

Growing Media for Containers

Part 4: Media Recipes

It is more practical to use a commercially prepared potting soil than to buy ingredients and formulate your own. However, potting soils sold through retail garden supply outlets vary widely in their performance as growing media. In the three previous installments, we discussed the different physical and chemical parameters of container media and the different organic and inorganic components that are commonly used in media. In this installment, we give you some growing media recipes that have been used successfully over the years. You can use these recipes to make your own container growing media or tweak them to fit your own special conditions.

Seed Starting Media

In order to germinate, seeds have some basic needs. All need water and oxygen. Regarding light, some need light, some need darkness, and some will germinate either way. As the seed begins to sprout, the tender shoot grows upward and the root (radical) grows downward. The easier it is for the shoot to emerge and the root to dig deeply, the better it is for the seedling. Large seeds can usually push through about anything as they germinate. This would be seeds like oaks, squash, pumpkins, etc. Smaller seeds aren't as strong and need an easy route. This would be seeds like broccoli, lettuce, peppers, tomatoes, cauliflower, etc. Having a seed starting medium with small particle size and no large chunks will work well for all seed types. Since the germinating seeds need both water and oxygen, a good medium has a high water-holding capacity but also good drainage and high air-filled porosity (see GNO Gardening October 2021).

Once your seedlings germinate and emerge, they will need nutrients to grow. This can be a part of your initial media mix or you can begin fertilizing after the seedlings emerge, usually about two weeks.

Basic Recipe for Seed-Starting Mix #1

- 4 parts compost or worm castings (screened to remove large pieces)
- 1 part perlite
- 1 part vermiculite
- 2 parts peat moss or coconut coir

Basic Recipe for Seed-Starting Mix #2

- 1 part sphagnum peat moss (or coconut coir)
- 1 part perlite
- 1 part vermiculite

Univ. of Georgia Seed Starting Mix

- 4 quarts shredded sphagnum peat moss
- 4 quarts fine vermiculite
- 1 tablespoon of superphosphate
- 2 tablespoons of ground limestone

Mix thoroughly, then wet completely. Leave the soil to drain and do not plant for 5 to 6 days. This allows the lime to react with the peat moss and create a favorable environment for the seedlings.

University of Florida Seed Starting Mix with slow-release nutrients added

- 4 gallons screened worm castings or screened compost
- 4 gallons fine vermiculite
- 8 oz. greensand or kelp meal for potassium
- 8 oz. supplement with full spectrum of micro-nutrients (e.g. Azomite)
- 8 oz. phosphate rock for phosphorus
- 8 oz. alfalfa meal for early nitrogen

Container Growing Media

You can find a lot of recipes online for container growing media and all have their ardent followers. Here are a few that you may find useful.

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Part 4: Media Recipes

UC (University of California) Mix 1

This mix has been an industry standard for over 35 years and is still popular today.

- 13.5 ft³ plaster sand
- 6.75 ft³ bark
- 6.75 ft³ peat moss
- 0.11 lb. Copper
- 0.13 lb. Iron
- 0.07 lb. Magnesium
- 0.03 lb. Manganese
- 0.05 lb. Zinc
- 0.25 lb. KNO₃
- 1.5 lb. Phosphate
- 0.25 lb. Potash

Most of us aren't going to be making potting mix by the cubic yard and don't want to buy and store all the individual micronutrient and macronutrient fertilizers. The following recipe is a good approximation of the UC Mix 1 recipe.

- 2 gal. Sand
- 1 gal. Bark
- 1 gal. Peat
- ½ tsp. Potassium nitrate
- 1 Tbs. Super Phosphate
- ½ tsp. Muriate of Potash
- 1 Tbs. Micronutrient product (e.g. Azomite)

University of Florida Potting Mixes

Foliage Plant Mix

- 2 parts Peat
- 1 part Perlite
- 1 part Sand

OR

- 1 part Peat
- 1 part Pine bark
- 1 part Sand

Succulent Mix

- 2 parts Compost
- 1 part Peat
- 1 part Perlite
- 1 part Sand

Bromeliad Mix

- 1 part Peat
- 1 part Bark
- 1 part Sand

Basic Potting Mix

- 2 parts peat moss or coir (pre-moistened)
- 2 parts compost or composted manure
- 1 part perlite
- 1/4-1/2 parts vermiculite
- 1 tablespoon garden lime for each gallon of peat moss

Basic Potting Mix for Acid-Loving Plants

- 4 parts peat moss
- 2 parts compost or composted manure
- 1 part perlite
- ¼ to ½ part vermiculite

Dan Gill's Potting Mix for Blueberries

- 15 gallon container
- 1/2 peat moss
- 1/2 soil conditioner (composted bark)
- 8 ounces Osmocote 17-7-12 or 16-4-8
- 2 ounces dolomitic lime
- 1 ounce trace elements (Micromax or other trace element fertilizer)

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Basic Potting Mix for Cacti and Succulents

- 3 parts compost
- 2 parts coarse sand (use 3 parts for cactus plants)
- 1 part perlite

Anna T's Basic Potting Soil Recipe

- 1 Part Compost
- 1 Part Garden Soil
- 1 Part Peat Moss
- 1/2 Part Vermiculite or Perlite (Use perlite for water retention and drainage. Use vermiculite to increase water and nutrient retention and aerate the soil.)

Gardenia Potting Mix (I had to throw this one in)

- 2 parts Peat
- 1 part Compost
- 1 part Sand of Perlite

This is just a few of the potting mix recipes you can find that others have used successfully. Sometimes you may need to tweak it to make it better suited for your particular environment or particular plant species. When you tweak a potting mix recipe, it's a good idea to first make a small batch and test it on some of your plants before you make a wholesale changeover.

And of course, there's always LSU Brand Tiger Greaux. Tiger Greaux has aged and composted forest products, peat moss, perlite, vermiculite, sand, fertilizer and micronutrients.

~Dr. Joe Willis



Young blueberry shrubs planted in Dan Gill's Blueberry Mix.

Selected Resources:

7 Easy DIY Potting Soil Recipes to Mix Your Own. <https://getbusygardening.com/diy-potting-soil/#cactus-succulents>

Azomite Fertilizer and Soil Amendment Products. <https://azomite.com/azomite-home-page/azomite-mineral-fertilizer-products/>

Homemade Potting Mixes – UFL. <https://sfyl.ifas.ufl.edu/lawn-and-garden/homemade-potting-mix/>

Plant Potting Mixes. <https://medium.com/age-of-awareness/plant-potting-mixes-a41a4a8187fa>

UC Soil Mixes and Available Ingredients. <https://agops.ucr.edu/soil-mixing>