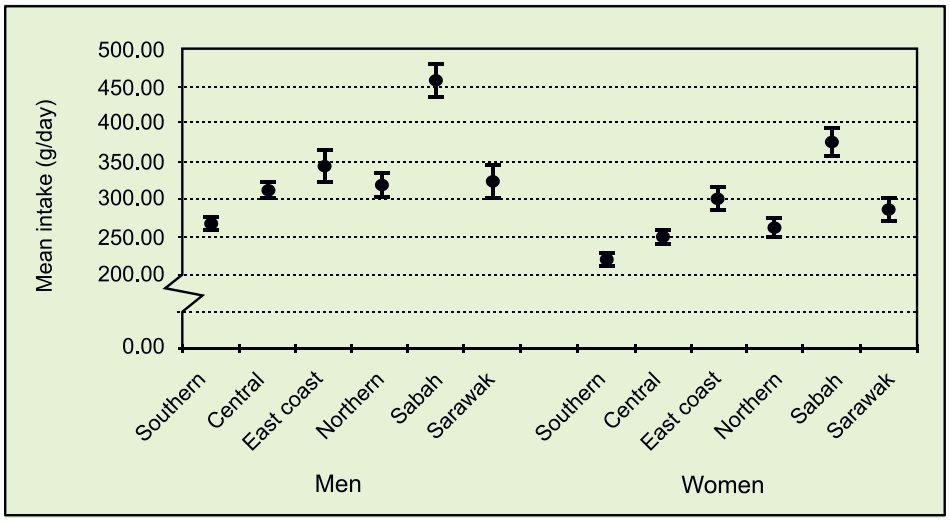

Figure 7.5.39: Rice intake and 95 % CI among men and women in various zones

There was no difference in the amount of green leafy vegetables eaten between zones in the Peninsular (Figure 7.5.40). However, in Sabah and Sarawak the population consumed significantly more vegetables than their peninsular counterparts. In each respective zone, there was no significant difference in the amount of green leafy vegetables eaten among men and women (Figure 7.5.41).

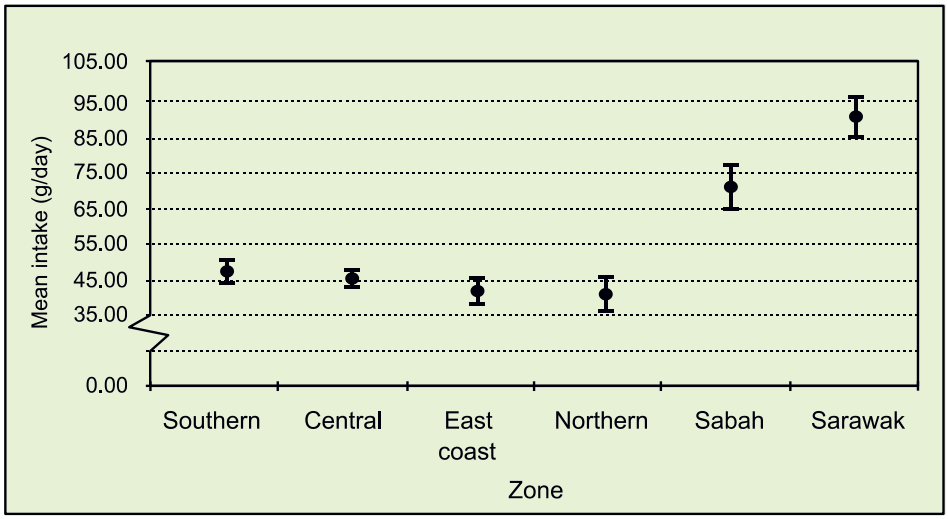

Figure 7.5.40: Green leafy vegetables intake and 95 % CI in various zones

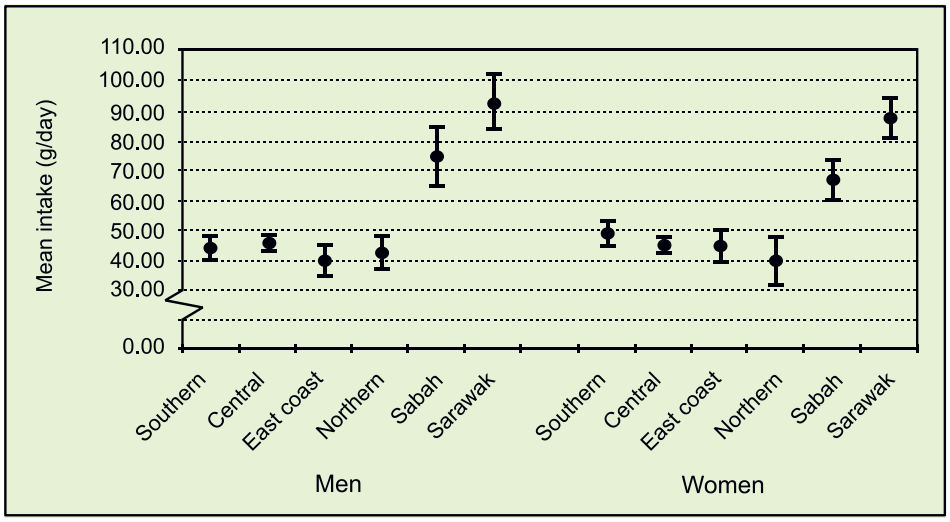

Figure 7.5.41: Green leafy vegetables intake and 95 % CI among men and women in various zones

The consumption pattern of marine fish in different zones reflected the geographical location of the respective zones, (Figure 7.5.42). The population in the of east coast, northern and Sabah ate significantly more marine fish than the other zones. A similar pattern is observed in comparing intake of marine fish among men and women in these zones (Figure 7.5.43).

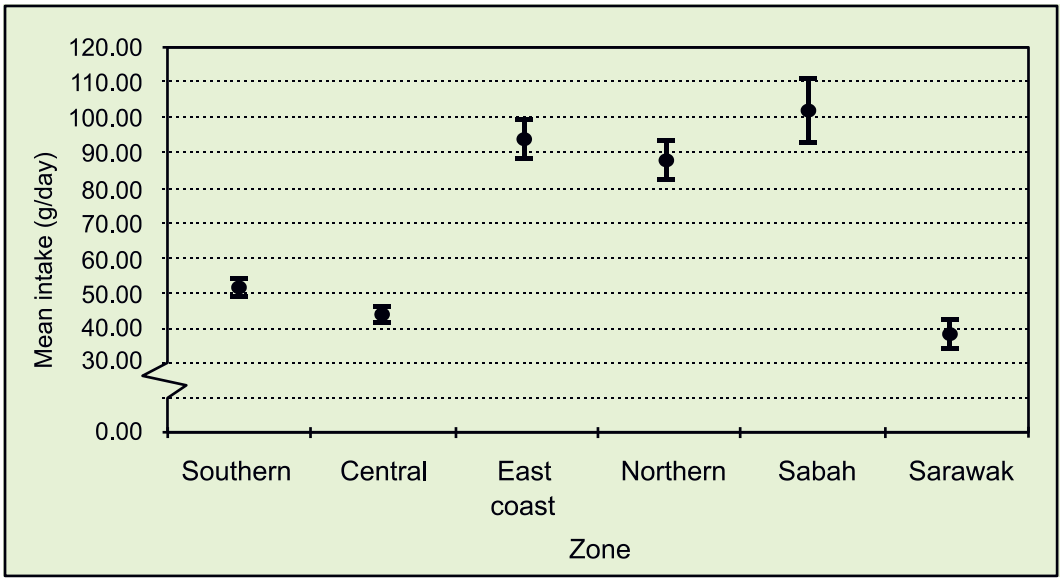

Figure 7.5.42: Marine fish intake and 95 % CI in various zones

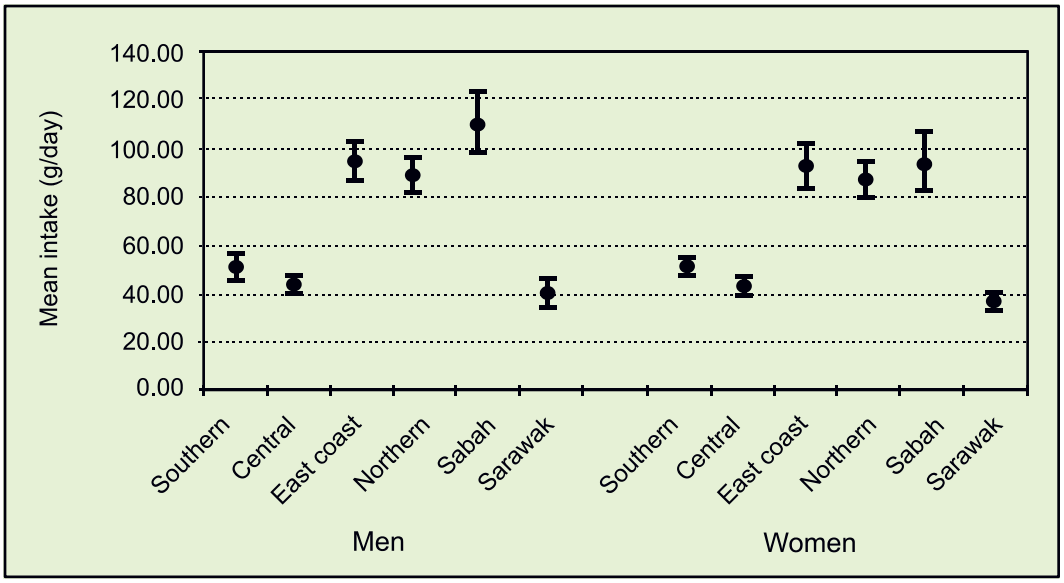

Figure 7.5.43: Marine fish intake and 95 % CI among men and women in various zones

There was no difference in the amount of eggs eaten in all zones except in the southern zone, where they consumed significantly more eggs, almost double the number of eggs than the other zones (Figure 7.5.44). Men in the southern and central regions consumed significantly more eggs than their women counterpart. However, there was no significant difference in egg consumption between men and women in the other zones (Figure 7.5.45).

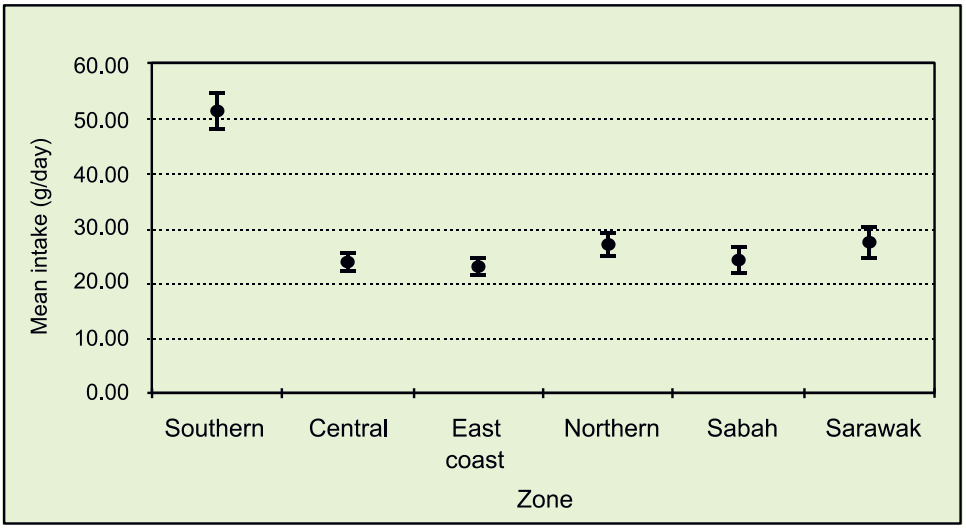

Figure 7.5.44: Egg intake and 95 % CI in various zones

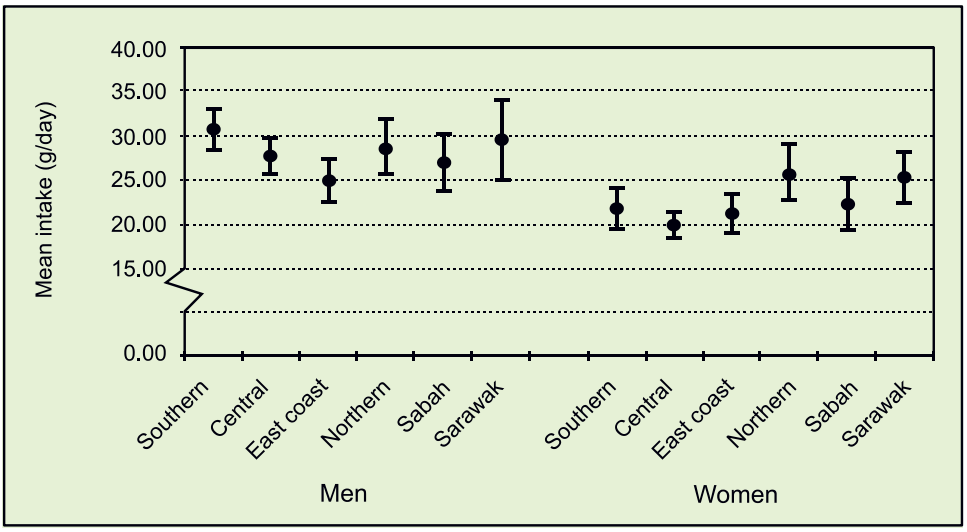

Figure 7.5.45: Egg intake and 95 % CI among men and women in various zones

The Sarawak population had a significantly higher intake of chicken when compared with the other zones (Figure 7.5.46). Only men in the southern and northern zones demonstrated a significantly higher intake of chicken than their women counterpart, (Figure 7.5.47).

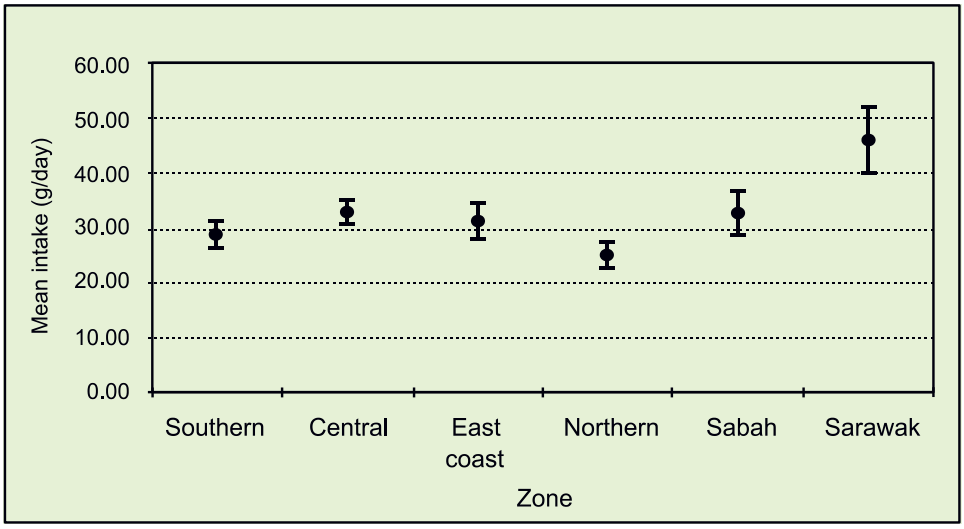

Figure 7.5.46: Chicken intake and 95 % CI in various zones

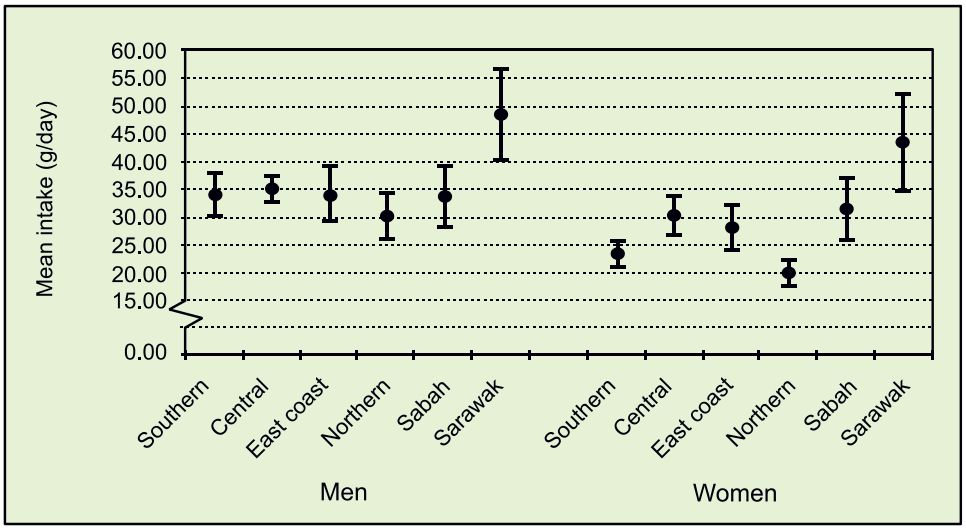

Figure 7.5.47: Chicken intake and 95 % CI among men and women in various zones

The southern, central and Sarawak population consumed significantly lower intake of local *kuih* compared with the other zones (Figure 7.5.48). However, only men in the central zone ate significantly more local *kuih* than their women counterpart (Figure 7.5.49).

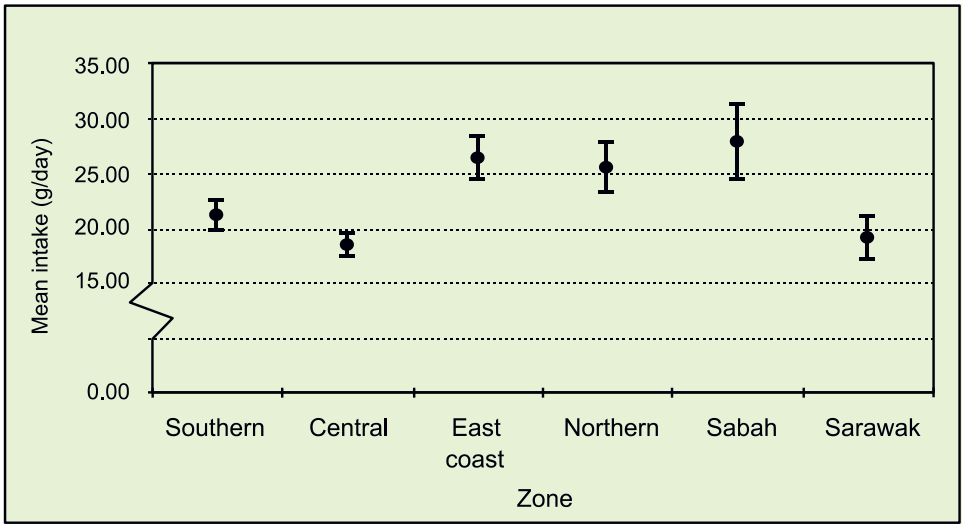

Figure 7.5.48: Local *kuih* intake and 95 % CI in various zones

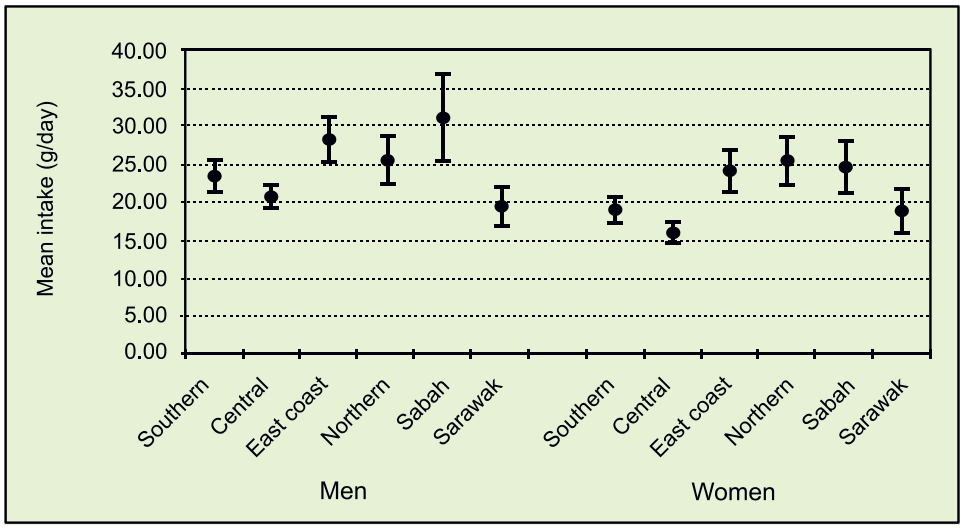

Figure 7.5.49: Local *kuih* intake and 95 % CI among men and women in various zones

The Sabah population ate significantly more wheat noodles than the other zones except Sarawak (Figure 7.5.50). Meanwhile Sarawak community also consumed significantly more than the central and east coast populations. Men consumed significantly higher wheat noodles than women in all zones except the east coast zones. There was no difference in the intake of wheat noodles among men and women in the east coast (Figure 7.5.51).

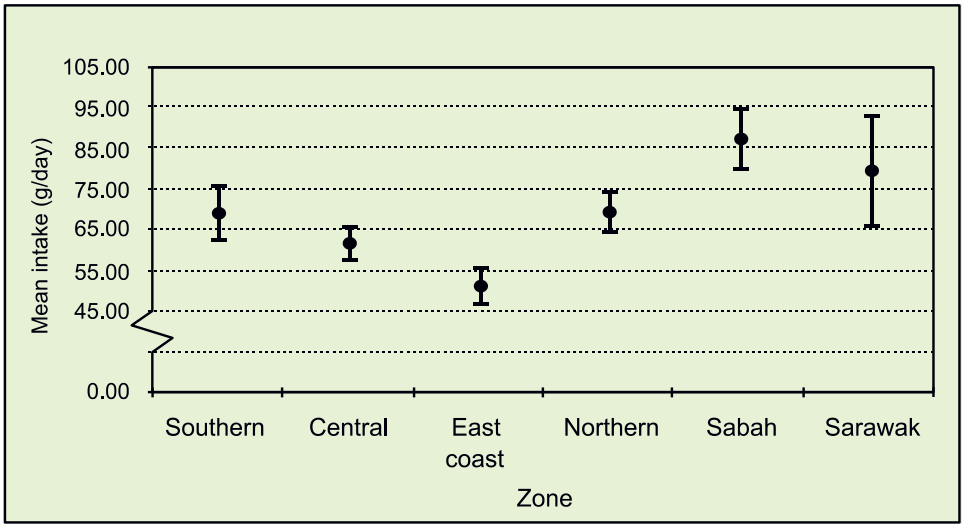

Figure 7.5.50: Wheat noodles intake and 95 % CI in various zones

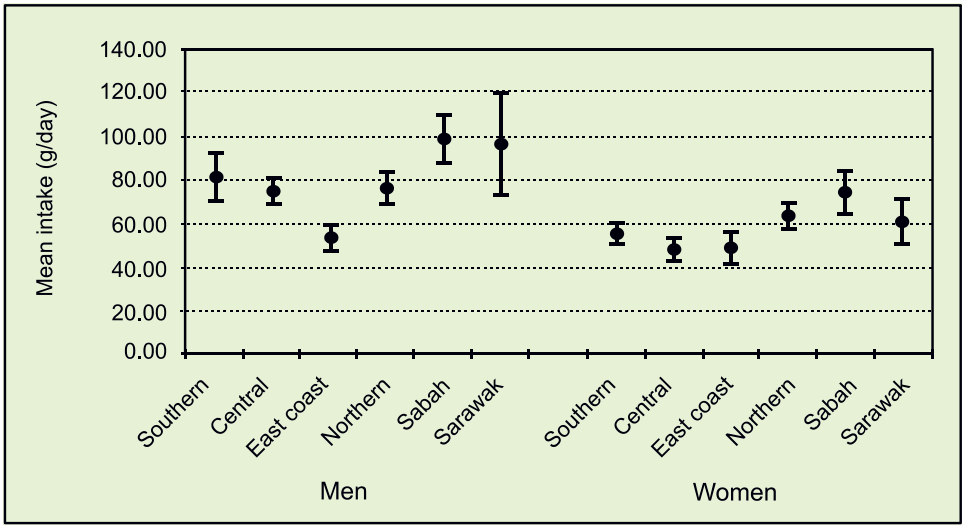

Figure 7.5.51: Wheat noodles intake and 95 % CI among men and women in various zones

Rice noodles intake was similar in all zones except in the northern whereby the intake was significantly higher (Figures 7.5.52) This might be due to the popular intake of *laksa Penang* in the northern. Southern and central men consumed significantly more rice noodles than the women. No difference in intake was shown between men and women in the other zones.(Figure 7.5.53).

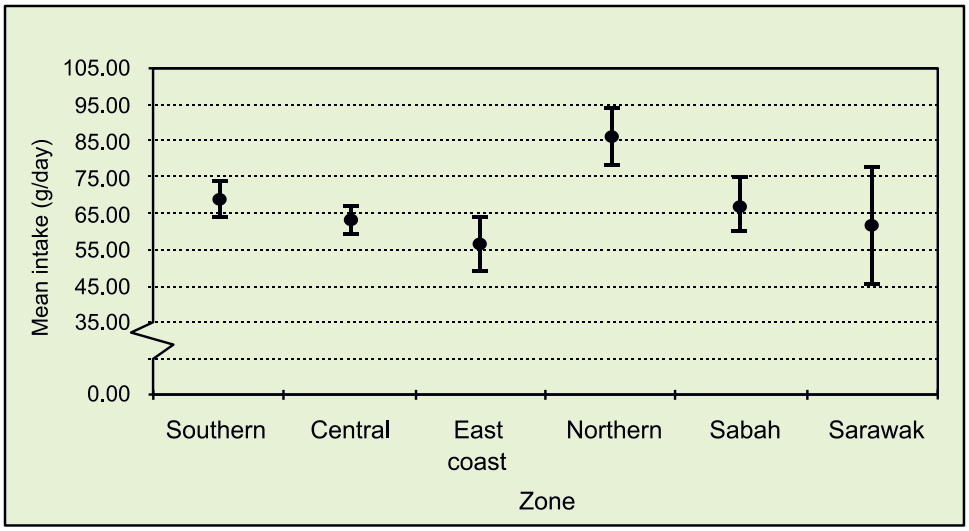

Figure 7.5.52: Rice noodles intake and 95 % CI in various zones

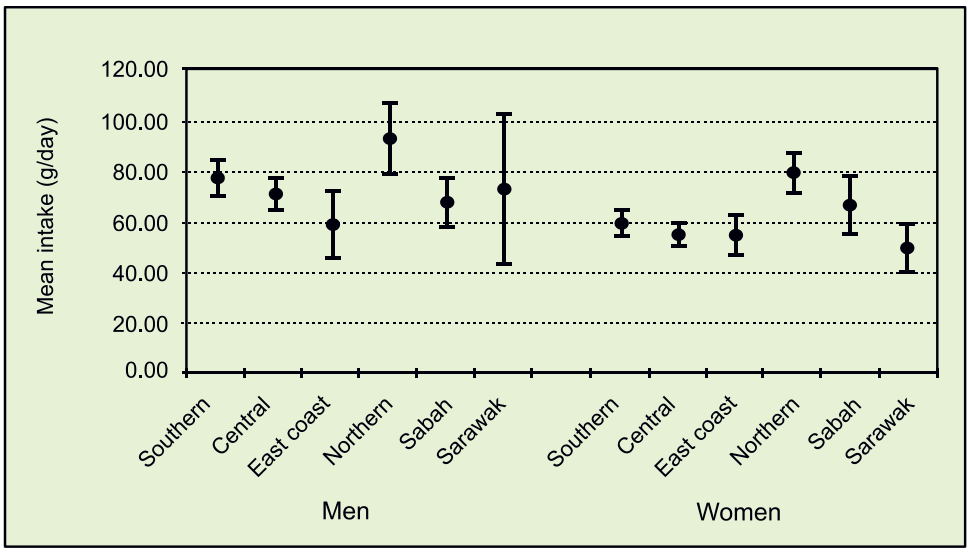

Figure 7.5.53: Rice noodles intake and 95 % CI among men and women in various zones

The lowest mean intake of non leafy vegetables was shown in the east coast and the northern zone (Figures 7.5.54). This low intake was significantly lower than the other zones. There was similar mean intake of non leafy vegetables between men and women in their respective zones (Figure 7.5.55).

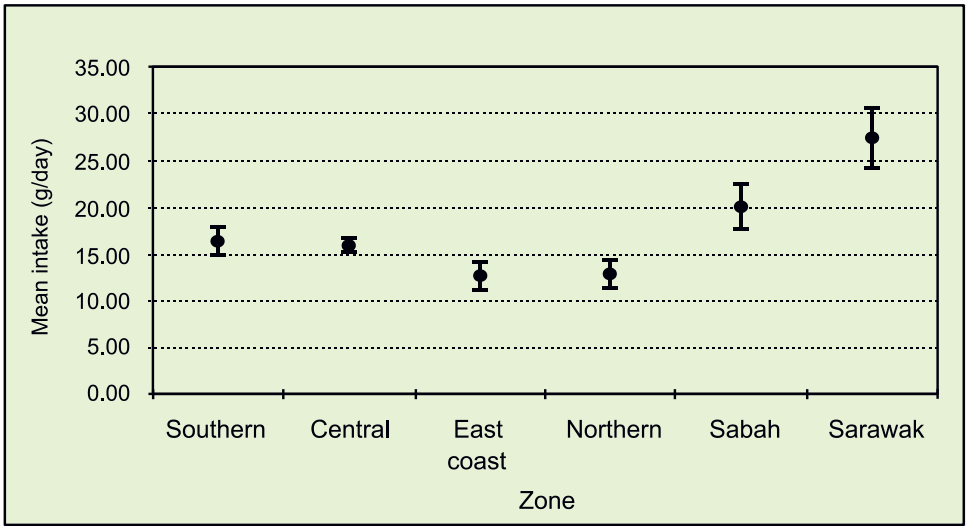

Figure 7.5.54: Non leafy vegetables intake and 95 % CI in various zones

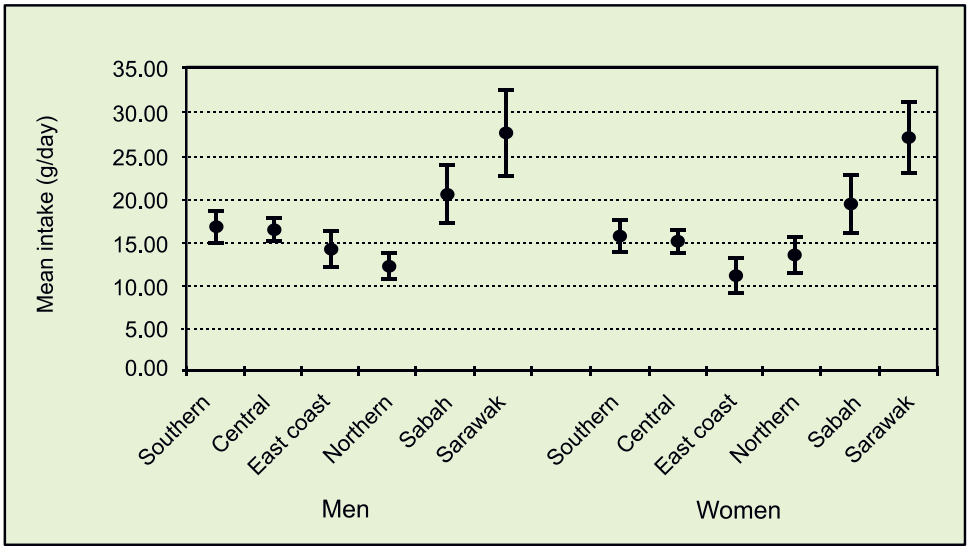

Figure 7.5.55: Non leafy vegetables intake and 95 % CI among men and women in various zones

7.5.5.2 Mean food intake by strata

It is a general assumption that urban population have a different food intake pattern in comparison with their rural counterparts. In this survey, it was shown that the rural population ate significantly more rice, marine fish and local *kuih*. There were however no difference in the intake of green leafy vegetables, eggs, wheat and rice noodles as well as non leafy vegetables between strata, (Figures 7.5.56 to 7.5.64).

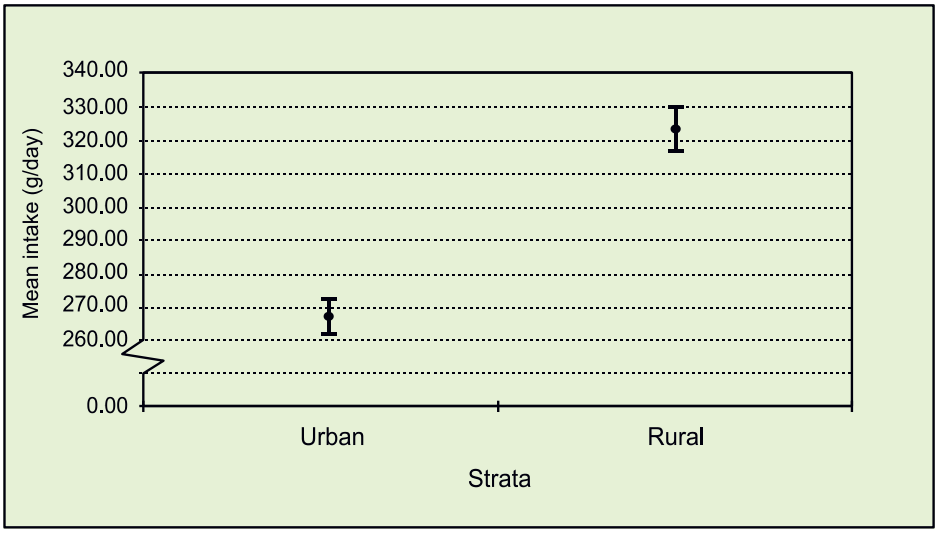

Figure 7.5.56: Rice intake and 95 % CI by strata

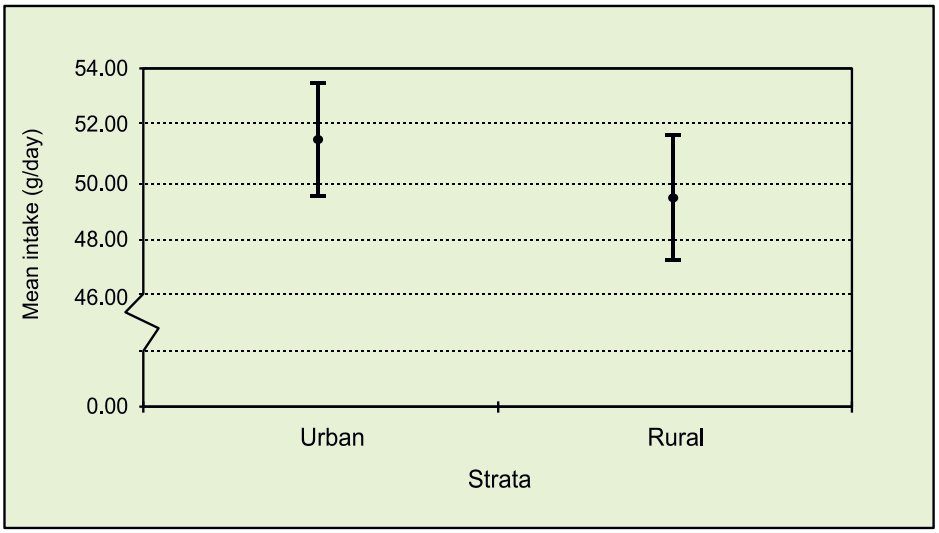

Figure 7.5.57: Green leafy vegetables intake and 95 % CI by strata

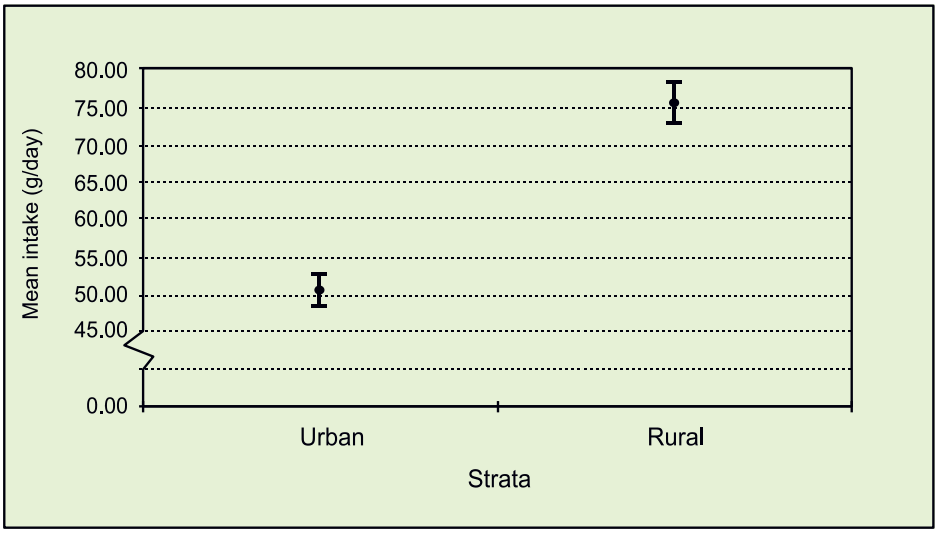

Figure 7.5.58: Marine fish intake and 95 % CI by strata

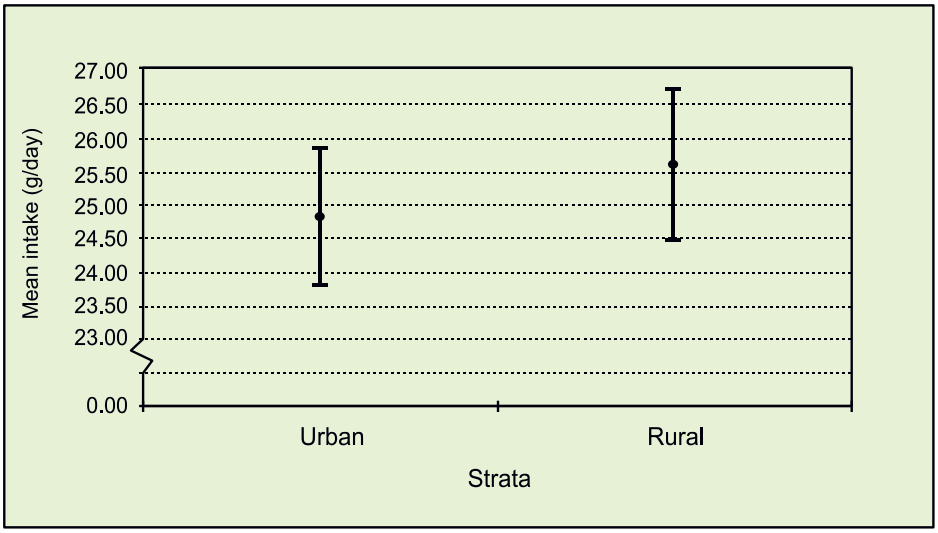

Figure 7.5.59: Chicken egg intake and 95 % CI by strata

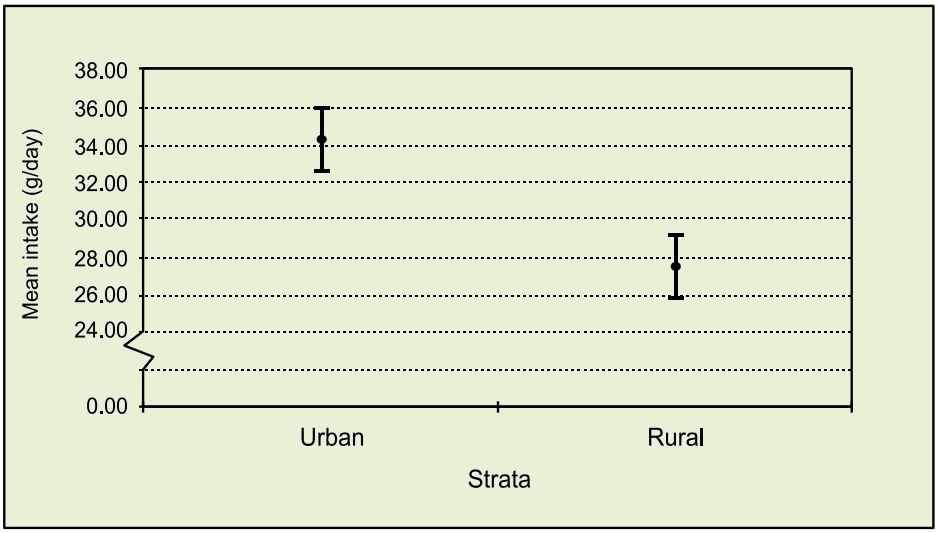

Figure 7.5.60: Chicken intake and 95 % CI by strata

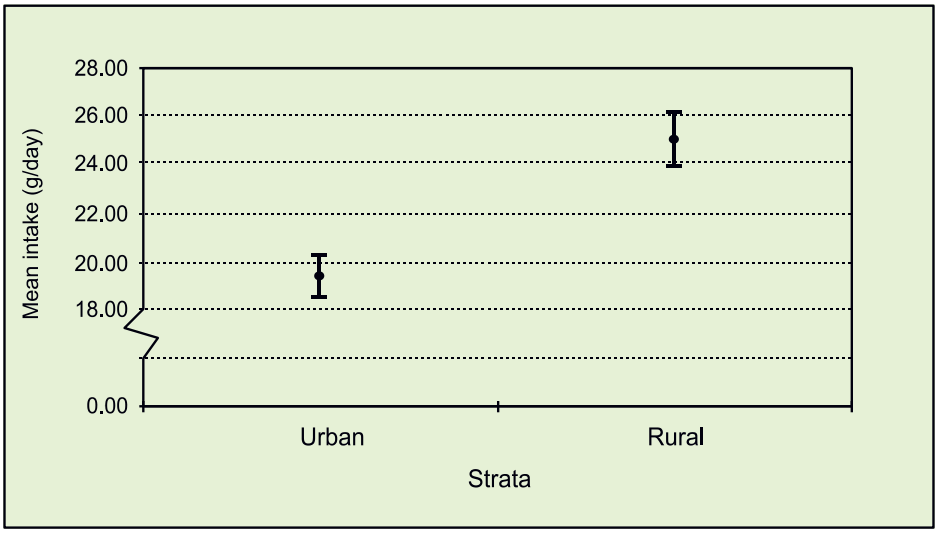

Figure 7.5.61: Local *kuih* intake and 95 % CI by strata

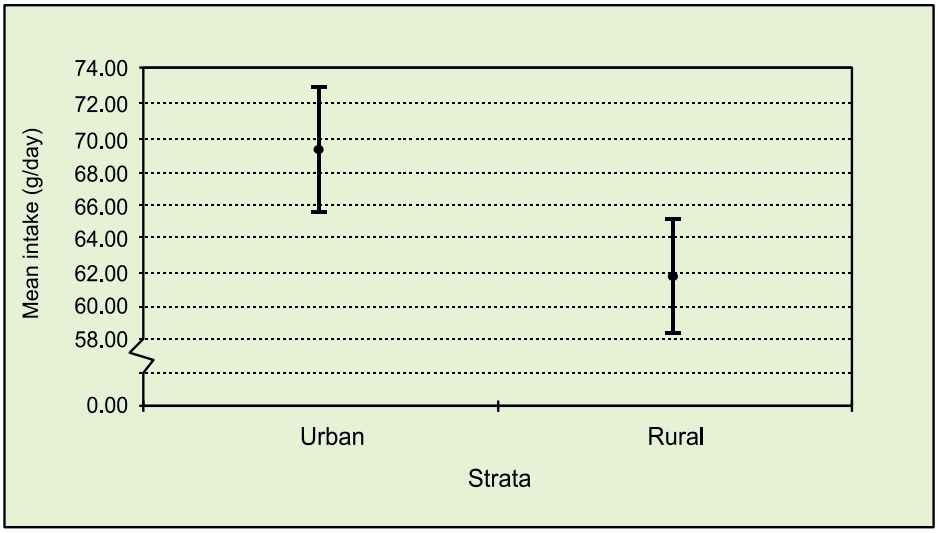

Figure 7.5.62: Wheat noodles intake and 95 % CI by strata

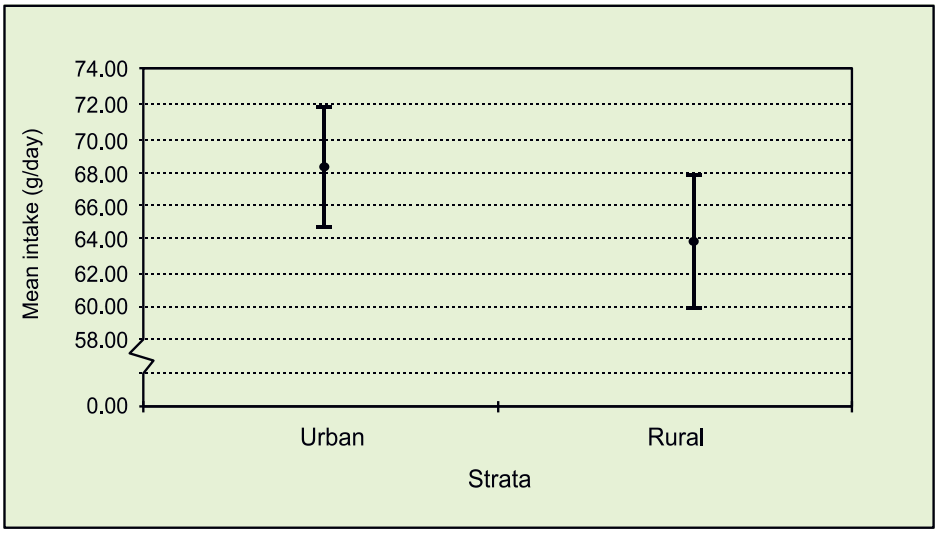

Figure 7.5.63: Rice noodles intake and 95 % CI by strata

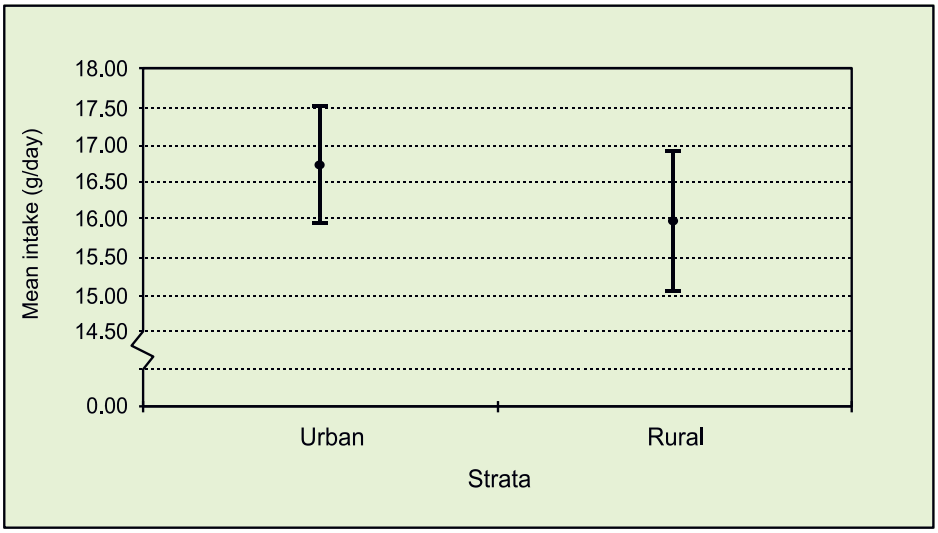

Figure 7.5.64: Non leafy vegetables intake and 95 % CI by strata

Men were shown to eat significantly more rice, eggs, chicken, wheat noodles and rice noodles than women either in both urban or rural areas. There was no significant difference in the intake of green leafy vegetables, marine fish and non leafy vegetables among men and in the urban and rural areas (Figures 7.5.65 to 7.5.73).

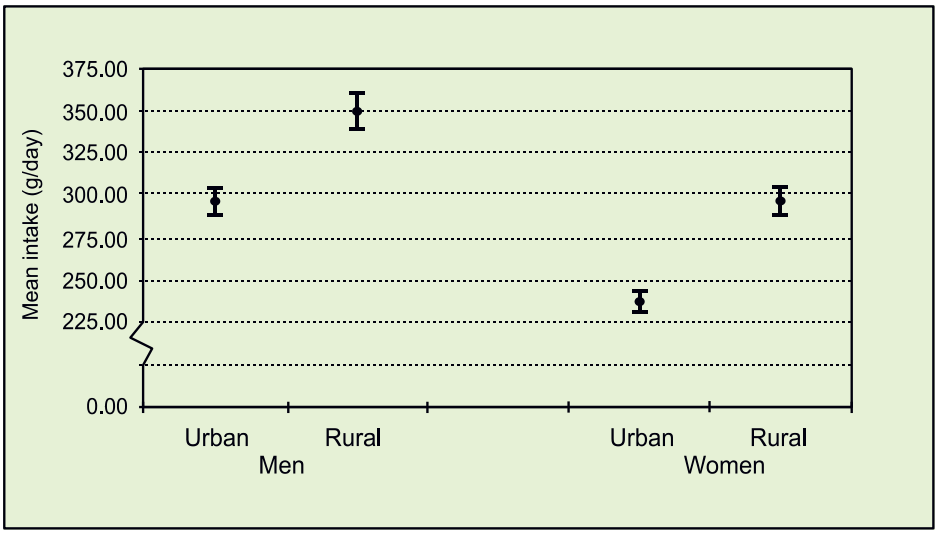

Figure 7.5.65: Rice intake and 95 % CI by strata and sex

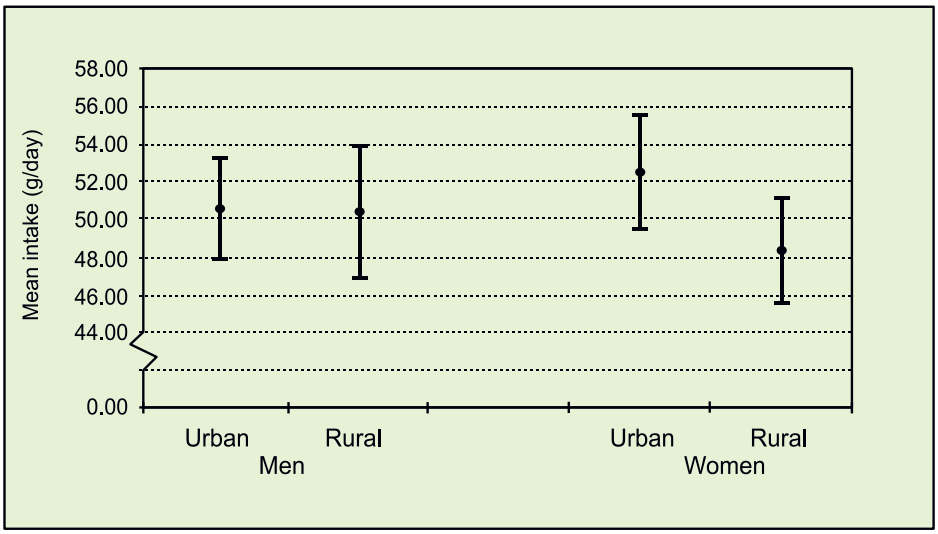

Figure 7.5.66: Green leafy vegetables intake and 95 % CI by strata and sex

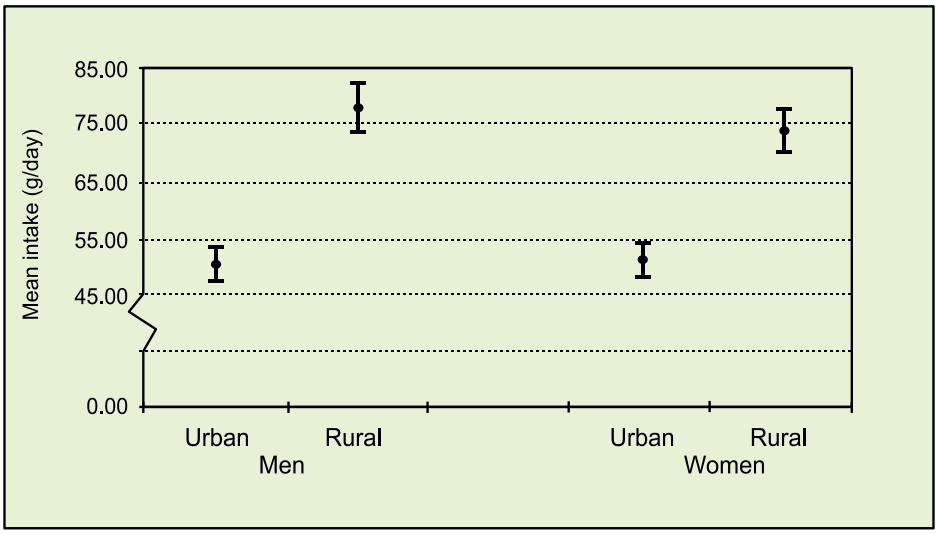

Figure 7.5.67: Marine fish intake and 95 % CI by strata and sex

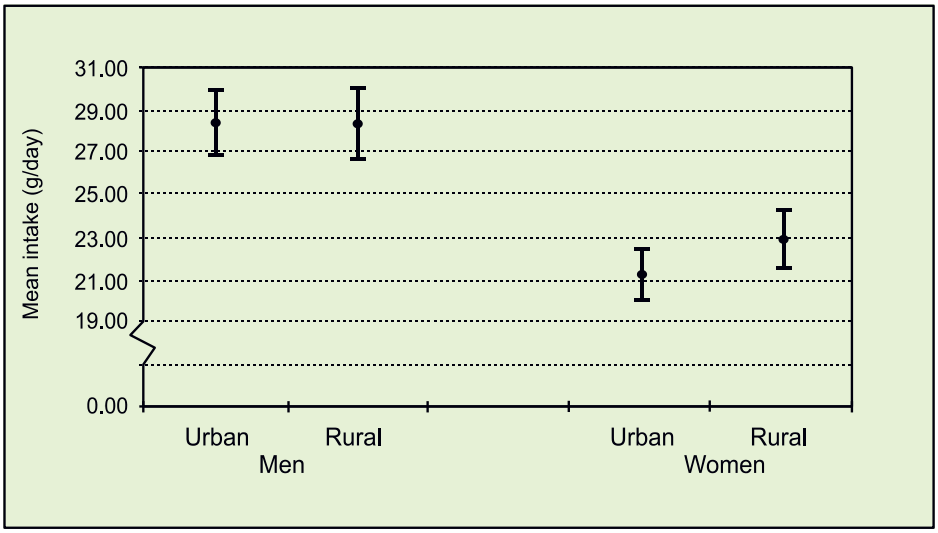

Figure 7.5.68: Chicken egg intake and 95 % CI by strata and sex

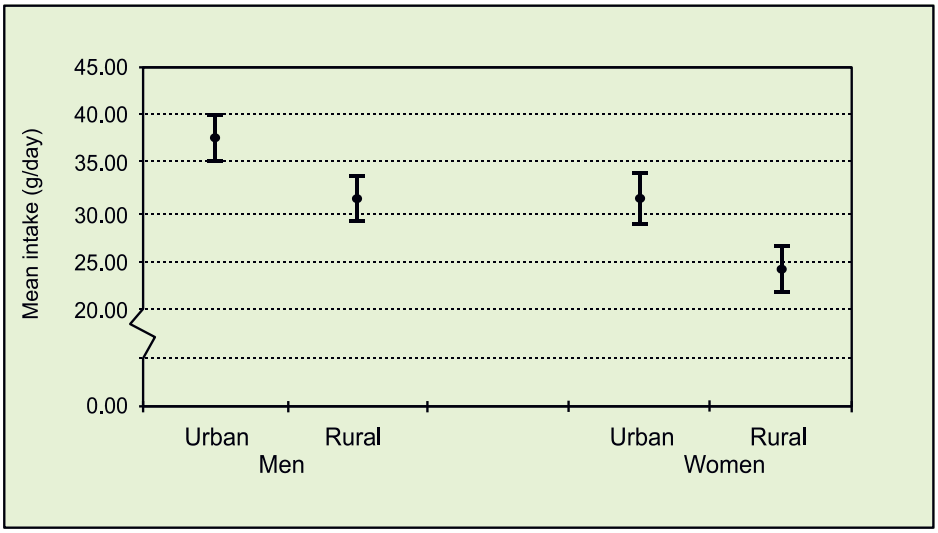

Figure 7.5.69: Chicken intake and 95 % CI by strata and sex

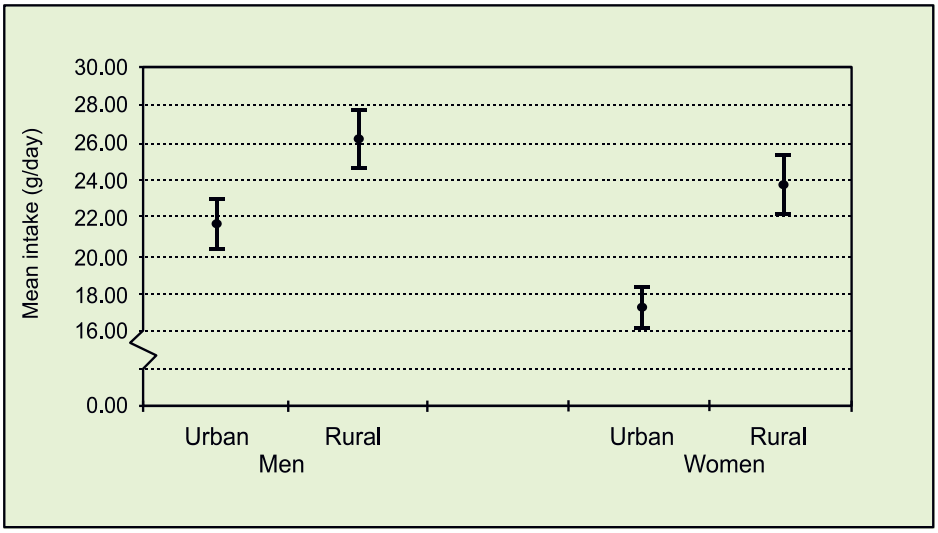

Figure 7.5.70: Local *kuih* intake and 95 % CI by strata and sex

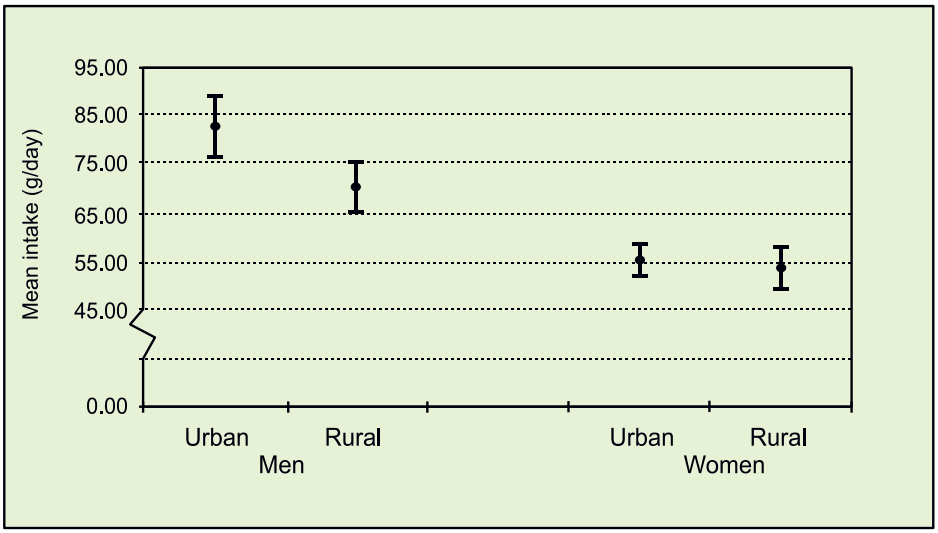

Figure 7.5.71: Wheat noodles intake and 95 % CI by strata and sex

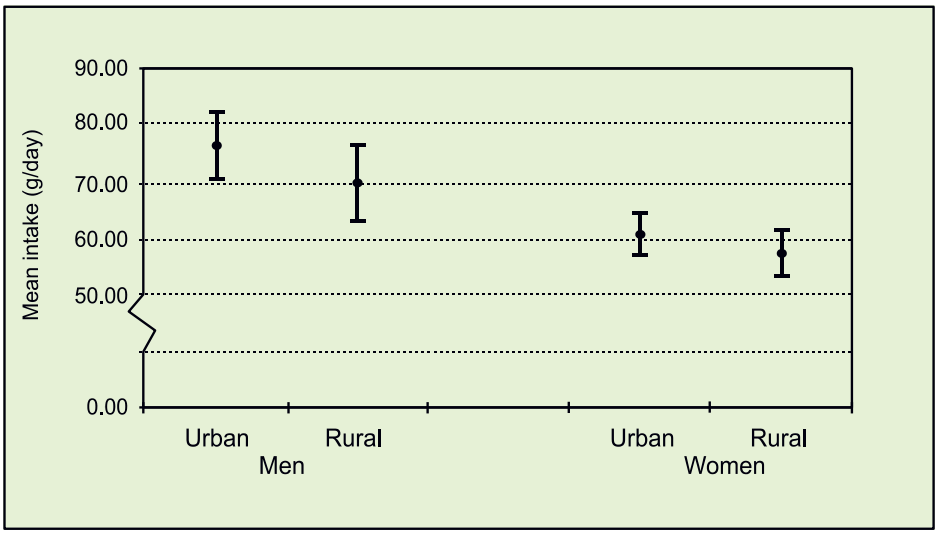

Figure 7.5.72: Rice noodles intake and 95 % CI by strata and sex

Figure 7.5.73: Non leafy vegetables intake and 95 % CI by strata and sex

7.5.5.3 Mean food intake among men and women

Men consumed significantly more rice, eggs, chicken, local *kuih* as well as wheat and rice noodles. This finding reflected the general assumption that men would eat more foods as they required more energy intake to fulfill their energy and nutrient requirements compared to women. No significant difference was shown in the intake of green leafy and non leafy vegetables as well as marine fish among men and women, (Figures 7.5.74 to 82).

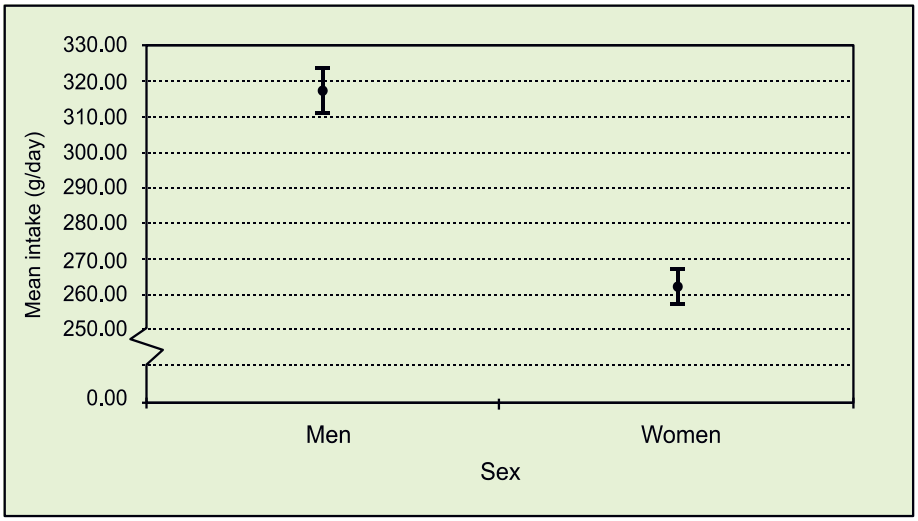

Figure 7.5.74: Rice intake and 95 % CI among men and women

Figure 7.5.75: Green leafy vegetables intake and 95 % CI among men and women

Figure 7.5.76: Marine fish intake and 95 % CI among men and women

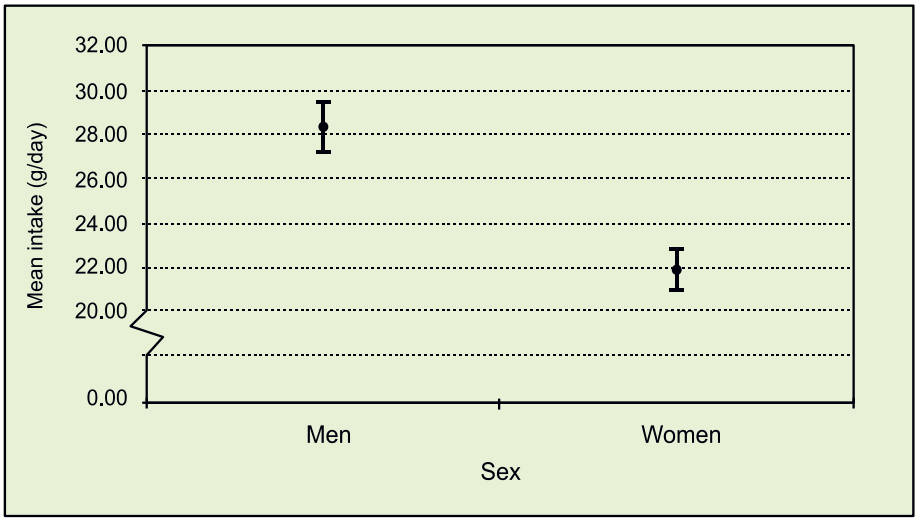

Figure 7.5.77: Chicken egg intake and 95 % CI among men and women

Figure 7.5.78: Chicken intake and 95 % CI among men and women

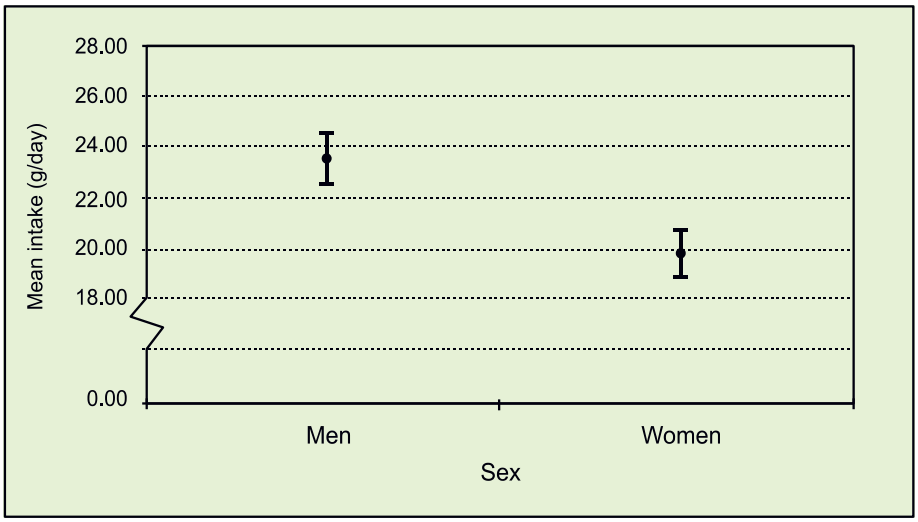

Figure 7.5.79: Local *kuih* intake and 95 % CI among men and women

Figure 7.5.80: Wheat noodles intake and 95 % CI among men and women

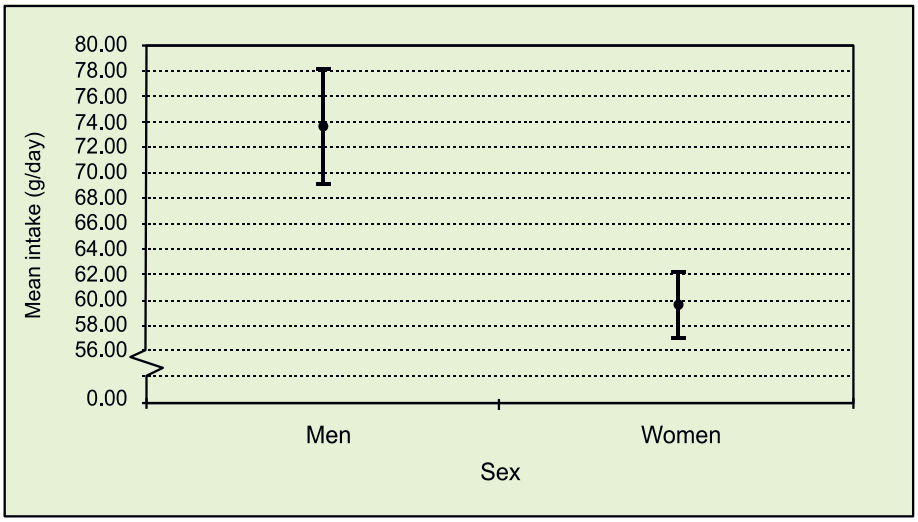

Figure 7.5.81: Rice noodles intake and 95 % CI among men and women

Figure 7.5.82: Non leafy vegetables intake and 95 % CI among men and women

7.5.5.4 Mean food intake in various age groups

The results showed that people in the younger group (below 40 years) had significantly higher mean intake of rice than the older age group, except the 18 to 19 years age group (Figure 7.5.83). The intake of green leafy vegetables, marine fish and non leafy vegetables were similar in all age groups (Figures 7.5.84, 7.5.85 and 7.5.91). The egg and chicken consumption demonstrated a descending amount of intake with age (Figures 7.5.86 and 7.5.87). There was however no significant difference in the intake of eggs and chicken between the 40 to 49 and 50 to 59 year-old groups. Wheat and rice noodles as well as local *kuih* intakes were significantly lower in the 50 to 59 year-old age group. There was no significant difference in the intake of wheat noodles, rice noodles and non-leafy vegetables among the other age groups (Figures 7.5.88 to 7.5.91).

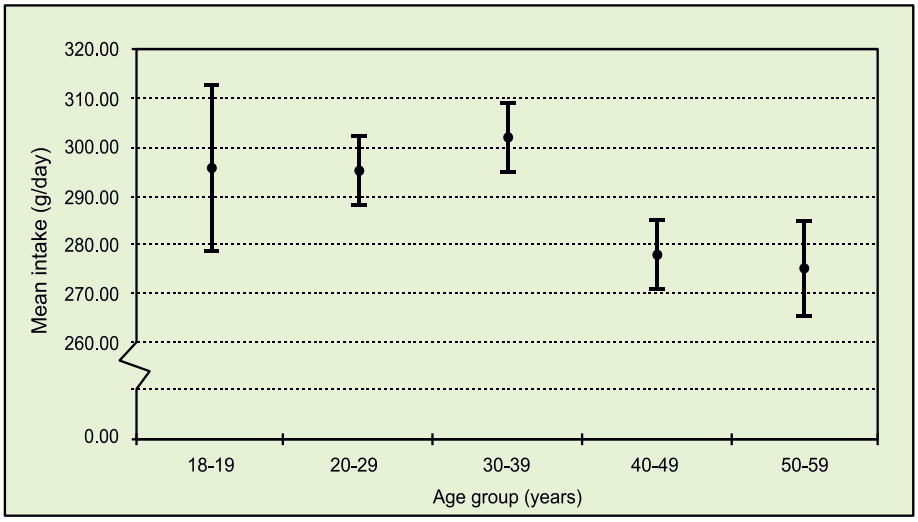

Figure 7.5.83: Rice intake and 95 % CI by age group

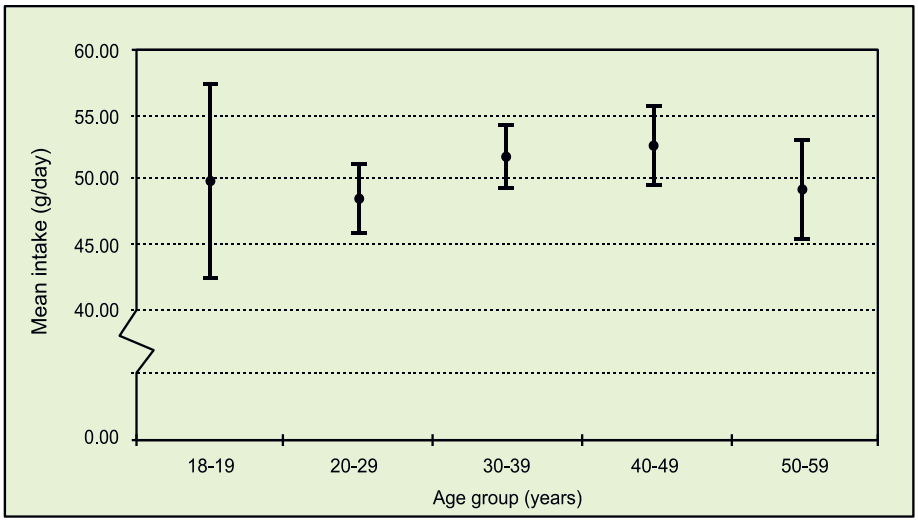

Figure 7.5.84: Green leafy vegetables intake and 95 % CI by age group

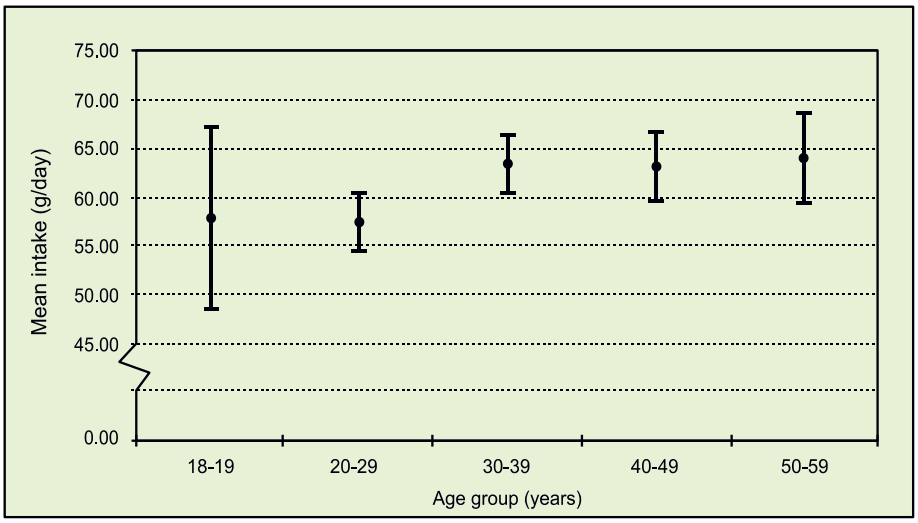

Figure 7.5.85: Marine fish intake and 95 % CI by age group

Figure 7.5.86: Chicken egg intake and 95 % CI by age group

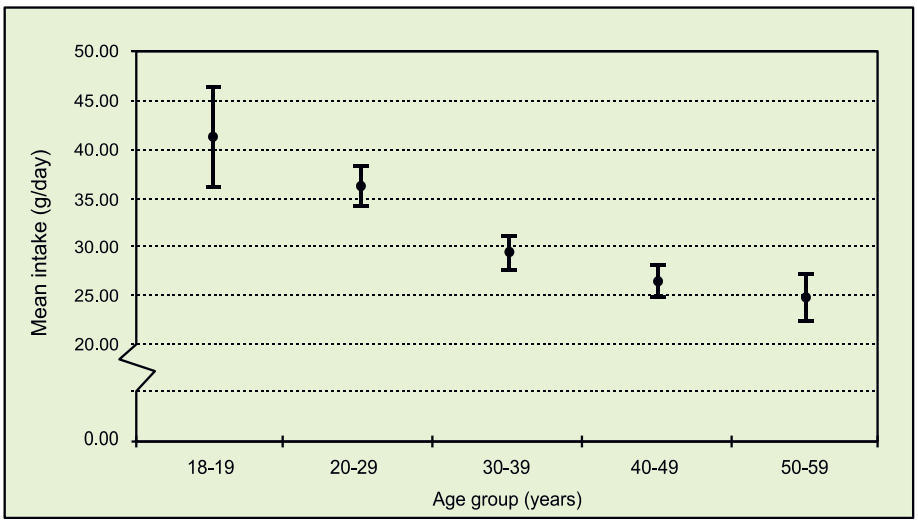

Figure 7.5.87: Chicken intake and 95 % CI by age group

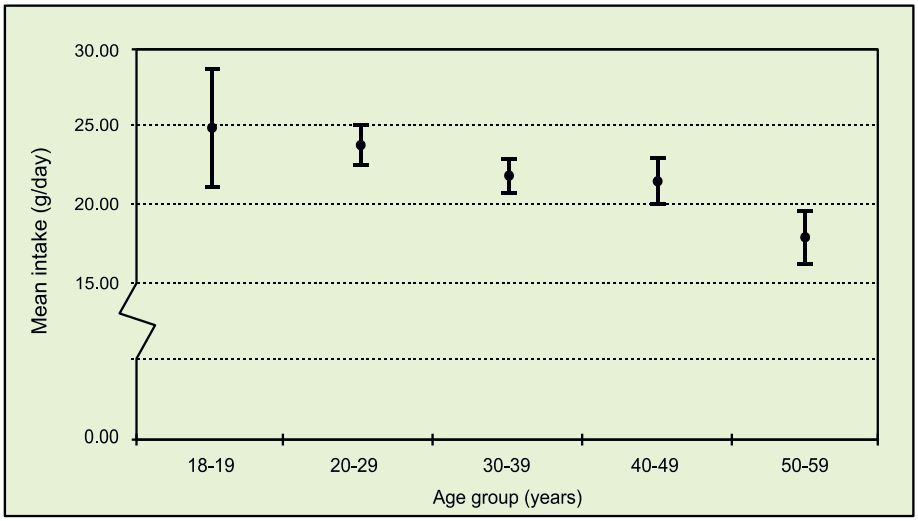

Figure 7.5.88: Local *kuih* intake and 95 % CI by age group

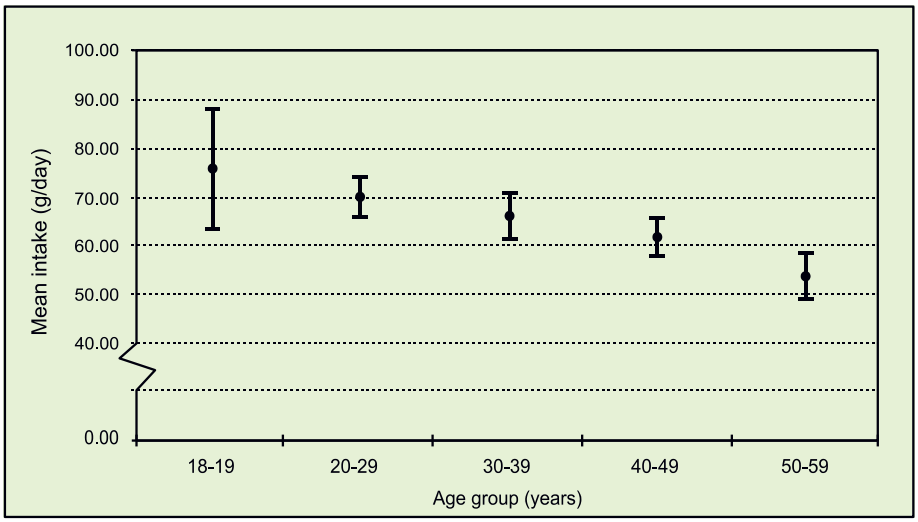

Figure 7.5.89: Wheat noodles intake and 95 % CI by age group

Figure 7.5.90: Rice noodles intake and 95 % CI by age group

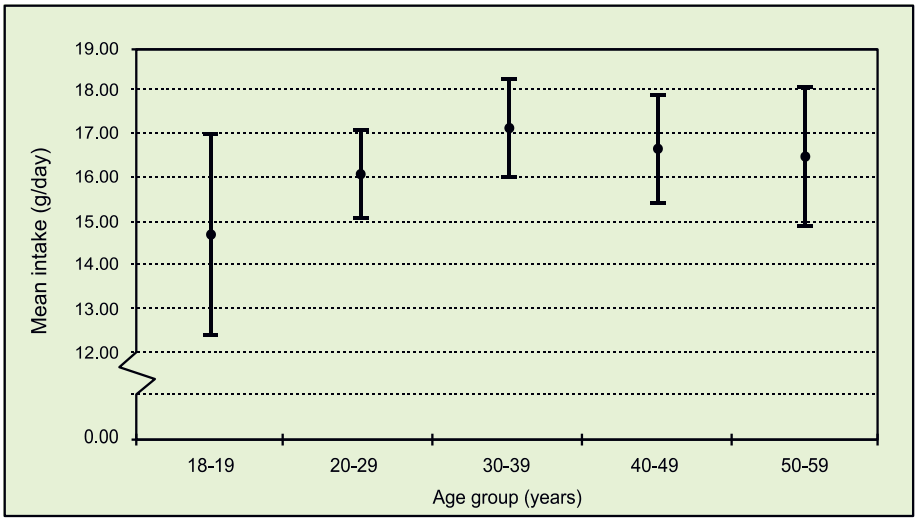

Figure 7.5.91: Non-leafy vegetables intake and 95 % CI by age group

7.5.5.5 Mean food intake among men and women in various age groups

Comparing the mean intake of men and women in different age groups revealed that in all age groups, men significantly consumed more rice than women, (Figure 7.5.92). However only men in the younger age groups (below 40 years) were significantly eating more noodles than women. There was no significant difference in the intakes of noodles between men and women in the older age groups (above 50 years) (Figures 7.5.93 and 7.5.94). The intakes of green leafy vegetables, marine fish and non leafy vegetables were not significantly different between men and women in all age groups (Figures 7.5.95 to 7.5.97). The egg and chicken consumption between men and women were significantly different in the below 50 years age group. No significant difference was shown for the above 50 years age group (Figures 7.5.99 and 7.5.100).

Figure 7.5.92: Rice intake and 95 % CI among men and women in various age groups

Figure 7.5.93: Wheat noodles intake and 95 % CI among men and women in various age groups

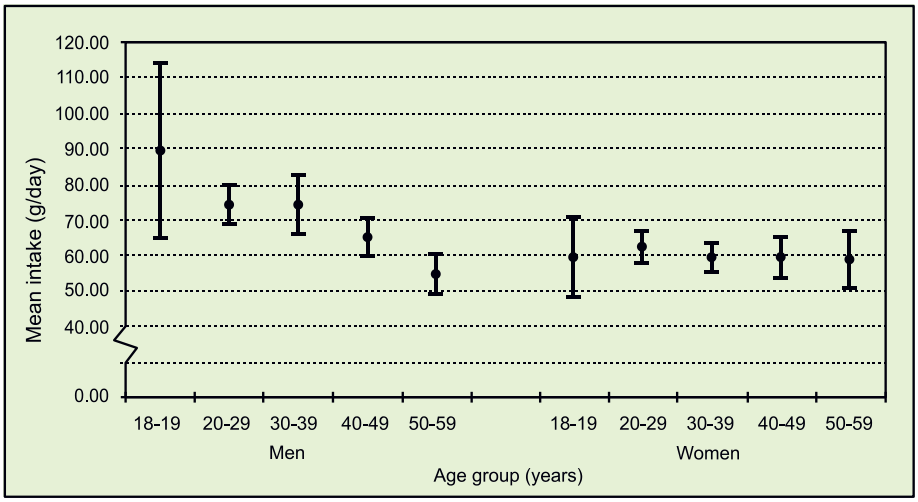

Figure 7.5.94: Rice noodles intake and 95 % CI among men and women in various age groups

Figure 7.5.95: Green leafy vegetables intake and 95 % CI among men and women in various age groups

Figure 7.5.96: Marine fish intake and 95 % CI among men and women in various age groups

Figure 7.5.97: Non leafy vegetables intake and 95 % CI among men and women in various age groups

Figure 7.5.98: Local *kuih* intake and 95 % CI among men and women in various age groups

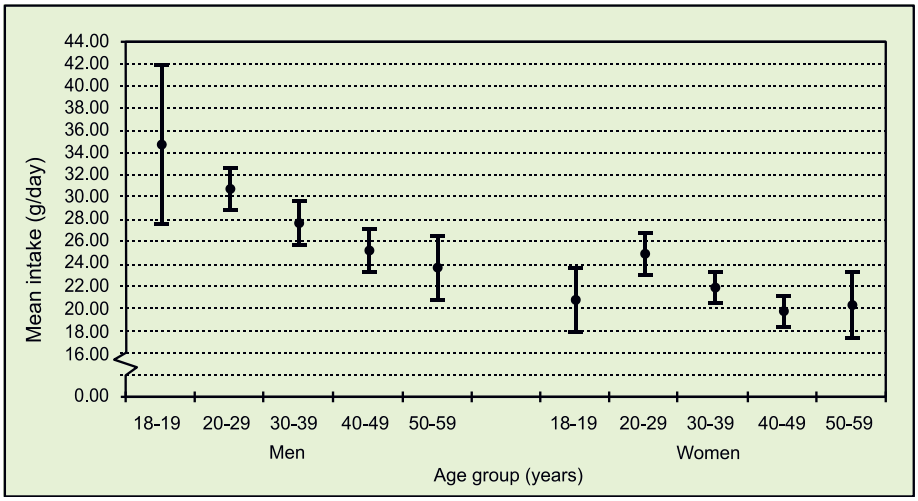

Figure 7.5.99: Chicken egg intake and 95 % CI among men and women in various age groups

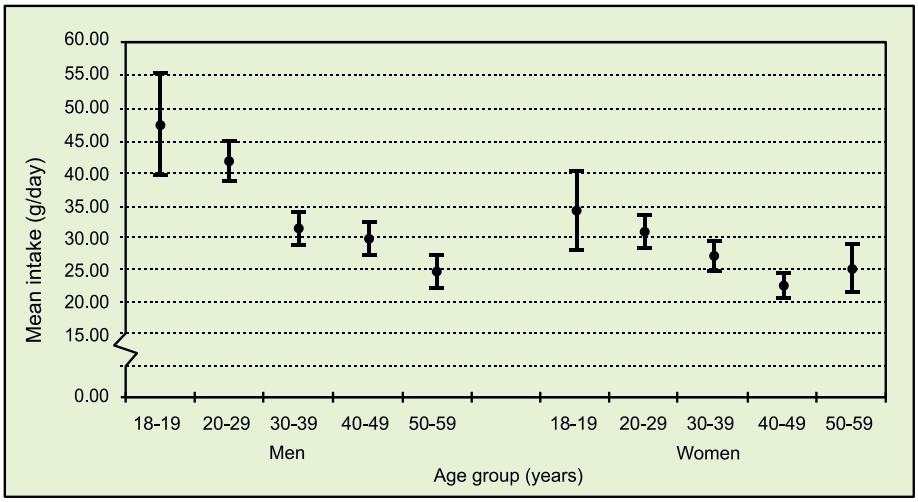

Figure 7.5.100: Chicken intake among and 95 % CI men and women in various age groups

7.5.6 Comparison of daily food intake with the recommendations of the Malaysian Food Pyramid

The Malaysian Food Pyramid recommends that individuals from the age two years and above should consume daily eight to twelve servings of cereal and cereal products (cereal group), at least five servings of fruits and vegetables (fruit group), two to three servings of fish, chicken, meat and legumes (meat group) and one to two servings of milk daily (milk group), (Malaysian Dietary Guidelines, 1999).

In calculating the number of serving sizes consumed per day, all the food items in the FFQ were categorized into the following food groups:

1) Cereal, cereal products and tuber
2) Fruits and vegetables
3) Meat, poultry, fish, legumes and products
4) Milk and dairy products

The mean intake of each food was converted into serving sizes and added to get the total for that food group.

The survey showed that generally the population fulfilled the intake recommendations for cereal, fruits and vegetables and the meat groups, (Table 7.5.2). It should be noted that the meat group intake exceeded the recommendation rather excessively, by as much as four to five servings per day. A breakdown of the meat group, which was a major source of protein in the diet is shown in Table 7.5.3. Protein source in the Malaysian diet were mainly provided by fish and seafood as well as legumes and their products. Other sources included meat and meat product and eggs. Our findings showed that Malaysians consumed equal proportion of animal and plant protein. The food group which should be of concern was the milk group. The population did not meet the recommendation for milk and products, consuming only 0.14 servings a day, in comparison with the one to two servings suggested per day.

Table 7.5.2: A comparison between the recommended servings to be taken per day and actual servings consumed by the adult population

Food Group	Food pyramid recommendation	No. of servings consumed per day	Meet Food Pyramid recommendation?
	No. of servings per day		
Cereal, cereal products and tuber	8 to 12	9.91	Yes
Fruits and vegetables	5	6.34	Yes
Meat, poultry, fish, legumes and products	2 to 3	8.74	Excess
Milk and dairy products	1 to 2	0.14	No

Table 7.5.3: Source of protein among the adult population

Food	No. of servings per day
Meat and product	1.18
Fish and Seafood	3.04
Egg	0.28
Legumes and products	4.50

7.5.6.1 A comparison between the recommendations of the Malaysian Food Pyramid and the habitual food intake, among adult men and women in Malaysia

Table 7.5.4 shows the average servings per day of four main food groups taken by adult men and women and comparing them to the Malaysian Food Pyramid. Generally men consumed more number of servings for all the food groups compared to the women except for the milk group, which was higher among women. Both men and women fulfilled the recommended intake for cereals, fruit and meat groups recommendation but not the milk group. The intake of the meat group for both men and women exceeded the recommendations by nine and seven servings per day respectively. Protein sources in for both men and women were mainly contributed by legumes and products as well as fish and seafood.

Table 7.5.4: Mean number of servings per day of four food groups and comparing it to the Malaysian Food Pyramid recommendations, in men and women

Food Group	No. of servings per day		Meet Food Pyramid recommendations?	
	Men	Women	Men	Women
Cereal, cereal products and tuber	10.36	9.44	Yes	Yes
Fruits and vegetables	6.27	6.41	Yes	Yes
Meat, poultry, fish, legumes and products	9.67	7.77	Excess	Excess
Milk and dairy products	0.13	0.15	No	No

Table 7.5.5: Source of protein intake for men and women

Food	Number of servings per day	
	Men	Women
Meat and product	1.31	1.04
Fish and seafood	3.12	2.95
Egg	0.31	0.24
Legumes and products	5.23	3.75

7.5.6.2 A comparison between the Malaysian Food Pyramid recommended servings per day and the habitual food intake of adults, by zone

The average daily intake of the four main food groups in various zones are shown in Table 7.5.6. The adult population in all zones fulfilled the recommendations for intake of cereals, fruits and vegetables and the meat groups. The Sabah population consumed the highest number of servings per day for cereal group, while the Sarawak population took the most number of servings per day for fruits and vegetables group. The intake of meat group was high, thus exceeding the recommendation by as much as four to six servings per day. Protein sources in the zones were mainly from fish, seafood, legumes and products. The intake of legumes and products was highest in Sabah and lowest in the southern. The consumption of the milk group did not meet the recommendations in all zones. The intake of milk was lowest in Sabah.

Table 7.5.6: Mean number of servings per day of four food groups and comparing it to the Malaysian Food Pyramid recommendation in various zones

Zones	Cereal, cereal products and tubers		Fruits and Vegetables	
	No. of servings per day	Meet Food Pyramid recommendations?	No. of servings per day	Meet Food Pyramid recommendations?
Southern	9.27	Yes	6.21	Yes
Central	9.49	Yes	5.90	Yes
East Coast	10.14	Yes	5.95	Yes
Northern	10.02	Yes	5.98	Yes
Sabah	11.95	Yes	7.09	Yes
Sarawak	10.95	Yes	9.10	Yes

Zones	Meat, poultry, fish, legumes and products		Milk and Dairy products	
	No. of servings per day	Meet Food Pyramid recommendations?	No. of servings per day	Meet Food Pyramid recommendations?
Southern	7.80	Excess	0.15	No
Central	8.53	Excess	0.16	No
East Coast	9.67	Excess	0.13	No
Northern	9.27	Excess	0.14	No
Sabah	9.75	Excess	0.09	No
Sarawak	8.93	Excess	0.11	No

Table 7.5.7: Source of protein intake in various zones

Food	Number of servings per day					
	Southern	Central	East coast	Northern	Sabah	Sarawak
Meat and product	1.10	1.24	1.00	0.96	1.05	1.78
Fish and seafood	2.93	2.78	3.66	3.48	3.34	2.61
Egg	0.29	0.25	0.28	0.29	0.26	0.35
Legumes and products	3.60	4.54	5.26	4.75	5.45	4.36

7.5.6.3 A comparison between the Malaysian Food Pyramid recommended servings per day and the habitual food intake of adults in urban and rural areas

Table 7.5.8 indicates the average daily food intake of the four main food groups for the urban and rural adult population. The rural adults consumed more cereal, fruits and the meat groups than the urban adults. Both the urban and rural adult population fulfilled the recommended intake for cereals, fruit and the meat groups. The urban population drank more milk, however the milk intake did not meet recommendations in both strata. The intake of the meat group was excessive in both urban and rural, however the intake was higher in the rural area. Protein sources in the diet of the rural and urban population were mainly contributed by fish and seafood as well as legumes and products. The intake of legumes and products was higher in the rural compared to the urban adults.

Table 7.5.8: Mean number of servings per day of four food groups and comparing it to the Malaysian Food Pyramid recommendations by strata

Food Group	Number of servings per day		Meet Food Pyramid recommendations?	
	Urban	Rural	Urban	Rural
Cereal, cereal products and tubers	9.55	10.43	Yes	Yes
Fruits and vegetables	6.25	6.49	Yes	Yes
Meat, poultry, fish, legumes and products	8.29	9.40	Excess	Excess
Milk and dairy products	0.16	0.10	No	No

Table 7.5.9: Source of protein intake among urban and rural adults

Food	Number of servings per day	
	Urban	Rural
Meat and product	1.30	1.0
Fish and seafood	2.77	3.43
Egg	0.27	0.29
Legumes and products	4.17	5.00

7.5.6.4 A comparison between the Malaysian Food Pyramid recommended servings per day and the habitual food intake of adults in various ethnic groups

The mean daily food intake of various ethnic groups is demonstrated in Table 7.5.10. All the ethnic groups except Orang Asli meet the recommended intake for cereal group. Orang Asli group consumed the least intake of the cereals as well as the fruit group. All ethnic groups fulfilled the meat group recommendation and was in excess of recommendations, except for Orang Asli which just fulfilled the recommendations. Protein sources in the diet of all ethnic groups were mainly contributed by legumes and products. Milk intake was poor in all ethnic groups, they did not meet the recommendations.

Table 7.5.10: Mean number of servings per day of four food groups and comparing it to the Malaysian Food Pyramid recommendations, by ethnic group.

Ethnic Groups	Cereal, cereal products and tubers		Fruits and vegetables	
	No. of servings per day	Meet Food Pyramid recommendations?	No. of servings per day	Meet Food Pyramid recommendations?
Malay	9.89	Yes	6.33	Yes
Chinese	9.36	Yes	6.33	Yes
Indian	9.60	Yes	5.25	Yes
Orang Asli PM	4.80	No	1.36	No
Sabah Bumiputera	11.92	Yes	6.88	Yes
Sarawak Bumiputera	11.72	Yes	8.39	Yes
Other Bumiputera	11.66	Yes	7.52	Yes

Ethnic Groups	Meat, poultry, fish, legumes and products		Milk and Dairy products	
	No. of servings per day	Meet Food Pyramid recommendations?	No. of servings per day	Meet Food Pyramid recommendations?
Malay	9.39	Excess	0.13	No
Chinese	7.81	Excess	0.17	No
Indian	6.91	Excess	0.17	No
Orang Asli PM	3.03	Yes	0.02	No
Sabah Bumiputera	10.18	Excess	0.08	No
Sarawak Bumiputera	9.42	Excess	0.09	No
Other Bumiputera	8.24	Excess	0.08	No

Table 7.5.11: Source of protein intake for various ethnic groups

Food	Number of serving per day						
	Malay	Chinese	Indian	Orang Asli PM	Sabah Bumiputera	Sarawak Bumiputera	Other Bumiputera
Meat and product	1.02	1.72	0.65	0.42	0.94	1.62	0.93
Fish and seafood	3.55	2.32	1.91	1.17	3.30	2.98	3.31
Egg	0.30	0.26	0.19	0.14	0.25	0.31	0.32
Legumes and products	4.77	3.71	4.39	1.30	6.06	4.76	3.93

7.5.6.5 A comparison between the Malaysian Food Pyramid recommended servings per day and the habitual food intake of adult in various age groups

Table 7.5.12 indicates the mean daily food intake of the Malaysian population by age groups. The consumption of foods in the cereal group and meat group decreased with age. All age groups fulfilled the cereal, fruit and meat group recommendation Again milk intake did not meet the recommendations in all age groups.

Table 7.5.12: Mean number of servings per day of four food groups and comparing it to the Malaysian Food Pyramid recommendations by age group

Age Group (year)	Cereal, cereal products and tubers		Fruits and vegetables	
	No. of servings per day	Meet Food Pyramid recommendations?	No. of servings per day	Meet Food Pyramid recommendations?
18 -19	10.35	Yes	6.09	Yes
20 - 29	10.10	Yes	6.48	Yes
30 - 39	9.97	Yes	6.44	Yes
40 - 49	9.64	Yes	6.38	Yes
50 - 59	9.59	Yes	5.95	Yes

Age Group (year)	Meat, poultry, fish and products		Milk and dairy products	
	No. of servings per day	Meet Food Pyramid recommendations?	No. of servings per day	Meet Food Pyramid recommendations?
18 -19	9.71	Excess	0.17	No
20 - 29	9.06	Excess	0.14	No
30 - 39	8.85	Excess	0.13	No
40 - 49	8.87	Excess	0.14	No
50 - 59	7.67	Excess	0.16	No

Table 7.5.13: Source of protein intake in various age groups

Food	Number of servings per day				
	18 – 19 years	20 – 29 years	30 – 39 years	40 – 49 years	50 – 59 years
Meat and product	1.51	1.34	1.12	1.03	0.89
Fish and seafood	3.32	3.11	3.15	2.94	2.77
Egg	0.31	0.31	0.27	0.25	0.24
Legumes and products	4.84	4.58	4.52	4.90	4.08

7.6 DISCUSSIONS

The discussions will highlight the important findings obtained in this survey with regards to the habitual food intake of Malaysians. The specific objectives were to determine foods and beverages frequently consumed daily by the population as well as to establish the food consumption pattern of ten food items consumed per day by a majority of the population. The outcome as to whether Malaysians meet their Food Pyramid recommendations will also be discussed.

7.6.1 Habitual food intake

Overall, there were many food items which Malaysians consumed daily. This finding was encouraging as it was in the recommendation of the Malaysian Dietary Guideline (1999) that the population should consume a variety of foods. A diet can be considered as having variety when it consists of all food groups in the Malaysian food pyramid. Different food sources in each food group contribute the various nutrients required in the diet. Only two food items were eaten every day by a majority of the population. Cooked rice (*nasi putih*) was eaten by 97% of the population twice everyday and on average they ate 2½ plates of rice per day. The other food item was added sugar (4 teaspoons per day) consumed by 59% of population everyday, usually in the beverages such as tea, coffee and chocolate based milk. Other food items eaten daily were fish, particularly marine fish (one medium fish), green leafy vegetables (⅔ cups) and sweetened condensed milk (three teaspoons per day). It should be recognized that the adult Malaysians eat almost similar foods when comparing intake in various zones, in urban and rural areas, among men and women and even in different age groups. The top four food items frequently eaten were comparable. However subtle differences were observed. For example, people in the east coast ate more *budu* and *ulam.* In contrast more people in Sarawak consumed chili and tomato sauces.

Among the rural and urban populations common food items consumed were rice, sugar, leafy vegetables, marine fish, sweetened condensed milk, local *kueh*, anchovy and biscuits. In contrast urban dwellers ate chicken and eggs. The same results were shown among men, whereby they eat chicken and eggs more than women. There could be several possible reasons for this eating pattern .The availability of a variety of foods i.e. chicken and egg and their affordability might be a reason as to why these were eaten more in the urban and among men. In the urban environment, the lifestyle of the population is usually more hectic in comparison to their rural counterparts. For example fast foods restaurants, 24-hour coffee shops and convenience stores are more abundant in the urban area, thus providing access to ready-to-eat chicken and egg dishes. Furthermore the price is considered affordable by the urban residents. Women were shown to be drinkers of full cream milk compared to men. This finding indicates that women are probably more likely to be aware and more knowledgeable about milk nutrition. This is especially so as milk drinking is associated with lower risk of osteoporosis (Chee *et al*. 2002), thus the higher frequency of milk intake among women.

Irrespective of age groups, rice, sugar, fish, particularly marine fish and green leafy vegetables were consumed more than other foods. Among the below 20 years age group, chicken was consumed at least once a day, while this pattern of intake was not shown in the older age groups. Our findings showed that full cream milk was consumed daily by 14.81 % to 23.45 % of adults above 20 years old. However the amount consumed was below the recommendations.

7.6.2 Habitual beverage intake

Our results found that adult Malaysians had a satisfactory habit of drinking plain water. It was shown that on average they consumed at least six glasses of plain water daily. The recommended intake is at least 6 to 8 glasses a day (Malaysian Dietary Guideline,1999). It should be noted that the water intake recommendation include plain water, other beverages, water from fruits and vegetable as well as soups. Other beverages consumed daily were tea, coffee, chocolate based drinks and cordial. Soft drinks or carbonated drinks was not listed as the top five beverage consumed everyday. Our study showed that people in the rural, in the east coast and Sarawak, women and the teenagers (less than 20 years) drank less plain water. Alternatively, these groups consumed more beverages such as tea, coffee, chocolate based drink and cordial.

7.6.3 Meeting the Malaysian Food Pyramid recommendation

The Malaysians Dietary Guidelines recommend that we should eat a variety of foods to ensure that all the nutrients required by the body will be provided. The results from this survey indicated that generally adult Malaysians fulfilled some of the guidelines, for example, they met the recommendations for cereal group, fruits and vegetable groups and meat group. On the other hand they were well below meeting the suggested intake for the milk group. The two food groups which should be of concern were the meat and milk group. While the consumption of meat group definitely fulfilled the recommendation, however the number of servings consumed per day was very much beyond the suggested intake. Malaysians consumed almost nine servings of meat group per day as opposed to two to three servings per day as recommended. It should be noted that this meat group consumed included protein foods such as meat, chicken, fish and seafood, egg and legumes. Our findings demonstrated that while the intake of meat group was high, food sources of the meat group were supplied by an equal; meaning almost an equal number of servings for meat or chicken, fish or seafood and legumes were consumed. Various studies have also shown that fish and seafood were consumed daily by various communities (Norimah & Haja 2003; Lim & Chee, 1998). Despite this very acceptable ratio,

Malaysians still consume too much protein foods. Our results were supported by a few community studies which showed that Malaysians almost always meet the reference nutrient intake (RNI) for protein (Chee *et al*.,1997; Norimah & Riza,1999; Suzana et al., 2000; Chee & Lee 2003).

The more worrying trend was the very poor intake of milk. Generally milk consumption was not met by the general population, whether they were from rural or urban, from all zones in Malaysia, all ethnic groups, both sexes and all age groups. Malaysians tended to consume milk in the form of sweetened condensed milk which was habitually added to beverages such as *teh tarik, kopi and* chocolate flavoured beverages. Our results showed that on average Malaysians consumed about 30 g sweetened condensed milk (equivalent to three teaspoon) per day and 21g sugar (equivalent to four teaspoon) per day, amounting to approximately 7 teaspoon of sugar per day. Chee et al. (2002) reported that Malaysians could be regarded as non milk drinking population. Thus it was very important to educate the population the importance of drinking milk especially as a source of calcium in the diet. This habit of milk drinking should be instilled from young. Some local studies have shown that only 31% of adolescents consume milk everyday (Norimah & Choong, 2004) while 35% among primary school boys (Au Yong & Norimah, 2004) and 40% among primary school girls (Gan & Norimah, 2004).

7.7 CONCLUSIONS

A majority of the adult Malaysian population consumed rice twice a day with an average intake of 2½ plates per day. Other food items eaten everyday included green leafy vegetables and marine fish. They eat almost similar foods when compared either by zone, strata, sex and even age groups. However there were subtle differences especially in various zones. Malaysians habitually drink six glasses of plain water a day. Other beverages drank were tea, coffee and chocolate flavoured drinks and cordial.

There were three main areas of concern which could be highlighted from this Malaysian Adult Nutrition Survey. Firstly it has been widely speculated that Malaysians consumed too much sugar. This survey demonstrated that our population were taking as much as 7 teaspoon of sugar per day, contributing to about 6% of total caloric intake daily (RNI, 2006) from refined sugar. Secondly, this survey also found that Malaysians consumed too much meat in their diet. Although meat is a good source of protein, it also provides fats, cholesterol and sodium to the diet. This excessive intake of sugar, fats, cholesterol and sodium may increase the risk of non communicable diseases such as diabetes, hypertension, cancer and heart disease (Hu et al., 1997; Salmeron et al., 2001).

Thirdly, while the sugar and meat consumption were excessive, the population did not drink enough milk.

Overall, majority of the Malaysian adult population meet the Malaysian Dietary Guidelines recommendations for most food groups except for the milk. The group which needed particular attention was the Orang Asli which did not fulfill the recommended intake of all the food groups except for the meat group. Thus this group would be the most vulnerable to nutrient deficiencies.

Despite efforts by the Ministry of Health in creating awareness and providing nutrition education to the community with their Healthy Lifestyle Campaigns for 15 years, the results from this survey showed that the population had not improved their eating habits. Hence identification of simple and effective nutrition strategies need to be done to continuously educate the people and improve their nutrition knowledge and awareness as well as to motivate a change in nutrition behaviour.

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APPENDIX 7

Habitual Food Intake of Adults Aged 18 to 59 Years
Malaysian Adult Nutrition Survey 2003

KAJIAN PENGAMBILAN MAKANAN MALAYSIA 2002 / 2003

KEKERAPAN PENGAMBILAN MAKANAN DAN SUPLEMEN

ID Peserta	Negeri		Daerah Banci		BP			TK				No. Isirumah	

BAHAGIAN 1: BORANG KEKERAPAN PENGAMBILAN MAKANAN

Kod	Jenis makanan **A. Bijirin dan hasil bijirin**	Kekerapan pengambilan					Ukuran Sajian (Pilih satu Jenis ukuran sahaja)	Berapa banyak sajian setiap kali makan
		Berapa kali sehari	Berapa kali seminggu	Berapa kali sebulan	Berapa kali setahun	Tidak makan		
A1	*Nasi						Pinggan	
							Mangkuk cina	
							Cawan	
							Senduk	
A2	Bubur nasi						Mangkuk Sedang	
							Cawan	
							Senduk	
A3	*Pulut						Mangkuk cina	
							Cawan	
							Senduk	
A4	Mee kuning/mee siput/ mee segera						Pinggan lengkung	
							Pinggan	
							Mangkuk cina	
							Senduk	
A5	Mihun/kueh teow/laksa/ laksam						Pinggan lengkung	
							Pinggan	
							Mangkuk cina	
							senduk	
A6	*Loh shi fun*						Mangkuk cina	
A7	*Pasta						Pinggan	
							Senduk	
A8	*Sagu						Potong	
							Cawan	
							Sudu	
A9	*Roti						Keping	
A10	Roti bun						Biji	
A11	*Roti canai						Keping	
A12	Capati						Keping	
A13	Tosai						Keping	
A14	*Bijirin sarapan pagi						Cawan	
							Mangkuk cina	
A15	*Bijirin tersedia perlu dibancuh						Mangkuk cina	
							Cawan	
A16	Pizza						Potong	
A17	*Jagung						Tongkol	
							Cawan	

Kod	Jenis makanan **B. Daging dan hasil daging**	Kekerapan pengambilan					Ukuran Sajian (Pilih satu Jenis ukuran sahaja)	Berapa banyak sajian setiap kali makan
		Berapa kali sehari	Berapa kali seminggu	Berapa kali sebulan	Berapa kali setahun	Tidak makan		
B1	Ayam						Ketul	
B2	Lembu / kerbau						Kotak mancis	
B3	Kambing						Kotak mancis	
B4	Daging burger						Keping	
B5	Sosej / hotdog / frankfurter						Ketul	
B6	Nugget						Ketul	
B7	Bebola ayam/ketam/udang						Ketul	
B8	Itik						Ketul	
B9	*Ham						Keping	
B10	*Bacon						Keping	
B11	*Luncheon meat						Keping	
B12	*Babi (Bagi peserta bukan Islam)						Kotak mancis	

Kod	Jenis makanan **C. Ikan dan makanan laut**	Kekerapan pengambilan					Ukuran Sajian (Pilih satu Jenis ukuran sahaja)	Berapa banyak sajian setiap kali makan
		Berapa kali sehari	Berapa kali seminggu	Berapa kali sebulan	Berapa kali setahun	Tidak makan		
C1	*Ikan laut						Keping	
							Ekor	
C2	*Ikan air tawar						Keping	
							Ekor	
C3	Ikan bilis						Sudu makan	
C4	*Ikan dalam tin						Ekor	
C5	*Kekerang						Sudu makan	
C6	Udang basah						Ekor sederhana	
C7	Sotong basah						Potong sederhana	
C8	Sotong kering						Keping sederhana	
							Potong sederhana	
C9	Ketam						Ekor	
C10	*Ikan kering						Keping Ekor	
C11	Bebola ikan/kek ikan						Bebola Ketul	
C12	Keropok lekor						Ketul	

Kod	Jenis makanan D. Telur	Kekerapan pengambilan					Ukuran Sajian (Pilih satu Jenis ukuran sahaja)	Berapa banyak sajian setiap kali makan
		Berapa kali sehari	Berapa kali seminggu	Berapa kali sebulan	Berapa kali setahun	Tidak makan		
D1	Telur ayam						Biji	
D2	Telur itik						Biji	
D3	Telur puyuh						Biji	
D4	Telur masin						Biji	

Kod	Jenis makanan E. Kekacang dan hasilnya	Kekerapan pengambilan					Ukuran Sajian (Pilih satu Jenis ukuran sahaja)	Berapa banyak sajian setiap kali makan
		Berapa kali sehari	Berapa kali seminggu	Berapa kali sebulan	Berapa kali setahun	Tidak makan		
E1	*Kekacang						Sudu makan	
E2	Tauhu						Keping	
E3	Tempe						Keping Sudu makan	
E4	Kacang tanah						Sudu makan	

Kod	Jenis makanan F. Susu dan hasil tenusu	Kekerapan pengambilan					Ukuran Sajian (Pilih satu Jenis ukuran sahaja)	Berapa banyak sajian setiap kali makan
		Berapa kali sehari	Berapa kali seminggu	Berapa kali sebulan	Berapa kali setahun	Tidak makan		
F1	Susu segar / UHT						Cawan Gelas	
F2	Susu tepung						Sudu makan	
F3	Susu sejat / cair						Sudu makan	
F4	Susu pekat manis						Sudu makan	
F5	Yogurt / lassi / tairu						Cawan Sudu makan	
F6	Keju						Keping	

Kod	Jenis makanan G. Minuman	Kekerapan pengambilan					Ukuran Sajian (Pilih satu Jenis ukuran sahaja)	Berapa banyak sajian setiap kali makan
		Berapa kali sehari	Berapa kali seminggu	Berapa kali sebulan	Berapa kali setahun	Tidak makan		
G1	*Sayuran berdaun hijau						Cawan	
G2	*Sayuran kacang						Cawan	
G3	*Sayuran berubi						Cawan	
G4	*Sayuran kobis						Cawan	
G5	*Petola / labu / timun						Cawan	
G6	*Sayuran asin/kering						Cawan	
G7	Ulam-ulam						Cawan	
G8	Putik jagung						Sudu makan	
G9	*Cendawan basah / kering						Cawan	
G10	Taugeh						Cawan	

Kod	Jenis makanan H. Buah-buahan	Kekerapan pengambilan					Ukuran Sajian (Pilih satu Jenis ukuran sahaja)	Berapa banyak sajian setiap kali makan
		Berapa kali sehari	Berapa kali seminggu	Berapa kali sebulan	Berapa kali setahun	Tidak makan		
H1	Betik						Potong	
H2	Jambu batu						Keping	
H3	Limau manis tempatan						Biji	
H4	Mangga						Potong	
H5	Nenas						Potong	
H6	*Pisang						Biji	
H7	Tembikai						Potong	
H8	Belimbing						Biji	
H9	Nangka						Ulas	
H10	Epal						Biji	
H11	Oren/mandarin						Biji	
H12	Pir/lai						Biji	
H13	Anggur						Biji	
H14	Durian						Ulas	
H15	Rambutan						Biji	
H16	Longan segar						Biji	
H17	Laici segar						Biji	
H18	Tembikai susu						Potong	
H19	*Buahan dalam tin						Potong	
H20	*Buahan kering						Potong	

Kod	Jenis makanan **I. Minuman**	Kekerapan pengambilan					Ukuran Sajian (Pilih satu Jenis ukuran sahaja)	Berapa banyak sajian setiap kali makan
		Berapa kali sehari	Berapa kali seminggu	Berapa kali sebulan	Berapa kali setahun	Tidak makan		
I1	Air kosong						Gelas	
I2	Teh						Cawan	
I3	*Kopi						Cawan	
I4	*Minuman bercoklat						Cawan	
I5	Minuman bermalt (horlick / nesto malt)						Cawan	
I6	*Sirap Kordial						Gelas	
I7	*Jus buah-buahan						Cawan	
I8	Minuman bergas						Gelas/Tin	
I9	Air kacang soya						Gelas Kotak	
I10	Minuman botani/herba						Gelas Kotak	
I11	*Minuman bertenaga						Gelas	
							Kotak	

Kod	Jenis makanan **J. Minuman beralkohol *khusus bagi peserta bukan Islam***	Kekerapan pengambilan					Ukuran Sajian (Pilih satu Jenis ukuran sahaja)	Berapa banyak sajian setiap kali makan
		Berapa kali sehari	Berapa kali seminggu	Berapa kali sebulan	Berapa kali setahun	Tidak makan		
J1	Syandi						Tin	
J2	Bir						Gelas Tin	
							Botol	
J3	Wain						Gelas wain	
J4	*Spirit						Gelas	
J5	*Likeur						Gelas	

Kod	Jenis makanan K. Konfeksi	Kekerapan pengambilan					Ukuran Sajian (Pilih satu Jenis ukuran sahaja)	Berapa banyak sajian setiap kali makan
		Berapa kali sehari	Berapa kali seminggu	Berapa kali sebulan	Berapa kali setahun	Tidak makan		
K1	*Kuih tempatan						Ketul	
K2	Kek						Potong	
K3	Biskut						Keping	
K4	Gula-gula						Ketul	
							Potonq	
K5	Aiskrim (susu)						Cawan	
							Scoop	
K6	*ABC (air batu campur) / ais / lolipop						Mangkuk	
							Batang	
K7	Agar-agar / jeli / kastard						Cawan	
							Potong	
K9	Snek / keropok / kerepek						Keping	

Kod	Jenis makanan L. Sapuan roti	Kekerapan pengambilan					Ukuran Sajian (Pilih satu Jenis ukuran sahaja)	Berapa banyak sajian setiap kali makan
		Berapa kali sehari	Berapa kali seminggu	Berapa kali sebulan	Berapa kali setahun	Tidak makan		
L1	Jem						Sudu teh	
L2	Sri kaya						Sudu teh	
L3	Mentega						Sudu teh	
L4	Majerin						Sudu teh	
L5	Mentega kacang						Sudu teh	
L6	Krim keju						Sudu teh	

Kod	Jenis makanan M. Perencah / perasa	Kekerapan pengambilan					Ukuran Sajian (Pilih satu Jenis ukuran sahaja)	Berapa banyak sajian setiap kali makan
		Berapa kali sehari	Berapa kali seminggu	Berapa kali sebulan	Berapa kali setahun	Tidak makan		
M1	*Gula						Sudu teh	
M2	*Madu						Sudu teh	
M3	*Sambal belacan						Sudu makan	
M4	*Budu						Sudu teh	
M5	*Cencalok						Sudu teh	
M6	*Kicap pekat						Sudu teh	
M7	*Kicap cair						Sudu makan	
M8	*Sos cili / tomato						Sudu makan	
M9	*Sos tiram						Sudu teh	
M10	*Sos ikan						Sudu teh	
M11	*Petis / *heko / *otak udang						Sudu teh	

Table 1: Serving size and weight (g)

	Type of food	Serving size	Weight (g)
1	Nasi	pinggan	120
2	Bubur Nasi	mangkuk sedang	300
3	Pulut	senduk	100
4	Mee kuning/mee siput/mee segera	pinggan	288
5	Mihun/kueh teow/laksa/laksam	pinggan	330
6	Loh Shi Fun	mangkuk cina	141
7	Pasta	pinggan	244
8	Sagu	cawan	100
9	Roti	keping	34
10	Roti Bun	biji	62
11	Roti Canai	keping	93
12	Capati	keping	100
13	Tosai	keping	126
14	Bijirin	cawan	40
15	Bijirin tersedia perlu dibancuh	mangkuk cina	60
16	Pizza	potong	77
17	Jagung	cawan	118
18	Ayam	ketul	59
19	Lembu/Kerbau	kotak mancis	30
20	Kambing	kotak mancis	30
21	Daging burger	keping	74.3
22	Sosej/hotdog/frankfurter	ketul	34
23	Nugget	ketul	18
24	Bebola ayam/ketam/udang	ketul	4
25	Itik	ketul	30
26	Ham	keping	45
27	Bacon	keping	26
28	Luncheon meat	keping	47
29	Babi	keping	30
30	Ikan laut	ekor	64
31	Ikan air tawar	ekor	84
32	Ikan bilis	sudu makan	9
33	Ikan dalam tin	ekor	52
34	Kekerang	sudu makan	25
35	Udang basah	ekor sederhana	30

	Type of food	Serving size	Weight (g)
36	Sotong basah	potong sederhana	13
37	Sotong kering	ekor	68
38	Ketam	keping	10
39	Ikan kering	bebola	10
40	Bebola ikan/kek ikan	ketul	10
41	Keropok lekor	ekor sederhana	30
42	Telur ayam	biji	54
43	Telur itik	biji	73
44	Telur puyuh	biji	10
45	Telur masin	biji	97
46	Kekacang	sudu makan	8
47	Tauhu	keping	92
48	Tempe	keping	50
49	Kacang tanah	sudu makan	162
50	Susu segar/UHT	gelas	284
51	Susu tepung	sudu makan	7
52	Susu sejat/cair	sudu makan	19
53	Susu pekat manis	sudu makan	19
54	Yogurt/dadih/lassi/tairu	cawan	150
55	Keju	keping	16
56	Sayuran berdaun hijau	cawan	80
57	Sayuran kacang	cawan	72
58	Sayuran berubi	cawan	91
59	Sayuran kobis	cawan	100
60	Petola/Labu/Timun	cawan	88
61	Sayuran asin/kering	cawan	150
62	Ulam-ulam	cawan	17
63	Putik Jagung	sudu makan	14
64	Cendawan basah/kering	cawan	88
65	Taugeh	cawan	72
66	Betik	potong	140
67	Jambu Batu	keping	64
68	Limau manis tempatan	biji	78
69	Mangga	potong	28
70	Nenas	potong	106
71	Pisang	biji	43

	Type of food	Serving size	Weight (g)
72	Tembikai	potong	40
73	Belimbing	biji	174
74	Nangka	ulas	58
75	Epal	biji	167
76	Oren/Mandarin	biji	120
77	Pir/Lai	biji	157
78	Anggur	biji	8
79	Durian	ulas	26
80	Rambutan	biji	20
81	Longan segar	biji	9
82	Laici segar	biji	24
83	Tembikai susu	potong	132
84	Buahan dalam tin	potong	8
85	Buahan kering	potong	10
86	Air kosong	gelas	250
87	Air teh	cawan	200
88	Air kopi	cawan	200
89	Minuman bercoklat	cawan	200
90	Minuman bermalt	cawan	200
91	Sirap kordial	gelas	250
92	Jus buah-buahan	cawan	200
93	Minuman bergas	gelas/tin	325
94	Air Kacang Soya	gelas	250
95	Minuman botani/herba	gelas	250
96	Minuman bertenaga	gelas	250
97	Syandi	tin	355
98	Bir	tin	320
99	Wain	gelas wain	120
100	Spirit	gelas	30
101	Likeur	gelas	30
102	Kuih tempatan	ketul	30
103	Kek	potong	38
104	Biskut	keping	12
105	Gula-gula	ketul	5
106	Aiskrim susu	cawan	104

	Type of food	Serving size	Weight (g)
107	ABC ais/lollipop	mangkuk	432
108	Agar-agar/jeli/kastad	potong	71
109	Snek/keropok/kerepek	keping	3
110	Jem	sudu teh	22
111	Seri kaya	sudu teh	9
112	Mentega	sudu teh	14
113	Marjerin	sudu teh	13
114	Mentega kacang	sudu teh	16
115	Krim keju	sudu teh	11
116	Gula	sudu teh	7
117	Madu	sudu teh	10.25
118	Sambal belacan	sudu makan	16
119	Budu	sudu teh	8.2
120	Cencalok	sudu teh	16
121	Kicap pekat	sudu teh	10.1
122	Kicap cair	sudu makan	17.2
123	Sos cili/tomato	sudu makan	19.6
124	Sos tiram	sudu teh	9.95
125	Sos ikan	sudu teh	9.95
126	Petis/heko/otak udang	sudu teh	11

Table 2: Mean frequency boiled rice daily by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	2.00	0.01	1.98	2.02	6,742	13,730,200	2.06	0.01	2.04	2.09	3,274	7,040,372	1.93	0.01	1.91	1.96	3,468	6,689,827
Zone																		
Southern	1.92	0.02	1.88	1.95	1,278	2,855,298	1.98	0.03	1.93	2.03	603	1,479,323	1.85	0.02	1.80	1.89	675	1,375,975
Central	1.91	0.01	1.88	1.94	2,225	5,160,124	1.98	0.02	1.94	2.02	1,125	2,675,804	1.84	0.02	1.80	1.88	1,100	2,484,320
East coast	2.23	0.03	2.18	2.28	930	1,566,971	2.31	0.04	2.24	2.39	449	809,031	2.14	0.03	2.08	2.21	481	757,940
Northern	2.05	0.02	2.01	2.10	886	1,863,635	2.14	0.04	2.07	2.22	414	913,584	1.97	0.03	1.91	2.02	472	950,051
Sabah	2.15	0.03	2.10	2.21	731	1,114,188	2.20	0.05	2.11	2.28	357	565,830	2.11	0.03	2.05	2.18	374	548,358
Sarawak	2.06	0.02	2.01	2.10	692	1,169,984	2.06	0.04	1.98	2.15	326	596,801	2.05	0.02	2.00	2.09	366	573,184
Strata																		
Urban	1.91	0.01	1.88	1.93	3,575	8,136,340	1.97	0.05	1.94	2.01	1,759	4,167,120	1.84	0.02	1.81	1.86	1,816	3,969,220
Rural	2.14	0.01	2.11	2.16	3,167	5,593,859	2.20	0.02	2.16	2.24	1,515	2,873,252	2.08	0.02	2.05	2.11	1,652	2,720,607
Sex																		
Men	2.06	0.01	2.04	2.09	3,274	7,040,372												
Women	1.93	0.01	1.91	1.96	3,468	6,689,827												
Age group (years)																		
18-19	2.07	0.04	2.00	2.14	359	882,181	2.24	0.05	2.15	2.34	181	456,670	1.88	0.05	1.79	1.97	178	425,511
20-29	2.03	0.02	2.00	2.06	1,999	4,146,851	2.09	0.02	2.05	2.13	979	2,135,215	1.97	0.02	1.93	2.01	1,020	2,011,635
30-39	2.02	0.01	1.99	2.04	1,937	3,555,821	2.08	0.02	2.04	2.13	898	1,809,673	1.95	0.02	1.91	1.98	1,039	1,746,148
40-49	1.94	0.02	1.91	1.97	1,510	2,830,090	1.99	0.02	1.94	2.03	750	1,442,173	1.89	0.02	1.85	1.94	760	1,387,917
50-59	1.92	0.02	1.88	1.97	875	1,742,437	1.95	0.03	1.89	2.00	440	898,058	1.90	0.03	1.84	1.96	435	844,379

Table 3: Mean frequency sugar daily by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	1.97	0.02	1.94	2.01	4,034	8,153,977	2.11	0.03	2.05	2.17	1,981	4,237,052	1.83	0.02	1.79	1.87	2,053	3,916,925
Zone																		
Southern	1.75	0.04	1.68	1.83	817	1,771,272	1.92	0.06	1.80	2.04	393	912,419	1.58	0.04	1.50	1.66	424	858,854
Central	2.04	0.04	1.97	2.11	1,217	2,788,384	2.22	0.06	2.11	2.33	631	1,487,625	1.84	0.04	1.76	1.92	586	1,300,759
East coast	2.15	0.04	2.07	2.23	729	1,240,644	2.28	0.06	2.16	2.39	349	638,618	2.01	0.06	1.90	2.13	380	602,025
Northern	2.02	0.04	1.93	2.10	646	1,338,240	2.17	0.07	2.04	2.30	311	663,819	1.87	0.06	1.76	1.98	335	674,421
Sabah	2.03	0.04	1.86	2.20	220	335,026	2.02	0.14	1.74	2.30	110	190,707	2.05	0.08	1.89	2.20	110	144,319
Sarawak	1.84	0.03	1.73	1.94	405	680,411	1.75	0.08	1.59	1.90	187	343,863	1.93	0.06	1.81	2.06	218	336,547
Strata																		
Urban	1.84	0.03	1.79	1.89	1,863	4,275,722	1.97	0.04	1.89	2.04	966	2,277,964	1.70	0.03	1.64	1.77	897	1,997,758
Rural	2.12	0.03	2.07	2.17	2,171	3,878,255	2.27	0.04	2.19	2.35	1,015	1,959,088	1.96	0.03	1.90	2.02	1,156	1,919,167
Sex																		
Men	2.11	0.03	2.05	2.17	1,981	4,237,052												
Women	1.83	0.02	1.79	1.87	2,053	3,916,925												
Age group (years)																		
18-19	2.04	0.09	1.87	2.21	218	547,742	2.10	0.13	1.84	2.36	112	282,001	1.98	0.10	1.77	2.18	106	265,741
20-29	2.04	0.03	1.97	2.10	1,216	2,520,292	2.17	0.05	2.07	2.27	605	1,328,501	1.88	0.04	1.81	1.96	611	1,191,791
30-39	1.97	0.03	1.90	2.03	1,143	2,078,035	2.11	0.05	2.01	2.21	547	1,105,213	1.80	0.04	1.72	1.87	596	972,822
40-49	1.89	0.03	1.83	1.96	895	1,658,451	2.06	0.05	1.96	2.16	446	837,195	1.72	0.04	1.64	1.80	449	821,256
50-59	1.93	0.05	1.83	2.02	527	1,024,083	2.00	0.07	1.85	2.14	257	517,208	1.85	0.06	1.73	1.97	270	506,875

Table 4: Mean frequency marine fish daily by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	1.61	0.01	1.59	1.64	2,972	5,734,362	1.62	0.02	1.58	1.66	1,399	2,843,594	1.61	0.02	1.57	1.65	1,573	2,890,768
Zone																		
Southern	1.55	0.03	1.48	1.61	486	1,035,948	1.62	0.05	1.52	1.73	194	465,037	1.48	0.06	1.41	1.56	292	570,912
Central	1.41	0.03	1.36	1.46	684	1,542,094	1.41	0.04	1.33	1.48	345	786,718	1.41	0.05	1.34	1.48	339	755,376
East coast	1.90	0.03	1.84	1.96	643	1,071,336	1.90	0.04	1.81	1.99	297	526,280	1.90	0.04	1.81	1.98	346	545,055
Northern	1.64	0.03	1.58	1.71	557	1,154,829	1.62	0.04	1.53	1.71	265	580,145	1.67	0.05	1.58	1.76	292	574,684
Sabah	1.81	0.04	1.74	1.89	419	651,358	1.79	0.05	1.69	1.88	214	348,221	1.84	0.06	1.73	1.95	205	303,137
Sarawak	1.31	0.04	1.22	1.40	183	278,797	1.31	0.07	1.18	1.44	84	137,194	1.31	0.04	1.20	1.43	99	141,603
Strata																		
Urban	1.48	0.02	1.44	1.52	1,300	2,812,950	1.47	0.03	1.41	1.52	644	1,422,200	1.50	0.03	1.44	1.55	656	1,390,750
Rural	1.74	0.02	1.70	1.78	1,672	2,921,412	1.77	0.03	1.72	1.83	755	1,421,394	1.71	0.03	1.66	1.76	917	1,500,019
Sex																		
Men	1.62	0.02	1.58	1.66	1,399	2,843,594												
Women	1.61	0.02	1.57	1.65	1,573	2,890,768												
Age group (years)																		
18-19	1.76	0.07	1.62	1.89	125	303,537	1.90	0.09	1.73	2.08	62	146,662	1.62	0.10	1.43	1.81	63	156,875
20-29	1.61	0.03	1.56	1.67	786	1,585,761	1.62	0.04	1.53	1.70	352	764,771	1.61	0.04	1.53	1.68	434	820,990
30-39	1.63	0.03	1.58	1.68	881	1,544,535	1.62	0.04	1.55	1.69	399	768,057	1.64	0.03	1.57	1.71	482	776,478
40-49	1.56	0.02	1.51	1.61	713	1,276,542	1.55	0.03	1.49	1.62	362	649,184	1.57	0.04	1.50	1.64	351	627,358
50-59	1.64	0.04	1.56	1.71	444	832,238	1.66	0.06	1.55	1.77	215	420,868	1.61	0.05	1.52	1.71	229	411,370

Table 5: Mean frequency green leafy vegetables daily by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	1.47	0.01	1.45	1.50	2,774	5,608,649	1.47	0.02	1.43	1.50	1,258	2,733,786	1.48	0.02	1.45	1.51	1,516	2,874,863
Zone																		
Southern	1.43	0.03	1.38	1.48	530	1,178,018	1.42	0.04	1.34	1.51	224	557,557	1.44	0.04	1.37	1.50	306	620,461
Central	1.37	0.02	1.33	1.41	840	1,945,921	1.33	0.03	1.28	1.38	400	975,012	1.41	0.04	1.35	1.47	440	970,909
East coast	1.60	0.04	1.53	1.68	303	551,448	1.59	0.06	1.47	1.70	140	267,732	1.62	0.09	1.51	1.73	163	283,716
Northern	1.61	0.04	1.53	1.68	243	525,372	1.64	0.06	1.52	1.76	112	248,759	1.58	0.06	1.47	1.68	131	276,613
Sabah	1.69	0.04	1.61	1.77	325	497,686	1.75	0.07	1.61	1.88	145	237,505	1.64	0.05	1.54	1.73	180	260,181
Sarawak	1.48	0.03	1.42	1.54	533	910,204	1.49	0.05	1.40	1.59	237	447,221	1.47	0.04	1.40	1.54	296	462,983
Strata																		
Urban	1.42	0.02	1.39	1.45	1,580	3,527,082	1.41	0.02	1.36	1.46	727	1,750,034	1.43	0.02	1.39	1.47	853	1,777,048
Rural	1.57	0.02	1.53	1.60	1,194	2,081,567	1.57	0.03	1.51	1.62	531	983,752	1.57	0.03	1.51	1.62	663	1,097,815
Sex																		
Men	1.47	0.02	1.43	1.50	1,258	2,733,786												
Women	1.48	0.02	1.45	1.51	1,516	2,874,863												
Age group (years)																		
18-19	1.55	0.06	1.43	1.67	139	339,353	1.66	0.11	1.45	1.87	63	167,988	1.44	0.07	1.31	1.57	76	171,365
20-29	1.48	0.02	1.43	1.52	798	1,621,856	1.47	0.03	1.40	1.54	356	791,993	1.49	0.03	1.43	1.55	442	829,864
30-39	1.48	0.02	1.44	1.52	799	1,451,630	1.48	0.03	1.41	1.54	350	699,388	1.48	0.03	1.42	1.53	449	752,241
40-49	1.46	0.02	1.41	1.50	663	1,236,403	1.43	0.03	1.37	1.49	326	634,119	1.49	0.03	1.42	1.55	337	602,283
50-59	1.46	0.03	1.39	1.53	340	659,465	1.44	0.05	1.34	1.53	152	318,770	1.48	0.05	1.39	1.58	188	340,695

Table 6: Mean frequency sweeten condensed milk daily by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	1.57	0.02	1.53	1.61	2,392	4,988,928	1.64	0.03	1.59	1.70	1,394	3,037,869	1.45	0.03	1.39	1.50	998	1,951,059
Zone																		
Southern	1.53	0.04	1.45	1.61	570	1,282,113	1.62	0.05	1.52	1.73	331	797,122	1.38	0.03	1.26	1.49	239	484,991
Central	1.55	0.03	1.48	1.61	841	1,943,462	1.60	0.04	1.52	1.68	529	1,234,206	1.45	0.03	1.36	1.54	312	709,256
East coast	1.69	0.06	1.57	1.81	374	653,319	1.80	0.08	1.64	1.97	210	385,316	1.52	0.05	1.35	1.69	164	268,003
Northern	1.59	0.07	1.46	1.73	273	557,343	1.69	0.10	1.50	1.89	163	348,053	1.43	0.05	1.29	1.57	110	209,291
Sabah	1.64	0.06	1.52	1.75	219	337,388	1.80	0.08	1.63	1.96	104	150,907	1.51	0.08	1.36	1.67	115	186,481
Sarawak	1.44	0.08	1.28	1.60	115	215,304	1.40	0.11	1.18	1.61	57	122,266	1.49	0.07	1.27	1.71	58	93,038
Strata																		
Urban	1.50	0.03	1.45	1.55	1,264	2,912,427	1.57	0.04	1.50	1.64	743	1,754,997	1.39	0.03	1.33	1.46	521	1,157,430
Rural	1.66	0.03	1.59	1.72	1,128	2,076,501	1.74	0.04	1.65	1.83	651	1,282,872	1.52	0.05	1.43	1.62	477	793,628
Sex																		
Men	1.64	0.03	1.59	1.70	1,394	3,037,869												
Women	1.45	0.03	1.39	1.50	998	1,951,059												
Age group (years)																		
18-19	1.54	0.08	1.37	1.70	114	285,352	1.61	0.12	1.38	1.84	76	191,015	1.39	0.09	1.20	1.57	38	94,336
20-29	1.56	0.04	1.49	1.64	708	1,475,138	1.64	0.05	1.54	1.74	406	892,412	1.45	0.05	1.35	1.55	302	582,726
30-39	1.61	0.04	1.53	1.69	727	1,375,070	1.74	0.06	1.63	1.86	410	838,881	1.41	0.04	1.32	1.49	317	536,189
40-49	1.57	0.04	1.50	1.65	533	1,051,601	1.66	0.05	1.56	1.76	320	628,861	1.44	0.06	1.33	1.55	213	422,740
50-59	1.55	0.04	1.46	1.64	287	575,546	1.63	0.06	1.51	1.74	170	349,677	1.44	0.07	1.31	1.57	117	225,870

Table 7: Mean frequency full cream milk daily by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	1.41	0.02	1.37	1.45	1,162	2,407,725	1.41	0.02	1.34	1.48	380	850,594	1.41	0.04	1.36	1.46	782	1,557,130
Zone																		
Southern	1.42	0.05	1.32	1.51	227	474,938	1.39	0.09	1.21	1.56	67	166125.5	1.43	0.06	1.32	1.55	160	308,813
Central	1.41	0.03	1.35	1.47	427	1,007,054	1.44	0.05	1.34	1.55	151	367215.8	1.40	0.04	1.33	1.47	276	639,838
East coast	1.38	0.07	1.24	1.52	106	181,031	1.39	0.17	1.05	1.72	25	46068.69	1.38	0.07	1.22	1.53	81	134,962
Northern	1.39	0.05	1.29	1.48	168	377,996	1.34	0.09	1.18	1.51	56	133441.8	1.41	0.06	1.30	1.52	112	244,554
Sabah	1.49	0.06	1.37	1.61	134	193,753	1.49	0.01	1.29	1.69	52	80550.49	1.49	0.07	1.35	1.63	82	113,203
Sarawak	1.38	0.07	1.25	1.50	100	172,952	1.36	0.12	1.12	1.60	29	57191.98	1.38	0.08	1.23	1.54	71	115,760
Strata																		
Urban	1.42	0.03	1.37	1.47	674	1,544,955	1.42	0.05	1.33	1.51	231	545,082	1.41	0.03	1.35	1.47	443	999,874
Rural	1.40	0.03	1.34	1.46	488	862,769	1.40	0.06	1.28	1.52	149	305,512	1.40	0.04	1.33	1.47	339	557,257
Sex																		
Men	1.41	0.02	1.34	1.48	380	850,594												
Women	1.41	0.04	1.36	1.46	782	1,557,130												
Age group (years)																		
18-19	1.33	0.09	1.16	1.50	49	137,172	1.80	0.19	1.43	2.16	16	36,229	1.16	0.06	1.04	1.29	33	100,942
20-29	1.38	0.04	1.30	1.45	295	624,721	1.33	0.06	1.22	1.45	97	232,492	1.40	0.05	1.31	1.49	198	392,230
30-39	1.41	0.04	1.34	1.48	322	577,949	1.37	0.07	1.24	1.50	92	190,441	1.43	0.04	1.35	1.52	230	387,508
40-49	1.44	0.04	1.36	1.51	298	536,938	1.36	0.07	1.23	1.49	105	194,167	1.48	0.05	1.39	1.57	193	342,771
50-59	1.46	0.05	1.36	1.57	182	416,179	1.51	0.10	1.32	1.70	66	158,600	1.43	0.06	1.31	1.56	116	257,579

Table 8: Mean frequency bread daily by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	1.24	0.02	1.20	1.28	1,104	2,406,207	1.22	0.03	1.16	1.28	474	1,104,059	1.26	0.03	1.20	1.31	630	1,302,148
Zone																		
Southern	1.20	0.03	1.13	1.26	250	526,497	1.18	0.06	1.06	1.29	96	226,100	1.21	0.04	1.14	1.29	154	300,396
Central	1.20	0.03	1.14	1.26	415	1,020,778	1.19	0.04	1.10	1.27	189	469,872	1.22	0.04	1.14	1.29	226	550,906
East coast	1.47	0.10	1.27	1.67	127	235,613	1.45	0.13	1.19	1.72	50	99,971	1.48	0.15	1.19	1.77	77	135,642
Northern	1.23	0.05	1.13	1.33	164	376,932	1.19	0.08	1.04	1.35	66	176,631	1.26	0.07	1.14	1.38	98	200,301
Sabah	1.46	0.11	1.24	1.67	60	97,867	1.45	0.17	1.11	1.79	27	42,313	1.46	0.14	1.19	1.73	33	55,554
Sarawak	1.18	0.04	1.09	1.27	88	148,521	1.18	0.06	1.06	1.29	46	89,171	1.19	0.07	1.06	1.32	42	59,349
Strata																		
Urban	1.21	0.02	1.17	1.26	674	1,639,551	1.22	0.04	1.14	1.29	296	757,895	1.21	0.03	1.16	1.27	378	881,656
Rural	1.30	0.04	1.22	1.37	430	766,655	1.23	0.05	1.13	1.32	178	346,164	1.35	0.06	1.24	1.47	252	420,491
Sex																		
Men	1.22	0.03	1.16	1.28	474	1,104,059												
Women	1.26	0.03	1.20	1.31	630	1,302,148												
Age group (years)																		
18-19	1.18	0.06	1.06	1.30	60	151,075	1.17	0.08	1.01	1.32	36	95,869	1.20	0.11	1.00	1.41	24	55,205
20-29	1.21	0.03	1.15	1.28	303	652,636	1.19	0.05	1.09	1.29	129	300,713	1.24	0.04	1.15	1.32	174	351,923
30-39	1.25	0.04	1.18	1.33	295	556,226	1.23	0.07	1.10	1.36	114	239,836	1.27	0.04	1.19	1.35	181	316,390
40-49	1.22	0.04	1.14	1.30	257	495,744	1.22	0.06	1.10	1.34	110	211,300	1.22	0.05	1.11	1.32	147	284,443
50-59	1.32	0.05	1.22	1.42	171	403,374	1.34	0.08	1.18	1.50	79	199,994	1.30	0.07	1.17	1.44	92	203,380

Table 9: Mean frequency biscuits daily by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	1.25	0.02	1.22	1.29	1,175	2,284,791	1.26	0.03	1.20	1.32	426	888,531	1.25	0.02	1.21	1.29	749	1,396,260
Zone																		
Southern	1.13	0.03	1.08	1.19	231	489,476	1.12	0.04	1.03	1.21	72	184,826	1.14	0.04	1.07	1.22	159	304,650
Central	1.11	0.02	1.07	1.15	293	714,863	1.06	0.03	1.01	1.12	113	287,278	1.14	0.03	1.08	1.20	180	427,585
East coast	1.33	0.06	1.22	1.45	171	303,811	1.44	0.11	1.22	1.66	65	135,419	1.25	0.05	1.14	1.35	106	168,392
Northern	1.32	0.05	1.22	1.42	138	271,524	1.27	0.08	1.12	1.42	51	97,869	1.35	0.07	1.21	1.48	87	173,655
Sabah	1.55	0.09	1.37	1.73	130	192,830	1.70	0.15	1.40	2.00	51	69,998	1.46	0.07	1.24	1.69	79	122,832
Sarawak	1.46	0.05	1.36	1.56	212	312,287	1.49	0.09	1.32	1.66	74	113,141	1.45	0.06	1.33	1.57	138	199,146
Strata																		
Urban	1.18	0.02	1.13	1.22	535	1,225,896	1.15	0.03	1.09	1.22	191	466,209	1.19	0.03	1.13	1.25	344	759,687
Rural	1.34	0.03	1.29	1.40	640	1,058,895	1.38	0.05	1.27	1.48	235	422,322	1.32	0.03	1.26	1.39	405	636,573
Sex																		
Men	1.26	0.03	1.20	1.32	426	888,531												
Women	1.25	0.02	1.21	1.29	749	1,396,260												
Age group (years)																		
18-19	1.28	0.08	1.13	1.43	54	134,556	1.12	0.07	0.97	1.26	26	69,093	1.45	0.11	1.23	1.68	28	65,463
20-29	1.31	0.04	1.24	1.38	312	621,457	1.28	0.05	1.18	1.38	117	246,241	1.33	0.05	1.23	1.42	195	375,216
30-39	1.23	0.03	1.17	1.29	324	536,515	1.22	0.05	1.12	1.33	102	182,331	1.23	0.04	1.15	1.31	222	354,184
40-49	1.21	0.03	1.15	1.28	277	491,433	1.22	0.06	1.10	1.34	109	198,836	1.21	0.04	1.13	1.29	168	292,597
50-59	1.25	0.04	1.17	1.34	196	399,836	1.37	0.09	1.19	1.54	68	151,204	1.18	0.04	1.11	1.26	128	248,631

Table 10: Mean frequency local kueh daily by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	1.15	0.01	1.12	1.18	1,082	2,025,895	1.13	0.02	1.10	1.17	540	1,087,190	1.17	0.02	1.13	1.21	542	938,705
Zone																		
Southern	1.10	0.03	1.05	1.15	182	393,517	1.11	0.04	1.03	1.18	92	207,582	1.09	0.07	1.01	1.17	90	185,935
Central	1.09	0.02	1.04	1.14	205	459,259	1.03	0.02	1.01	1.06	117	286,956	1.18	1.07	1.07	1.29	88	172,303
East coast	1.17	0.03	1.11	1.22	274	430,483	1.21	0.04	1.13	1.30	132	232,192	1.11	0.03	1.04	1.18	142	198,291
Northern	1.24	0.04	1.16	1.33	171	342,881	1.19	0.05	1.09	1.29	72	149,645	1.29	0.05	1.16	1.42	99	193,237
Sabah	1.19	0.04	1.11	1.27	159	241,653	1.22	0.06	1.11	1.33	81	126,281	1.16	0.12	1.06	1.27	78	115,372
Sarawak	1.15	0.05	1.06	1.24	91	158,102	1.11	0.05	1.01	1.21	46	84,535	1.20	0.08	1.04	1.36	45	73,567
Strata																		
Urban	1.12	0.02	1.08	1.16	428	913,983	1.10	0.02	1.05	1.15	216	474,157	1.14	0.03	1.08	1.20	212	439,827
Rural	1.18	0.02	1.14	1.21	654	1,111,912	1.16	0.02	1.12	1.21	324	613,033	1.19	0.03	1.13	1.26	330	498,879
Sex																		
Men	1.13	0.02	1.10	1.17	540	1,087,190												
Women	1.17	0.02	1.13	1.21	542	938,705												
Age group (years)																		
18-19	1.15	0.06	1.04	1.26	60	134,157	1.16	0.08	1.00	1.32	31	77,553	1.14	0.07	1.00	1.27	29	56,604
20-29	1.16	0.03	1.11	1.21	308	585,633	1.13	0.03	1.07	1.19	147	300,316	1.19	0.04	1.11	1.27	161	285,317
30-39	1.11	0.02	1.07	1.15	312	566,614	1.12	0.03	1.06	1.17	153	305,171	1.11	0.03	1.04	1.17	159	261,443
40-49	1.19	0.03	1.12	1.25	264	450,082	1.17	0.04	1.10	1.25	144	261,414	1.20	0.05	1.10	1.31	120	188,669
50-59	1.19	0.05	1.10	1.28	132	230,890	1.12	0.04	1.04	1.21	63	113,503	1.26	0.08	1.10	1.41	69	117,387

Table 11: Mean frequency anchovy daily by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	1.24	0.02	1.21	1.28	877	1,674,396	1.24	0.03	1.18	1.29	391	794,266	1.25	0.03	1.20	1.30	486	880,129
Zone																		
Southern	1.20	0.04	1.11	1.28	197	423,603	1.12	0.05	1.02	1.22	80	181,115	1.26	0.07	1.13	1.39	117	242,488
Central	1.13	0.03	1.08	1.18	207	443,758	1.11	0.04	1.03	1.18	101	228,818	1.15	0.04	1.07	1.23	106	214,940
East coast	1.37	0.08	1.22	1.52	88	149,535	1.48	0.14	1.20	1.76	36	63,195	1.28	0.07	1.15	1.42	52	86,340
Northern	1.14	0.06	1.03	1.25	68	149,099	1.19	0.09	1.00	1.37	35	82,022	1.08	0.05	0.98	1.17	33	67,078
Sabah	1.42	0.20	1.02	1.81	23	28,756	1.62	0.18	1.26	1.98	8	7,544	1.34	0.26	0.82	1.86	15	21,212
Sarawak	1.37	0.04	1.30	1.45	294	479,644	1.39	0.06	1.27	1.51	131	231,573	1.36	0.05	1.27	1.45	163	248,071
Strata																		
Urban	1.19	0.03	1.13	1.24	356	756,934	1.17	0.03	1.10	1.24	175	385,998	1.21	0.04	1.12	1.30	181	370,936
Rural	1.29	0.03	1.24	1.34	521	917,462	1.30	0.04	1.21	1.38	216	408,268	1.28	0.03	1.21	1.35	305	509,194
Sex																		
Men	1.24	0.03	1.18	1.29	391	794,266												
Women	1.25	0.03	1.20	1.30	486	880,129												
Age group (years)																		
18-19	1.21	0.09	1.04	1.38	48	103,350	1.08	0.05	0.99	1.17	27	66,348	1.46	0.20	1.06	1.85	21	37,002
20-29	1.23	0.04	1.15	1.31	243	481,410	1.25	0.06	1.13	1.38	105	214,998	1.21	0.05	1.11	1.31	138	266,413
30-39	1.31	0.04	1.23	1.39	240	426,226	1.34	0.07	1.21	1.47	107	208,315	1.29	0.05	1.19	1.39	133	217,911
40-49	1.22	0.04	1.15	1.29	203	347,091	1.16	0.04	1.08	1.25	98	175,020	1.27	0.06	1.16	1.38	105	172,071
50-59	1.28	0.05	1.19	1.37	132	237,015	1.33	0.08	1.18	1.49	49	85,086	1.25	0.06	1.14	1.36	83	151,929

Table 12: Mean frequency plain water daily by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	5.83	0.04	5.75	5.90	6,623	13,553,484	6.01	0.06	5.90	6.13	3,154	6,805,693	5.64	0.05	5.54	5.73	3,469	6,747,791
Zone																		
Southern	5.64	0.09	5.46	5.81	1,277	2,859,255	5.72	0.15	5.43	6.01	588	1,449,486	5.55	0.10	5.36	5.74	689	1,409,769
Central	6.10	0.06	5.97	6.23	2,194	5,084,322	6.32	0.10	6.13	6.51	1,078	2,560,523	5.88	0.09	5.71	6.05	1,116	2,523,799
East coast	5.08	0.09	4.91	5.26	897	1,536,198	5.20	0.13	4.94	5.46	429	783,858	4.96	0.12	4.73	5.19	468	752,340
Northern	6.11	0.10	5.91	6.31	869	1,837,446	6.38	0.16	6.06	6.70	404	888,013	5.86	0.13	5.62	6.11	465	949,433
Sabah	6.24	0.11	6.02	6.46	716	1,097,525	6.56	0.17	6.22	6.90	345	553,065	5.91	0.13	5.66	6.16	371	544,460
Sarawak	5.22	0.11	5.02	5.43	670	1,138,738	5.40	0.15	5.11	5.70	310	570,748	5.05	0.15	4.75	5.34	360	567,990
Strata																		
Urban	6.02	0.05	5.92	6.13	3,504	8,003,819	6.18	0.08	6.02	6.35	1,682	4,001,084	5.86	0.07	5.74	5.99	1,822	4,002,735
Rural	5.54	0.05	5.44	5.64	3,119	5,549,665	5.77	0.08	5.61	5.93	1,472	2,804,609	5.30	0.06	5.18	5.43	1,647	2,745,056
Sex																		
Men	6.01	0.06	5.90	6.13	3,154	6,805,693												
Women	5.64	0.05	5.54	5.73	3,469	6,747,791												
Age group (years)																		
18-19	5.56	0.15	5.27	5.84	363	900,012	5.87	0.02	5.43	6.30	182	453,165	5.24	0.19	4.87	5.61	181	446,847
20-29	5.69	0.07	5.56	5.82	1,964	4,073,330	5.90	0.11	5.70	6.11	944	2,054,587	5.47	0.09	5.30	5.64	1,020	2,018,743
30-39	5.94	0.06	5.81	6.06	1,912	3,499,625	6.12	0.10	5.92	6.32	870	1,754,566	5.76	0.08	5.61	5.91	1,042	1,745,060
40-49	6.02	0.08	5.87	6.17	1,467	2,767,034	6.15	0.11	5.93	6.37	712	1,378,454	5.89	0.10	5.69	6.09	755	1,388,580
50-59	5.99	0.11	5.78	6.19	851	1,695,590	6.28	0.16	5.97	6.58	420	852,511	5.69	0.14	5.42	5.97	431	843,079

Table 13: Mean frequency tea daily by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	1.78	0.02	1.74	1.81	3,251	6,657,023	1.86	0.03	1.81	1.91	1,801	3,945,728	1.65	0.03	1.60	1.71	1,450	2,711,295
Zone																		
Southern	1.65	0.04	1.57	1.72	642	1,422,101	1.72	0.06	1.61	1.82	344	838,920	1.55	0.05	1.46	1.65	298	583,181
Central	1.81	0.03	1.74	1.87	1,163	2,735,903	1.92	0.04	1.84	2.00	707	1,691,769	1.63	0.05	1.53	1.73	456	1,044,133
East coast	1.92	0.05	1.82	2.02	568	956,850	2.02	0.07	1.88	2.16	280	523,378	1.80	0.06	1.67	1.92	288	433,472
Northern	1.70	0.05	1.60	1.81	359	745,493	1.80	0.07	1.65	1.94	204	446,090	1.57	0.07	1.43	1.70	155	299,404
Sabah	1.81	0.05	1.66	1.96	208	290,169	1.85	0.08	1.64	2.06	102	149,662	1.77	0.11	1.55	1.98	106	140,507
Sarawak	1.77	0.06	1.64	1.89	311	506,506	1.74	0.09	1.56	1.92	164	295,909	1.80	0.08	1.64	1.96	147	210,598
Strata																		
Urban	1.73	0.03	1.68	1.78	1,607	3,715,794	1.81	0.03	1.74	1.88	950	2,284,283	1.59	0.04	1.52	1.66	657	1,431,511
Rural	1.84	0.03	1.78	1.89	1,644	2,941,229	1.93	0.04	1.85	2.01	851	1,661,445	1.72	0.04	1.64	1.80	793	1,279,784
Sex																		
Men	1.86	0.03	1.81	1.91	1,801	3,945,728												
Women	1.65	0.03	1.60	1.71	1,450	2,711,295												
Age group (years)																		
18-19	1.70	0.08	1.54	1.86	156	392,059	1.72	0.11	1.52	1.93	97	235,131	1.66	0.13	1.41	1.92	59	156,927
20-29	1.74	0.03	1.67	1.80	974	2,005,068	1.80	0.04	1.72	1.89	545	1,196,836	1.64	0.05	1.55	1.73	429	808,232
30-39	1.76	0.04	1.69	1.84	891	1,618,985	1.88	0.06	1.77	1.99	458	936,697	1.61	0.04	1.53	1.69	433	682,288
40-49	1.81	0.04	1.74	1.88	765	1,426,332	1.88	0.05	1.78	1.97	435	838,465	1.72	0.05	1.62	1.82	330	587,867
50-59	1.87	0.05	1.76	1.97	434	882,572	2.00	0.07	1.86	2.15	248	526,182	1.67	0.07	1.53	1.80	186	356,389

Table 14: Mean frequency coffee daily by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	1.58	0.02	1.54	1.62	1,939	3,890,275	1.62	0.03	1.56	1.67	1,030	2,176,010	1.54	0.03	1.48	1.60	909	1,714,265
Zone																		
Southern	1.48	0.05	1.39	1.56	362	832,957	1.55	0.06	1.42	1.67	202	482,050	1.38	0.07	1.24	1.51	160	350,907
Central	1.49	0.03	1.43	1.56	626	1,433,533	1.50	0.05	1.41	1.60	318	769,280	1.48	0.05	1.38	1.57	308	664,254
East coast	1.62	0.09	1.44	1.79	131	214,991	1.69	0.12	1.47	1.92	81	148,999	1.44	0.12	1.21	1.67	50	65,992
Northern	1.47	0.05	1.37	1.57	230	457,176	1.51	0.07	1.38	1.65	120	252,893	1.42	0.07	1.27	1.56	110	204,283
Sabah	1.81	0.05	1.71	1.91	308	459,485	1.82	0.11	1.68	1.97	160	240,567	1.80	0.07	1.66	1.94	148	218,918
Sarawak	1.90	0.07	1.77	2.04	282	492,133	1.91	0.10	1.71	2.12	149	282,222	1.89	0.09	1.72	2.07	133	209,911
Strata																		
Urban	1.53	0.03	1.47	1.58	1,049	2,322,658	1.55	0.04	1.47	1.62	567	1,295,964	1.50	0.04	1.43	1.58	482	1,026,694
Rural	1.66	0.03	1.60	1.73	890	1,567,617	1.72	0.05	1.62	1.81	463	880,046	1.60	0.04	1.51	1.68	427	687,571
Sex																		
Men	1.62	0.03	1.56	1.67	1,030	2,176,010												
Women	1.54	0.03	1.48	1.60	909	1,714,265												
Age group (years)																		
18-19	1.51	0.09	1.33	1.69	80	211,713	1.41	0.10	1.21	1.62	49	117,140	1.63	0.15	1.34	1.92	31	94,573
20-29	1.48	0.04	1.41	1.56	468	926,308	1.45	0.05	1.36	1.55	262	557,382	1.53	0.05	1.42	1.63	206	368,926
30-39	1.59	0.04	1.52	1.67	580	1,064,634	1.74	0.06	1.63	1.85	294	589,983	1.42	0.04	1.33	1.50	286	474,652
40-49	1.65	0.04	1.57	1.73	483	917,169	1.74	0.06	1.62	1.86	253	484,351	1.55	0.06	1.43	1.66	230	432,818
50-59	1.59	0.05	1.48	1.69	310	638,665	1.51	0.06	1.39	1.63	165	344,553	1.67	0.09	1.50	1.85	145	294,112

Table 15: Mean frequency cocoa daily by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	1.39	0.02	1.35	1.43	1,559	3,199,338	1.44	0.04	1.37	1.51	664	1,488,107	1.35	0.02	1.30	1.39	895	1,711,230
Zone																		
Southern	1.20	0.03	1.14	1.26	329	700,847	1.21	0.04	1.12	1.30	135	321,461	1.19	0.04	1.12	1.27	194	379,385
Central	1.36	0.03	1.30	1.42	527	1,157,767	1.38	0.05	1.27	1.48	234	556,832	1.35	0.04	1.27	1.42	293	600,935
East coast	1.68	0.09	1.50	1.86	189	345,945	1.99	0.17	1.66	2.32	79	156,450	1.43	0.08	1.26	1.59	110	189,495
Northern	1.35	0.04	1.27	1.43	219	462,063	1.34	0.07	1.21	1.48	97	212,619	1.36	0.05	1.26	1.45	122	249,444
Sabah	1.51	0.08	1.35	1.68	127	224,775	1.68	0.14	1.41	1.94	50	100,051	1.38	0.08	1.23	1.53	77	124,724
Sarawak	1.55	0.08	1.40	1.71	168	307,941	1.54	0.13	1.28	1.80	69	140,695	1.57	0.09	1.40	1.74	99	167,247
Strata																		
Urban	1.34	0.03	1.29	1.39	843	1,933,765	1.37	0.04	1.28	1.45	365	917,959	1.31	0.03	1.25	1.36	478	1,015,805
Rural	1.47	0.03	1.40	1.53	716	1,265,573	1.55	0.06	1.44	1.66	299	570,148	1.40	0.04	1.33	1.47	417	695,425
Sex																		
Men	1.44	0.04	1.37	1.51	664	1,488,107												
Women	1.35	0.02	1.30	1.39	895	1,711,230												
Age group (years)																		
18-19	1.36	0.09	1.18	1.54	98	246,284	1.50	0.15	1.20	1.80	52	134,983	1.19	0.07	1.05	1.32	46	111,300
20-29	1.45	0.04	1.37	1.52	516	1,071,661	1.47	0.06	1.35	1.60	218	487,566	1.42	0.04	1.34	1.51	298	584,094
30-39	1.39	0.04	1.32	1.47	434	772,419	1.44	0.07	1.29	1.58	150	301,287	1.36	0.04	1.29	1.44	284	471,133
40-49	1.33	0.04	1.25	1.40	320	600,226	1.42	0.07	1.29	1.55	149	282,446	1.24	0.04	1.17	1.31	171	317,781
50-59	1.32	0.05	1.23	1.42	174	347,938	1.32	0.07	1.17	1.47	87	180,840	1.33	0.06	1.20	1.45	87	167,098

Table 16: Mean frequency cordial daily by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	1.38	0.03	1.32	1.43	783	1,537,368	1.41	0.05	1.32	1.50	312	700,244	1.35	0.04	1.27	1.42	471	837,124
Zone																		
Southern	1.30	0.05	1.20	1.40	202	449,249	1.26	0.07	1.12	1.40	93	231,496	1.35	0.08	1.20	1.50	109	217,753
Central	1.37	0.06	1.24	1.50	173	390,774	1.42	0.09	1.24	1.60	76	189,393	1.32	0.09	1.13	1.50	97	201,380
East coast	1.36	0.08	1.20	1.52	91	155,244	1.50	0.16	1.19	1.81	31	57,142	1.28	0.09	1.10	1.45	60	98,102
Northern	1.49	0.10	1.30	1.68	77	159,973	1.75	0.19	1.38	2.12	26	62,227	1.33	0.10	1.14	1.52	51	97,746
Sabah	1.46	0.10	1.27	1.65	89	132,575	1.51	0.15	1.21	1.82	30	55,326	1.43	0.12	1.18	1.67	59	77,249
Sarawak	1.41	0.07	1.27	1.55	151	249,552	1.43	0.14	1.16	1.70	56	104,659	1.39	0.07	1.25	1.53	95	144,894
Strata																		
Urban	1.31	0.04	1.22	1.40	338	769,522	1.37	0.06	1.24	1.49	163	399,700	1.25	0.05	1.13	1.37	175	369,822
Rural	1.44	0.04	1.36	1.52	445	767,846	1.47	0.07	1.33	1.61	149	300,544	1.42	0.05	1.33	1.51	296	467,302
Sex																		
Men	1.41	0.05	1.32	1.50	312	700,244												
Women	1.35	0.04	1.27	1.42	471	837,124												
Age group (years)																		
18-19	1.39	0.12	1.16	1.62	42	103,299	1.48	0.15	1.19	1.77	27	73,315	1.17	0.11	0.95	1.39	15	29,984
20-29	1.40	0.05	1.30	1.51	233	479,332	1.51	0.10	1.32	1.69	88	215,014	1.32	0.05	1.22	1.42	145	264,318
30-39	1.34	0.05	1.25	1.43	247	435,478	1.41	0.08	1.24	1.57	89	184,378	1.30	0.05	1.20	1.39	158	251,100
40-49	1.34	0.05	1.23	1.44	168	273,120	1.31	0.07	1.18	1.45	73	125,487	1.36	0.08	1.20	1.51	95	147,632
50-59	1.35	0.09	1.18	1.52	82	166,483	1.28	0.09	1.11	1.45	31	65,464	1.40	0.13	1.14	1.66	51	101,019

Table 17: Mean frequency green leafy vegetables weekly by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	1.99	0.02	1.96	2.02	4,975	10,208,059	2.78	0.03	2.70	2.86	1,844	3,953,072	2.68	0.02	2.60	2.75	1,872	3,699,893
Zone																		
Southern	1.95	0.03	1.88	2.02	1,018	2,237,342	2.66	0.09	2.48	2.83	354	843,958	2.58	0.08	2.42	2.74	376	774,850
Central	2.07	0.03	2.02	2.12	1,803	4,194,556	3.10	0.06	2.98	3.22	682	1,607,518	2.92	0.07	2.79	3.05	664	1,528,083
East coast	2.44	0.04	2.31	2.56	543	900,040	2.42	0.10	2.22	2.62	266	484,757	2.46	0.08	2.31	2.61	277	415,283
Northern	2.22	0.06	2.12	2.31	570	1,190,488	2.25	0.08	2.10	2.40	266	577,318	2.18	0.07	2.05	2.31	304	613,170
Sabah	2.98	0.06	2.81	3.14	372	556,185	2.99	0.12	2.76	3.23	192	299,258	2.96	0.12	2.74	3.19	180	256,926
Sarawak	2.81	0.06	2.53	3.09	155	251,843	2.80	0.22	2.37	3.23	84	140,262	2.82	0.17	2.48	3.16	71	111,581
Strata																		
Urban	2.81	0.02	2.73	2.88	1,909	4,423,203	2.86	0.05	2.75	2.97	954	2,229,293	2.75	0.05	2.65	2.85	955	2,193,910
Rural	2.62	0.03	2.54	2.70	1,807	3,229,761	2.67	0.06	2.56	2.79	890	1,723,778	2.56	0.05	2.46	2.67	917	1,505,983
Sex																		
Men	2.78	0.03	2.70	2.86	1,844	3,953,072												
Women	2.68	0.02	2.60	2.75	1,872	3,699,893												
Age group (years)																		
18-19	2.85	0.10	2.63	3.06	206	513,523	2.74	0.14	2.47	3.01	111	257,627	2.95	0.17	2.62	3.28	95	255,896
20-29	2.71	0.03	2.62	2.80	1,087	2,296,749	2.73	0.10	2.60	2.85	536	1,170,432	2.69	0.12	2.56	2.82	551	1,126,317
30-39	2.82	0.03	2.73	2.91	1,081	1,984,795	2.88	0.15	2.76	3.01	517	1,036,283	2.75	0.19	2.62	2.87	564	948,512
40-49	2.67	0.03	2.57	2.76	814	1,531,863	2.74	0.14	2.60	2.88	399	758,097	2.59	0.20	2.46	2.73	415	773,766
50-59	2.63	0.04	2.50	2.76	499	1,031,303	2.70	0.12	2.51	2.89	266	546,338	2.56	0.15	2.39	2.74	233	484,964

Table 18: Mean frequency chicken egg weekly by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	2.50	0.02	2.46	2.54	4,908	10,038,048	2.60	0.03	2.54	2.66	2,319	4,997,416	2.39	0.03	2.34	2.45	2,589	5,040,631
Zone																		
Southern	2.60	0.05	2.50	2.70	954	2,137,578	2.86	0.08	2.70	3.01	448	1,081,418	2.34	0.05	2.23	2.44	506	1,056,160
Central	2.53	0.04	2.47	2.60	1,642	3,788,859	2.60	0.05	2.50	2.69	812	1,925,747	2.47	0.05	2.37	2.57	830	1,863,112
East coast	2.32	0.04	2.21	2.42	624	1,046,233	2.36	0.07	2.23	2.48	313	571,591	2.25	0.06	2.13	2.36	352	569,009
Northern	2.52	0.06	2.41	2.63	663	1,400,816	2.59	0.08	2.43	2.75	298	666,914	2.45	0.07	2.31	2.60	365	733,903
Sabah	2.41	0.06	2.30	2.52	507	782,866	2.51	0.08	2.35	2.67	242	394,902	2.31	0.07	2.16	2.45	265	387,964
Sarawak	2.31	0.06	2.20	2.43	504	864,588	2.32	0.10	2.13	2.51	206	356,845	2.37	0.08	2.22	2.52	271	430,483
Strata																		
Urban	2.52	0.03	2.46	2.57	2,657	6,018,168	2.62	0.04	2.54	2.70	1,271	2,989,097	2.41	0.04	2.34	2.49	1,386	3,029,071
Rural	2.46	0.03	2.40	2.52	2,251	4,019,880	2.56	0.05	2.47	2.65	1,048	2,008,319	2.36	0.04	2.28	2.44	1,203	2,011,561
Sex																		
Men	2.60	0.03	2.54	2.66	2,319	4,997,416												
Women	2.39	0.03	2.34	2.45	2,589	5,040,631												
Age group (years)																		
18-19	2.55	0.10	2.36	2.74	275	674,134	2.75	0.15	2.45	3.04	142	347,883	2.34	0.12	2.11	2.57	133	326,251
20-29	2.55	0.03	2.49	2.62	1,465	3,031,951	2.71	0.05	2.61	2.80	685	1,517,221	2.40	0.05	2.31	2.49	780	1,514,730
30-39	2.52	0.03	2.46	2.59	1,417	2,602,705	2.61	0.05	2.52	2.71	640	1,279,863	2.44	0.05	2.35	2.52	777	1,322,842
40-49	2.43	0.04	2.36	2.51	1,096	2,093,944	2.52	0.05	2.41	2.62	531	1,036,494	2.35	0.05	2.25	2.45	565	1,057,451
50-59	2.30	0.05	2.20	2.40	612	1,238,204	2.32	0.07	2.18	2.47	305	628,005	2.28	0.07	2.14	2.42	307	610,199

Table 19: Mean frequency chicken meat weekly by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	2.38	0.02	2.34	2.43	4,722	9,731,134	2.53	0.03	2.47	2.59	2,325	5,053,582	2.23	0.03	2.18	2.28	2,397	4,677,552
Zone																		
Southern	2.37	0.05	2.27	2.46	931	2,111,509	2.56	0.07	2.42	2.70	445	1,113,503	2.15	0.06	2.03	2.26	486	998,006
Central	2.49	0.04	2.42	2.57	1,638	3,792,954	2.66	0.05	2.56	2.77	854	2,036,941	2.29	0.05	2.20	2.39	784	1,756,013
East coast	2.32	0.05	2.21	2.42	624	1,046,233	2.46	0.08	2.30	2.62	310	547,557	2.16	0.07	2.01	2.30	314	498,676
Northern	2.17	0.05	2.08	2.27	601	1,262,139	2.29	0.07	2.14	2.44	284	614,689	2.06	0.06	1.94	2.19	317	647,450
Sabah	2.43	0.07	2.30	2.56	424	653,710	2.44	0.09	2.26	2.62	203	317,896	2.42	0.09	2.24	2.61	221	335,814
Sarawak	2.31	0.06	2.20	2.43	504	864,588	2.29	0.08	2.13	2.45	229	422,996	2.34	0.08	2.18	2.49	275	441,592
Strata																		
Urban	2.50	0.03	2.44	2.55	2,646	6,076,949	2.64	0.04	2.56	2.72	1,309	3,130,426	2.34	0.04	2.27	2.41	1,337	2,946,523
Rural	2.20	0.03	2.14	2.26	2,076	3,654,185	2.34	0.05	2.24	2.43	1,016	1,923,156	2.04	0.04	1.96	2.12	1,060	1,731,029
Sex																		
Men	2.53	0.03	2.47	2.59	2,325	5,053,582												
Women	2.23	0.03	2.18	2.28	2,397	4,677,552												
Age group (years)																		
18-19	2.47	0.10	2.28	2.67	243	585,097	2.50	0.14	2.23	2.78	123	301,032	2.44	0.13	2.18	2.70	120	284,064
20-29	2.58	0.04	2.50	2.66	1,406	2,941,112	2.81	0.06	2.69	2.93	677	1,498,148	2.34	0.05	2.24	2.45	729	1,442,965
30-39	2.34	0.03	2.28	2.41	1,399	2,608,327	2.46	0.05	2.36	2.55	662	1,347,715	2.22	0.05	2.13	2.32	737	1,260,612
40-49	2.26	0.04	2.19	2.33	1,054	2,002,483	2.41	0.05	2.30	2.51	545	1,052,874	2.10	0.05	2.00	2.20	509	949,609
50-59	2.13	0.05	2.03	2.23	577	1,186,104	2.18	0.07	2.03	2.32	300	634,752	2.07	0.07	1.93	2.22	277	551,352

Table 20: Mean frequency cabbage weekly by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	1.79	0.02	1.76	1.82	4,450	9,246,753	1.82	0.02	1.78	1.87	2,121	4,573,369	1.76	0.02	1.72	1.80	2,329	4,673,384
Zone																		
Southern	1.76	0.03	1.69	1.83	922	2,053,122	1.77	0.05	1.68	1.87	429	1,027,290	1.74	0.05	1.65	1.84	493	1,025,832
Central	1.80	0.03	1.75	1.85	1,625	3,771,794	1.87	0.04	1.79	1.94	799	1,882,087	1.74	0.04	1.67	1.81	826	1,889,707
East coast	1.88	0.05	1.79	1.97	534	907,687	1.85	0.07	1.72	1.98	246	450,353	1.91	0.07	1.78	2.04	288	457,334
Northern	1.74	0.03	1.67	1.80	633	1,360,389	1.77	0.05	1.67	1.87	301	666,319	1.70	0.05	1.61	1.79	332	694,070
Sabah	1.87	0.05	1.77	1.98	390	566,195	1.85	0.08	1.70	2.00	186	270,940	1.90	0.07	1.75	2.04	204	295,256
Sarawak	1.74	0.05	1.65	1.83	346	587,566	1.79	0.07	1.65	1.92	160	276,381	1.70	0.06	1.57	1.82	186	311,185
Strata																		
Urban	1.78	0.02	1.74	1.82	2,550	5,838,073	1.82	0.03	1.76	1.88	1,214	2,816,595	1.74	0.03	1.69	1.80	1,336	3,021,478
Rural	1.81	0.02	1.76	1.85	1,900	3,408,680	1.83	0.03	1.77	1.90	907	1,756,774	1.78	0.03	1.72	1.84	993	1,651,906
Sex																		
Men	1.82	0.02	1.78	1.87	2,121	4,573,369												
Women	1.76	0.02	1.72	1.80	2,329	4,673,384												
Age group (years)																		
18-19	1.91	0.07	1.77	2.06	246	606,430	1.96	0.11	1.75	2.16	118	281,468	1.88	0.10	1.68	2.08	128	324,963
20-29	1.81	0.03	1.75	1.87	1,354	2,834,666	1.82	0.04	1.74	1.90	642	1,401,030	1.80	0.04	1.72	1.88	712	1,433,636
30-39	1.78	0.03	1.73	1.83	1,252	2,349,871	1.84	0.04	1.77	1.92	580	1,183,967	1.72	0.03	1.65	1.78	672	1,165,904
40-49	1.77	0.03	1.71	1.83	997	1,932,953	1.84	0.05	1.75	1.92	483	958,295	1.71	0.04	1.62	1.79	514	974,659
50-59	1.74	0.04	1.66	1.82	561	1,184,887	1.75	0.05	1.64	1.85	284	602,507	1.73	0.06	1.62	1.85	277	582,379

Table 21: Mean frequency local kueh weekly by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	2.19	0.02	2.15	2.23	4,334	8,864,623	2.24	0.03	2.18	2.30	2,077	4,481,694	2.14	0.03	2.08	2.19	2,257	4,382,929
Zone																		
Southern	2.22	0.04	2.13	2.30	863	1,930,149	2.33	0.07	2.20	2.47	398	992,127	2.09	0.06	1.99	2.20	465	938,022
Central	2.19	0.04	2.12	2.26	1493	3,441,618	2.25	0.05	2.16	2.34	742	1,747,371	2.13	0.05	2.02	2.23	751	1,694,247
East coast	2.21	0.06	2.10	2.32	542	945,640	2.23	0.08	2.08	2.39	261	478,274	2.19	0.08	2.03	2.35	281	467,365
Northern	2.22	0.05	2.12	2.32	562	1,183,347	2.24	0.08	2.08	2.39	269	596,979	2.20	0.06	2.07	2.32	293	586,367
Sabah	2.25	0.06	2.13	2.37	437	624,286	2.22	0.09	2.04	2.39	211	303,724	2.29	0.09	2.12	2.46	226	320,562
Sarawak	1.96	0.06	1.83	2.09	437	739,584	1.92	0.11	1.71	2.13	196	363,218	2.00	0.07	1.86	2.14	241	376,366
Strata																		
Urban	2.17	0.03	2.11	2.22	2,340	5,293,991	2.24	0.04	2.16	2.32	1,149	2,727,229	2.09	0.04	2.01	2.16	1,191	2,566,762
Rural	2.22	0.03	2.16	2.28	1,994	3,570,632	2.23	0.04	2.15	2.32	928	1,754,466	2.20	0.04	2.12	2.28	1,066	1,816,167
Sex																		
Men	2.24	0.03	2.18	2.30	2,077	4,481,694												
Women	2.14	0.03	2.08	2.19	2,257	4,382,929												
Age group (years)																		
18-19	2.29	0.10	2.10	2.47	240	597,416	2.39	0.15	2.10	2.68	117	287,723	2.19	0.12	1.96	2.42	123	309,692
20-29	2.27	0.03	2.21	2.34	1,328	2,801,585	2.31	0.05	2.21	2.41	641	1,428,814	2.23	0.05	2.14	2.33	687	1,372,772
30-39	2.20	0.03	2.14	2.27	1,281	2,337,253	2.26	0.05	2.16	2.35	593	1,193,136	2.14	0.05	2.05	2.24	688	1,144,117
40-49	2.13	0.04	2.05	2.21	930	1,749,430	2.21	0.06	2.10	2.33	451	878,043	2.04	0.06	1.93	2.15	479	871,387
50-59	2.06	0.06	1.95	2.17	515	1,015,226	2.07	0.08	1.91	2.22	259	521,717	2.06	0.08	1.90	2.22	256	493,509

Table 22: Mean frequency noodles weekly by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	2.13	0.02	2.09	2.17	4,127	8,342,427	2.22	0.03	2.16	2.28	2,017	4,347,634	2.03	0.03	1.98	2.09	2,110	3,994,794
Zone																		
Southern	2.04	0.04	1.95	2.12	792	1,751,249	2.19	0.07	2.05	2.32	392	943,953	1.86	0.05	1.76	1.97	400	807,297
Central	2.10	0.04	2.03	2.18	1,308	2,990,814	2.19	0.05	2.09	2.30	686	1,625,132	1.99	0.06	1.88	2.10	622	1,365,682
East coast	1.95	0.05	1.85	2.04	559	951,411	2.00	0.07	1.86	2.14	262	488,932	1.89	0.06	1.77	2.01	297	462,479
Northern	2.08	0.05	1.98	2.18	569	1,186,292	2.07	0.08	1.92	2.22	268	587,820	2.08	0.07	1.95	2.22	301	598,472
Sabah	2.63	0.07	2.48	2.77	478	752,273	2.76	0.12	2.52	3.00	222	372,319	2.49	0.07	2.35	2.63	256	379,953
Sarawak	2.30	0.07	2.17	2.42	421	710,389	2.43	0.11	2.21	2.65	187	329,478	2.18	0.08	2.03	2.33	234	380,911
Strata																		
Urban	2.15	0.03	2.09	2.20	2,210	4,965,856	2.24	0.04	2.15	2.32	1,109	2,607,482	2.05	0.04	1.97	2.12	1,101	2,358,374
Rural	2.11	0.03	2.05	2.17	1,917	3,376,572	2.19	0.05	2.10	2.29	908	1,740,152	2.02	0.04	1.94	2.09	1,009	1,636,420
Sex																		
Men	2.22	0.03	2.16	2.28	2,017	4,347,634												
Women	2.03	0.03	1.98	2.09	2,110	3,994,794												
Age group (years)																		
18-19	2.25	0.11	2.03	2.47	243	584,787	2.27	0.13	2.01	2.53	135	334,183	2.23	0.19	1.85	2.61	108	250,604
20-29	2.20	0.04	2.13	2.27	1,281	2,645,473	2.27	0.05	2.17	2.38	616	1,337,378	2.13	0.05	2.04	2.22	665	1,308,096
30-39	2.11	0.03	2.05	2.18	1,207	2,188,054	2.23	0.05	2.12	2.33	558	1,118,058	2.00	0.04	1.91	2.08	649	1,069,996
40-49	2.11	0.04	2.03	2.19	901	1,677,214	2.21	0.06	2.10	2.32	458	881,153	2.00	0.06	1.89	2.11	443	796,061
50-59	1.92	0.05	1.82	2.02	461	920,569	1.99	0.07	1.84	2.13	234	494,994	1.84	0.07	1.70	1.98	227	425,575

Table 23: Mean frequency rice noodles weekly by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	2.01	0.02	1.97	2.05	3,939	8,090,569	2.08	0.03	2.02	2.14	1,864	4,081,037	1.94	0.03	1.88	1.99	2,075	4,009,532
Zone																		
Southern	1.97	0.05	1.88	2.06	779	1,718,454	2.09	0.07	1.95	2.22	375	909,425	1.84	0.05	1.73	1.94	404	809,029
Central	2.02	0.04	1.94	2.09	1,359	3,139,453	2.09	0.05	1.98	2.19	675	1,630,004	1.94	0.05	1.83	2.05	684	1,509,449
East coast	1.79	0.04	1.70	1.87	511	842,385	1.85	0.06	1.72	1.97	228	403,284	1.73	0.06	1.61	1.85	283	439,101
Northern	2.12	0.05	2.02	2.22	618	1,265,820	2.08	0.08	1.94	2.23	281	600,930	2.16	0.07	2.02	2.29	337	664,890
Sabah	2.18	0.07	2.05	2.31	339	540,174	2.31	0.09	2.13	2.50	156	264,232	2.06	0.08	1.89	2.22	183	275,943
Sarawak	2.00	0.07	1.86	2.15	333	584,282	2.12	0.12	1.89	2.36	149	273,162	1.90	0.09	1.73	2.07	184	311,120
Strata																		
Urban	2.01	0.03	1.96	2.07	2,185	4,975,505	2.09	0.04	2.01	2.17	1,052	2,520,543	1.93	0.04	1.86	2.01	1,133	2,454,963
Rural	2.00	0.03	1.95	2.06	1,754	3,115,064	2.06	0.04	1.98	2.15	812	1,560,494	1.95	0.04	1.87	2.03	942	1,554,570
Sex																		
Men	2.08	0.03	2.02	2.14	1,864	4,081,037												
Women	1.94	0.03	1.88	1.99	2,075	4,009,532												
Age group (years)																		
18-19	2.05	0.12	1.83	2.28	211	498,572	2.00	0.12	1.76	2.24	105	254,708	2.11	0.20	1.73	2.49	106	243,864
20-29	2.06	0.04	1.99	2.14	1,204	2,514,966	2.11	0.05	2.01	2.22	572	1,247,204	2.02	0.05	1.92	2.11	632	1,267,762
30-39	2.01	0.03	1.94	2.07	1,126	2,078,648	2.06	0.05	1.96	2.17	501	1,026,475	1.95	0.04	1.86	2.04	625	1,052,173
40-49	1.94	0.04	1.87	2.02	900	1,711,096	2.03	0.05	1.93	2.14	437	860,840	1.86	0.05	1.75	1.96	463	850,256
50-59	1.80	0.05	1.71	1.90	465	960,929	1.85	0.07	1.72	1.97	232	486,222	1.76	0.07	1.63	1.89	233	474,707

Table 24: Mean frequency bread weekly by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	2.47	0.02	2.43	2.52	3,954	8,003,111	2.45	0.03	2.39	2.52	1,866	3,965,529	2.49	0.03	2.43	2.56	2,088	4,037,582
Zone																		
Southern	2.51	0.05	2.41	2.61	813	1,817,089	2.45	0.07	2.31	2.59	380	914,999	2.57	0.07	2.43	2.71	433	902,091
Central	2.58	0.04	2.50	2.66	1,351	3,090,513	2.58	0.05	2.48	2.69	659	1,549,817	2.58	0.06	2.47	2.69	692	1,540,697
East coast	2.30	0.06	2.18	2.42	493	816,545	2.32	0.08	2.16	2.49	226	410,118	2.27	0.09	2.10	2.45	267	406,427
Northern	2.48	0.06	2.36	2.60	479	976,874	2.37	0.08	2.21	2.54	222	455,164	2.57	0.09	2.40	2.74	257	521,710
Sabah	2.33	0.07	2.19	2.47	411	603,231	2.35	0.09	2.17	2.52	196	301,123	2.31	0.11	2.10	2.52	215	302,109
Sarawak	2.21	0.08	2.06	2.36	407	698,859	2.22	0.13	1.96	2.48	183	334,310	2.21	0.08	2.04	2.37	224	364,549
Strata																		
Urban	2.59	0.03	2.53	2.65	2,205	4,946,374	2.57	0.04	2.48	2.65	1,043	2,423,245	2.62	0.04	2.53	2.70	1,162	2,523,129
Rural	2.28	0.03	2.21	2.34	1,749	3,056,737	2.27	0.04	2.19	2.36	823	1,542,284	2.28	0.05	2.19	2.37	926	1,514,454
Sex																		
Men	2.45	0.03	2.39	2.52	1,866	3,965,529												
Women	2.49	0.03	2.43	2.56	2,088	4,037,582												
Age group (years)																		
18-19	2.43	0.10	2.24	2.63	225	553,493	2.36	0.14	2.09	2.62	110	267,919	2.51	0.15	2.22	2.79	115	285,574
20-29	2.47	0.04	2.38	2.56	1,179	2,440,900	2.45	0.06	2.32	2.57	552	1,193,284	2.49	0.06	2.38	2.61	627	1,247,616
30-39	2.47	0.04	2.40	2.54	1,152	2,123,594	2.38	0.05	2.28	2.48	515	1,049,695	2.56	0.05	2.46	2.66	637	1,073,899
40-49	2.53	0.04	2.44	2.61	907	1,681,818	2.58	0.07	2.45	2.71	441	855,301	2.47	0.06	2.35	2.59	466	826,516
50-59	2.48	0.07	2.35	2.62	457	888,590	2.41	0.08	2.25	2.57	235	449,630	2.56	0.11	2.34	2.77	222	438,960

Table 25: Mean frequency anchovy weekly by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	2.73	0.02	2.68	2.78	3,716	7,652,965	2.18	0.04	2.11	2.26	1,649	3,666,803	2.06	0.03	2.00	2.13	1,818	3,588,127
Zone																		
Southern	2.13	0.05	2.03	2.23	679	1,509,713	2.18	0.08	2.03	2.33	326	791,518	2.07	0.06	1.94	2.19	353	718,195
Central	2.18	0.04	2.10	2.26	1,353	3,175,032	2.25	0.06	2.14	2.37	682	1,663,944	2.10	0.06	1.99	2.22	671	1,511,088
East coast	2.11	0.06	1.98	2.23	435	722,939	2.15	0.10	1.96	2.34	182	338,147	2.07	0.09	1.90	2.24	253	384,793
Northern	1.88	0.05	1.77	1.99	499	1,028,682	1.91	0.08	1.75	2.08	223	464,363	1.85	0.07	1.71	2.00	276	564,320
Sabah	1.84	0.07	1.70	1.97	238	362,414	1.92	0.11	1.70	2.13	115	180,100	1.76	0.08	1.60	1.91	123	182,314
Sarawak	2.52	0.11	2.30	2.75	263	456,150	2.49	0.19	2.12	2.86	121	228,731	2.55	0.13	2.30	2.80	142	227,418
Strata																		
Urban	2.10	0.03	2.03	2.16	1,911	4,480,243	2.17	0.05	2.07	2.27	925	2,253,266	2.03	0.04	1.94	2.11	986	2,226,977
Rural	2.17	0.04	2.10	2.23	1,556	2,774,687	2.20	0.05	2.10	2.31	724	1,413,537	2.13	0.05	2.03	2.22	832	1,361,150
Sex																		
Men	2.18	0.04	2.11	2.26	1,649	3,666,803												
Women	2.06	0.03	2.00	2.13	1,818	3,588,127												
Age group (years)																		
18-19	2.22	0.11	2.01	2.43	201	517,622	2.23	0.15	1.94	2.52	107	283,026	2.20	0.16	1.89	2.50	94	234,596
20-29	2.20	0.04	2.12	2.29	1,076	2,276,514	2.26	0.06	2.14	2.38	525	1,204,673	2.14	0.06	2.02	2.25	551	1,071,841
30-39	2.08	0.04	2.01	2.16	985	1,853,121	2.10	0.06	1.99	2.21	444	918,763	2.07	0.05	1.97	2.18	541	934,358
40-49	2.04	0.05	1.95	2.13	756	1,440,665	2.09	0.07	1.96	2.23	348	679,010	2.00	0.06	1.87	2.12	408	761,655
50-59	2.06	0.06	1.94	2.18	418	867,723	2.20	0.09	2.03	2.38	214	449,576	1.91	0.08	1.75	2.07	204	418,148

Table 26: Mean frequency tuber vegetables weekly by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	1.82	0.02	1.79	1.86	3,573	7,574,801	1.81	0.03	1.75	1.86	1,682	3,751,937	1.84	0.03	1.79	1.89	1,891	3,822,865
Zone																		
Southern	1.84	0.04	1.76	1.93	831	1,870,197	1.89	0.07	1.75	2.02	393	961,601	1.80	0.05	1.70	1.90	438	908,596
Central	1.93	0.03	1.87	1.99	1,420	3,309,781	1.89	0.04	1.81	1.97	673	1,614,220	1.96	0.05	1.87	2.05	747	1,695,561
East coast	1.69	0.06	1.57	1.80	336	564,104	1.63	0.07	1.49	1.76	151	272,836	1.74	0.09	1.57	1.91	185	291,269
Northern	1.62	0.04	1.54	1.71	522	1,115,320	1.58	0.06	1.47	1.70	245	555,931	1.66	0.06	1.54	1.78	277	559,389
Sabah	1.89	0.07	1.75	2.03	213	307,772	1.77	0.09	1.59	1.94	109	166,163	2.04	0.11	1.82	2.26	104	141,610
Sarawak	1.61	0.06	1.49	1.73	251	407,627	1.67	0.11	1.47	1.88	111	181,187	1.55	0.07	1.41	1.70	140	226,440
Strata																		
Urban	1.86	0.03	1.81	1.91	2,137	4,998,049	1.85	0.04	1.78	1.92	998	2,413,001	1.87	0.03	1.81	1.93	1,139	2,585,048
Rural	1.75	0.03	1.69	1.82	1,436	2,576,752	1.73	0.04	1.65	1.81	684	1,338,935	1.78	0.05	1.68	1.88	752	1,237,817
Sex																		
Men	1.81	0.03	1.75	1.86	1,682	3,751,937												
Women	1.84	0.03	1.79	1.89	1,891	3,822,865												
Age group (years)																		
18-19	1.92	0.08	1.76	2.08	179	462,199	1.88	0.11	1.65	2.12	94	249,500	1.88	0.12	1.65	2.12	94	249,500
20-29	1.81	0.03	1.75	1.88	1,037	2,258,034	1.78	0.05	1.69	1.86	541	1,104,145	1.78	0.05	1.69	1.86	541	1,104,145
30-39	1.85	0.03	1.78	1.91	1,036	1,999,122	1.90	0.05	1.81	2.00	575	1,018,731	1.90	0.05	1.81	2.00	575	1,018,731
40-49	1.80	0.04	1.73	1.88	817	1,628,200	1.82	0.05	1.70	1.93	421	825,199	1.82	0.06	1.70	1.93	421	825,199
50-59	1.74	0.05	1.65	1.82	478	996,674	1.74	0.06	1.61	1.86	244	502,127	1.74	0.06	1.61	1.86	244	502,127

Table 27: Mean frequency soybean drink weekly by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	1.88	0.02	1.84	1.93	2,905	5,983,931	1.89	0.03	1.83	1.95	1,387	2,966,425	1.88	0.03	1.81	1.94	1,518	3,017,505
Zone																		
Southern	1.87	0.05	1.77	1.97	603	1,345,048	1.87	0.08	1.71	2.03	287	691,471	1.88	0.07	1.75	2.00	316	653,577
Central	1.88	0.04	1.80	1.95	1,076	2,456,998	1.90	0.05	1.81	2.00	505	1,187,633	1.85	0.06	1.74	1.96	571	1,269,366
East coast	1.95	0.07	1.80	2.09	268	468,793	1.90	0.10	1.70	2.10	128	246,859	2.00	0.11	1.79	2.21	140	221,934
Northern	1.82	0.06	1.71	1.93	390	828,205	1.80	0.08	1.65	1.95	174	380,271	1.84	0.08	1.69	2.00	216	447,934
Sabah	1.97	0.07	1.83	2.11	278	407,752	2.06	0.10	1.86	2.26	152	227,160	1.86	0.10	1.68	2.05	126	180,592
Sarawak	1.91	0.07	1.78	2.04	290	477,135	1.84	0.09	1.67	2.02	141	233,032	1.97	0.10	1.77	2.17	149	244,102
Strata																		
Urban	1.88	0.03	1.83	1.94	1,709	3,861,428	1.94	0.04	1.85	2.02	804	1,858,578	1.84	0.04	1.76	1.91	905	2,002,851
Rural	1.88	0.04	1.81	1.95	1,196	2,122,503	1.81	0.04	1.72	1.90	583	1,107,848	1.95	0.06	1.84	2.06	613	1,014,655
Sex																		
Men	1.89	0.03	1.83	1.95	1,387	2,966,425												
Women	1.88	0.03	1.81	1.94	1,518	3,017,505												
Age group (years)																		
18-19	1.99	0.10	1.80	2.19	181	425,170	2.00	0.13	1.76	2.25	89	204,173	1.99	0.15	1.69	2.28	92	220,996
20-29	1.98	0.04	1.90	2.05	966	2,015,526	1.96	0.06	1.85	2.07	465	1,009,551	1.99	0.05	1.89	2.09	501	1,005,975
30-39	1.86	0.04	1.79	1.93	873	1,632,643	1.83	0.05	1.73	1.93	416	841,013	1.89	0.05	1.79	2.00	457	791,630
40-49	1.78	0.05	1.69	1.87	586	1,150,157	1.83	0.07	1.70	1.97	274	546,771	1.74	0.06	1.62	1.86	312	603,386
50-59	1.77	0.07	1.64	1.91	277	582,837	1.81	0.10	1.61	2.01	136	295,877	1.73	0.09	1.55	1.91	141	286,960

Table 28: Mean frequency cocoa weekly by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	2.19	0.03	2.13	2.24	2,395	4,998,755	2.20	0.04	2.12	2.28	1,119	2,438,974	2.17	0.04	2.10	2.25	1,276	2,559,781
Zone																		
Southern	2.13	0.06	2.01	2.25	490	1,117,840	2.18	0.08	2.03	2.34	241	587,798	2.07	0.09	1.90	2.25	249	530,042
Central	2.16	0.05	2.07	2.26	799	1,924,848	2.13	0.07	2.00	2.26	385	930,334	2.20	0.07	2.06	2.33	414	994,514
East coast	2.20	0.07	2.06	2.33	306	528,556	2.19	0.11	1.97	2.41	133	249,565	2.20	0.09	2.03	2.37	173	278,992
Northern	2.22	0.07	2.09	2.36	341	706,624	2.31	0.11	2.10	2.52	157	339,592	2.14	0.09	1.96	2.32	184	367,032
Sabah	2.22	0.11	2.02	2.43	232	351,782	2.34	0.19	1.98	2.70	99	161,937	2.13	0.11	1.91	2.34	133	189,845
Sarawak	2.33	0.09	2.16	2.51	227	369,106	2.27	0.13	2.02	2.52	104	169,750	2.39	0.12	2.14	2.63	123	199,357
Strata																		
Urban	2.21	0.04	2.14	2.28	1,329	3,097,516	2.24	0.05	2.13	2.34	615	1,474,492	2.19	0.05	2.09	2.28	714	1,623,023
Rural	2.14	0.04	2.06	2.22	1,066	1,901,240	2.14	0.05	2.03	2.24	504	964,482	2.15	0.06	2.03	2.27	562	936,758
Sex																		
Men	2.20	0.04	2.12	2.28	1,119	2,438,974												
Women	2.17	0.04	2.10	2.25	1,276	2,559,781												
Age group (years)																		
18-19	2.43	0.12	2.21	2.66	162	394,181	2.41	0.15	2.12	2.70	82	208,773	2.45	0.18	2.10	2.80	80	185,408
20-29	2.27	0.05	2.18	2.37	815	1,713,956	2.30	0.06	2.17	2.42	387	852,073	2.25	0.07	2.12	2.39	428	861,883
30-39	2.06	0.05	1.97	2.15	687	1,286,609	2.01	0.06	1.88	2.13	317	661,010	2.12	0.06	2.00	2.24	370	625,599
40-49	2.14	0.06	2.03	2.24	478	910,578	2.15	0.09	1.98	2.32	214	414,075	2.12	0.07	1.98	2.26	264	496,503
50-59	1.97	0.09	1.81	2.14	228	458,384	1.99	0.12	1.75	2.24	113	232,119	1.96	0.12	1.72	2.19	115	226,265

Table 29: Mean frequency cordial weekly by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	2.05	0.03	2.00	2.11	2,220	4,401,380	2.00	0.04	1.93	2.08	1,021	2,135,059	2.10	0.04	2.02	2.18	1,199	2,266,321
Zone																		
Southern	2.09	0.06	1.97	2.21	412	934,532	2.09	0.09	1.90	2.27	179	432,557	2.09	0.08	1.93	2.25	233	501,975
Central	2.10	0.06	1.99	2.21	654	1,485,512	1.95	0.07	1.82	2.09	317	727,990	2.25	0.09	2.07	2.42	337	757,522
East coast	1.98	0.06	1.86	2.10	345	567,713	2.01	0.09	1.85	2.18	158	283,962	1.95	0.09	1.78	2.12	187	283,751
Northern	1.92	0.06	1.79	2.04	286	585,653	1.88	0.10	1.71	2.06	129	281,983	1.95	0.09	1.78	2.12	157	303,670
Sabah	1.97	0.07	1.82	2.11	259	369,019	2.00	0.12	1.76	2.24	111	157,138	1.94	0.09	1.77	2.11	148	211,881
Sarawak	2.14	0.07	2.00	2.27	264	458,951	2.13	0.09	1.95	2.31	127	251,429	2.14	0.11	1.94	2.35	137	207,522
Strata																		
Urban	2.05	0.04	1.97	2.13	1,053	2,331,687	1.95	0.05	1.85	2.05	487	1,112,769	2.13	0.06	2.01	2.25	566	1,218,919
Rural	2.06	0.04	1.98	2.13	1,167	2,069,693	2.06	0.05	1.95	2.17	534	1,022,290	2.06	0.05	1.95	2.16	633	1,047,403
Sex																		
Men	2.00	0.04	1.93	2.08	1,021	2,135,059												
Women	2.10	0.04	2.02	2.18	1,199	2,266,321												
Age group (years)																		
18-19	2.21	0.11	2.01	2.42	154	383,746	1.97	0.13	1.73	2.22	75	187,467	2.44	0.16	2.12	2.76	79	196,279
20-29	2.07	0.04	1.99	2.16	746	1,496,054	2.04	0.06	1.91	2.16	357	747,229	2.11	0.06	1.99	2.23	389	748,825
30-39	2.00	0.05	1.91	2.10	624	1,110,499	1.98	0.07	1.84	2.13	273	530,198	2.02	0.07	1.89	2.15	351	580,301
40-49	1.99	0.06	1.88	2.10	465	827,329	1.96	0.08	1.81	2.12	214	399,311	2.01	0.08	1.86	2.17	251	428,018
50-59	2.00	0.08	1.84	2.15	212	388,762	2.10	0.13	1.85	2.34	95	178,048	1.91	0.10	1.72	2.10	117	210,714

Table 30: Mean frequency fruit juices weekly by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	1.88	0.03	1.82	1.94	1,860	3,990,850	1.85	0.04	1.78	1.93	916	2,112,191	1.91	0.04	1.83	2.00	944	1,878,659
Zone																		
Southern	1.96	0.06	1.84	2.08	417	941,919	1.99	0.09	1.82	2.16	199	497,894	1.92	0.09	1.75	2.09	218	444,025
Central	1.93	0.05	1.84	2.02	764	1,780,361	1.85	0.06	1.73	1.96	391	968,087	2.03	0.07	1.88	2.17	373	812,273
East coast	1.77	0.07	1.63	1.92	184	329,110	1.72	0.10	1.52	1.91	92	171,578	1.83	0.11	1.62	2.04	92	157,532
Northern	1.73	0.06	1.62	1.84	236	521,119	1.76	0.08	1.60	1.92	112	265,823	1.69	0.08	1.55	1.84	124	255,297
Sabah	1.76	0.11	1.54	1.98	123	183,164	1.79	0.16	1.49	2.10	60	92,750	1.73	0.15	1.43	2.03	63	90,413
Sarawak	1.78	0.12	1.55	2.02	136	235,178	1.73	0.19	1.35	2.10	62	116,059	1.84	0.14	1.57	2.10	74	119,119
Strata																		
Urban	1.91	0.04	1.85	1.98	1,179	2,734,912	1.89	0.05	1.79	1.99	575	1,434,446	1.94	0.05	1.84	2.04	604	1,300,466
Rural	1.81	0.05	1.71	1.90	681	1,255,938	1.77	0.06	1.65	1.89	341	677,745	1.85	0.08	1.70	2.00	340	578,193
Sex																		
Men	1.85	0.04	1.78	1.93	916	2,112,191												
Women	1.91	0.04	1.83	2.00	944	1,878,659												
Age group (years)																		
18-19	1.88	0.10	1.68	2.08	143	374,014	1.78	0.11	1.57	1.99	68	180,671	1.98	0.17	1.65	2.31	75	193,343
20-29	1.91	0.05	1.81	2.00	683	1,437,501	1.89	0.07	1.77	2.02	336	741,555	1.92	0.07	1.79	2.05	347	695,946
30-39	1.87	0.05	1.78	1.97	535	1,027,963	1.89	0.08	1.75	2.04	259	550,357	1.85	0.06	1.73	1.97	276	477,607
40-49	1.87	0.06	1.76	1.99	351	682,763	1.80	0.08	1.65	1.94	177	362,907	1.96	0.09	1.79	2.13	174	319,856
50-59	1.87	0.11	1.66	2.07	132	296,301	2.00	0.16	1.68	2.31	67	151,688	1.73	0.13	1.48	1.98	65	144,613

Table 31: Mean frequency tea weekly by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	2.26	0.03	2.20	2.33	1,778	3,684,514	2.46	0.05	2.35	2.56	796	1,740,994	2.09	0.04	2.01	2.17	982	1,943,519
Zone																		
Southern	2.18	0.07	2.05	2.31	348	788,985	2.32	0.11	2.11	2.53	162	389,838	2.03	0.08	1.88	2.19	186	399,147
Central	2.27	0.06	2.15	2.39	519	1,181,978	2.59	0.09	2.41	2.78	215	528,806	2.00	0.07	1.87	2.14	304	653,171
East coast	2.21	0.07	2.05	2.36	239	430,072	2.27	0.13	2.03	2.52	114	208,862	2.14	0.09	1.96	2.32	125	221,209
Northern	2.44	0.08	2.28	2.60	296	638,627	2.66	0.12	2.43	2.89	131	291,754	2.25	0.11	2.05	2.46	165	346,874
Sabah	2.34	0.14	2.07	2.62	223	371,954	2.48	0.22	2.04	2.91	108	195,953	2.20	0.14	1.92	2.47	115	176,002
Sarawak	2.08	0.10	1.88	2.28	153	272,898	2.12	0.17	1.78	2.45	66	125,781	2.05	0.12	1.80	2.29	87	147,117
Strata																		
Urban	2.26	0.04	2.17	2.34	1,006	2,332,336	2.50	0.07	2.37	2.63	440	1,075,433	2.05	0.05	1.95	2.15	566	1,256,903
Rural	2.28	0.06	2.16	2.39	772	1,352,177	2.38	0.09	2.20	2.56	356	665,561	2.17	0.06	2.05	2.29	416	686,616
Sex																		
Men	2.46	0.05	2.35	2.56	796	1,740,994												
Women	2.09	0.04	2.01	2.17	982	1,943,519												
Age group (years)																		
18-19	2.29	0.11	2.07	2.50	122	302,507	2.44	0.15	2.14	2.74	57	146,210	2.14	0.15	1.84	2.44	65	156,296
20-29	2.30	0.06	2.19	2.41	586	1,232,677	2.51	0.09	2.35	2.68	268	589,244	2.11	0.07	1.97	2.24	318	643,433
30-39	2.28	0.05	2.18	2.38	535	1,004,103	2.43	0.08	2.27	2.59	229	461,632	2.15	0.06	2.02	2.28	306	542,471
40-49	2.25	0.08	2.10	2.40	345	658,887	2.47	0.12	2.24	2.70	151	301,070	2.06	0.10	1.87	2.26	194	357,817
50-59	2.14	0.10	1.94	2.34	174	358,602	2.35	0.15	2.05	2.65	85	173,272	1.94	0.13	1.68	2.19	89	185,330

Table 32
Food Consumption Pattern among Malaysian Adults

	Type of food ever eaten during past one year	Estimated intake (g/day)	95 % Confidence Interval		Estimated Population #	Prevalence (%)
			Lower	Upper		
1	Nasi	289.68	285.63	293.74	13,819,039	97.47
2	Sayuran berdaun hijau	50.66	49.18	52.15	13,569,638	95.71
3	Ikan laut	60.67	58.95	62.40	13,420,572	94.66
4	Telur ayam	25.15	24.40	25.89	13,240,610	93.39
5	Ayam	31.66	30.43	32.89	13,157,133	92.80
6	Kuih tempatan	21.63	20.94	22.31	13,111,944	92.48
7	Mee kuning/mee siput/mee segera	66.34	63.75	68.93	13,062,177	92.13
8	Mihun/kueh teow/laksa/laksam	66.56	63.92	69.20	12,840,341	90.56
9	Air kosong	1519.24	1497.40	1541.08	12,723,194	89.74
10	Sayuran kacang	16.42	15.82	17.02	12,719,919	89.72
11	Sayuran kobis	18.23	17.38	19.08	12,553,713	88.54
12	Biskut	18.50	17.77	19.24	12,511,500	88.25
13	Pisang	20.57	19.65	21.49	12,476,954	88.00
14	Roti	36.10	34.88	37.32	12,228,320	86.25
15	Epal	35.00	33.62	36.39	12,212,813	86.14
16	Ikan bilis	4.90	4.72	5.09	12,142,267	85.64
17	Betik	84.60	70.34	98.86	12,039,609	84.92
18	Sayuran berubi	14.66	13.91	15.42	11,821,056	83.38
19	Tembikai	7.59	7.14	8.04	11,739,004	82.80
20	Roti Canai	21.11	20.08	22.15	11,649,679	82.17
21	Taugeh	9.75	9.36	10.14	11,518,717	81.24

Esttimated population who consumed the food listed

Table 32: continue 1

	Type of food ever eaten during past one year	Estimated intake (g/day)	95 % Confidence Interval		Estimated Population #	Prevalence (%)
			Lower	Upper		
22	Kek	4.19	3.95	4.43	11,419,769	80.54
23	Petola/Labu/Timun	13.85	13.15	14.56	11,338,877	79.97
24	Oren/Mandarin	24.56	23.40	25.73	11,190,515	78.93
25	Air teh	246.50	238.74	254.27	11,166,900	78.76
26	Air Kacang Soya	56.91	54.25	59.58	10,995,522	77.55
27	Mangga	10.48	9.60	11.36	10,867,497	76.65
28	Jagung	8.98	8.43	9.52	10,826,316	76.36
29	Ikan dalam tin	4.30	4.10	4.50	10,713,452	75.56
30	Tauhu	19.40	18.57	20.24	10,679,595	75.32
31	Anggur	4.29	4.05	4.53	10,624,133	74.93
32	Kekacang	4.19	3.95	4.44	10,384,564	73.24
33	Sotong basah	12.94	12.30	13.59	10,271,641	72.45
34	Minuman bercoklat	127.82	122.03	133.60	10,199,913	71.94
35	Pir/Lai	23.65	22.55	24.74	10,182,570	71.82
36	Roti Bun	18.21	17.18	19.24	10,163,340	71.68
37	Gula	21.18	20.52	21.84	10,047,309	70.86
38	Jambu Batu	14.35	13.47	15.24	10,026,836	70.72
39	Limau manis tempatan	14.09	13.18	15.00	10,025,749	70.71
40	Kacang tanah	56.90	53.22	60.57	9,969,366	70.32
41	Rambutan	9.68	8.50	10.86	9,946,645	70.15
42	Sos cili/tomato	8.20	7.77	8.63	9,942,623	70.13
43	Susu pekat manis	29.60	28.45	30.75	9,865,027	69.58
44	Snek/keropok/kerepek	5.85	5.35	6.35	9,831,084	69.34
45	Putik Jagung	4.22	3.98	4.46	9,709,013	68.48
46	Bubur Nasi	28.18	25.96	30.40	9,668,467	68.19

Esttimated population who consumed the food listed

Table 32: continue 2

	Type of food ever eaten during past one year	Estimated intake (g/day)	95 % Confidence Interval		Estimated Population #	Prevalence (%)
			Lower	Upper		
47	Ikan kering	2.93	2.69	3.17	9,609,206	67.77
48	Udang basah	3.00	2.85	3.16	9,572,128	67.51
49	Babi*	23.83	22.12	25.54	3,704,836	65.89
50	Cendawan basah/kering	6.95	6.55	7.34	9,325,411	65.77
51	Durian	4.71	4.07	5.35	9,314,273	65.69
52	Agar-agar/jeli/kastad	9.29	8.75	9.82	9,173,722	64.70
53	Air kopi	170.51	163.50	177.53	9,145,256	64.50
54	Bebola ikan/kek ikan	10.70	9.95	11.45	9,040,484	63.76
55	Sirap kordial	102.29	96.76	107.83	9,027,233	63.67
56	Pulut	4.61	4.05	5.17	9,006,334	63.52
57	Ulam-ulam	3.70	3.50	3.90	8,989,680	63.41
58	Ketam	3.94	3.62	4.27	8,902,653	62.79
59	Nenas	10.07	9.52	10.62	8,885,562	62.67
60	ABC ais/lollipop	25.90	24.03	27.76	8,881,563	62.64
61	Jus buah-buahan	47.51	44.74	50.28	8,877,118	62.61
62	Sambal belacan	4.66	4.42	4.91	8,862,748	62.51
63	Minuman bergas	57.11	53.50	60.72	8,756,208	61.76
64	Aiskrim susu	3.96	3.72	4.21	8,732,754	61.59
65	Lembu/Kerbau	9.47	8.69	10.25	8,689,217	61.29
66	Kekerang	4.70	4.36	5.05	8,337,690	58.81
67	Daging burger	6.73	6.29	7.17	8,332,160	58.77
68	Seri kaya	2.57	2.43	2.70	8,275,833	58.37
69	Tembikai susu	15.09	14.14	16.04	8,183,483	57.72
70	Telur masin	5.08	4.55	5.61	8,020,305	56.57

* Among non-muslim population only

Esttimated population who consumed the food listed

Table 32: continue 3

	Type of food ever eaten during past one year	Estimated intake (g/day)	95 % Confidence Interval		Estimated Population #	Prevalence (%)
			Lower	Upper		
71	Buahan dalam tin	1.46	1.30	1.63	7,956,107	56.12
72	Gula-gula	3.40	3.15	3.64	7,841,867	55.31
73	Keropok lekor	4.17	3.87	4.46	7,812,304	55.10
74	Nugget	4.21	3.96	4.46	7,775,118	54.84
75	Ikan air tawar	12.11	11.15	13.07	7,532,394	53.13
76	Nangka	5.76	5.36	6.17	7,392,889	52.14
77	Belimbing	10.48	9.67	11.28	7,126,875	50.27
78	Buahan kering	3.71	3.28	4.14	6,992,825	49.32
79	Sosej/hotdog/frankfurthe	6.04	5.67	6.41	6,708,050	47.31
80	Longan segar	2.02	1.69	2.36	6,702,901	47.28
81	Kicap pekat	6.32	5.99	6.65	6,666,048	47.02
82	Jem	6.20	5.77	6.62	6,262,017	44.17
83	Bebola ayam/ketam/udang	1.25	1.16	1.34	5,540,089	39.07
84	Sayuran asin/kering	9.96	9.19	10.73	5,388,899	38.01
85	Marjerin	3.48	3.26	3.71	5,311,289	37.46
86	Pizza	3.35	3.02	3.68	5,118,772	36.10
87	Susu tepung	11.57	10.96	12.17	4,933,846	34.80
88	Kicap cair	8.85	8.34	9.36	4,909,589	34.63
89	Mentega	3.64	3.40	3.89	4,725,340	33.33
90	Laici segar	2.75	2.26	3.25	4,604,571	32.48
91	Minuman bertenaga	39.37	36.44	42.30	4,568,217	32.22
92	Tempe	6.91	6.37	7.44	4,552,447	32.11
93	Kambing	2.90	2.58	3.21	4,453,947	31.41
94	Minuman bermalt	42.68	39.06	46.31	4,353,881	30.71

Esttimated population who consumed the food listed

Table 32: continue 4

	Type of food ever eaten during past one year	Estimated intake (g/day)	95 % Confidence Interval		Estimated Population #	Prevalence (%)
			Lower	Upper		
95	Minuman botani/herba	80.50	73.74	87.26	3,950,462	27.86
96	Mentega kacang	3.19	2.90	3.47	3,945,635	27.83
97	Madu	2.27	1.94	2.61	3,935,602	27.76
98	Luncheon meat*	8.27	6.93	9.61	1,536,790	27.33
99	Sotong kering	5.65	5.03	6.28	3,679,015	25.95
100	Bijirin tersedia perlu dibancuh	11.39	10.44	12.35	3,313,737	23.37
101	Itik	1.89	1.40	2.39	3,281,983	23.15
102	Bir*	19.01	8.93	29.09	1,249,886	22.23
103	Yogurt/dadih/lassi/tairu	15.67	13.60	17.74	3,110,080	21.94
104	Capati	15.26	13.05	17.47	3,104,795	21.90
105	Telur puyuh	1.53	1.32	1.74	3,060,179	21.58
106	Bijirin	6.91	6.01	7.81	2,858,569	20.16
107	Tosai	23.51	20.17	26.86	2,852,311	20.12
108	Keju	1.89	1.64	2.14	2,792,025	19.69
109	Ham*	4.06	3.29	4.82	1,028,921	18.30
110	Syandi*	14.50	8.95	20.04	1,027,153	18.27
111	Pasta	8.26	7.21	9.31	2,527,327	17.83
112	Susu sejat/cair	9.03	7.78	10.28	2,499,328	17.63
113	Sagu	5.58	3.53	7.63	2,439,133	17.20
114	Sos tiram	3.91	3.53	4.29	2,421,109	17.08
115	Budu	4.37	3.81	4.92	2,397,206	16.91
116	Wain*	8.05	5.66	10.43	808,036	14.37
117	Cencalok	1.33	1.09	1.57	1,991,023	14.04
118	Susu segar/UHT	35.52	30.38	40.65	1,482,959	10.46

* Among non-muslim population only

Esttimated population who consumed the food listed

Table 32: continue 5

	Type of food ever eaten during past one year	Estimated intake (g/day)	95 % Confidence Interval		Estimated Population #	Prevalence (%)
			Lower	Upper		
119	Bacon*	2.84	2.15	3.54	562,442	10.00
120	Petis/heko/otak udang	1.12	0.95	1.28	1,373,790	9.69
121	Loh Shi Fun	11.73	9.69	13.77	1,305,521	9.21
122	Telur itik	5.27	4.42	6.11	1,293,427	9.12
123	Krim keju	1.46	1.23	1.70	1,011,570	7.13
124	Likeur*	7.58	4.25	10.91	338,731	6.02
125	Sos ikan	1.87	1.49	2.24	463,365	3.27
126	Spirit*	4.70	1.99	7.41	123,101	2.19

* Among non-muslim population only

Esttimated population who consumed the food listed

Table 33: Cereal, cereal products and tubers by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	9.91	0.06	9.79	10.03	6,801	13,912,374	10.36	0.09	10.18	10.54	3,272	7,061,577	9.44	0.08	9.28	9.60	3,529	6,850,797
Zone																		
Southern	9.27	0.11	9.05	9.49	1,308	2,926,683	9.73	0.17	9.40	10.05	617	1,510,546	8.78	0.15	8.49	9.06	691	1,416,137
Central	9.49	0.09	9.31	9.68	2,259	5,244,559	10.10	0.13	9.84	10.37	1,122	2,672,465	8.85	0.13	8.61	9.10	1,137	2,572,095
East coast	10.14	0.20	9.75	10.53	931	1,598,428	10.51	0.32	9.88	11.14	446	820,569	9.74	0.23	9.29	10.20	485	777,859
Northern	10.02	0.19	9.65	10.39	882	1,865,252	10.34	0.28	9.79	10.88	411	906,807	9.71	0.25	9.22	10.21	471	958,445
Sabah	11.95	0.25	11.46	12.44	729	1,109,829	12.34	0.39	11.58	13.10	355	564,317	11.56	0.31	10.94	12.17	374	545,512
Sarawak	10.95	0.21	10.54	11.35	692	1,167,623	11.06	0.32	10.44	11.68	321	586,873	10.84	0.27	10.32	11.36	371	580,749
Strata																		
Urban	9.55	0.08	9.40	9.70	3,632	8,287,608	10.05	0.11	9.82	10.27	1,764	4,185,223	9.05	0.10	8.84	9.25	1,868	4,102,384
Rural	10.43	0.10	10.24	10.62	3,169	5,624,766	10.81	0.15	10.52	11.11	1,508	2,876,354	10.03	0.12	9.79	10.28	1,661	2,748,412
Sex																		
Men	10.36	0.09	10.18	10.54	3,272	7,061,577												
Women	9.44	0.08	9.28	9.60	3,529	6,850,797												
Age group (years)																		
18-19	10.35	0.30	9.77	10.93	376	938,186	11.63	0.43	10.80	12.47	188	475,519	9.03	0.34	8.37	9.69	188	462,667
20-29	10.10	0.10	9.90	10.30	2,016	4,177,249	10.47	0.15	10.19	10.76	975	2,119,345	9.71	0.14	9.43	9.99	1,041	2,057,903
30-39	9.97	0.10	9.77	10.16	1,954	3,581,116	10.29	0.15	9.99	10.59	898	1,810,257	9.63	0.13	9.38	9.89	1,056	1,770,859
40-49	9.64	0.11	9.43	9.84	1,516	2,848,475	10.15	0.15	9.86	10.44	747	1,441,221	9.11	0.15	8.82	9.39	769	1,407,253
50-59	9.59	0.17	9.26	9.92	873	1,755,604	9.79	0.24	9.32	10.26	437	898,932	9.39	0.24	8.92	9.86	436	856,672

Table 34: Meat and product by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	1.18	0.02	1.14	1.21	6,798	13,930,439	1.31	0.03	1.25	1.37	3,296	7,126,412	1.04	0.02	0.99	1.09	3,502	6,804,027
Zone																		
Southern	1.10	0.05	1.00	1.20	1,310	2,937,325	1.31	0.08	1.14	1.47	615	1,510,664	0.89	0.04	0.81	0.96	695	1,426,661
Central	1.24	0.03	1.18	1.30	2,272	5,284,618	1.35	0.04	1.27	1.43	1,144	2,726,697	1.12	0.05	1.03	1.21	1,128	2,557,920
East coast	1.00	0.05	0.90	1.09	929	1,590,830	1.11	0.08	0.96	1.26	449	824,040	0.87	0.05	0.77	0.98	480	766,791
Northern	0.96	0.04	0.88	1.04	876	1,849,964	1.16	0.07	1.03	1.30	412	909,859	0.76	0.04	0.69	0.84	464	940,105
Sabah	1.05	0.05	0.95	1.15	717	1,094,473	1.05	0.08	0.90	1.21	352	561,116	1.05	0.07	0.91	1.18	365	533,356
Sarawak	1.78	0.09	1.61	1.95	694	1,173,229	1.85	0.10	1.65	2.05	324	594,036	1.72	0.14	1.44	1.99	370	579,194
Strata																		
Urban	1.30	0.03	1.24	1.35	3,632	8,297,629	1.43	0.04	1.35	1.52	1,780	4,233,052	1.15	0.03	1.09	1.22	1,852	4,064,576
Rural	1.00	0.03	0.95	1.05	3,166	5,632,810	1.12	0.04	1.05	1.19	1,516	2,893,359	0.87	0.03	0.80	0.94	1,650	2,739,451
Sex																		
Men	1.31	0.03	1.25	1.37	3,296	7,126,412												
Women	1.04	0.02	0.99	1.09	3,502	6,804,027												
Age group (years)																		
18-19	1.51	0.08	1.36	1.67	376	928,110	1.69	0.12	1.47	1.92	191	482,168	1.32	0.10	1.12	1.52	185	445,942
20-29	1.34	0.04	1.26	1.41	2,025	4,212,693	1.54	0.06	1.41	1.66	977	2,139,379	1.13	0.04	1.06	1.21	1,048	2,073,314
30-39	1.12	0.03	1.06	1.18	1,957	3,593,253	1.23	0.05	1.14	1.32	910	1,839,173	1.00	0.03	0.93	1.07	1,047	1,754,080
40-49	1.03	0.04	0.96	1.10	1,514	2,842,702	1.17	0.05	1.07	1.27	754	1,452,628	0.88	0.05	0.79	0.98	760	1,390,074
50-59	0.89	0.04	0.81	0.98	859	1,731,895	0.90	0.06	0.79	1.02	437	896,761	0.88	0.06	0.76	1.01	422	835,134

Table 35: Fish and seafood daily by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	3.04	0.04	2.96	3.11	6,854	14,023,420	3.12	0.06	3.01	3.24	3,318	7,154,506	2.95	0.05	2.85	3.05	3,536	6,868,914
Zone																		
Southern	2.93	0.08	2.77	3.10	1,313	2,943,998	2.98	0.12	2.74	3.21	619	1,517,797	2.89	0.12	2.65	3.12	694	1,426,201
Central	2.78	0.07	2.64	2.92	2,290	5,313,421	2.98	0.11	2.76	3.21	1,148	2,728,004	2.57	0.08	2.41	2.73	1,142	2,585,417
East coast	3.66	0.12	3.43	3.89	941	1,614,689	3.58	0.16	3.26	3.90	453	831,825	3.75	0.17	3.42	4.08	488	782,864
Northern	3.48	0.10	3.29	3.67	881	1,859,565	3.58	0.15	3.28	3.88	414	912,170	3.39	0.12	3.15	3.62	467	947,395
Sabah	3.34	0.11	3.12	3.56	733	1,116,077	3.36	0.16	3.05	3.67	358	568,234	3.31	0.16	3.00	3.62	375	547,843
Sarawak	2.61	0.10	2.42	2.79	696	1,175,670	2.57	0.14	2.30	2.84	326	596,476	2.64	0.13	2.38	2.90	370	579,194
Strata																		
Urban	2.77	0.05	2.66	2.87	3,651	8,329,735	2.85	0.08	2.69	3.01	1,788	4,240,110	2.68	0.07	2.55	2.81	1,863	4,089,626
Rural	3.43	0.06	3.32	3.55	3,203	5,693,684	3.52	0.09	3.35	3.70	1,530	2,914,396	3.34	0.07	3.19	3.49	1,673	2,779,288
Sex																		
Men	3.12	0.06	3.01	3.24	3,318	7,154,506												
Women	2.95	0.05	2.85	3.05	3,536	6,868,914												
Age group (years)																		
18-19	3.32	0.20	2.94	3.71	378	934,111	3.63	0.31	3.03	4.23	191	482,168	3.00	0.23	2.55	3.45	187	451,942
20-29	3.11	0.06	2.98	3.23	2,032	4,218,619	3.19	0.10	3.00	3.38	983	2,143,472	3.02	0.08	2.85	3.18	1,049	2,075,147
30-39	3.15	0.07	3.01	3.30	1,967	3,611,571	3.11	0.09	2.93	3.30	913	1,842,845	3.20	0.11	2.98	3.41	1,054	1,768,726
40-49	2.94	0.07	2.80	3.08	1,532	2,875,549	3.04	0.11	2.84	3.25	763	1,469,375	2.83	0.09	2.64	3.01	769	1,406,174
50-59	2.77	0.10	2.58	2.97	878	1,761,784	2.95	0.15	2.65	3.25	441	900,343	2.58	0.13	2.34	2.83	437	861,442

Table 36: Egg by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	0.28	0.00	0.27	0.29	6,638	13,576,741	0.31	0.01	0.30	0.32	3,203	6,915,588	0.24	0.01	0.23	0.25	3,435	6,661,153
Zone																		
Southern	0.29	0.01	0.27	0.31	1,278	2,880,662	0.34	0.01	0.32	0.36	602	1,481,335	0.24	0.01	0.22	0.27	676	1,399,328
Central	0.25	0.01	0.24	0.26	2,194	5,102,958	0.29	0.01	0.27	0.31	1,097	2,619,981	0.21	0.01	0.19	0.22	1,097	2,482,977
East coast	0.28	0.01	0.26	0.30	916	1,553,925	0.29	0.02	0.26	0.32	442	797,734	0.27	0.02	0.24	0.30	474	756,191
Northern	0.29	0.01	0.26	0.31	865	1,816,397	0.30	0.02	0.27	0.33	405	892,104	0.27	0.02	0.24	0.31	460	924,293
Sabah	0.26	0.01	0.24	0.28	705	1,071,164	0.28	0.02	0.25	0.31	341	542,467	0.25	0.02	0.22	0.28	364	528,697
Sarawak	0.35	0.02	0.30	0.40	680	1,151,635	0.39	0.04	0.30	0.47	316	581,967	0.31	0.02	0.28	0.34	364	569,667
Strata																		
Urban	0.27	0.01	0.26	0.28	3,541	8,090,707	0.31	0.01	0.29	0.33	1,725	4,108,787	0.23	0.01	0.22	0.24	1,816	3,981,921
Rural	0.29	0.01	0.28	0.30	3,097	5,486,033	0.31	0.01	0.29	0.33	1,478	2,806,801	0.26	0.01	0.25	0.28	1,619	2,679,233
Sex																		
Men	0.31	0.01	0.30	0.32	3,203	6,915,588												
Women	0.24	0.01	0.23	0.25	3,435	6,661,153												
Age group (years)																		
18-19	0.31	0.02	0.27	0.35	368	915,956	0.37	0.04	0.30	0.44	189	475,930	0.24	0.02	0.21	0.28	179	440,026
20-29	0.31	0.01	0.29	0.32	1,971	4,094,982	0.33	0.01	0.31	0.35	953	2,086,217	0.28	0.01	0.26	0.30	1,018	2,008,765
30-39	0.27	0.01	0.26	0.28	1,917	3,529,696	0.30	0.01	0.28	0.32	889	1,799,418	0.24	0.01	0.23	0.26	1,028	1,730,278
40-49	0.25	0.01	0.23	0.26	1,481	2,779,729	0.28	0.01	0.26	0.30	725	1,391,625	0.22	0.01	0.20	0.23	756	1,388,104
50-59	0.24	0.01	0.21	0.26	840	1,686,254	0.25	0.02	0.22	0.29	422	874,141	0.22	0.02	0.19	0.25	418	812,113

Table 37: Legumes and products by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	4.50	0.14	4.22	4.78	6,606	13,509,270	5.23	0.22	4.79	5.67	3,181	6,850,890	3.75	0.18	3.40	4.10	3,425	6,658,380
Zone																		
Southern	3.60	0.22	3.16	4.04	1,298	2,899,132	4.31	0.38	3.57	5.04	613	1,494,426	2.85	0.20	2.45	3.25	685	1,404,705
Central	4.54	0.26	4.03	5.05	2,211	5,122,308	5.50	0.39	4.74	6.26	1,101	2,613,598	3.54	0.35	2.87	4.22	1,110	2,508,710
East coast	5.26	0.48	4.32	6.20	860	1,462,472	5.80	0.62	4.59	7.01	410	744,118	4.70	0.74	3.25	6.14	450	718,354
Northern	4.75	0.45	3.86	5.64	864	1,826,407	5.90	0.86	4.21	7.59	402	886,633	3.67	0.32	3.04	4.30	462	939,775
Sabah	5.45	0.45	4.56	6.34	698	1,058,792	5.84	0.74	4.38	7.29	341	537,793	5.05	0.52	4.03	6.08	357	520,999
Sarawak	4.36	0.37	3.64	5.08	675	1,140,159	4.09	0.48	3.14	5.04	314	574,322	4.64	0.55	3.57	5.71	361	565,837
Strata																		
Urban	4.17	0.18	3.81	4.52	3,551	8,102,752	4.80	0.29	4.22	5.37	1,726	4,092,777	3.53	0.21	3.11	3.94	1,825	4,009,975
Rural	5.00	0.23	4.55	5.46	3,055	5,406,518	5.88	0.35	5.20	6.56	1,455	2,758,114	4.09	0.31	3.49	4.70	1,600	2,648,405
Sex																		
Men	5.23	0.22	4.79	5.67	3,181	6,850,890												
Women	3.75	0.18	3.40	4.10	3,425	6,658,380												
Age group (years)																		
18-19	4.84	0.58	3.71	5.98	365	913,975	5.16	0.56	4.08	6.25	187	471,894	4.50	1.04	2.46	6.54	178	442,081
20-29	4.58	0.23	4.13	5.02	1,950	4,037,371	5.41	0.37	4.69	6.13	939	2,039,034	3.72	0.26	3.22	4.23	1,011	1,998,336
30-39	4.52	0.23	4.07	4.96	1,908	3,508,704	5.17	0.38	4.43	5.92	882	1,784,613	3.84	0.24	3.36	4.31	1,026	1,724,091
40-49	4.90	0.40	4.12	5.68	1,480	2,782,938	5.29	0.52	4.27	6.31	732	1,417,255	4.49	0.60	3.32	5.67	748	1,365,683
50-59	4.08	0.47	3.16	5.00	839	1,680,504	5.57	0.89	3.81	7.32	416	847,757	2.56	0.22	2.14	2.98	423	832,746

Table 38: Milk and dairy products by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	0.14	0.00	0.13	0.15	3,701	7,619,942	0.13	0.01	0.12	0.15	1,585	3,497,338	0.15	0.01	0.14	0.16	2,116	4,122,604
Zone																		
Southern	0.15	0.01	0.13	0.17	750	1,645,352	0.14	0.02	0.10	0.17	304	737,564	0.16	0.01	0.13	0.19	446	907,788
Central	0.16	0.01	0.14	0.18	1,280	2,964,878	0.14	0.01	0.12	0.17	568	1,366,534	0.17	0.01	0.15	0.20	712	1,598,344
East coast	0.13	0.02	0.09	0.17	385	653,183	0.14	0.04	0.05	0.22	164	295,122	0.12	0.02	0.09	0.16	221	358,061
Northern	0.14	0.01	0.11	0.16	515	1,100,305	0.14	0.02	0.11	0.17	226	512,812	0.13	0.01	0.10	0.16	289	587,493
Sabah	0.09	0.01	0.07	0.10	415	653,793	0.08	0.01	0.05	0.10	177	309,068	0.10	0.01	0.07	0.12	238	344,725
Sarawak	0.11	0.01	0.08	0.14	356	602,430	0.09	0.02	0.06	0.13	146	276,238	0.13	0.02	0.09	0.16	210	326,192
Strata																		
Urban	0.16	0.01	0.15	0.18	2,164	4,923,394	0.15	0.01	0.13	0.17	943	2,274,976	0.17	0.01	0.15	0.19	1,221	2,648,419
Rural	0.10	0.00	0.09	0.11	1,537	2,696,547	0.09	0.01	0.07	0.10	642	1,222,362	0.11	0.01	0.09	0.12	895	1,474,185
Sex																		
Men	0.13	0.01	0.12	0.15	1,585	3,497,338												
Women	0.15	0.01	0.14	0.16	2,116	4,122,604												
Age group (years)																		
18-19	0.17	0.03	0.11	0.22	226	569,781	0.13	0.03	0.08	0.18	106	261,866	0.20	0.04	0.11	0.29	120	307,914
20-29	0.14	0.01	0.12	0.16	1,161	2,426,689	0.14	0.02	0.11	0.17	500	1,117,222	0.15	0.01	0.13	0.16	661	1,309,467
30-39	0.13	0.01	0.11	0.14	1,073	1,962,915	0.12	0.01	0.10	0.14	435	888,371	0.14	0.01	0.12	0.16	638	1,074,543
40-49	0.14	0.01	0.12	0.16	798	1,467,109	0.12	0.01	0.10	0.14	346	665,770	0.15	0.02	0.13	0.18	452	801,339
50-59	0.16	0.02	0.13	0.20	410	868,237	0.18	0.03	0.12	0.24	187	410,142	0.15	0.02	0.12	0.19	223	458,096

Table 39: Meat, poultry, fish, legumes and products by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	8.74	0.15	8.44	9.04	6,910	14,140,791	9.67	0.23	9.21	10.13	3,337	7,200,454	7.77	0.19	7.39	8.14	3,573	6,940,337
Zone																		
Southern	7.80	0.27	7.28	8.32	1,327	2,967,807	8.80	0.44	7.94	9.65	623	1,526,764	6.75	0.25	6.26	7.23	704	1,441,043
Central	8.53	0.27	8.00	9.06	2,316	5,374,933	9.77	0.40	8.99	10.55	1,159	2,757,054	7.22	0.36	6.52	7.93	1,157	2,617,879
East coast	9.67	0.50	8.69	10.65	942	1,615,879	10.15	0.66	8.85	11.45	453	831,825	9.17	0.76	7.67	10.66	489	784,055
Northern	9.27	0.47	8.35	10.20	891	1,882,175	10.71	0.89	8.98	12.45	416	916,476	7.90	0.35	7.21	8.60	475	965,700
Sabah	9.75	0.47	8.83	10.67	736	1,120,769	10.17	0.73	8.73	11.60	359	569,858	9.32	0.58	8.18	10.46	377	550,912
Sarawak	8.93	0.41	8.13	9.74	698	1,179,226	8.70	0.51	7.71	9.70	327	598,477	9.17	0.64	7.91	10.43	371	580,749
Strata																		
Urban	8.29	0.20	7.90	8.67	3,690	8,416,717	9.13	0.31	8.52	9.74	1,802	4,274,172	7.41	0.23	6.96	7.86	1,888	4,142,545
Rural	9.40	0.24	8.92	9.88	3,220	5,724,074	10.46	0.36	9.76	11.16	1,535	2,926,282	8.29	0.33	7.65	8.93	1,685	2,797,792
Sex																		
Men	9.67	0.23	9.21	10.13	3,337	7,200,454												
Women	7.77	0.19	7.39	8.14	3,573	6,940,337												
Age group (years)																		
18-19	9.71	0.64	8.45	10.97	381	949,433	10.74	0.67	9.43	12.05	191	482,168	8.65	1.10	6.49	10.80	190	467,265
20-29	9.06	0.25	8.57	9.55	2,046	4,247,153	10.11	0.40	9.33	10.89	990	2,161,858	7.96	0.28	7.42	8.51	1,056	2,085,295
30-39	8.85	0.24	8.37	9.33	1,982	3,639,649	9.59	0.39	8.83	10.36	917	1,852,871	8.08	0.29	7.51	8.65	1,065	1,786,779
40-49	8.87	0.40	8.09	9.65	1,543	2,898,048	9.53	0.52	8.51	10.55	766	1,475,387	8.18	0.61	6.99	9.37	777	1,422,661
50-59	7.67	0.49	6.71	8.62	891	1,784,721	9.22	0.91	7.45	11.00	446	911,867	6.04	0.27	5.50	6.58	445	872,854

Table 40: Fruits and vegetables by socio-demographic characteristics

Characteristic	Total						Men						Women					
	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population	Mean frequency	Std error	95% CI		Total sample	Estimated population
			Lower	Upper					Lower	Upper					Lower	Upper		
Malaysia	6.34	0.08	6.19	6.50	6,900	14,126,339	6.27	0.11	6.05	6.50	3,332	7,191,342	6.41	0.11	6.20	6.63	3,568	6,934,998
Zone																		
Southern	6.21	0.16	5.90	6.53	1,323	2,962,207	6.02	0.24	5.55	6.49	622	1,525,695	6.42	0.21	6.01	6.83	701	1,436,512
Central	5.90	0.12	5.67	6.13	2,313	5,370,650	5.91	0.17	5.58	6.24	1,156	2,750,472	5.88	0.17	5.55	6.21	1,157	2,620,178
East coast	5.95	0.21	5.54	6.37	940	1,612,607	5.77	0.31	5.16	6.39	452	830,364	6.14	0.28	5.60	6.68	488	782,244
Northern	5.98	0.24	5.51	6.44	889	1,879,936	6.20	0.37	5.48	6.92	416	916,476	5.76	0.31	5.16	6.36	473	963,460
Sabah	7.09	0.28	6.55	7.64	737	1,121,712	7.07	0.45	6.19	7.96	359	569,858	7.11	0.32	6.49	7.74	378	551,854
Sarawak	9.10	0.36	8.40	9.81	698	1,179,226	8.64	0.43	7.79	9.48	327	598,477	9.59	0.58	8.44	10.73	371	580,749
Strata																		
Urban	6.25	0.10	6.06	6.44	3,686	8,410,785	6.21	0.15	5.92	6.51	1,799	4,267,589	6.28	0.12	6.04	6.52	1,887	4,143,196
Rural	6.49	0.14	6.22	6.75	3,214	5,715,554	6.36	0.18	6.01	6.71	1,533	2,923,753	6.62	0.20	6.22	7.02	1,681	2,791,802
Sex																		
Men	6.27	0.11	6.05	6.50	3,332	7,191,342												
Women	6.41	0.11	6.20	6.63	3,568	6,934,998												
Age group (years)																		
18-19	6.09	0.28	5.53	6.64	381	949,433	6.25	0.45	5.37	7.13	191	482,168	5.92	0.34	5.25	6.58	190	467,265
20-29	6.48	0.15	6.18	6.78	2,041	4,239,615	6.38	0.24	5.92	6.84	989	2,159,823	6.58	0.19	6.21	6.95	1,052	2,079,793
30-39	6.44	0.14	6.16	6.72	1,982	3,639,489	6.28	0.20	5.88	6.67	917	1,852,871	6.61	0.20	6.21	7.01	1,065	1,786,619
40-49	6.38	0.16	6.07	6.68	1,540	2,894,501	6.34	0.21	5.93	6.75	763	1,469,380	6.41	0.23	5.96	6.87	777	1,425,121
50-59	5.95	0.18	5.60	6.31	889	1,781,514	6.17	0.25	5.68	6.67	445	910,798	5.72	0.26	5.21	6.24	444	870,716

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