



# Role of Green Vegetables and Fruits in Human Life

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## **Abstract:**

Various platforms and detailed studies are performed earlier to explore the consumption of food in human life, but the importance of Fruits and Green Leafy vegetables are important dietary supplements in completing the human life cycle. The plants may be considered as biosynthetic laboratory for multitude of compound like alkaloid, glycoside, volatile oils, tannins, saponins, flavonoids etc. These compounds are termed as secondary metabolites and are responsible for therapeutic effects. The present review highlights the knowledge of presence of phytochemicals and phytonutrients in plants and the deficiencies caused due to not properly intake of vitamins, resulting improper functioning of almost all bodily and mental functions.

**Keywords:** Vegetables, food, nutrients,

## **Introduction:**

Vegetables are protective foods. They are rich in vitamins and minerals which are most essential for maintaining good health. Among the vitamins, vitamin A, B, C, D & E are important. All vitamins are found in small or large quantities in the common vegetable crops. The role of various vitamins along with their avail ability is given below.

Vitamin A- protects against cold and influenza. Its deficiency causes night-blindness and some eye diseases such as corneal ulcer, conjunctivitis and neurophthalmia. It is abundantly found in leafy vegetables like amaranth, lettuce and spinach. It is also found in carrots, raw tomatoes, turnip tops, cabbage, sweet potatoes etc.

Vitamin B- Severe deficiency results in beriberi, a disease affecting the nerves; soreness of lips and tongue, intestinal upset, skin eruptions, nervous symptoms and mental changes. Lack of vitamin B is also responsible for certain types of anaemia. This vitamin is found in beans with pods, green peas, onion bulbs and green onions, sweet potato, cabbage and tomatoes also contain a fair amount of the vitamin B group. Vitamin C- Its absence from diet causes a disease called scurvy. In the adults this disease is characterised by debility, anaemia, delay in healing of any wound or ulcer which may be present, sponginess of the gums which bleed with slight touch and a tendency to haemorrhages, especially in the skin. This vitamin is found in large quantities in vegetables that grow rapidly. Wilted vegetables contain less of vitamin C than fresh ones. Vitamin C is abundant in pepper and leafy vegetables. Spinach, cabbage, Brussels sprouts, watercress, tomatoes and cauliflower are excellent sources of this vitamin.

Vitamin D- is necessary for building up bones and preserving teeth against decay. It regulates the use of calcium and phosphorus by the body in the process of growth of bones and teeth. Vitamin D is present in green vegetables. Vitamin E-





has an important effect on the generative function and promotes fertility. It is found in cabbage, lettuce and leafy vegetables.

Besides vitamins, the human body needs at least ten minerals in fairly large quantities for the growth and development and proper functioning of the body. Of these, calcium, iron and phosphorus are often found lacking in our daily diet. Phosphorus can be half from milk while vegetables can supply calcium and iron. Leafy vegetables like Methi (Fenugreek), Palak(Spinach), Chakwat (mountain Spinach) are rich in calcium, while carrot, bitter gourd, onion and tomato are a good source of iron. Vegetables like onion, bhindi, asparagus and summer squash supply iodine, which is also needed by the human body. Calcium, magnesium and potassium are the most important base elements needed for neutralizing the acid produced in the body. The bulk of fibrous framework of leaves, stems and even bulbs, tubers and roots of vegetables yields a spongy mass which not only helps satisfy one's appetite but also assists in pushing the food through the digestive canal thus preventing constipation. Mineral salts, mild acid juices and compounds further help the intestinal activity with their laxative effect. Thus as protective food, vegetables are very important in the nutrition of human beings. Dieticians recommend inclusion often ounces of these should be green leafy vegetables, three ounces root vegetables and the remaining three ounces other vegetables. This means that we need to produce and consume more vegetables than we do at present. In India, vegetables constitute hardly eight to ten percent of the total food intake which is distressingly low as compared to 45 percent in Japan. Even in countries like the United States of America where animal protein and milk products are in abundance, the annual consumption of vegetables per capita is almost five times that of an average Indian. In India, with a large vegetarian population, the consumption of vegetables needs to be greatly augmented. This will naturally call for substantial increase in the production of vegetables by in-creasing the area under the vegetables crops and by raising the per acre yield. The vegetable crops occupy an area of about 1.5 millions hectares in India. That means they occupy hardly 0.1 percent of the total acreage cropped in India, out of which tubers and potatoes occupy about 50 percent of the area. Vegetable growing is concentrated near about big cities of India, mainly due to easy market facilities. Lack of adequate and quick interior transport services connecting villages with the cities is disadvantageous to the cultivation in the interior. As such only a few communities in India have so far specialized in vegetables cultivation. Some are prejudiced against it because they do not consider it to be a very dignified profession. Many cultivators do not take to vegetable cultivation because of the specialized skill needed and the hard labour required for it. The well known proverb "God gave carrots for continuous weeding" rightly describes the nature of hard work required for successful vegetable cultivation.

Yet, vegetable growing yields a much higher income per acre than any type of farming. A vegetable grower usually grows two to three crops a year in the same land because most of the vegetable crops are of short duration. Moreover, by growing vegetables, he can employ all the members of his family to the best





advantage all the year round. Hence, vegetable growing communities are able to make a good living from small holdings.

### **Cole crops:**

The important Cole crops are cauliflower, cabbage and kolkhoz. Out of these, the first two are cultivated in all the states of India. Cauliflower and cabbage belong to the genus Brassica of the family Cruciferae. Cauliflower is grown for its edible flowering heads and cabbage for its edible, enlarged and exaggerated terminal buds. Both the crops are essentially cool weather crops and are grown throughout India during the winter season. As summer crops these crops are grown in parts of Bihar, Chhindwara (tract of Madhya Pradesh), Simla Hills, Nasik tract of Maharashtra and Nilgiri Hills. However, Cole crops attain their best development when the seasons remain rather cool for a sufficiently long time during their growth period. When raised under warm conditions, the produce becomes markedly pungent owing to the greater development of a glucoside called sinigrin which contains sulphur. Generally the crops are produced by transplanting seedlings from the nursery. Cauliflower is one of the most important vegetable crops of India. Botanically cauliflower is Brassica oleraceavar, botrytis and goes by the local names of phulgobhi, fulwar, phulkobi. It is probably a native of Italy or some other parts of Southern Europe in the Mediterranean. During the last 100 years important varieties of this crop have been developed in France and Denmark.

**Cauliflower** is the most important member of the genus Brassica. Many species of this genus are grown in north India as vegetables. It is cultivated for its shortened flower parts which are used as a vegetable in curries and soups and for pickling. As a vegetables it is cooked alone or mixed with potatoes. Cooked cauliflower contains a good amount of vitamins B and a fair amount of protein in comparison to leafy vegetables.

**Brassicaoleraceacapitata**, is the botanical name of cabbage. It is a native of Western Europe and the Northern shores of the Mediterranean. It has been an important vegetable in many countries from ancient times. In Plato's Republic, cabbage is mentioned as a desirable element in a vegetable diet. Cabbage was held in high esteem by the ancient Greeks and is said to have been worshipped by the Egyptians. Apparently it was a favourite vegetable with the Romans and they introduced it in the countries which they subjected it was introduced in the European gardens probably in the ninth century and into the United States in the early days of colonization. Cabbage was introduced in India in the beginning of this century. Though cabbage is not as important as cauliflower from monetary point of view, it is grown in the vicinity of almost all large cities due to its wider adaptability to hot climate, compared to cauliflower. Thus cabbage is available in fairly large quantities up to the end of April. Cabbage contains vitamin A and is a good source of vitamins B and C. It is cooling in effect and helps prevent constipation, increase appetite speed up digestion and is very useful for patients of diabetes. It thrives best in a relatively cool, moist climate. It can tolerate frost to a great extent. The flavour of the savoy type of cabbage is improved after the heads have passed through moderate frost. In the plains of North India, the crop is mainly grown during the winter months. In Nasik Division of Maharashtra, Ootacamund division





of South India and parts of Kerala it is grown in Kharif season also. Knolkhol goes by many names in India like Ganthgobhi, noolkhol, gaddagobhi, olkabi and its botanical name is Brassica caulorapa. It is grown for the turnip like enlargement of the stem above the ground. Although, it is an excellent vegetable if used before it becomes tough and stringy, it is little known throughout India. It is a cool season crop and thrives on rich soils.

### **Leafy vegetables:**

Amongst all vegetables the leafy vegetables have a very high protective food value. They are rich in calcium, iron and other minerals and in vitamins A and C. Besides their soft fibrous matter provides the necessary roughage in the diet. In India, leafy vegetables are generally considered inferior to other vegetables like peas, cauliflower, bhindi and tomato which are more appetizing. But the fact remains that leafy vegetables when properly cooked are equally palatable. Considering their extra nutritive value, the leafy vegetables deserve a better recognition. Methi, Palak, Chakwat, Chaulai, Kulfa, Chekurmanis, Arvi, etc. are the common leafy vegetables consumed all over the world.

### **Fruit vegetables:**

There are three important fruit vegetables which are grown extensively throughout India. They are Brinjal, Bhindi and Tomato. Tomato is of tropical American origin, its original home being probably in Peru or Mexico. It is supposed to have been eaten by the wild tribes of Mexico. It has shorter history of about 400 years in comparison with many of the older vegetable crops. The earliest mention of tomato in literature was made by Mattiulus in Italy in 1544. In India tomato has become a very popular, vegetable especially during the last 20 years. The fruit is available in market almost all the year round. Tomato is used in many ways. It is taken cooked and raw or is made into soups, salads, preserves, pickles, ketchups, sauces and many other products and is served baked, fried and as a sauce on various foods.

It is a warm season crop which does not tolerate frost. Immature tomato blossoms drop rapidly during heat and drought as a result of increased transpiration. The blossom drop results in a serious reduction of yield, because of poor set of fruits and the vines continuing to grow often to a very big size. It is grown on a variety of soils, from sandy loam to heavy clay but for obtaining high yield, a well drained heavy loam is the best. In general tomato succeeds well on loams, silt loams and clay loams.

Brinjal probably has its original home in India where it is still found growing wild and in China where it has been known for the last 1500 years. It is a popular vegetable in Southern Europe also, especially in the Balkans, France and Italy. It is of minor importance in USA. It is an important crop in the plains of India and its fruit is available practically throughout the year. The unripe fruit is used as vegetable or in curries. It contains Vitamin A and B and is an appetizing vegetable. It can be grown on all kinds of soils but gives the best yield on heavy types of soils such as silt loam and clay loam. Rich soil which is retentive of moisture is necessary for growing this crop.





Bhindi is a native of tropical or subtropical Africa. It has been grown in the Mediterranean regions as well as in the tropical and subtropical regions for many centuries. It spread to America probably with the slave trade. This plant is also native of India, where its wild forms are met with. It is popularly grown during the summer months in North India. Its pods are cooked as a vegetable in curries, stewed with meat, cooked into soups and also canned and dried. Mature pods and the stem containing crude fibre are used in the paper industry. The plant as a whole is soaked in water and the resulting solution is used as a clarifier in the manufacture of Gur. It requires a long and warm growing season. Bhindi thrives in all kinds of soils but it grows best in a friable, well manure soil.

### **Cucurbitaceous or Vine Crops:**

The cucurbitaceous crops play a vital role in the supply of fresh vegetables and to a certain extent fresh fruits during summer in the plains of India. They all belong to the same family but to a number of different genera. These crops constitute the largest group of vegetables and India has been leading in the origin and introduction of a number of cultivated cucurbit species. This group includes melons, muskmelon, round melon and long melon, pumpkin, cucumbers and gourds. The cucurbits are grown for their ripe and unripe fruits. These fruits are consumed by rich and poor alike and as such these crops are cultivated all over India. Cucurbits are good sources of carbohydrates, vitamin A, vitamin C & minerals. The fruits are used as desert in pickles and green vegetables and in sweets besides being consumed in bulk as summer vegetables.

### **Root Crops:**

Root crops belong to two different families Cruciferae viz Turnip (Shalgum) and Radish (muli) and Umbelliferae viz carrot. These root crops are similar in their cultural requirements and many other respects. They thrive best in the cool season; however, radish is tolerant to high temperatures. These require deep friable sandy or lighter loam soils for their best development. For all root crops excellent drainage is required that is why they are usually grown on ridges. If these conditions are not provided the roots produced are likely to become more branched, misshaped and unsightly. Turnip originated in Russia Siberia, Central and Western China, Middle Asia, Punjab and Kashmir and the Mediterranean. It is widely cultivated in North India, mainly for its root. Turnip greens are seldom used as vegetables but are extensively utilized as green fodder for cattle. Turnip greens are a good source of minerals such as calcium and iron and vitamin A, B and C. turnips therefore should be cooked together with the tops. It essentially thrives on cool, moist climate. Best variety of turnips is grown successfully in the northern regions and the hilly tracts of India.

Radish is commonly known as Muli. It is a favourite crop of the kitchen Gardner, as it is easily grown and is ready for use in 3 to 6 weeks from the time of sowing. The original home of radish is China and India, where it has been cultivated since ancient times. It is grown for its fleshy edible root, which is eaten raw or cooked in vegetable curries. It is also used in parathas which are taken with curd for breakfast in Northern India. It contains B and C. It has a cooling effect,





prevents constipation and increases appetite, and is more wholesome when cooked together with the leaves. It is considered good for patients suffering from piles liver trouble, enlarged spleen and jaundice. Radish itself is not easily digestible. It is tolerant to heat but to develop best flavour a cool season is required. It is grown practically all the year round in India and it grows on all types of soils. The carrot originated in the hills of Punjab and Kashmir. The Punjab hills still abound in its wild forms where wild animals especially the brown bear, feed on its roots. In some parts of Kashmir, people still eat the wild carrot. In North India, highly coloured types of carrot are met with, which are not available in Europe. Types varying from absolutely colourless to light lemon, light orange, orange and deep orange, light purple, deep purple and almost black are grown in Northern India. The common variety the orange and the deep orange are grown all over India both for forage and for human consumption. It is taken raw and cooked in curries along with peas, and is very commonly used in preserves pickles & sweetmeats. Carrot pudding is very popular desert, and is considered to be very healthy. It is an excellent source of vitamin A and iron, contains good quantitative of vitamins B and C and is rich in sugar. It is tolerant to high temperatures and thrives best in cool weather.

