

# ROLE OF ROOTING MEDIA IN HORTICULTURE

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Ornamental plants deliver a great diversity in terms of beautiful and aesthetic plants, cut flowers, foliage, bedding plants, indoor plants, potted plants, bulbous plants, outdoor plants, which depending on their growth habit may be annuals, biennials or perennials. Floriculture has become an important sector for entrepreneurs because of its ever-increasing demand and its potential to provide ample opportunities of employment.

Most of the horticulture and greenhouse plants are vegetative propagated and hence rooting media plays a vital role in the production of horticultural crops directly or indirectly.

## Rooting Media?

Also known as “substrate”, “potting media” and growing media is a soil-less medium in which plants are grown. The production of floricultural crops involves a number of cultural inputs. Among these, perhaps the most important factor which plays a major role in quality production and rooting of herbaceous cuttings of plants is rooting media. It is a substrate that helps to provide moisture, support, nutrients and aeration to the growing plant and helps in proper growth and development of plants.

## Purpose of Growing Media

The rooting medium confirms the healthy plant production by providing it with a range of essential elements. Main purpose of rooting media are:

- providing support to the plant
- water absorption and retention
- provides nutrients directly to the root zone
- adequate gas exchange- aeration to the roots

## Type of rooting media:

### Peat:

Peat is obtained from remains of aquatic, marsh, bog, swamp vegetation found under water and formed when partially decomposed plants accumulate under water in areas with low temperatures and low oxygen and nutrient levels. The main property of peat is retaining moisture in soil when it's dry and preventing the excess of water from killing roots when it's wet.

### Coco Peat

Cocopeat is a multipurpose growing medium made out of coconut husk. The fibrous coconut husk is pre washed, machine dried, sieved and made free from sand and other contaminations such as animal and plant residue. It has a very good aeration capacity.

### Perlite

Perlite is an amorphous volcanic glass that has relatively high-water content, typically formed by the hydration of obsidian. It occurs naturally and has the unusual property of greatly expanding when heated sufficiently. It has property to improve aeration, drainage and reduce cost.

### Vermiculite

Vermiculite is a hydrous phyllosilicate mineral. It undergoes significant expansion when heated. It promotes faster root growth and gives quick anchorage to young roots. The mixture helps to retain air, plant food, and moisture, releasing them as the plant requires them. It has high water holding capacity and sterile in nature.

### Vermicompost

Vermicompost is stable, fine granular organic manure, which enriches soil quality by improving its physicochemical and biological properties. It is highly

useful in raising seedlings and for crop production. It is produced by the fragmentation of organic wastes by earthworms. It is rich in micronutrients which are ideal for plant growth.

#### **Shredded Bark/ Wood Bark**

Small pieces of shredded bark can be used as constituent in growing and propagating media. This has the advantage of being biologically active and suppressing some diseases.

#### **Rock-Wool**

It is made from natural ingredients - basalt rock and chalk. Rock-wool for hydroponics is formed when heated at 1600°C, into lava. It is mainly used in displays of cut flowers. Other growing media

constitutes pumice, charcoal, bagasse, leaf mould and sand.

#### **Significance of Rooting Media**

Growing media are used by the horticulture industry as well as consumers for the proper rooting in nursery and proper development of plants. Different growing media can be used to grow plants while the physical and chemical properties of media like structure, texture, pH as well as nitrogen, phosphorus and potassium are the dominant factors for the growth and development of plant. Growing media are used to grow a wide variety of plants including vegetables, fruits, floriculture ornamentals, tree and shrub ornamentals and plants.

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