

## FRUITS AND VEGETABLES

**Ques. Why should we eat vegetables/fruits?**

**Ans. Fruits and vegetables are packed with thousands of beneficial compounds. Following reasons makes it essential to include fruits and vegetables in our daily diet:**

- Fresh Vegetables and fruits are rich sources of micronutrients like minerals (like iron and calcium) and vitamins (like vitamin C, folic acid, B complex vitamins and carotenoids)
- Fresh Vegetables and fruits are rich sources of macronutrients like complex carbohydrates/ fibre. They contain abundant amounts of iron, calcium, vitamin C, folic acid, carotenoids (precursors of vitamin A) and phytochemicals.
- Some vegetables and fruits provide very low calories in addition to high fibre content, whereas some others such as potato, sweet potato, tapioca and yam as well as fruits like banana are rich in starch which provides energy in good amount. Therefore, vegetables and fruits can be used to increase or decrease calories in our diet.

**Ques. - What functions does Iron in vegetables/fruits perform in the body?**

**Ans.** Iron is abundantly found in some of the fruits and vegetables like green leafy vegetables, dried fruits, organ meats etc. Iron is an essential element necessary for the formation of haemoglobin, the red pigment present in the red cells of blood. Haemoglobin plays an important role in the transport of oxygen to the tissues. Reduction in haemoglobin in blood leads to anaemia; a condition characterised by paleness and easy fatigue and increased susceptibility to infections. Iron is available in plenty in green leafy vegetables. But the absorption of iron is limited. Vitamin C rich foods must be consumed along with iron rich foods to improve iron absorption.

Some of the iron rich fruits and vegetables are:

- Plant foods like green leafy vegetables, legumes and dried fruits contain iron.
- Iron is also obtained through meat, fish and poultry products.
- Iron bio-availability is poor from plant foods but is good from animal foods.
- Fruits rich in vitamin C like gooseberries (amla), guava and citrus fruits improve iron absorption from plant foods.
- Beverages like tea bind dietary iron and make it unavailable. Hence, they should be avoided before, during or soon after a meal

**Ques. - What functions does Vitamin A in vegetables/fruits perform in the body?**

**Ans.** Carotenoids (Pre-formed vitamin A) are plentiful in fruits and vegetables that are green or deep yellow/orange in colour, such as green leafy vegetables, carrots, tomatoes, sweet potatoes, papaya, mango etc. This fat-soluble vitamin is necessary for clear vision in dim light, and for maintaining the integrity of epithelial tissues. In vitamin A deficiency, the white of the eye (conjunctiva) loses its lustre and becomes dry. In severe vitamin A deficiency, the black area of the eye (cornea) gets necrosed, leading to irreversible blindness in young children. Vitamin A also has a role in maintaining resistance of the body to common infections.

**Ques. - What functions does Vitamin C in vegetables/fruits perform in the body?**

**Ans.** Vitamin C is abundantly available in fresh amla, citrus fruits, guava, banana and certain vegetables such as tomatoes. Vitamin C is an essential nutrient required for healthy bones and teeth. It also promotes iron absorption. Vitamin C deficiency is characterised by weakness, bleeding gums and defective bone growth. However, it is very susceptible to destruction by atmospheric oxidation. It is for this reason that when vegetables become dry and stale or cut and exposed to air most of the vitamin C originally present is destroyed.

**Ques. - What functions does Folic Acid in vegetables/fruits perform in the body?**

**Ans.** Folic Acid is found in good quantities in Green leafy vegetables, legumes, nuts and liver. Folic acid is a haemopoietic vitamin essential for multiplication and maturation of red cells in our body. Its deficiency leads to megaloblastic anaemias. Folic acid intake during pregnancy protects the foetus from developing certain congenital defects. It also promotes the birth weight of infants. Folic acid deficiency increases homocysteine (**Homocysteine** is a non-protein amino acid) levels in blood, thereby increasing the risk for heart disease.

**Ques. – How can vegetables and fruits with low or high calorie content help in weight management?**

**Ans. -** Many of the vegetables and fruits have low calories in addition to high fibre content. Large intake of low calorie vegetables and fruits can help in reducing calories in diet and help in obesity management by providing high satiety and low calories. On the other hand vegetables like colocasia, potato, tapioca, yam, sweet potato and fruits like banana, avocado pear (215 Kcal) and mahua (111 Kcal) have more than 100 kcal per 100gram.

**Ques. What are some of the low calorie vegetables and fruits?**

**Ans.** A list of low calorie fruits and vegetables is given below:

**Low calorie vegetables and fruits ( 20 kcal)**

Name of the vegetables	Kcal
<b>GLV</b>	
Amaranth (stem)	19
Ambat chukka	15
Celery stalk	18
Ipomoea stem	19
Spinach stalk	20
<b>Roots and tubers</b>	
Radish table	16
Radish white	17
<b>Other vegetables</b>	
Ash gourd	10
Bottle gourd	12
Cluster beans	16
Colocasia stem	18
Cucumber	13
Ghosala	18
Kovai	18
Parwal	20
Ridge guard	17
Snake guard	18
Vegetable marrow	17
<b>Fruits</b>	
Bilimbi	19
Jamb safed	19
Musk melon	17
Water melon	16
Orange juice	9
Tomato ripe	20

Source: Nutritive Value of Indian Foods, 2006

**Ques. What are some of the high calorie vegetables and fruits?**

**Ans.** A list of high calorie fruits and vegetables is given below:

### Vegetables and Fruits with High calorie value ( $\geq 100$ kcal)

Food Stuff	Kcal/100g
<b>Leafy vegetables</b>	
Chekkur manis	103
Colocasia leaves (dried)	277
Curry leaves	108
Fetid cassia (dried) (Chakunda)	292
Rape leaves (dried)	297
Tamarind leaves	115
<b>Roots &amp; Tubers</b>	
Arrow root flour	334
Parsnip	101
Sweet potato	120
Tapioca	157
Yam ordinary	111
Yam wild	110
<b>Other vegetables</b>	
Beans, scarlet runner	158
Jack fruit, seeds	133
Karonda (dry)	364
Lotus stem (dry)	234
Sundakai (dry)	269
Water chestnut (fresh)	115
Water chestnut (dry)	330
<b>Fruits</b>	
Apricot (dry)	306
Avacado pear	215
Banana	116
Bael fruit	116
Currants, red	316
Dates (dried)	317
Dates fresh	144
Mahua (ripe)	111
Raisins	308
Seetaphal	104
Wood apple	134

Source: Nutritive Value of Indian Foods, 2006

**Ques. – What are Phytochemicals?**

**Ans.** Phytochemicals is a general name for chemicals present in plants. They may protect DNA and other cell parts from oxidation, detoxify environmental pollutants, deactivate carcinogens, boost the immune system, or act in as yet unknown ways to prevent or delay onset of cancer, heart disease, cataracts, and other diseases related to the foods we eat or don't eat.

**Ques. - What functions does Phytochemicals in vegetables/fruits perform in the body?**

**Ans.** Vegetables provide phytochemicals and considerable health significance to the human body. Among these, dietary fibre, antioxidants, and other bio-active constituents require special mention. These special factors are required for delaying ageing and preventing the processes which lead to diseases such as cataract, cardio-vascular diseases, diabetes and cancer.

**Ques. - What functions does Dietary fibre in vegetables/fruits perform in the body?**

**Ans.** Dietary fibre delays the intestinal transit of the food consumed. Dietary fibre is important for proper bowel function, to reduce chronic constipation, diverticular disease, haemorrhoids coronary heart diseases, diabetes and obesity. They also reduce plasma cholesterol. The protective role of dietary fibre against colon cancer has long been recognised.

**Ques. – What is soluble and insoluble dietary fibre?**

There are two different types of fibre -- soluble and insoluble. Both are important for health, digestion, and preventing diseases.

- **Soluble fibre** attracts water and turns to gel during digestion. This slows digestion. Soluble fibre is found in oat bran, barley, nuts, seeds, beans, lentils, peas, and some fruits and vegetables. Soluble fibre may help lower cholesterol, which can help prevent heart disease.
- **Insoluble fibre** is found in foods such as wheat bran, vegetables, and whole grains. It adds bulk to the stool and appears to help food pass more quickly through the stomach and intestines.

**Ques. – What are antioxidants?**

**Ans.** Antioxidants are a group of substances that prevent the damage caused by the oxidation of fatty acids and proteins by oxygen free radicals.

Free radicals are molecules produced when your body breaks down food, or by environmental exposures like tobacco smoke and radiation. Free radicals can damage cells, and may play a role in heart disease, cancer and other diseases.

Antioxidant substances include:

- Beta-carotene
- Lutein
- Lycopene
- Selenium
- Vitamin A
- Vitamin C
- Vitamin E

Antioxidants are found in many foods. These include fruits and vegetables, nuts, grains, and some meats, poultry and fish.

**Ques. - What functions does antioxidants in vegetables/fruits perform in the body?**

**Ans.** Antioxidants plays important functions in the body. Antioxidants restrict the damage that reactive oxygen free radicals can cause to the cell and cellular components.

They are of primary biological value in giving protection from certain diseases. Some of the diseases that have their origin in deleterious free radical reactions are atherosclerosis, cancer, inflammatory joint diseases, asthma, diabetes etc.

**Ques. – What are the rich sources of antioxidants?**

- Raw and fresh vegetables like green leafy vegetables, carrots, fresh fruits including citrus and tomatoes have been identified as good sources of antioxidants (free radical scavengers).
- The nutrients vitamin C and carotenoids that are present in these vegetables are also potential antioxidants.
- Different coloured vegetable provide different antioxidants like orange coloured provides beta-carotene, red provide lycopene, deep red provides betalines, blue and purple provide anthocynins.

**Ques. – How much fruits and vegetables should be consumed on a daily basis?**

**Ans.** The Expert Committee of the Indian Council of Medical Research, taking into consideration the nutrient requirements, has recommended that every adult should consume at least 300 g of vegetables (GLV : 50 g; Other vegetables : 200 g; Roots & Tubers : 50 g) in a day.

In addition, fresh fruits (100 g) should be consumed regularly. Since requirements of iron and folic acid are higher for pregnant women they should consume 100g of leafy vegetables daily.

High calorie vegetables and fruits should be restricted for over-weight/ obese subjects.

**Ques. – Which vegetables and fruits should be consumed?**

**Ans.** One should consume fresh, locally available seasonal vegetables and fruits. They have more micronutrients and tastes better. However no single fruit or vegetable provides all the nutrients one needs. The key lies in eating a variety of and colours.

Include commonly consumed leafy greens, tomatoes and other vegetables, apart from these yellow, orange, red, deep red, purple citrus fruits, being vitamin C – rich enrich the diets significantly. Along with these try selecting some new vegetables and fruits to your meals.

**Ques. – How can one prevent cooking losses from vegetables and fruits?**

**Ans.** Water-soluble and heat sensitive vitamins (like B-complex vitamins) are lost during washing of cut vegetables and cooking of foodstuffs. However, proper methods of cooking can substantially reduce these losses. Nutrient loss is high when the vegetables are washed after cutting or when they are cut into small pieces for cooking. Consumption of properly washed raw and fresh vegetables is always beneficial.

Cutting of vegetables into small pieces exposes a greater surface area of the foodstuff to the atmosphere, resulting in loss of vitamins due to oxidation. Therefore, vegetables should be cut into large pieces. Cut vegetables should not be soaked in water for long, as water-soluble minerals and vitamins get dissolved. Water in which vegetables have been soaked should not be discarded but put to use to prevent nutrient loss. Avoid washing vegetables after cutting

**Ques. – How to accommodate more servings of vegetables and fruits in a day?**

**Ans.** To get the maximum nutritional benefits from fruits and vegetables it is important to find ways to eat more servings of vegetables and fruits per day. Few tips are given below to include more fruits and vegetables in the diets.

- Eat vegetables/ fruits in all your meals in various forms (curry, soups, mixed with curd, added to pulse preparations and rice)
- Consume raw and fresh vegetables as salads.
- Grow the family's requirements of vegetables in the kitchen garden, if possible
- Green leafy vegetables, when properly cleaned and cooked, are safe even for infants.
- Let different varieties of vegetables and fruits add colour to your plate and vitality to your life.
- Beta carotene rich foods like dark green, yellow and orange colored vegetables and fruits (GLVs, carrots, papaya and mangoes) protect from vitamin- A deficiency.

**Ques. – What are the cost-effective ways of How do we get these foods (concept of kitchen gardening will be elaborated here)**

**Ans.** Green leafy vegetables (GLVs), other vegetables and fruits are easily available. Most vegetables, particularly GLVs are inexpensive. In fact, these foods can be grown in the backyard with very little effort and cost. Even in lean seasons like summer, they can be grown using water and waste from kitchen.

**Ques. - How to Use Fruits and Vegetables to Help Manage Your Weight?**

**Ans.** Fruits and vegetables are part of a well-balanced and healthy eating plan. There are many different ways to lose or maintain a healthy weight. Using more fruits and vegetables along with whole grains and lean meats, nuts, and beans is a safe and healthy one. Helping control your weight is not the only benefit of eating more fruits and vegetables.

To **lose weight**, one must eat fewer calories than the body uses.

- For this one can create low-calorie versions of some of the dishes by substituting low-calorie fruits and vegetables in place of higher-calorie ingredients.
- The water and fibre in fruits and vegetables will add volume to dishes, so one can eat the same amount of food with fewer calories. Most fruits and vegetables are naturally low in calories and high in fibre.
- Substitution is the key to reduce the calorie content of any dish. It is true that fruits and vegetables are lower in calories than many other foods, but they do contain some calories. If you start eating fruits and vegetables in addition to what you usually eat, you are adding calories and may gain weight. The key is substitution. Eat fruits and vegetables instead of some other higher-calorie food.

**Ques. – How can fruits and vegetables be incorporated in the weight management plan?**

**Ans.** Following tips may prove useful for making fruits and vegetables part of the Weight Management Plan:

- Eat fruits and vegetables in its natural form.
- Eat your fruit raw to enjoy its natural sweetness.
- Canned or frozen fruits and vegetables are good options when fresh produce is not available. However, be careful to choose those without added sugar, syrup, cream sauces, or other ingredients that will add calories.
- Use fat-free or low-fat cooking techniques like steaming, stir frying. Some cooking techniques, such as frying, or using high-fat dressings or sauces will greatly increase the calories and fat in the dish.
- Choose whole fruit over fruit drinks and juices. Fruit juices lack fruit fibre. It is better to eat the whole fruit because it contains the added fiber that helps you feel full.
- One 6-ounce serving of orange juice has 85 calories, compared to just 65 calories in a medium orange.

Fruits are generally very efficient source of Vitamin C. An average of 100g of mix fruit can give an adult his daily Vitamin C requirements. The fruits which are good sources of Vitamin C include guava, sitaphal, amla etc

The yellow and deep orange coloured fruits are excellent sources of  $\beta$ -carotene, the precursor of Vitamin A. this essential nutrient protects the person from nutritional blindness. Mango and papaya are some of the best and low cost sources of this important vitamin. Tomato, orange, muskmelon, roseapple and cape gooseberry are also fairly good sources of carotene.

Some are fair sources of vitamins of the B-complex family. These include banana, sithaphal, pineapple, cherimoya and raisins.

Most of the essential minerals such as calcium are found in fruits like sitaphal, citrus, amla, hill guava etc. some fruits provide iron and other trace minerals also –lemon, guava, watermelon and sapota.

**Source:** Publication on Fruits by NIN, Reprint-2011

**Ques. – What is the richest known natural source of Vitamin C?**

**Ans.** Amla also known as gooseberry is probably the richest known natural source of vitamin C. the fruit pulp is reported to contain as much as 600 mg of the vitamin per 100 g and the pressed juice as much as 920 mg/100ml; nearly twenty times as much as in orange juice i.e. one tiny amla is equal in vitamin C value to one or two oranges. The fruit contains a chemical substance which prevents the oxidation of the vitamin in it. Therefore, amla is a rich source of vitamin C in the in fresh as well as in the dry condition. It is also one of the cheapest sources of Vitamin C available in India.

Nutrient	Nutritive value per 100 g of Amla
Protein	0.5 g
Energy	58 kcal
Carotene	9 µg
Calcium	50 mg
Iron	1.2 mg
Phosphorus	20 mg
Fibre	3.4 g
Vitamin C	600 mg

**Ques. – In what forms can amla be consumed?**

**Ans.** Amla can be consumed in multiple forms, some of which are raw form, pickled form, cooked form, in chutneys, fresh vegetable juices, murrabs, candies, bars, dry powder, fermented liquor, sherbet.....

**Ques. – What are medicinal properties of Amla?**

**Ans.** Amla fruit has been known for its medicinal properties in the indigenous medicine system of India.

Amla has the following medicinal properties:

Acidic, cooling, diuretic (A substance or drug that tends to increase the discharge of urine. Diuretics are used in the treatment of high blood pressure, edema, and other medical conditions) and laxative (an agent stimulating evacuation of faeces).

It is claimed that the dried fruit is useful in haemorrhage, diarrhoea and dysentery.

In combination with iron amla is used as a remedy for anaemia, jaundice and dyspepsia (Dyspepsia can be defined as painful, difficult, or disturbed digestion, which may be accompanied by symptoms such as nausea and vomiting, heartburn, bloating, and stomach discomfort)

A fermented liquor prepared from the fruit is used in jaundice, dyspepsia and cough.

Acute bacillary dysentery may be asserted by drinking a sherbet of amla with lemon juice. Amla is one of the three ingredients in Triphala, a compound in indigenous medicine, used in the treatment of headache, biliousness, dyspepsia, constipation, enlarged liver and ascites (Ascites is an abnormal accumulation of fluid in the abdomen).

**Ques. – How does Apples compare with other popular fruits of India?**

**Ans. Apples** does not compare favourably with the other popular fruits of India, particularly with reference to cost. The apple contains practically no vitamin A or C. Mango and Papaya are far superior in their carotene content as compared to apples. They are cheaper and more abundantly available in their seasons. As compared to 100gm amla, which has 600mg of vitamin C, 100gm of apple has less than 2mg of this vitamin. Even the bananas contain 7 mg of vitamin C and 78µg of carotene

- Apples have very small amounts of mineral nutrients to their credit. The iron content is just 1 mg per 100 gm. The gooseberry and watermelon contain more iron than does the apple. Apples contain fair amounts of calcium and phosphorus; but the more easily available and cheaper sitaphal and sapota contain more quantities of these mineral salts.
- Calcium available from apple is equivalent to that from guava.
- However, citrus fruits are much better sources of calcium and vitamin C
- Apple is a fair source of fibre
- When cut pieces of apple are exposed to the air, certain chemical substances known as tannins combine with oxygen and form brown colour, the Vitamin C in fruit is destroyed.
- Apple juice is considered good for diarrhoea and peptic ulcer
- It is also used for infant feeding

Nutrient	Nutritive value per 100 g of Apple
Energy	59 kcal
Carotene	0 µg
Calcium	10 mg
Iron	1 mg
Phosphorus	14 mg
Fibre	1 g
Vitamin C	1 mg
Sodium	28 mg
Potassium	75 mg

**Ques. – How does Banana compare with other popular fruits of India?**

**Ans.** Almost every part of the banana tree is useful. The fruits both raw and ripe, the flower, inner core or the stem all are edible. The broad leaves are traditionally used as platters for eating and packing.

The banana is a most valued item. Its energy content makes it a very advantageous and filling staple though poorer in proteins as compared to cereals.

Ripe banana can augment the diets of small children

The fruit has about 20% sugars.

Ripe bananas are very well digested and the nutrients are well absorbed well.

Ripe banana also has 1.2 g protein; 78 µg of carotene and 0.4 g fibre per 100 g. it has 88 mg of potassium. A medium sized banana is about 80-100 g.

Iron and potassium in banana are wholly available

The fruit is a fair source of B vitamins and calcium. It contains appreciable amounts of many trace minerals as well as fibre.

Ripe banana have a mild laxative property and hence are very useful in children’s diet, particularly as a remedy for constipation. At the same time, the fruit is helpful to combat diarrhoea and dysentery, heals intestinal lesions etc.

**Nutritive value per 100 g of Banana**

	Energy kcal	Calcium mg	Phosphorus mg	Iron mg	Vitamin C mg
Ripe banana	116	17	36	0.9	7
Plantain flower	34	32	42	1.6	16
Green plantain	64	10	29	0.6	24
Stem of Plantain	42	10	10	1.1	7

**Ques. – How does Grapes compare with other popular fruits of India?**

**Ans.** Large quantities of grapes are grown mainly for making alcoholic beverages popularly known as wine.

Compared to other seasonal fruits like chiku, guava, sitaphal, they are very poor in nutrients.

Grapes have a large amount of pectin. So it is easy to make jams and marmalades out of them.

Generally, the table grapes are poor in vitamins including Vitamin C. 100 gm of the fruits contain 70 kcal and 1 mg of vitamin C. they are fairly good sources of calcium, phosphorus

and iron. Traces of iodine and fluoride are found. Black grapes generally have higher amounts of vitamin C. they also have traces of Vitamin A.

Ripe grapes are easily digested. Excessive consumption, however, may slight flatulence. They are good stimulants for the kidneys and mildly laxative.

Raisins or dried grapes are good energy givers.

#### **Nutritive value per 100 g of Grapes**

<b>Nutrient content</b>	<b>Blue Grapes</b>	<b>Green Grapes</b>
<b>Energy (Kcal)</b>	58	71
<b>Calcium (mg)</b>	20	20
<b>Phosphorus (mg)</b>	23	30
<b>Iron (mg)</b>	0.5	0.5
<b>Carotene (µg)</b>	3	0
<b>Vitamin C (mg)</b>	1	1
<b>Fibre (g)</b>	2.8	2.9

#### **Ques. – How does Guava compare with other popular fruits of India?**

**Ans.** The fruit is one of the richest sources of Vitamin C. it contains 4 to 10 times more vitamin C than do some citrus fruits. Guava contains very little carotene. However, it is fairly rich in most other mineral nutrients.

Guava contains fairly large amounts of phosphorus and calcium.

Guava leaves and bark are powdered and used for dressing wounds and sores. A decoction (extract) of fresh, young leaves is said to be good for digestive disorders. The decoction is also used for arresting vomiting and diarrhoea. Powdered leaves are applied to soothe rheumatic pains. A decoction of guava leaves could be gargles to relieve tooth-ache and gum boils. The flower of guava are said to be cooling and are used for treating bronchitis.

Mashed and sieved guava pulp can make a good infant food during weaning stages.

According to a study conducted by NIN, guava came in at the top with antioxidant activity ranging from as high as 496 mg/100 gm to as low as 22 mg/100 gm in pineapple. Antioxidants play a crucial role in preventing cellular damage which was the most common reason for ageing, cancer and other degenerative diseases.

### Nutritive value per 100 g of different varieties of Guava

Nutrient Content	Common variety	Pahadi type
Energy (Kcal)	51	38
Carotene	0	0
Vitamin C (mg)	212	15
Calcium (mg)	10	50
Phosphorus (mg)	28	20
Fibre (g)	5.2	4.8
Iron (mg)	1.4	1.2
Potassium (mg)	-	91

### Ques. – How does Jackfruit compare with other popular fruits of India?

**Ans.** The fruit has a little protein and fat, 19.8% carbohydrates and yields 88 kcal of energy. It also provides amounts of carotene, thiamine, riboflavin, niacin, vitamin C. in addition it has crude fibre, calcium, iron, potassium and sodium. The seeds of jackfruit are also nutritious. They provide 7 g of protein, but contain a powerful enzyme inhibitor particularly carbonic anhydrase. This account for the occasional abdominal distension (stomach upset) that jackfruit seeds cause on after consumption.

### Nutritive value per 100 g of Jackfruit

Nutrient	Nutrient content
Protein	1.9 g
Carbohydrate	19.8 g
Fat	0.1 g
Energy	88 Kcal
Fibre	1.1 g
Carotene	175 µg
Vitamin C	7 mg
Thiamine	0.3 mg
Riboflavin	0.13mg
Niacin	0.4mg
Calcium	20mg
Phosphorus	41mg
Iron	0.5mg
Potassium	191mg
Sodium	41.1mg

**Ques. – How does Jamun compare with other popular fruits of India?**

**Ans.** It is fairly good source of vitamin C and mineral salts. Jamun is believed to be of special use in the treatment of diabetes. The extracts of the bark, seeds and also leaves are used. Aqueous extract of the seeds is reported to cause a marked decrease in blood sugar, when injected into dogs. Experiments carried out at central research institute, Lucknow, showed that oral administration of dried alcoholic extracts of the seeds to diabetic patients reduces the level of blood sugar and glycosuria. Fresh seeds are superior to dried ones. Jamun seeds are fairly rich in protein and calcium. Jamun flowers are an important source of good quality amber coloured honey.

Extracts from barks of the jamun tree have a moderate antibiotic activity. The bark is astringent and is used for gargles and mouth washes. A decoction of the bark and powdered seeds is considered useful in the treatment of diarrhoea and dysentery.

**Nutritive value per 100 g of Jamun**

Nutrient	Jamun
Energy (Kcal)	62
Iron (mg)	1.2
Calcium (mg)	15
Phosphorus (mg)	15
Vitamin C (mg)	18
Folic acid (mg)	3
Carotene (µg)	48
Fibre (g)	0.9
Potassium (mg)	55
Magnesium (mg)	35
Sodium (mg)	26.2

**Ques. – How does mango compare with other popular fruits of India?**

**Ans.** For the money spent on mangoes, they are the most nutritious. They are excellent sources of carotene (pro-vitamin A) as compared to other common fruits. Ripe mango is also a very good source of vitamin C. Raw mangoes has appreciable amounts of iron. The fruit is a fair source of potassium and other trace minerals. Due to the high content of beta carotene, when eaten seasonally, is believed to prevent blindness due to vitamin A deficiency.

To derive most out of the nutrients in this fruit, it is best to eat it just as a ripe fruit.

Extracts of leaves, bark, stem and unripe mangoes are reported to possess to a limited extent antibacterial properties against some microorganisms. Dried mango flowers are

astringent. They are said to be used in the treatment of diarrhoea, chronic dysentery and some conditions of the bladder.

#### **Nutritive value per 100 g of Green mango and Ripe mango**

<b>Nutrient</b>	<b>Green mango</b>	<b>Ripe mango</b>
<b>Energy (Kcal)</b>	44	74
<b>Fibre (g)</b>	1.2	0.7
<b>Calcium (mg)</b>	10	14
<b>Iron (mg)</b>	5.4	1.3
<b>Carotene (µg)</b>	90	2743
<b>Vitamin C (mg)</b>	3	16

#### **Ques. – How does water melons compare with other popular fruits of India?**

**Ans.** The water melon is a good source of pectin. Hence the fruit can easily be made into jams, jellies and marmalades. The fruit is best consumed in the form of squashes, juices, or as ripe slices. The seeds contain 34% protein and 52% oil. The seeds as such are considered to have a ‘cooling’ effect.

**Vitamin A** found in watermelon is important for optimal eye health and boosts immunity by enhancing the infection-fighting actions of white blood cells called lymphocytes.

**Vitamin B6** found in watermelon helps the immune system produce antibodies. Antibodies are needed to fight many diseases. Vitamin B6 helps maintain normal nerve function and form red blood cells. The body uses it to help break down proteins. The more protein you eat, the more vitamin B6 you need.

**Vitamin C** in watermelon can help to bolster the immune system's defenses against infections and viruses and can protect a body from harmful free radicals that can accelerate aging and conditions such as cataracts.

In watermelons, lycopene, beta carotene and phyto-nutrients – citrulline. When watermelon is consumed, citrulline is converted to arginine through certain enzymes. Arginine is an amino acid that works wonders on the heart and circulation system and maintains a good immune system. “The citrulline-arginine relationship helps heart health, the immune system and may prove to be very helpful for those who suffer from obesity and type 2 diabetes”.

#### **Ques. – How does musk melons compare with other popular fruits of India?**

**Ans.**

Muskmelon is a good source of beta-carotene, the precursor of vitamin A. So, eating this fruit regularly will help you to improve your vision. Muskmelons are also rich in vitamin C.

Together, vitamin A as well as vitamin C, both powerful antioxidants, help to protect the body tissues against oxidative damage by free radicals.

Potassium, folate, pyridoxine (vitamin B6), nicotinamide (vitamin B3), and dietary fibre, are the other important nutrients present in the muskmelon. All these play an important role in various metabolic activities of the body.

Since the muskmelon is alkaline in nature when partially ripe, it is invaluable in the treatment of hyperacidity.

**Nutritive value per 100 g of Musk melon and Water melon**

<b>Proximate composition</b>	<b>Musk melon</b>	<b>Water melon</b>
<b>Moisture (%)</b>	95.2	95.8
<b>Energy (Kcal)</b>	17	16
<b>Carotene (µg)</b>	169	0
<b>Vitamin C (mg)</b>	26	1
<b>Calcium (mg)</b>	32	11
<b>Phosphorus (mg)</b>	14	12

**Ques. – How does oranges and lemons compare with other popular fruits of India?**

**Ans.** Oranges are rich in dietary fibre, pectin, a type of soluble dietary fibre which is necessary for people with high cholesterol levels and diabetes.

Similar to other citrus fruits, oranges are an excellent source of vitamin C, which is a powerful natural antioxidant. This vitamin is required for developing resistance against infectious agents.

Oranges contain the flavonoids - hesperetin and narigenin. The latter acts as an antioxidant, free radical scavenger, anti-inflammatory and immune system modulator properties besides being the ingredient that reduces oxidant injury to DNA.

Being a good source of vitamin A and other flavonoids such as alpha and beta carotenes, beta-cryptoxanthin, zeaxanthin and lutein, oranges have plenty of properties. While vitamin A is essential in maintaining a healthy mucus membrane and skin. Flavonoids, on the other hand, protect the body from the risk of lung and oral cavity cancers.

Oranges can prevent free radical damage, which are known to trigger painful inflammation. Consuming orange juice on a regular basis helps in reducing the severity of inflammatory conditions like asthma, osteoarthritis and rheumatoid arthritis.

The potassium content in these citrus fruits helps in maintaining a healthy heart and an electrolyte balance in cells.

Vitamin C rich foods, such as oranges, are known to lower the incidence of peptic ulcers, which in turn, decrease the risk of developing stomach cancer.

Oranges contain Vitamin B6 that stimulates the production of haemoglobin, which is known to that carry oxygen to all parts of the body. Vitamin C neutralizes harmful elements in the body by stimulating the absorption of non-heme iron, thereby reducing iron deficiency.

Calcium content in oranges enhances the health of teeth and bones. Additionally, this element helps in maintaining a healthy blood pressure level and assist in the healthy functioning of muscles.

**Source:** <http://www.fao.org/docrep/W8079E/w8079e0m.htm#TopOfPage>

<http://www.cdc.gov/nutrition/everyone/fruitsvegetables/index.html>

**Book: Dietary Guidelines for Indians, NIN, 2011 edition**