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DEPARTMENT OF BOTANY

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S.B. ARTS & K.C.P SCIENCE COLLEGE,
VIJAYAPURA - 586103
(An Institution Affiliated to Rani Channamma University, Belagavi)**



**A
PROJECT REPORT
ON**

“Nutritional Value of Fruits and Vegetables”

**SUBMITTED TO THE
S.B. ARTS & KCP SCIENCE COLLEGE VIJAYAPURA
(An Institution Affiliated to Rani Channamma University, Belagavi)**
In the partial fulfillment of the requirements for the award of degree of

BACHELOR OF SCIENCE (CBZ)

SUBMITTED BY
KEERTANA K JAYAKKANAVAR [U15KM21S0157]
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**Under the Guidance of
Dr. Ramchandra Naik M
ASSISTANT PROFESSOR &
HEAD OF THE BOTANY DEPARTMENT
S.B. ARTS & SCIENCE COLLEGE
VIJAYAPURA 2023-24**

**B.L.D.E., ASSOCIATION'S
S.B ARTS & K.C.P SCIENCE COLLEGE
VIJAYAPURA-586103
(An Institution Affiliated to Rani Channamma University, Belagavi)**

DECLARATION

We hereby declare that this project and entitled "**Nutritional Value Of Fruits And Vegetable**" Submitted to SB Arts and KCP Science College, Vijayapura in partial fulfillment for the award of the degree Bachelor of science in botany is the result of the bonafied work, carried out under the guidance of Dr.Ramchandra Naik.M. Head of the Department of Botany during the year 2024-2025 .

I further declare that work embodied in the project has not been submitted for the award of any diploma or degree of this university or elsewhere.

KEERTANA K JAYAKKANAVAR 

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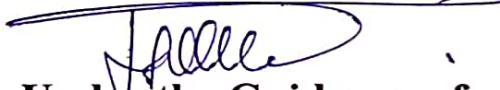


DEPARTMENT OF BOTANY

CERTIFICATE

This is to certify that the project report entitled "**NUTRITIONAL VALUE OF FRUIT AND VEGETABLES**" submitted to S.B Arts and KCP Science College Vijayapura for the award of degree of bachelor of science in botany by to '**KEERTANA K JAYAKKANAVAR**', '**RAKSHITA NESUR**', '**PRIYANKA CHAVAN**', '**SUNILKUMAR C LAMANI**' and '**SAGAR R BHOSAGI**' is the result of bonafide work carried out by us under guidance at the department of botany, S.B Arts and KCP Science College Vijayapura.

I further declare that work embodied in the project has not been submitted for the award of any diploma or degree of this university or elsewhere.


Under the Guidance of
Dr. RAMACHANDRA NAIK M
Asst. Professor, Botany Dept.,
KCP

Date:

Place:

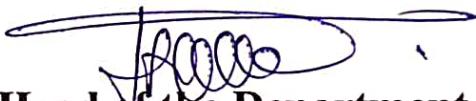
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DEPARTMENT OF BOTANY

CERTIFICATE

This is to certify that the following students 'KEERTANA K JAYAKKANAVAR [U15KM21S0157]', 'RAKSHITA NESUR [U15KM21S0276]', 'PRIYANKA CHAVAN [U15KM21S0119]', 'SUNILKUMAR C LAMANI [U15KM21S0262]' and 'SAGAR R BHOSAGI [U15KM21S0121]' of B.Sc. VI Semester of Chemistry, Botany, Zoology stream has satisfactorily completed project report on "**NUTRITIONAL VALUE OF FRUITS AND VEGETABLES**" during the academic year 2023-2024 as prescribed by Rani Channamma University, Belagavi.


Head of the Department

Dr. RAMCHANDRA NAIK M
Asst. Professor and HoD, Botany
Dept. KCP

Examiners:

1. 
2. 

ACKNOWLEDGEMENT

I express my deep sense of gratitude and indebtedness to my esteemed institute “S.B. ARTS & K.C.P SCIENCE COLLEGE, VIJAYAPURA” which has provided me an opportunity to fulfill the most cherished desire to reach my goal.

I express my foremost gratitude to my Principal Ms. RABIYA MIRDHE, KCP for his constant support and valuable guidance.

I express my foremost gratitude to our guide Dr. RAMACHANDRA NAIK M, Professor, Botany Department, KCP for his constant support and valuable guidance.

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Finally, I am very thankful to my beloved parents and to my dear friends.

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Chapter 1

A Review Paper on Fruit Nutrition and Health Benefits

Abstract

The present study aimed at studying nutritional facts of fruits and its impact on betterment of health. Food packets come with labels on it stating its nutritional facts. If fruits had labels on them their nutritional facts would leave us surprised. Over last few decade people have become conscious about their health and diet. In such time, importance of fruits in nutrition and their health benefits can't be left unrecognized. Fruits are rich in vitamins, minerals and are rich source of energy. Mango and papaya are rich source of Vitamin A. Aonla, guava and citrus fruits are rich in vitamin C, while richest source for vitamin C was Barbados cherry. Walnut is the richest source of fat (64.5 per cent) and produces highest calories per unit of edible portion. Cashew nut is the richest source of protein 21.2% and thiamine 630mg/100g. Litchi is richest source of calcium and cashew nut is found rich in Vitamin-B1 (Thiamine). Dry karonda is the richest source of iron (39.1 per cent) followed by date palm (10.6 per cent)

Keywords :- Blood pressure, fruits, health benefits, nutrition, vitamin

Nutritional Value of Fruits and Vegetables



Apple



Custard Apple



Pineapple

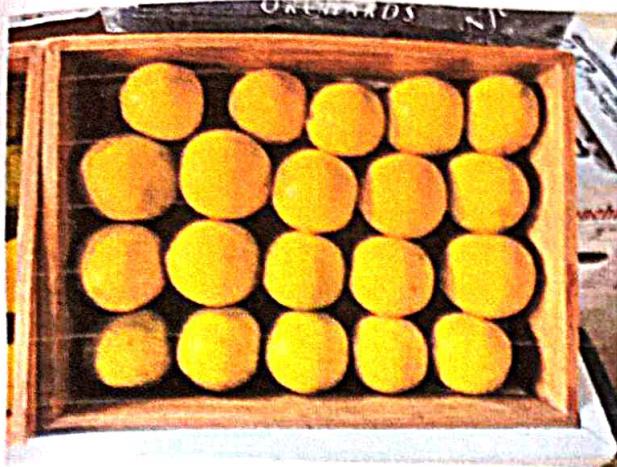


Banana



Guava

Nutritional Value of Fruits and Vegetables



Orange



Avocado



Sapodilla



Papaya



Dragon Fruit



Shastri Market Vijayapura

RPH7+QWV, Shri Siddeshwara

**Rd, Godbole Mala, Vijayapura,
Karnataka 586101**



Nutritional Value of Fruits and Vegetables

NUTRITIVE VALUE OF FRUITS

	Energy (Kcal)	Moisture (g)	Protein (g)	Fat (g)	Mineral (g)	Fibre (g)	Carbohydrates(g)	Calcium (mg)	Phosphorus (mg)	Iron (mg)
Ambada	48	90	1	3	0	1	4	36	11	4
Amla	58	82	0	0	0	3	14	50	20	1
Apple	59	85	0	0	0	1	13	10	14	1
Apricot fresh	53	85	1	0	1	1	12	20	25	2
Apricot dry	306	19	2	1	3	2	73	110	70	5
Avocado	215	74	2	23	1	-	1	10	80	1
Bael fruit	137	61	2	0	2	3	32	85	50	1
Banana ripe	116	70	1	0	1	0	27	17	36	0
Banvan tree figs	72	74	2	2	2	8	12	364	43	-
Bahundi	19	94	0	0	0	1	3	15	10	1
Bread fruit	71	79	1	0	1	2	16	40	30	0
Bullock heart	70	77	1	0	1	5	16	10	10	1
Cape gooseberry	53	83	2	0	1	3	11	10	67	2
Cashew fruit	51	86	0	0	0	1	12	10	10	0
Cherries, red	64	83	1	0	1	0	14	24	25	0
Currants, black	316	18	3	0	2	1	75	130	110	8
Dates fresh	144	59	1	0	1	4	34	22	38	1
Dates dried	617	15	2	0	2	4	76	120	50	7
Grape pale green	71	79	0	0	1	3	16	20	30	0
Grape fruit seedless	45	88	1	0	0	0	10	30	30	0
Grape fruit triumph	32	92	1	0	0	0	7	20	20	0
Grapes blue variety	58	82	1	0	1	3	13	20	23	0
Guava, country	51	82	1	0	1	5	11	10	28	0
Guava, hill	38	85	0	0	1	5	9	50	20	1
Jack fruit	88	76	2	0	1	1	20	20	41	0
Jambu fruit	62	84	1	0	0	1	14	15	15	0
Korukipalki	78	79	3	0	1	1	16	14	49	1
Lakuch	66	82	1	1	1	2	13	50	20	0
Lemon	57	85	1	1	0	2	11	70	10	0
Lemon sweet	35	90	1	0	0	0	7	30	20	1
Figs	37	88	1	0	1	2	8	80	30	1
Lichi	61	84	1	0	0	0	14	10	35	1
Lime	59	85	1	1	1	1	11	90	20	0
Lime, sweet malta	36	90	1	0	0	1	8	30	20	1
Loquat	43	88	1	0	0	1	10	30	20	1
Mahua, ripe	111	74	1	2	1	0	23	45	22	0
Mango	74	81	1	0	0	1	17	14	16	1
Mangosteen	60	85	1	0	0	0	14	10	20	0
Melon, musk	17	95	0	0	0	0	3	32	14	1

Work Carried on nutritional values and health benefits

Health Benefits of Fruits

Fruits are universally promoted as healthy. The Dietary Guidelines for Americans 2010 recommend you make one half of your plate fruits and vegetables. Myplate.gov also supports that one-half the plate should be fruits and vegetables. Fruits include a diverse group of plant foods that vary greatly in content of energy and nutrients. Additionally, fruits and supply dietary fibre, and fibre intake is linked to lower incidence of cardiovascular disease and obesity. Fruits also supply vitamins and minerals to the diet and are sources of phytochemicals that function as antioxidants, phytoestrogens, and anti-inflammatory agents and through other protective mechanisms (Slavin, 2012).

Fruit Consumption and Disease Cure

It was recognized that a high consumption of fruits and vegetables can help to prevent several non-communicable diseases such as cardiovascular diseases, the diabetes type 2 and some cancer (Gann, 2006).

Pomegranate

Reported that special blend of pomegranate juice, seed, and peel that, according to published results, potently and reproducibly kills prostate and breast cancer cells in culture. In addition to Biblical references, the Romans mention the tree's unique healing powers, and several Middle Eastern, Asian, and South American peoples continue to chew small bits of its bark, petals, and peel to treat ailments ranging from dysentery to diseases of the mouth and gums. By supplementing diets with pomegranate juice, which is high in antioxidants, seemed to improve some key indicators of cardiovascular health. In addition to the high levels of antioxidant-rich tannins and flavonoids in the juice and peel, researchers crush and dry the seeds to produce unique oil, about 80% of which is a very rare 18-carbon fatty acid, or punicic acid. Also present in

the oil is the isoflavone genistein, the phytoestrogen coumestrol, and the sex steroid estrone. In fact, the pomegranate is one of the only plants in nature known to contain estrone (Robert, 2003).

Date Palm Fruits

Egyptian Date Palm (*Phoenix dactylifera L.*) Fruits contain a variety of B-complex vitamins B1, B2, Nicotinic acid and vitamin A. The date palm extracts contains 13.80% moisture and 86.50% total solid. Ash and Crud fibres contents were 2.13 and 5.20, respectively. Protein, carbohydrates and lipids contents were 3.00%, 73.00% and 2.90% respectively. The low level of lipids content 2.90% compared with its content of sugars means that, the date palm is save to heart and blood patients because its containing a very low level of fatty acids and cholesterol. HPLC analysis of sugars content showed that, the carbohydrate content consists of a large amount of glucose, fructose and sucrose, The protein pattern on SDSPAGE showed that, most of proteins in the date palm are a high molecular weight proteins between 80 and 135 KD and contained a minimum levels of the LMW proteins less than 55 KD (El-Sohaimy, 2010).

Aonla or Indian Gooseberry

The main nutrient in Aonla is vitamin C (720 mg/100 g fruit). While storing dry or in other forms vitamin c may get destroyed if exposed to heat but its tannins which protect them from being destroyed. It also has ample of chemical constituents which renfder it with a very high antioxidant value. Amalaki (*Emblica officinalis*) i.e. Aonla and its preparations can be used in any type of ill health. It is commonly used in piles, fracture, constipation, vomiting, nausea, diseases related to vision and eye, hick up, fever, jaundice, liver disease, skin disease, diabetes (Kavita, 2013).

Conclusion

In conclusion, it can be stated that fruits are rich sources of vitamins, minerals, calories and other needful nutrients. Including fruits in daily diet will have multiple health benefits and will also help in disease cure. Poor diet can be said an invitation to multiple diseases. Citrus fruits and Aonla are rich in Vitamin C, while the richest source for Vitamin C was Barbados cherry. Walnut is the richest source of fat (64.5 per cent) and produces highest calories per unit of edible portion. Cashew nut is the richest source of protein 21.2 per cent and thiamine 630mg/100g. Dry Apricot is the richest source of calcium, phosphorus and niacin. Dry karonda is the richest source of iron (39.1 per cent) followed by date palm (10.6 per cent). Litchi was found rich in calcium content. Bael is the richest source of riboflavin.