

RATNAPURA DISTRICT IS RICH IN BIODIVERSITY WITH HIGH NUTRITIONAL VALUE FOODS

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Abstract

Food, comfortable sleep, and good activities are three important facts for healthy life and food is most important. People use various types of food such as vegetables, fruits, bread, cereal, rice and pasta, fats, oil, milk, yoghurt, cheese, meat, fish, beans, eggs, nuts; and can be classified as plant and animal origin. A balanced diet contains all the six groups of nutrients; carbohydrates, proteins, fats, vitamins, fibers, mineral salts in correct proportions and water. The aim of the study is to describe the food values of some of the plants growing in **Ratnapura District** and to make the society aware. Information on nutritional values of food, Sinhala name, Botanical name and parts used as foods are collected from text books and through internet search. **Ratnapura District is rich in biodiversity.** From the plants that grow in this area and among the foods considered as high in calorific values, Rice, Black gram, Madras bram, Gingerly seeds, Finger millet, Green gram, Little millet, Turmeric, Clove, Garlic, Avocado, Pineapple, Custard apple top the list. Carbohydrates are high in Little millet, Rice, Turmeric and Green gram. Fats are high in gingerly seeds and Cashew apple. Madras Bram, Cassew apple, Gingerly seeds Little millet and Agathi are high in proteins. Highest water content is in Ash pumpkin. High calcium levels are present in Long beans, Avocado, Ladies fingers, Mangosteen and Custard apple and highest in Agathi. Lasia has the highest Iron concentration. Gingerly seeds, and Cashew apple have a high phosphorus content. It is concluded that **Ratnapura District is rich in biodiversity and food with high nutritional values.**

Key words: Nutritional values, Food, **Ratnapura District**

Introduction

There are three important facts for healthy life. Namely; food, comfortable sleep, and good lifestyle. People use different types of food. They mostly include vegetables, fruits, bread, cereal, rice and pasta, fats, oil, milk, yoghurt, cheese, meat, fish, beans, eggs, and nuts. These can be classified as of plant origin and of animal origin. Food is vital to our body as a fuel and also contain main nutritional substances such as carbohydrates, proteins, fat, water, vitamins and minerals.

Carbohydrates, proteins and fat are macronutrients. Vitamins and minerals are micronutrients. Carbohydrates and fat are chief energy resources. Protein can give energy but mainly is used for building and repairing of the body tissues Vitamins and minerals are other important bodybuilding elements.

Calcium, phosphorus, iron, iodine and potassium are minerals. Of them, Calcium, and Phosphorus makes bones and teeth hard. Iron builds haemoglobin; the oxygen carrying substance in red blood. Iodine is required for building the thyroid hormone. Body building and energy-giving foods cannot maintain growth and normal metabolism in the absence of vitamins. Vitamins are divided as fat soluble vitamins and water soluble vitamins. Vitamins A, D, E, and K are fat soluble, while vitamins B and C are water soluble. The body obtains Vitamins A, B, and C mainly from plant sources. Vitamin A helps to maintain health of epithelial cells, especially in the skin, front of eye and lining of the digestive and respiratory tracts, and is also essential for regeneration of photo pigmentation in retina. Vitamin B1 (Thiamin) helps to produce enzymes. Vitamin B2 (Riboflavin), component of coenzymes concerned with carbohydrates and protein metabolism in cells of eye, carbohydrates and protein metabolism in cells of eye, intestinal mucosa and blood. Vitamin B3 (Niacin), mainly inhibits production of cholesterol and assists breakdown of triglycerides. Vitamin C is essential for formation and maintenance of

intercellular cement and connective tissues; especially necessary for healthy blood vessels, wound healing and bone growth. These are mainly used by the body for provide energy, repair and replace damage cells; sustain the body in fighting infections.

Nowadays, most people try to get a balanced diet for their meal. But what is balanced diet? It means consuming an assortment of food, in such a quantity and a variety that will provide all the necessary nutrients to maintain a healthy body. Of course, it will have to be a tasty and an enjoyable meal, too. Every essential nutrient has an important role to play for the proper functioning of the human body and a balanced diet plays a major basic role in achieving long life.

Thus, it is important that the general public has a good knowledge on nutritional values of various foods they consume.

Material and methods

Sri Lankans consume different types of foods and most of those are of plant origin. These can be classified as cereal, vegetables, and fruits. The aim of the study is to collect the food values of some of them **which are grown in Ratnapura District**, and to make the public aware of the food-values contained therein. Sinhala name, Botanical name, parts used as foods and their nutritional values are given in the Table No 1.



This image shows below food according to their serial number

Nutritional Values

No	Name in Sinhala & English Name	Botanical name	Part used in Food	E	Car	F	P	Vitamins					W	Cal	I	P	
				(Kcal)	(g)	(g)	(g)	A	B1	B2	B3	C	(mg)	(mg)	(mg)	(mg)	
1	Sahal (Rice)	<i>Oryza Sativa</i>	Seeds	365	7	0.5	7.2	-	0.07	0.01	-	-	11.6 2	28	0.8	115	
2	Udu (Black gram)	<i>Cicer arietinum</i>	Seeds	164	27.42	2.59	8.86	38*	0.11	0.06 3	-	-	60.2 1	49	2.89	291	
3	Kollu (Madras bram)	<i>Dolichos biflorus</i>	Seeds	321	37.2	0.5	22.0	71*	420*	200*	-	-	11.8	287	8.04	311	
4	Kurahan (Finger millet)	<i>Eleusine covacane</i>	Seeds	328	7.2	1.2	7.3				-	-	13.0 1	344	6.4	283	
5	Mun Eta (Green gram)	<i>Vigna Radiata</i>	Seeds	347	62.62	0.38	7.02	94*	470*	370*	-	1	10.0 4	27	7.3	99	
6	Tala (Gingerly)	<i>Sesamum Indicum</i>	Seeds	567	26.04	48.0	16.9 6	-	-	-	-	-	-	131	7.78	774	
7	Meneri (Llitle millet)	<i>Panicum Sumatrense</i>	Seeds	341	70.4	1.1	12.5		200*	180*	-	-	11.9	14	5.0	206	
8	Kohila (Lasia)	<i>Lasia Spinosa</i>	Leaves Stem	34 53	3.2 11.3	0.5 0.1	4 1.7	1311 -	30 100	-	-	-	22	-	155 21	16.3 0.4	26 74
9	Ratu lunu (Red onion)	<i>Allium Cepa</i>	Stem	59	12.6	0.1	1.8	15*	80*	20*	0.5*	2	-	40	1.2	60	
10	Karavila (Bitter gourd)	<i>Momordica Charantia</i>	Fruit	2.5	4.2	0.2	1.6	126*	70*	90*		88	-	20	1.8	70	
11	Alu puhul (White pumpkin)	<i>Benincasa Hispida</i>	Fruit	10	1.9	0.1	0.4	-	60*	100 *	0.4 *	1	96	30	0.8	20	
12	Wambatu (Brijal)	<i>Solanum Melongena</i>	Fruit	24	5.7	0.19	1.01	-	0.03	0.07	0.64	2.2	-	9	0.24	25	
13	Malu miris (Capsicum)	<i>Capsicum Annuum</i>	Fruit	20	4.64	0.17	0.86	-	0.05	0.02 8	0.48 0	-	-	10	0.34	20	
14	Mekaral (Long beans)	<i>Solanum Lycopersicum</i>	Fruit	18	49	0.2	1	-	-	-	-	-	95	-	-	-	
15	Pipinggna (Cucumber)	<i>Cucumis Sativa</i>	Fruit	16	3.63	0.11	0.65	-	0.07	0.33	-	-	-	16	0.28	24	
16	Bandakka (Ladies fingers)	<i>Abelmoschus Esculentus</i>	Fruit	31	7.03	0.10	2.00	-	-	-	-	-	90	-	-	-	
17	Wattakka (Pumpkin)	<i>Cucubita Maxima/PepoMoschata</i>	Fruit	13	6.5	0.1	1.0	-	0.05	0.11	-	9	-	21	0.8	44	
18	Batala (Sweet potatoes)	<i>Solanum Tuberosum</i>	Yam	86		0.1	1.6	70*	0.1	0.1	0.61	2.4	-	30	0.6	47	
19	Nivithi (Spinach)	<i>Basella Alba</i>	Stem with leaves	-	2.9		2	-	30*	260*	6	28	-	73	10.9	21	
20	Kaha (Turmeric)	<i>Curcuma Longa</i>	Rhizome	349	69.4	5.1	6.3	-	30*	30*	-	-	-	150	14.8	282	
21	Dehi (Lime)	<i>Citrus Aurantifolia</i>	Juice	57		0.9		-	20*	10*	0.1*	39	-	70	2.3	10	
22	Karabu neti (Clove)	<i>Syzygium Aromaticum</i>	Fruit	293	45.00	9.0	50	-	100*	200*	2		-	740	5.00	-	
23	Sudu lunu (Garlic)	<i>Allium Sativum</i>	Stem	145	29.8	0.1	6.5	-	60*	230*	0.4	13	-	30.0 0	1.3	310. 00	
24	Abha (Mango)	<i>Mangifera Indica</i>	Fruit	74	16.9	0.4	0.6	90*	90*	90*		16	-	14	1.3	16	
25	Kathuru murnga (Agathi)	<i>Sesbania Garndiflora</i>	Leaves	93	11.8	1.4	8.4	5400 *	210*	90*	1.3	-	-	1130	3.9	80	
26	Delum (Pomegranate)	<i>Punia Granatum</i>	Fruit	65	14.5	0.1	2.6	-	60*	100*	0.3	16	-	10	0.3	70	
27	Papol (Papaya)	<i>Carica Papaya</i>	Fruit	39	9.81	0.14	0.61	55*	0.04	0.05	-	61.8	-	24	0.10	5	
28	Aligeta pera (Avocado)	<i>Persea Americana</i>	Fruit	160	8.53	14.6 6	2	-	0.06	0.13	-	10	-	12	0.55	52	
29	Komadu (Water melon)	<i>Citrusllus Lanatus</i>	Fruit	30	7.55	0.15	0.61	-	0.03	0.02	-	8.1	91.4 5	7	0.24	11	
30	Mengus (Mangosteen)	<i>Garcinia Mangostana</i>	Fruit	73	18	0.6	0.4	-			-	-	81	-	-	-	

Discussion

Daily average energy requirements for Adult and children are given below.

Adults'	Heavy work	-	4500kcal
	Moderate	-	3380 kcal
	Light	-	2420kcal
Adolescent (16 years)		-	3500kcal
Child (8 years)		-	2000kcal

Daily energy requirements are best obtained by consuming well balanced meals which contain carbohydrates, fat and protein plus vitamins, minerals and water. An ideal diet should contain about 300-500g carbohydrates, 70g protein. It should not contain more than 75g fat for men and 53g for women. Approximately 2.5 L of water should be taken in per day. Water is important for maintaining the osmolality of body fluids.

According to the nutritional values, as given in the table, Sahal (Rice), Undu (Black gram), Kollu (Madras bram), Kurahan (Finger millet), Mung eta (Green gram), Tala (Gingerly), Meneri (Little millet) Kaha (Turmeric), Karabu neti (Clove), Sudu loonu (Garlic), Aligeta pera (Avocado), Annasi (Pineapple), Seeni aththa (Custard apple) are considered as the food containing most calories, out of thirty four items and Tala (Gingerly) being the highest.

Meneri (Little millet), Kaha (Turmeric), and Mung Eta (Green gram) contain most carbohydrates. Tala (Gingerly), and Kaju puhulan (Cashew apple) are foods with high fat content. High proteins are contained in foods such as Kollu (Madras bram), Kaju puhulan (Cashew apple), Tala (Gingerly), Meneri (Little millet) and Kathuru murunga (Agathi).

Out of these thirty four food items, water content is high in Alu puhul (Ash pumpkin), Mekaral (Long beans), Komadu (Water melon), Bandakka (Ladies fingers), Mengus (Mangosteen), and Seeni aaththa (Custard apple). Kathuru Murunga (Agathi) has the highest calcium level. Highest iron is found in Kohila, (Lassia) Tala (Gingerly), and Kaju puhulan (Cashew apple) are the foods with high phosphorus content.

Above information provides nutritional values of thirty four selected plants growing in Ratnapura District, which is an area rich in biodiversity.

Conclusion

A balanced diet means getting the right types and amounts of foods and drinks so as to supply the nutritional and energy requirements for maintaining body cells, tissues, and organs, and for supporting normal growth and development. A well-balanced diet should provide sufficient energy and nutrition for optimal growth and development.

If the public has a good knowledge of food values, they can select a balanced diet that will help to promote health, prevent diseases occurred by malnutrition or over nutrition, and be enjoyable as well.

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