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147. How to be more media storage savvy. Steinkamp, B., Poole, H., Tilley, M., and Gibson, J. Greenhouse Management 31(2):30, 55-57. 2011.

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How to be more media storage savvy

Knowing how storage affects growing mixes is vital to producing healthy, marketable plants

Growing mixes can change when they are stored, but these changes can be manageable if growers know what to expect. Growers who use commercial media prefer fresh materials, straight from the manufacturer, if possible. This isn't always realistic because the media are usually stored before they are used. Some growers buy truckloads and use it for several months, sometimes as long as a year.

Media that is shipped to a distributor's warehouse might sit for several months before a customer receives it. Baled growing media can be a year old before a grower ever receives them. Some mix properties change during storage.

Starting point pH

The pH of a growing medium tested right from

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Key points

1. The growing medium pH tested right from the bag will not necessarily be the same three or four days after planting and watering in.

2. Growers who rely on a starter fertilizer for initial fertility might notice growth differences when part of a crop is planted in the last of an old batch of mix and the rest in freshly made mix.

3. Dry growing media can be more of a problem with baled than bagged mixes because bales are often manufactured dryer and stored longer. Prefilled pots and flats can also dry out rapidly.

Take control of your crop

Here's what you can do to help ensure crop consistency.

- Do not buy growing media too far in advance. If you do buy media in advance, be sure to have a protected area for storage that avoids temperature and moisture extremes.
- Test the pH and electrical conductivity of each batch before use or request tests from the manufacturer. Follow up with a professional lab test after two weeks if you have any concerns.
- Water in newly planted crops with an appropriate fertilizer if necessary.
- Monitor media pH and electrical conductivity regularly. Conduct appropriate tests through a professional lab.

Storage of growing media can cause chemical changes, such as a pH increase along with a decrease in soluble salts and available nitrogen levels.

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the bag will not necessarily be the same three or four days after planting and watering in. The medium can test low in pH, sometimes as low as 4.5. A low pH is most often seen in dry or freshly mixed media.

The moisture level in these mixes is too low to dissolve the incorporated lime and to trigger the rapid pH increase that occurs after watering in. The drier a mix, the slower the pH rises during storage.

When testing the pH of an unused medium, moisten the mix three times with tap water over the course of two to three days before testing. This results in a better indication of a medium's starting point pH.

Impact on soluble salts

The electrical conductivity (EC) of a mix changes during storage. Most commercial mixes contain a starter fertilizer charge that provides nitrogen, phosphorus, potassium and trace elements. These and other components contribute to the electrical conductivity values of freshly manufactured mixes.

Commercially prepared growing media are not sterilized and have a large population of nonpathogenic microorganisms. When a freshly made mix is stored, the microorganism population begins to slowly consume the nitrogen in the mix. As a result, a mix with an electrical conductivity of 2 mmhos per centimeter at the manufacture date may test 1 mmhos per centimeter after four months in storage. This is particularly true with bark-containing mixes, even when "stable" composted bark is used.

Managing media

Before changing growing media, test the new mix to determine if it's suitable for the crops being grown. Running growing mixes through potting machines, flat fillers or handling equipment can alter aeration and water retention. Avoid excessive handling, which causes a grinding effect.

Control weeds by storing bagged growing mixes inside and always scouting crops.

Figure usage needs on number of bags or cubic yards to produce a crop.

Growers who rely on a starter fertilizer for initial fertility might notice growth differences when part of a crop is planted in the last of an old batch of mix and the rest in a freshly made mix. In this situation, many growing media manufacturers recommend watering in the plants with a dilute liquid fertilizer for balance.

Mixes that contain a controlled-release fertilizer increase in electrical conductivity during storage. Very little moisture is needed to start softening or causing noticeable swelling of the fertilizer prills. Most commercial bagged or bulk growing mixes contain 40-50

Media storage smarts

There are several elements of a commercial growing media that can change during storage.

• Long storage time means a growing mix has a greater chance of drying out. A dried mix is more difficult to wet.

• Storing bulk mix requires greater protection than packaged product to prevent contamination from weed seed, insects and diseases. Store packaged mixes on pallets off the ground. Ensure there is good air circulation around and through the bags or bales. Prior to each use, blend portions of dry and moist mix to improve consistency.

• Growing mixes can develop a slime mold in the area between the medium and the bag where condensate forms. The molds are mostly harmless and disappear within a couple weeks after planting.

Occasionally, when a growing mix package is opened a brownish, yellowish or reddish mold may be seen on the surface. While unsightly, the mold grows for a few days and then gradually disappears.

• Storage can cause chemical changes, such as a pH increase along with a decrease in soluble salts and available nitrogen levels. Test any mix that has been stored for six months or longer to determine what changes have occurred and compensate for those changes.

percent moisture. Even a dry growing mix can have enough moisture to start the fertilizer release process. To be safe, always check the soluble salts level of a mix containing a controlled-release fertilizer before using it.

Impact on wettability

Although media are packaged in plastic bags, they dry out during storage. Depending on the circumstance and the product, a dry mix can be hard to wet.

This can be more of a problem with baled than bagged mixes, because bales are often manufactured dryer and stored longer. Prefilled pots and flats can also dry out rapidly.

With a bulk mix, the surface tends to dry out while the interior stays moist. Blending dry and wet portions of the mix before placing it in the potting machine can help overcome this situation. If not, there may be

pot-to-pot wetting differences. If a mix seems unusually dry, fill a few containers and then apply water to test for wetting problems.

Algae and mold growth

Occasionally, when a bag or bale of medium is opened, green algae can be seen on the medium surface and on the inside of the bag. This algae is harmless. A small amount of blending prior to pot filling will help eliminate the algae.

Less often, a brownish, yellowish or reddish mold can be seen on the medium surface. This is saprophytic fungi. Occasionally, this mold will continue to grow on the surface after containers are filled. The mold grows for about 10 days and then gradually disappears. GM

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Running growing mixes through potting machines, flat fillers or handling equipment can alter aeration and water retention.

ON THE COVER:

Bob and Allen Schmidt, of Schmidt Bros. Inc. in Swanton, Ohio, are sold on branding.

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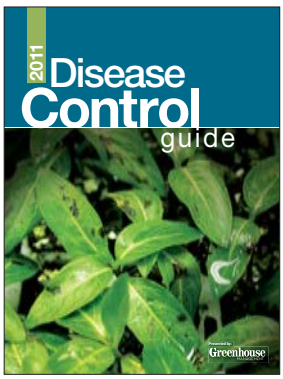

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