Choosing Soils for Hanging Baskets

Using proper media is crucial to achieving a successful hanging basket.

By Michael Tilley, Hugh Poole, Bob Steinkamp and Jamie Gibson

As the popularity of mixed baskets and containers continues to rise, many growers face space constraints in their greenhouses because of limited hanging baskets space. In the absence of available space to hang baskets, finish the products on benches. When choosing a growing medium for hanging baskets consider the following factors.

1. Will the baskets hang from support purlins in the greenhouse?

To avoid undue stress on greenhouse supports and make basket handling easier, choose a growing medium with a lower bulk density for hanging basket production above benches. Try a peat-based growing medium with perlite or perlite/vermiculite for this type of system. Fafard offers a select group of peat-based and bark-based formulations that fit specific grower irrigation/fertilization practices.

- Canadian Growing Mix 2 offers a great balance of porosity and moisture-retaining capacity.
- Canadian Growing Mix 1-PV (moisture retentive) and Canadian Growing Mix F-15 (porous) mixes are also good choices for tighter budgets. Plants requiring more drainage perform better in a more porous mix such as Canadian Growing Mix 1-P.

Ensure irrigation and fertilization schedules match mixed-planting needs by planting products with similar moisture/nutrient requirements together. The physical and chemical properties of the growing media will contribute to optimum growth, so ensure that the growing medium is suitable for all plants utilized in mixed-planting baskets. Crops with high water needs require media with greater water retention, such as those made with peat, coir and/or vermiculite. Crops requiring more drainage perform better with coarse aggregate additions, like bark and perlite. Media pH is appropriate. Geraniums require a pH above 5.8, while petunias prefer a lower pH.
Will the baskets start and finish on greenhouse benches?

In the absence of hanging space, start and finish baskets on greenhouse benches. Use a growing medium with a higher bulk density, like those containing bark or other heavier components, to allow for more frequent wet/dry cycles.

Bark-based growing media allows for better porosity and drainage, which contributes to a more toned, finished product; this is an important attribute for after-purchase shelf life. Bark-based mixes may cost more than baled peat-based mixes, but the benefits are realized in increased longevity of the plant material under the consumer’s care. A more porous, or a more moisture retentive mix are two types of peat/bark-based mixes that perform well in hanging basket production.

Larger baskets hold more growing media and available water, allowing for decreased irrigation frequency. Some baskets are designed with a separate reservoir at the bottom, permitting roots to grow into the water. That setup is superior to raising the drainage holes on the sides, which can create anaerobic conditions that favor root pathogens.

What is the climate where the baskets will be sold?

A region’s climate for marketed hanging baskets dictates the growing medium utilized for production. In cooler, less humid climates, peat-based growing media with perlite or perlite/vermiculite as described above performs adequately during the post-production period. In hot, humid climates try a bark-based medium that allows for more frequent irrigations. Amend these mixes with coir, which increases water retention, or polymers, which absorb many times their weight in water, releasing moisture back to the plant in hot, dry conditions. Growers can increase crop survival rates by applying a wetting agent drench that saturates the entire soil volume. Drenches help re-establish capillary water movement throughout the root system and ensure the media will absorb the maximum amount of water.

What is the marketing outlet and technical expertise available to care for the finished baskets until sold?

Will the market-ready baskets be delivered to an independent garden center, where employees are trained and skilled in proper plant culture, or...
How to Improve Media Water-Holding Ability for Retail Post-Harvest Longevity

Hanging basket growing media can be amended with coir, polymers or calcined clays, which increase soil water retention. New technology controlled-release fertilizers (CRFs) supply nutrients long after shipping in retail and garden settings. Growers increase retail/consumer success by applying a wetting agent drench just prior to shipping that improves water distribution and soil moisture.

**Coir**
- Coir is derived from coconut husks and is somewhat peat-like in physical characteristics, but it is denser than peat during watering-in.
- In hanging baskets, growing media with coir increases the water- and nutrient-holding capacity, and can reduce settling or “media shrink” at the retail and consumer level.

**Polymers**
- Polymers are small crystals (primarily polyacrylamide gels) that have the capacity to absorb many times their weight in water, which can then be released back to the plant when the growing medium dries down.
- Hanging baskets placed in windy, hot conditions, such as patios or porches can benefit from polymers, especially during the hot summer months, and when the baskets are left over the weekend or vacation travel by the consumer.

**Calcined Clays**
- Calcined clays incorporated into the growing media can mimic properties of native mineral soils, such as increased buffering capacity, moisture and nutrient retention.
- In hanging baskets, calcined clays can reduce the irrigation and nutrient requirements required to maintain healthy, actively growing plants at the retail level and after purchase by the consumer.

**Controlled-Release Fertilizers**
- New technology CRFs gives the grower additional options to incorporate fertilizers with different release rates into the growing media during production, which eliminates or reduces the need for constant-liquid feeding with water-soluble fertilizers. Release rates over a specified growing period can be at the beginning, throughout, or at the end of the production cycle, based on the grower’s goals in producing a finished product.
- In hanging baskets, top-dressing with a CRF prior to shipping will increase the longevity of the crop and ensure success at the retail and consumer level, especially when the baskets are clear-watered, without fertilizer. Extended nutrient availability after purchase is added value to the consumer.

**Wetting Agents**
- Wetting agents are compounds that reduce the hydrophobic properties of some media components, such as peat and pine bark, which, when properly incorporated into growing media, reduces the surface tension that repels water droplets, allowing uniform wetting and saturation of the growing medium.
- Due to the breakdown of wetting agents over time, hanging basket crops will benefit when a wetting agent drench is applied, prior to shipping to retail outlets and purchase by the consumer. Drenching hanging baskets with a wetting agent improves saturation of the rootball, thus increasing available water and nutrients to the plant at the retail and consumer level.
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The physical and chemical properties of the growing media will contribute to optimum growth, so ensure that the growing medium is suitable for all plants in mixed-planting baskets.

will they go to market outlets such as discount stores where employees lack skills and training in the care of post-production plant materials? Growing media selection based on this knowledge allows the grower to ensure that the post-production plant material retains marketability for longer periods, prior to sale.

If the majority of the hanging baskets will be sold in independent garden centers, growing media can be a peat:perlite or peat:perlite:vermiculite medium that holds adequate moisture between irrigations. Since IGCs employ staff trained in proper plant culture/care, there is less chance that the baskets will be over- or under-watered prior to sale. IGCs also have specific areas/support structures that the hanging baskets are displayed, so the baskets are usually watered/fertilized as needed, prior to sale.

If the majority of the hanging baskets will be sold at the major box store outlets, a growing medium containing peat, bark and other components are a...
better choice. Plants grown in bark-based media experience frequent wet/dry cycles and often produce plants that are better prepared for stressful conditions. A bark-based medium will be more porous, allowing better drainage, especially when associates inexperienced in plant care are watering the baskets. In addition, components such as polymers can be incorporated into the media at the time of planting to enhance water availability when the baskets are not watered for a length of time. Also, top-dressing the baskets with a controlled-release fertilizer will supply the plants with nutrients after the baskets are displayed for sale. Toning the plants towards the end of the growth cycle will increase plant durability under box store display conditions.

**Considerations**

There are many variables to consider when choosing growing media for hanging baskets. Utilizing a growing medium that fits the production requirements of the grower, yet contributes to the longevity and success of the consumer after purchase are the desired goals. Finding a balance between these goals can be challenging, but obtainable. Again, consider how the baskets will be grown in the greenhouse, either on benches or hanging from greenhouse supports, the climate where the baskets will be marketed, and whether the baskets will be marketed to independent garden centers or big box store outlets. Most importantly, match the crop to the growing medium for growing success in the greenhouse, the market outlet and with the consumer.

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