

# **IMPORTANCE, OF VEGETABLE CROPS PRODUCTION**

# IMPORTANCE OF VEGETABLES

## 1. Food uses

- ✓ Vegetables play a very important role in human diet.
- ✓ They supply some of the things in which other food materials are **deficient**.

### A. Main dishes

- ✓ Vegetable is effectively serves as main dishes in many situations.
- ✓ About 20% of Ethiopian population depends on Enset for food and feed.
- ✓ **Salad & soups** can also be used as a main course with some typical ingredients including **potatoes, tomatoes, broccoli, onions & peppers**.
- ✓ **Casseroles, soufflés, omelets, quiches and lasagna** are often main course items with typical vegetables including **cabbage, squash, broccoli, turnips, eggplant & spinach**.
- ✓ Baked beans are a traditional<sup>1</sup> favorite meal.

# Importance of vegetables...

## B. Side dish and appetizer

- Many vegetables such as squash, brussels sprouts, broccoli, asparagus and cauliflowers are traditional **side dishes that are steamed, boiled, baked, or fired.**
- A **potato dish** is a common side dish in many meals from the home cooked meal to the meal prepared at a restraint.

## C. Dessert

- Sweet food served after the main part of meal.
- **Water Melons** are often used as desserts, **either sliced cold or cooked in to pies, tart.**
- Rhubarb is a component of pies and preserves and is used in tarts, sauces, puddings, punch, jams and jellies.
- **Sweet potatoes, squash, & pumpkins** are used to make biscuits, bread, muffins, pies, custard, cookies and cakes.

# Importance of vegetables...

## D. Spice and Flavoring

- Some vegetables are used in cooking not only to be consumed but also to **add flavoring to another component of the cooked dish.**
- **Garlic** has a distinct flavor that adds to the taste **of many meat and vegetable distinct.**
- **Peppers** are potent flavorings and the paprika pepper is the source of the spice paprika.
- **Leeks and onions** are also used to add flavor to soups and stews.
- Celery leaves can be dried and as an herb and celery seed is used in soups and pickles.
- Fresh and dried parsley also is used as flavoring.

# Importance of vegetables...

## E. Garnish/Decorative value

- Anything that is used to improve the appearance or taste of food such as small pieces of fruit or vegetable.
- **Kale** is a typical garnish used in salads bars or as a decorative feature on dinner plates with meats.
- Kale is used because it is less likely to wilt than other greens.
- **Parsley** is also used as a garnish to a cooked meal, with uncooked springs included with the main cooked items.
- Other vegetables used as garnish include lettuce and radishes.

## F. Other food uses

- **Sandwiches:** - **Lettuce, tomatoes, pickles, onion and peppers** are often added to both cold and hot **sandwiches and hamburger**.
- Bulb onions may be sliced and used on **sandwiches or dipped in butter and fired as onion rings or blooming onions**.

# Importance of vegetables...

## 2. Nutritional values

- ❑ Vegetables significantly **enhance the quality of the human diet** by contributing **variability, bulk, fibers, vitamins, minerals and other compounds**, which have **positive effect on human health**.
- ❑ Vegetables are the important **energy giving material to the human body**.
- ❑ **They are the major sources of vitamins** without which the human body cannot maintain **proper health and resistance to diseases**.
- ❑ Besides they also **contain minerals, salts, protein, cellulose which protects human body against various disorders**.

# Importance of vegetables...

## A. VITAMINS

- Vegetables are excellent source of **Vitamins A, C, E & B complex**
- Vegetables are our most important natural sources of **Vitamins "A" and "C"**
- They rank high as sources of **Vitamins "B<sub>1</sub>" and "B<sub>2</sub>".**
- The **pro-vitamins "A"** is concentrated largely in the **thin, leafy portions of vegetables, not petiole or other roots.**
- **Yellow roots, however, are usually rich in pro-vitamin "A" i.e. carrots and yellow sweet potatoes (true- roots).**

# Importance of vegetables...

## A. VITAMINS...

### I. Vitamin “C”

- It is ascorbic acid which increases the resistance of **the body to colds, coughs, wound healing, allergic reactions and other respiratory diseases (cancer)**
  - **Due to powerful substances that seem to offer protection against these diseases.**
- It also improves the **availability of iron.**
  - Foods rich in vitamin C **play an important supportive role in preventing Fe (iron) deficiency.**
- **Peppers, green leafy vegetable, Broccoli, cauliflowers, Brussels sprouts, tomatoes and potatoes are good sources of Vitamin C.**
- **Vitamin C is lost by cooking.** What is the solution?

# Importance of vegetables...

## II. Vitamin “A”

- ✓ Carotenes are essential for vision, growth, bone development, integrity of the immune system, and reproduction.
- ✓ Dark green and deep yellow vegetables are rich in pro vitamins (converted in the body to vitamin A) with the young shoots containing more of this vitamin than the mature leaves,
- ❖ Lack of vitamin A causes poor growth and night blindness.

# Cont....

- ❖ **Lack of vitamin A is a common nutritional problem in developing countries.**
- ✓ **Broccoli, green pepper, carrots, pumpkin, tomatoes, spinach and leafy vegetables (lettuce) are good sources of beta carotene.**
- ✓ **Leafy, green and yellow vegetables accounts for approximately 33% of Vitamin A.**

# Importance of vegetables...

## III. Vitamin “E”

- ✓ Functions as an antioxidant at the cellular level to prevent per oxidation of polyunsaturated fatty acids.
- ✓ Vitamin E can be increased in the diet through the use of vegetable oils for salads and cooking, to a lesser extent, the use of margarine.
- ✓ Increased levels of vitamin E have been reported to reduce the incidence of heart to delay the onset of cataracts.
- ✓ Vitamin E has slowed the progression of Alzheimer's disease in patients.
- ✓ Parsnips, spinach and broccoli are good sources of Vitamin E.

# Importance of vegetables...

## IV. Vitamin “B” complex

- ✓ [(Vitamin B<sub>1</sub> (thiamine), B<sub>2</sub> (riboflavin), B<sub>6</sub> (pyridoxine), B<sub>12</sub> (cyanobalamin) and niacin (nicotinic acid)).
- ✓ The B vitamins are necessary for the utilization of carbohydrates and protein and in the prevention of anemia.
- ✓ The **legumes contain** a reasonable amount for of vitamin B<sub>1</sub>, B<sub>2</sub> and niacin.
- ✓ **Collards, kale, green peas, peppers, potatoes, spinach, tomatoes, and turnip greens are considered good sources of niacin (nicotinic acid).**

# Importance of vegetables...

## B. Minerals

### I. Calcium: **is badly lacking in Ethiopian diets.**

- ❖ It is needed for **healthy bones and for resistance to infections.**
- ❖ In its absence children suffer from **rickets, pigeon chest, and retarded growth.**
- ❖ Their **teeth become bad.**
- ❖ It also acts as a **coordinator among the mineral elements and helps to correct proportion of other elements.**
- ❖ Vegetables like **cabbage, carrot, cauliflower, lettuce, onion, spinach, tomato** supply **Calcium in minor quantities.**

# Importance of vegetables...

## II. Phosphorus: is essential for all active tissues of the body.

- ✓ It is required for **cell multiplication of both bones and soft tissues**, for the maintenance of proper liquid content of the tissues.
- ✓ It also plays an important role in **oxidation of carbohydrates which liberates energy**.
- ✓ It is found in enough quantities in vegetables like **potatoes, carrot, tomatoes, cucumber, pinch, cauliflower, lettuce**

# Cont...

## III. Iron

- ✓ Iron is essential part of the **red blood corpuscles and is the best known oxygen carrier in the body.**
- ✓ It is essential element in the body
- ✓ Vegetables are richer in iron and found in **green leaves.**
- ✓ It can be found from **Spinach, Cabbage, Peas, Bean and Tomatoes.**

## Nutrients

## Vegetables

Carbohydrates      Potato, Beet, Carrot, Turnip, Peas, Lima bean, Dried beans,  
Sweet potato, Yam,      Tapioca, Onion, Garlic, Colocasia, Cabbage,  
Muskmelon, Watermelon, Pumpkin

Proteins      Peas, Cowpea, French bean, Broad bean, Fenugreek,  
Amaranthus, Garlic, Brussels      Sprouts, Dolichos bean

Fats or oils      Legume seed, Soya bean

## Minerals

Calcium      Kale, Turnip greens, Broccoli, Dried Bean and Peas, Spinach,  
Carrot, Onion, Beet      root, Coriander, Tomato, Cauliflower, Pumpkin,  
Amaranthus, Fenugreek,      Drumstick leaves, Lettuce, Cabbage,  
Swiss chard, Mustard leaves

Phosphorus      Beans, Potato, Carrot, Tomato, Cucumber, Lettuce, Garlic,  
Peas, Cauliflower,      Cabbage, Beet root

Potassium      Potato, Tomato, Sweet potato, Bitter gourd, Radish, Winter  
squash, Legumes.

Iron      Dark green leafy vegetables such as Spinach, Lettuce, Kale,  
Fenugreek,

Peas, Bitter gourd      Amaranthus, Mint, Cabbage, Carrot, Potato, Onion, Tomato,

Iodine      Onion, Okra, Summer squash, Asparagus.

## Vitamins

|                                                                                         |                                                                                                                                                                                  |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Vitamin 'A'<br>Collard, Cress,<br><br>Turnip green,<br><br>leaves,<br><br>Tomato, Peas. | : Broccoli, Cantaloupe, Carrot, Swiss chard,<br><br>Kale, Pumpkin, Spinach, Sweet potato,<br><br>Winter squash, Amaranthus, Coriander<br><br>Drumstick leaves, Fenugreek leaves, |
| Vitamin 'B' Complex<br>Asparagus,                                                       | : Peas, Beans, Garlic, Colocasia, Tomato,<br><br>Cabbage, Lettuce.                                                                                                               |
| Thiamin (B1)                                                                            | : Dry peas and Beans                                                                                                                                                             |
| Riboflavin (B2)                                                                         | : Green leafy vegetables                                                                                                                                                         |
| Folacin (Folic acid )                                                                   | : Green leafy vegetables                                                                                                                                                         |
| Niacin                                                                                  | : Peas, and Bean                                                                                                                                                                 |
| Vitamin 'C'<br>Green pepper,<br><br>Cabbage, Collards,                                  | : Cantaloupe, Broccoli, Brussels Sprouts,<br><br>Sweet pepper, Watermelon, Asparagus,                                                                                            |

# Importance of vegetables...

## C. Fiber or as a source of Roughage

- ✓ Vegetables are very important, especially in developed countries **where a low fiber diet is consumed.**
- ✓ It also helps to satisfy the **appetite.**
- ✓ The beneficial effect of fiber on
  - ❖ **Reduce blood cholesterol level and consequently high blood pressure**
  - ❖ **Reduce the incidence of heart disease,**
  - ❖ **Preventing gall stones and cancer of the colon**
  - ❖ **Reduce obesity**
  - ❖ **Avoid constipation**
  - ❖ **Significantly control diabetes**

# Importance of vegetables...

## D. Vegetables provide water to the human body:

- ❖ Most, particularly leafy vegetables such as **Spinach, Cabbage, Kale, Swiss chard, Mustard leaves** are succulent in nature and containing about 80-95% water.
- ❖ When these vegetables are consumed, they provide water to body.
- ❖ Water play very important role in the human body.

- 1. Water is required for maintaining osmotic balance in the cells and to carry out metabolic processes.**
- 2. Water is a constituent of all body fluids.**
- 3. Water helps to maintain body temperature.**
- 4. All products of digestion are dissolved in water and absorbed and transported throughout the body.**
- 5. It is also required to carry out the metabolic waste products such as urine and sweat from the body.**

# Importance of vegetables...

## E. Vegetables neutralize acidity

- ❖ Vegetables are **alkaline** in nature and
- ❖ Play key role in **neutralizing the acids produced during the digestion of proteinous and fatty foods like meat, oil and eggs.**

## F. Vegetables as source of energy

- ❖ **Potatoes, sweet potatoes, peas and beans** are rich in carbohydrates and thus are capable of providing energy.
- ❖ It is thought that **85-113g of leafy and 57-113g of non-leafy vegetables should be consumed per person per day.**
- ❖ In other words **142-227g** of vegetables are needed **every day.**
- ❖ An extra 57g of vegetables should be taken to make up for the fruits, when not included in the <sup>1</sup>diet.

# Importance of vegetables...

## G. Vegetables contain Antioxidants:

- ❖ Vegetables contain several compounds that are valuable antioxidants such as carotinoids and Flavonoids.
- ❖ The sources of these compounds are the following vegetables.

### Carotinoids:

- **Asparagus, Bitter gourd, Broccoli, Cabbage, Carrot,**
- **Lettuce, Pepper ( green ), Spinach, Tomato ( ripe )**

### Flavonoids:

- **Lettuce, Onion, Red pepper, Broad bean, French Bean, Brussels Sprouts, Cauliflower, Cabbage, Radish, Kale**

# Importance of vegetables...

## H. Vegetables add pleasant flavor in the meal:

- When cooked or raw vegetables (salad) are consumed with meal that add pleasant flavor which increase our appetite.

## I. Vegetables are cheapest protective foods:

- Vegetables are rich in minerals and vitamins which provide power and resistant to our body against adverse conditions and disease organisms.

## J. Vegetables serve as Subsidiary food:

- Vegetables like Potato, Sweet potato, Tapioca and lesser Yam can be used as **substitute for cereals** like wheat and rice and they can also act as subsidiary foods

# Importance of vegetables...

## 3. Economical Importance

- ❖ Vegetable is highly remunerative as they supply **regular income to fulfill the needs of farmers, traders, exporters and ultimately the nation.**
- ❖ The economic importance of vegetable growing can be explained with the help of the following points.

### i. More vegetable production/unit area and time:

- ✓ Vegetables are **short duration (about 3 months) crops** and **3 vegetable crops can be grown and harvested from the same field or plot within one year.**
- ✓ The **productivity of vegetables crops is also high as compared to other crops** like cereals.
- ✓ Some vegetable crops can be grown **twice or thrice** in a year provided that the climatic conditions are congenial.

# Importance of vegetables...

## ii. High monetary return and regular source of income:

- Both productivity and market prices of vegetables are high which results more monetary return to farmers.
- Most of vegetables such as **tomato, spinach, okra** etc. are harvested many times at regular intervals and 2-3 vegetable crops can be grown on the same field or plot.
- Farmers harvest one after another and sale their produce continuously for long period and get benefited regularly.

## iii. Vegetables as intercrops:

- ✓ Vegetables being **quick growing and short duration crops**,
- ✓ They are most suitable for intercropping in long duration and widely spaced crops which initially slow growing such as **sugarcane, maize and fruit crops**.
- ✓ The intercropping of vegetables is more profitable: **as they produce high yield and provide high additional income to the farmers**

# Importance of vegetables...

## iv. Vegetables during lean period:

- Some vegetable crops such as potato, onion, garlic, colocasia and pumpkin **can be stored for a long period after harvesting.**
- They **fetch a premium ( high return ) in the off-season.**

## v. Vegetable as a source of fodder:

- ✓ Some vegetables such as Chinese cabbage, spinach, beet, fenugreek, carrot and leaves of radish, turnip, carrot and Cole crops are **good source of fodder.**
- ✓ Roots and leaves of carrot and leaves of Cole crops are used as **feed for milk cattle, rabbit, and guinea pigs.**
- ✓ **Unmarketable vegetable remains are fed to the pigs.**

# Importance of vegetables...

## vi. Export value of vegetables:

- Good quality of fresh and processed vegetables is of great demand in the international markets.
- They can be exported to neighboring countries and foreign exchange can be earned
- It may be utilized for other purposes and development of the country.

# Importance of vegetables...

## 4. Industrial importance:

- Vegetables and fruits are required in small or large amount for processing units, a cottage, small and large scale sectors.
- They are processed as Frozen fruits and vegetables, Dehydrated fruits and vegetables, fruit pulp, Jam, Jelly, Vinegar, Candies, Pickles, Marmalade, Syrup, Juice, Squash, Ketchup, chutney and Past.

# Importance of vegetables...

## 5. Medicinal Importance:

- ✓ The fruits and vegetables play very important role in the balanced diet of human being by:-
  - **Providing the energy rich food**
  - **Supply vital protective nutrients like vitamins and minerals.**
- ✓ They are one of the **cheapest sources of natural nutritive food and enrich human health**
- ✓ Low consumption of these protective food fruits and vegetables has been largely responsible for malnutrition in large segment of our population.
- ✓ **Those who consume little fruits and vegetables suffer from diseases arising out of minerals and vitamins deficiency**

# Importance of vegetables...

- The major contribution of vegetables to human health is the large amount of **vitamin 'C' and 'A' and Folic acid as well as good amount of dietary fibres and minerals.**
- **The phytochemicals in vegetables protect the human body from Cancers and Cardiovascular diseases.**
- Therefore, **vegetables are often known as protective foods.**
- Most vegetables have high medicinal values and recommended to be used as remedy of many diseases described below.

## Vegetables

## Uses for remedy of disease

|                             |                                                        |
|-----------------------------|--------------------------------------------------------|
| Onion and Garlic diseases,  | : Headache, Parasites and Heart and Circulatory        |
| disorders, Diabetes,        | High blood pressure, Cancer, Rheumatic                 |
| Celery                      | : Leprosy and some skin wounds.                        |
| Lettuce problems            | : Fevers, Headache and Jaundice, Urinary               |
| Artichoke                   | : Gastric disorders                                    |
| Cabbage juice               | : Antidote for poisonous Mushrooms                     |
| Mustard                     | : Reduce the pain of muscle strain or bruises.         |
| Broccoli                    | : Block the growth of tumors (Cancer)                  |
| Spinach extracts            | : Clean wounds and cure warts                          |
| Sweet potato diseases       | : Lower fever, leaf tissues used to treat skin         |
| Bitter gourd (dried fruits) | : Rheumatism and parasites, used as antitumor compound |
|                             | and skin disorder and burn.                            |
| Watermelon (seed)           | : Urinary tract infection, poor blood circulation      |
| Asparagus (shoots)          | : Used to cure Jaundice                                |

# Importance of vegetables...

## 4. Ornamental uses / Aesthetic Value of Vegetables

- ✓ Those who grow vegetables can tell the **joy, they have from sowing to harvesting of vegetables.**
- ✓ **Vegetable growers or Kitchen gardeners get an opportunity for contact with the Soil-a way of life.**
- ✓ **They feel joy when they see their crops and nature herself will draw them into mood.**
- ✓ Various types of squashes and gourds are also used for decorative purposes.
- ✓ Garlic wreaths or braids are often used as used as ornamental features in kitchens.
- ✓ **Ornamental kale is an outdoor plant.**

# Importance of vegetables...

## 5. Social roles of vegetables

- ✓ Vegetables **for special occasions**:
- ✓ **Anchote (*Coccinia abyssinica*)** holds a very special place in the traditions and customs of the Ethiopian (Oromo) people.
- ✓ A most yam producing African countries, extra large yams are required for ceremonial purposes, **“Yam festival”**.
- ✓ Germany, there is a celebration day associated with garlic, which is called **“garlic day”**.
- ✓ **“Pumpkin festival” in Ukraine**.
- ✓ **“Tomato” festival in Spain**

# **Importance of vegetables...**

## **6. Other Important Roles of Vegetables**

1. Fruits and Vegetables such as Banana, Enset, Sweet potato, Tapioca and Potato etc. **play vital roles in the food Nutritional Security to the Nation**
2. **Vegetables and fruits play very important role in diversification of agriculture**
3. **Fruit and Vegetable crops have a positive ecological effect in contributing to the soil and water conservation.**
4. **The production of fruits and vegetables offers employments (Jobs opportunity) to the people and family members.**