

The Mavis Institute

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Media Ingredients

Either soil-based or peat-based potting media can be made at home by combining individual ingredients.

Recipes given here are measured in parts for primary ingredients

- Sphagnum peat moss has a coarse texture and contributes to good aeration, yet provides waterholding capacity to prevent soil from drying too quickly. Adding too much sphagnum peat, however, can restrict soil drainage by holding too much water. Sphagnum peat moss can be difficult to wet and should be moistened prior to mixing in other ingredients.
- Coconut fibre or Coir is a natural fibre extracted from the husk of coconut. Coco coir has a neutral pH level, which means that it will not hinder nutrients from dissolving into the soil-water mixture and being taken up by the plants. Coir should be moistened prior to mixing in other ingredients.
- Coarse, sharp, or builder sand, often used in construction, is a primary ingredient in potting media. Like peat moss, sand improves drainage and aeration, but does not improve waterholding capacity. Too much sand will make containers too heavy to move. Sand should not be mixed with a clay-based soil.
- Perlite can be used in both peat-based and soil-based potting media in place of sand. Perlite is expanded volcanic rock (fluoride-based), manufactured when heated to 1,800°F. Like sand, perlite provides great drainage, but is lighter in weight and holds more air. Although more expensive than sand, the advantages may outweigh the additional cost. Disadvantages of perlite include: 1) a tendency to float to the top of the medium when watered; 2) an inability to hold or retain water; and 3) a need to be moistened before it is mixed into other ingredients to reduce dust, which is harmful if inhaled.
- Vermiculite is often used instead of perlite. Vermiculite is clay belonging to the mica family and is naturally found in laminated flakes. It expands when folds of vermiculite can hold water, nutrients, and air, unlike perlite. Only horticultural grades, sold at garden centers, are recommended. Vermiculite can easily compact, which reduces its ability to hold water and air.



Making Soilless or Peat-based Potting Media

Soilless mixes media do not contain any soil, but generally consist of peat moss/coir combined with horticultural grades of vermiculite and/ or perlite and added fertilizer. Peat-based media are useful for seed germination because they are relatively sterile, light in texture and weight, and uniform. The light texture enables seeds to readily germinate and emerge, allows tender roots to grow, and makes transplanting seedlings easier.

In general, standard media recipes are created based on the types of plants being grown (ex. bedding plants, potted plants, or for seed germination). A standard recipe for a homemade soilless mix consists of 5 parts sphagnum peat moss or coir and 2 parts perlite and 1 part vermiculite.

1. Start by pouring 5 parts of peat moss/coir into the container.
2. Add 2 parts perlite
3. Add 1 part vermiculite and mix thoroughly.
4. **Moisten the mix before using in pots or flats.**
5. Add a small pitch of agricultural lime if needed.

Small amounts of calcitic limestone or agricultural lime will need to be added to the peat based media. The correct media pH must be maintained so these nutrients can be available for plant roots to absorb. The range in which all nutrients are available to most plants is between 6.0 (slightly acidic) and 7.0. Adding ground calcitic limestone or agricultural lime raises media pH and contains calcium, which strengthens cell walls. Dolomitic limestone, sometimes used instead of calcitic limestone, also raises media pH and supplies magnesium as well as calcium. Soilless or peat-based media often require the pH to be adjusted upward (to between 6.0 and 7.0) and buffering to prevent rapid drops in pH while the plant is growing.

Bat Guano Tea

1. Bat Guano 2 to 4 tablespoons
2. 1 Gal rain water or non city water

If you need only a small amount of fertilizer for container plants, you can shortcut the brewing process. Add 2 tablespoon of guano to 1 gallon of water, and allow the mixture to sit 24 hours. Your plants won't get the maximum fertilization benefit this way, but they will get some. Temperatures between 60 and 90 degrees Fahrenheit are ideal for brewing.

Guano tea can be made by filling a 5-gallon bucket with rain water and setting it out of direct sunlight. raise the water temperature to 75 F. When the water is warm, fill a composting teabag with guano (10 tablespoons), and place it in the water. Add microbe food such as 1.6 ounces of molasses With an aerator in the bucket, the tea mixture should brew 12 to 48 hours. Use the tea to fertilize plants. The mixture can be used as is for a soil drench or strained and applied as a foliar spray twice each month.

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