

JOB ROLE – SOLANACEOUS CROP CULTIVATOR

Sector – Agriculture

(Qualification Pack Code: AGR/Q0402)

PPT's for Class IX



PSS Central Institute of Vocational Education
Shyamla Hills, Bhopal – 462 013 , Madhya Pradesh, India

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UNIT 1: INTRODUCTION TO HORTICULTURE

Session 2: Branches of Horticulture and Special Horticultural Operations

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Session Objectives

The student will be able to:

- Describe the different branches of horticulture.
- Classify of vegetable crops.
- Describe important horticultural operations.

Introduction

Horticulture is the most important branch of agriculture. Horticultural crops require intense care in planting, carrying out intercultural operations, manipulation of growth, harvesting, packaging, marketing, storage and processing.

India is the second largest producer of fruits and vegetables in the world after China. In India, about 55–60 per cent of the total population depends on agriculture and allied activities. Horticultural crops constitute a significant portion of the total agricultural produce in India.

Branches of Horticulture



Branches of Horticulture

Pomology: It deals with the scientific study of fruit Crops.



Fruit cultivation

Olericulture: It deals with the scientific study of vegetable crops.



Vegetable cultivation

Branches of Horticulture

Floriculture: It deals with the scientific study of flowering and ornamental Crops.



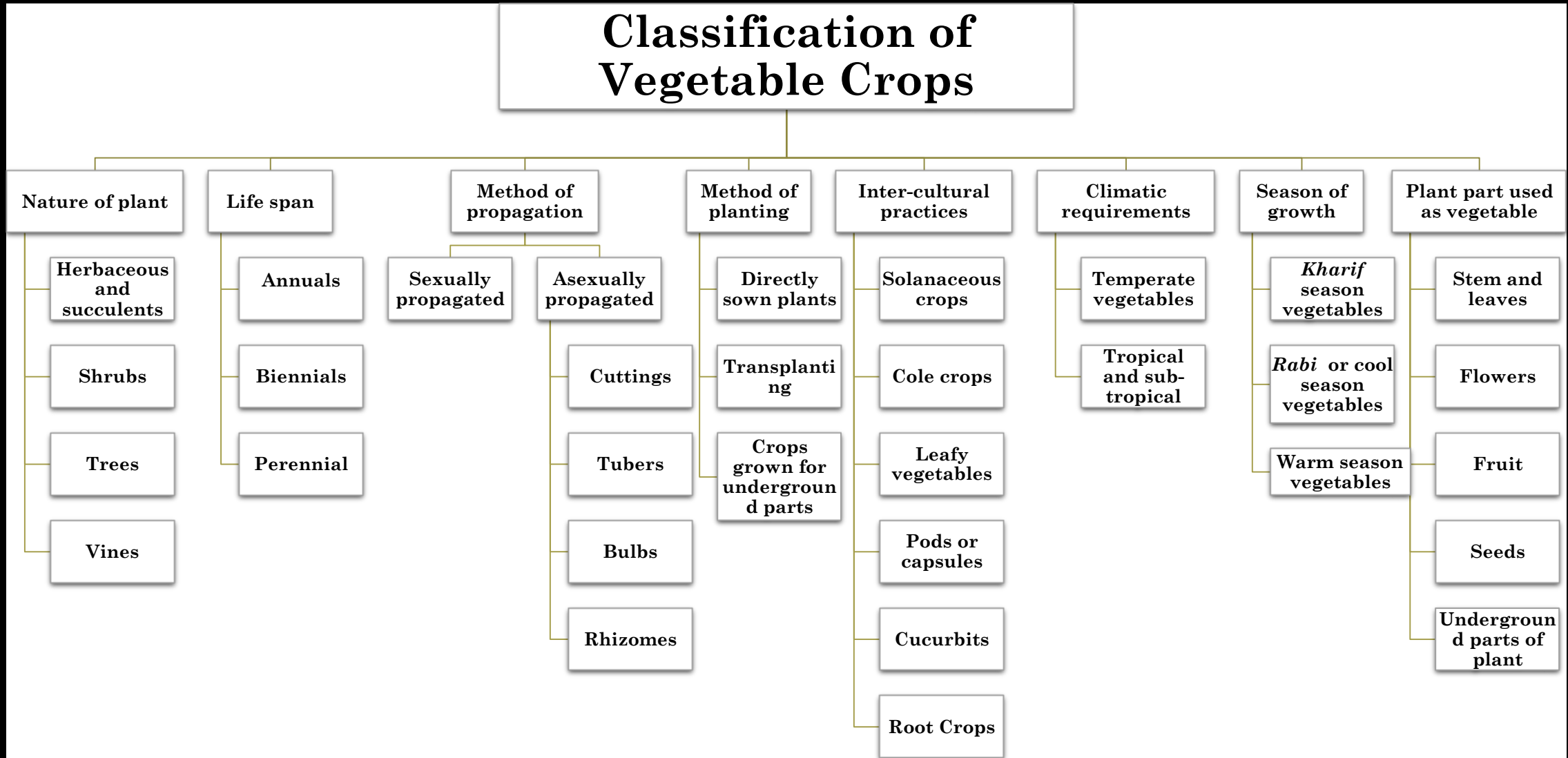
Flower cultivation

Post-harvest technology: It deals with the principles and practices of handling, packaging and processing of harvested crops to increase their storage life and availability.

Difference Between Fruits and Vegetables

S. No.	Fruits	Vegetables
1.	Most fruit plants are perennials	Most vegetables are annuals
2.	Fruit plants are generally woody in nature	Vegetable plants are, generally, herbaceous and succulents
3.	They are commercially propagated asexually (by vegetative)	They are commercially propagated sexually (by seed)
4.	Fruit plants require special cultural practices, i.e., training, pruning, etc	Vegetables are seasonal and only staking and pruning are required in some crops
5.	Fruits are mostly consumed fresh after ripening	Most vegetables require cooking for consumption.

Classification of Vegetable Crops



Important Horticultural Operations

Training

When a plant is made to grow with or without support, in a desired fashion by removing or fastening some of its parts with a view to give it a better framework or shape, the operation is called 'training'.

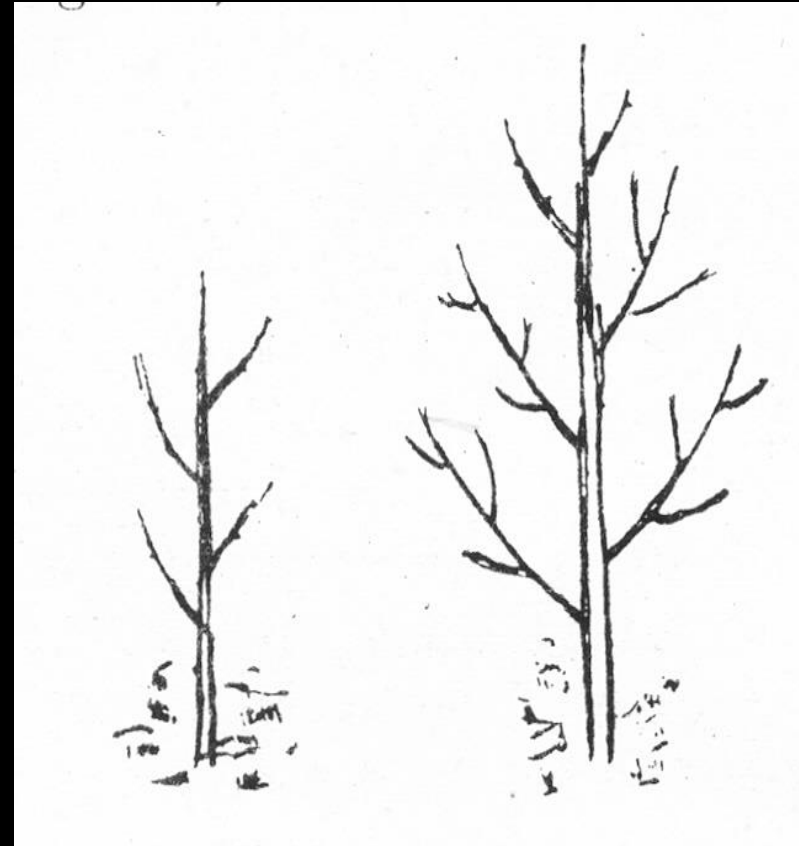
Important Horticultural Operations

System of training

There are three systems of training in fruit trees:

1. Central leader system

In this system, the main stem of a tree is allowed to grow straight from the ground level to the top, which is called the central axis of the tree. The smaller side branches grow from this central axis in various directions.

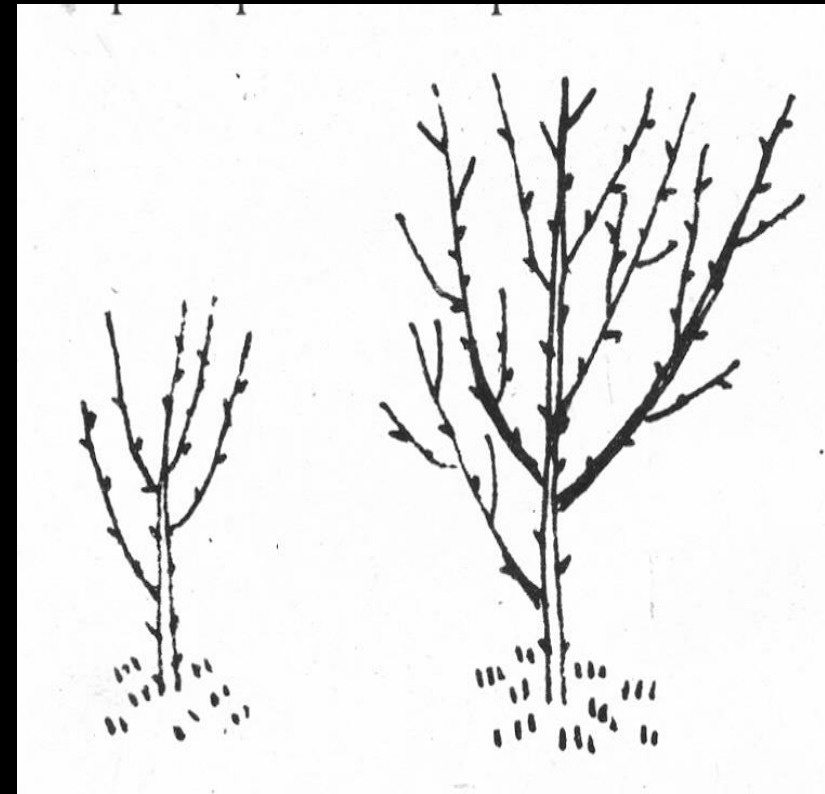


Important Horticultural Operations

System of training

2. Open centre system

In this system, the main stem of a tree is allowed to grow up to a desired height and the top is headed to induce lateral branches, resulting in a low-headed and open at the centre tree. In this system, the sunlight reaches all branches and the crop is borne closer to the ground

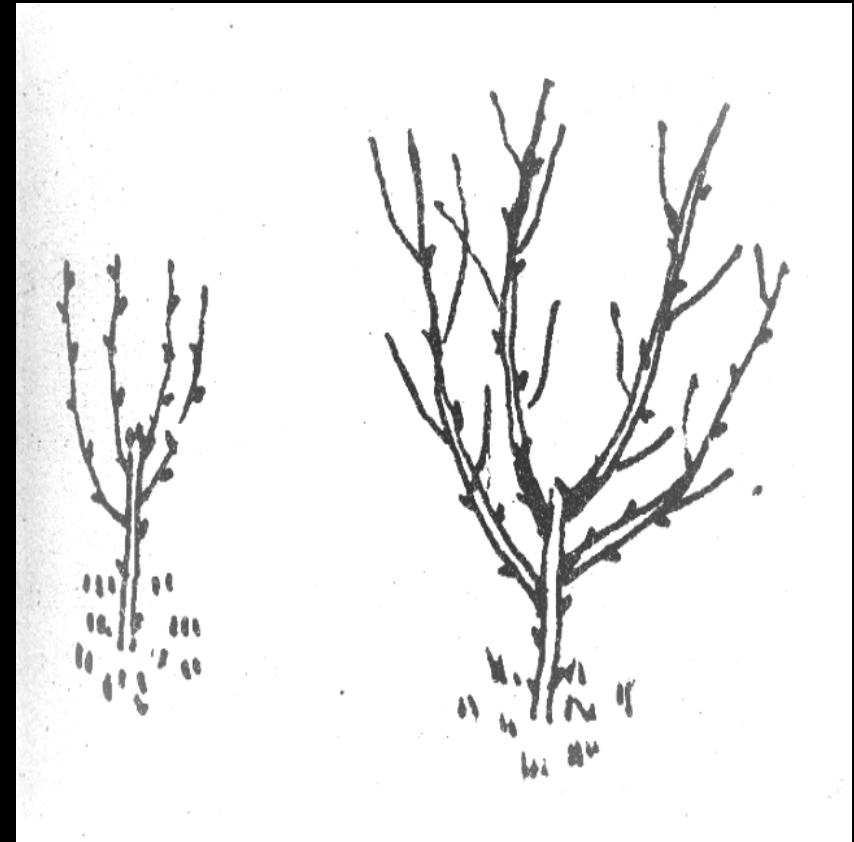


Important Horticultural Operations

System of training

3. Modified leader system

This system is the modification of the central leader system and the open centre system. The main stem grows for a few years, and after some time, lateral branches are induced to grow, which are widely spaced and spread on all sides not as in the open centre system.



Important Horticultural Operations

Pruning

Judicious removal of any part of a plant to divert sap towards its producing areas, leading to an improvement in the quality of yield is called 'pruning'.

Types of pruning

- **Thinning out:** When a shoot or a branch is removed entirely without leaving any stub is called 'thinning out'.
- **Heading back:** When the terminal portion of a branch or a shoot is removed partially, leaving the basal portion intact.

Important Horticultural Operations

Objectives of pruning

- ✓ To maintain flowering and fruiting balance
- ✓ To obtain regular bearing in fruits
- ✓ To remove pest-infected branches
- ✓ To ensure adequate sunlight for plant growth
- ✓ To maintain a balance between vegetative and reproductive growth stages

Important Horticultural Operations

Staking

Staking is the practice for supporting tomato plants especially indeterminate type to keep plants and fruits off the ground



Staking in tomato crop

Important Horticultural Operations

Advantages of staking

- ✓ It provides support to the plant.
- ✓ It keeps the fruits above the ground and produce healthy plant.
- ✓ There are comparatively less chances of incidence of pests and diseases.
- ✓ It facilitates spraying and dusting of pesticides/fungicides.

Important Horticultural Operations

Practices for inducing flowering

- **Bending:** In this operation, erect growing branches of guava trees are bent towards the ground without breaking them.
- **Notching:** A small notch of bark, particularly, just above the bud is removed to accumulate nitrogen and induce vegetative growth from the bud. The branches are notched below the bud to accumulate carbohydrate and induce an individual bud to turn into a fruitful one. This practice is followed on a large scale in fig plants.

Important Horticultural Operations

Practices for inducing flowering

- **Topping and Pinching:** It includes the removal of succulent terminal shoots or just pinching of the last small terminal portion of a shoot. It is practised in fruit plants or vines, which throw shoots that are fast growing.
- **Bahar treatment:** Some fruiting plants have vegetative and reproductive growth 3–4 times a year. This behaviour of plants in an orchard is not desirable. One good crop at a required time is more desirable for decent economic returns.

Important Horticultural Operations

Transplanting

- ✓ It is the agronomical practice of plant in which seedling are moved and planted to growing places.
- ✓ In solanaceous crops seedlings are ready after 4-5 weeks of sowing or when seedling attained the 3-4 leaf stage.
- ✓ Seedling should be hardened before the transplanting them.

Summary

In this session you have learnt about the different branches of horticulture, classification of vegetable crops and important horticulture operations.

Project Coordinator : Dr. Rajiv Kumar Pathak

Assistance

Dr. Sanvar Mal Choudhary

Dr. Narendra Vasure



Joint Director

**PSS Central Institute of Vocational Education
Shyamla Hills, Bhopal – 462013 , Madhya Pradesh, India**

E-mail: jdpsscive@gmail.com

Tel. +91 755 2660691, 2704100, 2660391, 2660564

Fax +91 755 2660481

Website: www.psscive.ac.in