

GROWERTALKS

Features

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Store Right to Get More

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Often growing media is incorrectly singled-out as the source of slow dry-down rate, uneven drying, weeds and root diseases. In fact, many problems are the result of improper growing medium storage, handling practices and poor crop management. By paying attention to detail, you can maximize the performance of growing media and achieve uniform, quality crop production.

Growing medium delivery

When your order of growing medium arrives, look on the truck. Make sure that the product delivered is indeed the product you ordered. Inspect the packaging for tears and holes, since these can allow intrusion of water and contaminants. If you find products with tears, use these packages immediately after delivery or tape over holes before placing in a storage area.

Also, look for product “Manufacturing lot” number(s), since this serves as a product identification that you can use for recording shipments and for stock rotation at your greenhouse. As an added measure of confidence, you can take several samples of medium for each identification number and test each for pH and EC.

Pictured:

- *Poor crop performance of thyme caused by over-processed growing medium.*
 - *Filled pots are improperly stacked and nested, causing compaction of growing medium. Each layer of containers has a different level of compaction, which leads to growth and watering problems.*
 - *Filled flats on the growing bench will dry out over time if not used shortly after filling.*
 - *Uneven growth and yellowing of vinca caused by overwatering the growing medium.*
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Recommended storage

All growing media are best stored inside a building or protected area. If indoor space is limited, store the product outside on its original pallets, keeping the shrink-wrap intact. Store on a solid surface that's slightly elevated and doesn't flood. Cover the product with a tarp to prevent water intrusion, since water dissolves the limestone and quickly increases the pH of the product. Tarps also protect the packaging from chemical contaminants, weed seed and pathogens that may be present in airborne particles that can settle on the product.

Avoid storage near roads or train tracks where herbicides or road salt could drift and contaminate the product. Also, monitor for rodents, as they can burrow and tunnel into packaging and store food, such as bird seed.

If product is stored outside during the cold winter months, the product will tend to freeze. If so, it will need to be brought into a heated area one to four weeks prior to using the product so it can thaw before use. The time depends on the size of the packaging (large packaged product takes longer to thaw), as well as the storage temperature.

All growing medium have “best before” dates that should be observed. Rotate stock using “FIFO— First in, First Out.” This is important because natural microorganisms found in the organic components in growing media will consume starter fertilizer charges and contribute to the breakdown of the wetting agent over time.

For example, most peat-based growing media and plug growing media should be used within nine to 12 months from the date of manufacturing to ensure best results. Bark-based growing media, which are more microbial-active, should be used within six months. Organic growing medium should be used within a few months, as organic wetting agents aren't as effective as their chemical counterparts and are easily consumed by natural microorganisms. “Best before” dates will vary based on storage temperatures.

For example, there's less microbial activity when product is frozen, therefore, “best before” date is extended, compared to high storage temperatures above 90F, which shorten product storage life for the dates mentioned above.

Mixing and fluffing bales

When potting and transplanting, sanitize the work area and be sure to check that there's no dust, weed seed or other residues that may be found in or around potting benches and machinery. Root-rot pathogens can easily contaminate the potting area from dust. Weed seed can also blow around in the fall and can settle on benches or in the potting area. Make sure that mixing and potting machines are free of mineral soil residues that also harbor pathogens and weed seed.

When loosening compressed bales, add water to reduce the amount of dust that can be generated when decompressing growing media. Water also can slightly increase yields by adding “spring” and elasticity to peat fiber, so more pots may be filled. Moisture content of the growing medium should be damp to the touch and shouldn't have free water dripping when squeezed.

Don't use front-end loaders or other heavy equipment to break apart compressed bales, as they damage the growing medium and create fine particles. Instead, use commercial bale-breaking machines, as they have slow turning blades and minimize processing time.

Extended processing periods break down the structure of the media and its components, forming fine particles and causing variability in growing media structure. Over-processed growing media can cause variability within crops. “Fines” plug up air pores within the growing medium, limiting air-exchange for roots and reduce water drainage. This results in less oxygen to the roots, which slows plant growth and reduces water uptake by the plant. If watering isn't adjusted, there's greater opportunity for root disease.

Container filling

Fill containers carefully to avoid compaction. Avoid nesting of filled containers on top of each other or compacting growing medium around plugs or seedlings when transplanting. Compaction collapses air spaces within the growing medium, reducing air porosity. Plant roots need oxygen. Low air porosity can cause plant stress and reduce overall plant growth rate.

When plants are stressed, they're more susceptible to attack from insects and plant pathogens. When compaction occurs, it typically isn't uniform across all containers. Some will have lower air space than others, causing differences in plant growth rates, water requirements and, ultimately, uneven dry-down from one container to

another.

When filling containers, it's best to plant as soon as possible. Peat-based and bark-based growing media that are exposed to air or sun will dry out. After a few hours to a few days, the surface of exposed growing medium may begin to repel water, even if the growing medium is fresh.

If transplanting is delayed, cover filled trays with plastic to avoid water loss or stack trays on a pallet without compacting, shrink wrap and store out of direct sunlight. Also, long-term storage of opened, unused growing medium—whether it's in containers, on a bench or in the opened package—is at risk for contamination from weed seed, chemicals, insects, etc.

Transplanting

When transplanting, dibble a hole to place a plug or liner into the container. Lightly move growing medium around the root ball, but don't compact the growing medium. Instead, apply water, as it will uniformly settle the growing medium around the root ball without causing compaction. As previously stated, don't wait too long after transplanting to water in newly transplanted plugs and liners, as the growing medium can dry out.

Watering

Water the crop when it needs it by looking for color changes in the growing medium surface from dark to light brown. Don't water too often, as this leads to overwatering and crop problems. The general rule is to irrigate early in the day and refrain from applications after noon (unless, of course, the crop is wilting). Early watering allows foliage to dry and temperature of growing medium to rise to normal level. Thorough irrigation to run-through makes sure every pot is properly watered and prevents salt build up in the growing medium. Periodically open vents to introduce fresh air and lower relative humidity—this will also allow the growing medium to dry out faster and can reduce uneven drying from one container to the next.

Monitoring crop growth

Proper storage, handling and use of growing medium are the foundation for starting and growing successful crops. Keep in mind that growing medium pH, EC and nutrient levels will change throughout the crop cycle, based on plant uptake, water quality and fertilizer applications. Laboratory testing is a useful tool to validate crop nutrition so you can make cultural modifications, if necessary. An ounce of prevention is worth a pound of cure. **GT**

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