

# JOB ROLE – FLORICULTURIST (PROTECTED CULTIVATION)

Sector – Agriculture

(Qualification Pack Code: AGR/Q0702)



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# **UNIT 3: PREPARATION OF MEDIA AND CONTAINER FOR COMMERCIAL CULTIVATION IN GREENHOUSES**

## **Session 1: Growing Media and Its Composition**

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# Session Objectives

The student will be able to

- Describe growing media
- Explain types of growing media
- Detailed of growing media

# Introduction

. Growing media comprise material aimed to provide ideal physical and chemical characteristics for the root environment. In greenhouse agriculture, a good substrate has proper structural characteristics to support optimum irrigation, maintain proper moisture and aeration, development of roots, adapt to fluctuations in temperature, pH and EC as the plant grows.

Various types of growing media used in protected cultivation include peat moss, vermiculite, perlite, shredded coconut husks (coco peat), or composted materials plus starter nutrients and a wetting agent. These media can also be combined in desired proportions as per requirement of the crop .

# Growing Media

Medium which is used to grow the plant is called growing media that provide physical support to plant growth and comprises minerals, nutrient, moisture.

There are two types of media-

1. Soil media
2. Soilless media

## **Soil as growing media**

Soil is a basic natural medium for the growing of plants (Sand, loam and clay soil)



## **Soilless substrate as media**

The media other than soil are used as base to grow the plants (Coco peat, Vermiculite and Perlite)



# Soil Less Growing Media

## Coco peat

- It is by-product of coconut industry, which provides aeration, drainage and bonding of rooting system



# Soil Less Growing Media

## Vermiculite

- It is an aluminium-iron-magnesium silicate
- It has a range of pore spaces, which can retain considerable amount of moisture on wetting
- It contains calcium and magnesium



# Soil Less Growing Media

## Perlite

- It is a crushed volcanic rocks and is light in weight and can hold 3-4 times of water equal to its weight.
- It has neutral pH



# Soil Less Growing Media

## Rockwool

- It is a burnt mixture of coke, basalt, limestone and also the slag from iron industry.
- Provide good aeration and water-holding capacity



# Soil Less Growing Media

## Rice Husk

- By product of the rice milling industry
- It is extremely light in weight and is very effective for improving drainage

# Soil Less Growing Media

## Bark

- By product of saw mills
- Provides aeration and improved the water-holding capacity
- It has low nutrients and low pH

# Soil Less Growing Media

## Sphagnum Peat Moss

- It is also called peat moss or peat.
- It has excellent water-holding capacity
- Low pH and nutrient content



# Soil Less Growing Media

## Saw dust

- It is a by product of wooden logs used for furniture, it looks like coco peat

# Composition of Media

- Proportion of growing media depending upon crop requirements such as plant support, aeration, drainage, promotion of root development, nutrient supply and moisture retention.

# Composition of Media

- Standard soilless composition includes composite mixture of coco peat, vermiculite and perlite in 3:1:1 volume by volume ratio

# Advantage of Soil Less Media

- Minimizes soil born diseases like root rot and nematodes
- Maintains optimum EC and pH.
- Facilitates easy supply of nutrients to the plant
- Good seed germination and root development

# Summary

In this session you have learnt about the types and composition of growing media

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