

Introduction

- The word Horticulture is derived from two Latin words, '**Hortus**', and '**cultur**'.
 - o **Hortus**: meaning a garden, and
 - o **Cultura**: meaning cultivation.
- Thus horticulture refers to **the cultivation of garden crops** in its literal sense.
- **Then horticulture is broadly defined as**
- **the branch of agriculture which deals with production management, storage, processing, utilizing and marketing of fruit crops, vegetable crops, root and tuber crop, medicinal crop, spice and herbs, and ornamental plants.**
- **It also deals with stimulant crop like coffee and tea.**
- **It is both science and art.**

Cont....

- ✓ **Vegetables are a complex group of a wide variety of different types of plants.**
- ✓ Some species grow from year to year; **others grow and die within one or two years.**
- ✓ They have diverse forms of production; **by seeds or vegetative parts.**
- ✓ They may be: **herbaceous, vine, shrubby, or tree in growth habit.**
- ✓ **They differ in growth requirements.**
- ✓ Many vegetables can be grown under a wide range of conditions; while others have more exacting requirements for water.

Cont....

- ✓ temperature, and light. (**growth habit difference**)
- ✓ Thus, in one place several species can be **grown through the year**, but there are others that can be grown only **during certain times of the year**.
- ✓ **Irrigation is an absolute necessity for many species**, but a few can be grown under rain fed conditions.
- ✓ Vegetables can grow in the **wild or have to be cultivated**.
- ✓ **Distribution of species** that are used as vegetables may be worldwide or limited to specific areas of certain regions

Cont....

- ✓ They can be produced **in fields of specialized production areas**, outskirts of **urban areas**, **villages**, or **in gardens around the home**.
- ✓ Different parts of plant may be used as a vegetable, **depending on localities and culture**. In general,
- ✓ **developing countries utilize more parts of a particular plant as a vegetable than developed countries**.
- ✓ Most vegetables are high in water, which makes them bulky and highly perishable, particularly the leafy ones.

Definition of vegetable

- Because of their diverse nature, it is very difficult to come-up with a single, acceptable, all encompassing definition of vegetables.
- ❖ Definitions of the word “**vegetable**” are generally based on their **use**.
- ❖ A vegetable could thus be defined as
 - ***an edible, usually a succulent plant or a portion of it eaten with staples as main courses or as supplementary food in cooked or raw form.***

Characteristics of Vegetable Crops

1. Seasonality

- ✓ Most vegetables are seasonal.
- ✓ They grow best during certain seasons or in certain places.
- ✓ Demand for certain vegetables are also higher during certain periods of the year.
- ✓ .

Characteristics of vegetable

- ✓ Several species of vegetables can be grown throughout the year,
 - but there are others that can be grown only during certain times of the year.
- If irrigation is available, many species can be grown throughout the year

Cont..

2. Perishability

- Because of **high water content (85-90%)** of vegetables, they are perishable and deterioration, particularly of the leafy salad crops, sets in soon after harvest.

3. Bulkiness

- They are bulky in relation to their **volume and this is aggravated by the further needs of packing to protect them from damage**

Characteristics....

High capital requirements

- ✓Vegetables are intensive cultivated crops.
- ✓They require intensive cultural practices and the **financial and labor** inputs involved are therefore greater than those needed for most staple food such as rice or maize.

Cont....

Diversity

- ✓ Considering their diversity nature, **a plant may be a vegetable in one country but a fruit, a weed, an ornamental or a medicinal plant in another country, depending on the crop.**
- ✓ **For example**, tomato is a vegetable in Asia but a fruit in Europe.
- ✓ The garland chrysanthemum, is a vegetable to some Asians, to others it is

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Susceptibility to damage

- ✓ Crops only be stored for relatively short period of time and utilized mainly when they are fresh.
- ✓ Vegetable crops may also **suffer from wind damage** when grown on exposed sites where some form of protection will be desirable.
- ✓ For example, runner beans are susceptible for such damage

Status, potential and problems of vegetable crops production in Ethiopia

- ***Status of vegetable crops production in Ethiopia***
- In Ethiopia vegetable crop farming is ***largely practiced on small patches of land by smallholder farmers throughout the country.***
- In some extent the crops are **also produced by state and private commercial farms.**
- The **smallholder farmers are the dominant producers of vegetable crops in general and of vegetable and fruit crops in particular.**

Cont....

- **Their share is currently 95% of the total national fresh vegetable supplies to the domestic and regional export markets.**
- **The dominant vegetable types produced in Ethiopia are root crops.**
- **They cover 60% of the total area under vegetable production in Ethiopia.**
- **In terms of production root and tuber crops such as potato, sweet potato, and taro accounts more than 77% of the total quantity of vegetable produced in the country**

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- Of all vegetables produced by small-scale producer other than root crops, **Ethiopian cabbage (kale) takes the highest share (50%) followed by red pepper.**
- **Leafy vegetables** (Ethiopian cabbage, Swiss chard, lettuce, and head cabbage),
- **fruit vegetables** (tomato, green and hot pepper),
- **bulb vegetables** (onion, garlic) and
- **root vegetables** (potato, carrot, beet, taro/godere, and sweet potato) ***are vegetables commonly produced in Ethiopia.***

Cont..

- The **loss of vegetables between production and consumption** due to improper postharvest handling and diseases is estimated to be more than **35%.**
- The area under vegetable cultivation is very small compared to other agricultural field crops in Ethiopia.

Cont..

The low consumption is accounted to:-

- ▶ The **rigid traditional eating habits** of our population.
- ▶ **Low awareness** of nutritional importance of vegetables, vegetable consumption is ***considered as luxury food items*** rather than as necessity
- ▶ The **low level of income** of our society
- ▶ The **high price of vegetable** especially during off seasons
- ▶ Vegetables **supply shortage** of some preferred vegetables due to dependence on rain for their production and due to post harvest losses etc.

Cont....

- It is estimated that vegetable consumption is **48 kg/ person/year for rural** ad **37 kg/ person/year for urban** (only 12 and 29 birr for rural and urban respectively)
- Vegetable accounted **only 6 % of the total annual food expenditure**
- Compared to western world (130-160 kg per capita) ***our country's urban vegetable consumption is to be low as 25%-30%***

PROBLEMS OF VEGETABLE CROPS PRODUCTION

- Lack of improved seed sources and limited research activities, thus poor varieties are resulted into low quality and yield.
- Poor knowledge about the cultural requirement of each crop
- Inadequate PHH, thus postharvest yield lost is extremely high
 - storage condition is poor and improper
 - vegetables are highly perishables

Problem cont.....

- Poor transportation, storage, and marketing facilities.
- Very poor postharvest handling, lack of cold storage and transport services and unorganized marketing systems.
- During *peak horticultural crop harvest there is low price* which is below production cost while after harvest produces become scarce and have high price.

Problem cont..

Measures to be taken to alleviate these problems are:-

- ④ Special storage facilities or processing plants to non perishable form is required
- ④ Cooled and ventilated trucks and air transport are needed to transport fruits and vegetables.

Problem cont..

- ④ *Drying in sun, fumigating with sulphur-dioxide, canning, (process of preserving food by heating and sealing it in airtight containers.)*
- ④ *freezing* are required, but this technologies are **not much used in the country.**
- ④ Moreover, cleaning, grading, packing etc are required to win the competitive market

Problem cont....

- Poor knowledge of community about food and nutritional value of vegetables
- Lack of capital

Potential for vegetable production in Ethiopia

- Diverse agro-climatic condition allow to grow a variety of vegetables(Good agro-climatic conditions)
- Vast land and water resources
- Proximity to European market
- Government support to private sector development
- Government support to smallholders' market integration through the production of marketable agricultural commodities

Current issues in vegetable industry

The targets in vegetable industry in Ethiopia are:-

- ❑ To achieve **high productivity per unit area**, this could be obtained /attained through
 - ***Use of improved variety*** is implemented / effected through
 - Introduction, evaluation and selection suitable for our country's condition.

Current issues in vegetable industry

- **Developing new varieties through breeding**
 - Production and supply of superior quality and health propagating material from available improved varieties
 - **High density planting**; through proper use of Pesticides, fertilizers, appropriate time of application and recommended rate of fertilizer, uses of irrigation etc.

Current...

To reduce cost of production

- Economical application of fertilizers, which include **proper placement, appropriate time of application and recommended rate of fertilizer application**
- Economical use of irrigation water
- Use of IPM
- Proper use of resources (labour, land etc)

Current...

Use/ approach of recent research findings such as use of tissue culture

3. Minimize post harvest losses through

- Harvesting at optimum
- Proper handling and packing
- Cold storage (air conditioned trailers for transport etc)