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Curriculum for Agricultural Science Education

Principles of Agricultural Science – Plant

Potting Media Components

Unit 3 – Soilless Systems
Lesson 3.1 Mixing Media

Potting Media Goals

Growing crops in containers require:

- Light weight potting media for shipping and handling
- Good porosity for drainage and aeration
- Good water retention to prevent containers from drying out too quickly
- Inexpensive

Media Ingredients

Three types of ingredients are used in potting media

- **Inorganic materials** – minerals and substances derived from non-living matter
- **Organic materials** – substances derived from plant or animal tissues
- **Soil enhancers** – includes fertilizers, wetting agents, and soil chemistry buffers

Inorganic Materials

For potting media, inorganic materials are typically light weight and very porous volcanic materials such as:

- Perlite
- Pumice
- Vermiculite

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Other Inorganic Materials

Besides volcanic materials, man-made materials are used, such as:

- Plastic polymer beads
- Clay beads
- Rockwool

Anything inexpensive, light, and that will not disintegrate in wet conditions.

Organics

Organic materials absorb water and break down to provide improved porosity

Common materials used in potting media:

- Peat moss (sphagnum peat)
- Bark chips
- Sawdust
- Coconut fibers
- Seed hulls and husks

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Soil Enhancers

Because potting media provides plant roots access to everything they require, media can have enhancers mixed in for efficient plant growth.

Some enhancement amendments:

- Fertilizers
- Wetting agents
- Lime or gypsum

Slow Release Fertilizers

Potting media can be mixed with time release fertilizer pellets to provide steady plant nutrients over the length of the growing season.

Common product name is Osmocote®. These look like little round clay pellets.

Purchasing Media

Potting media is typically sold two ways

- Bulk – loose, sold by the cubic yard
- Packaged – compressed in plastic wrapped bales, sold by the cubic feet

References

Boodley, J. W. (1998). *The commercial greenhouse* (2nd ed.). Albany, NY: Delmar.

Parker, R. (2010). *Plant and soil science: Fundamentals and applications*. Clifton Park, NY: Delmar.