

From Forest Nursery Notes, Summer 2011

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.

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
continued on page 51

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.

continued from page 30

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

Cultivate Business in Your Community with America in Bloom®



Planting Pride in
Our Communities
For a Decade

Promoting America in Bloom® participation in your town helps people connect with plants. Since 2001, more than 22 million people in nearly 180 communities have already made planting pride a way of life. Find out how to sign up for the exciting 2011 program today.

**Save the date for our
national awards and symposium:
October 6-8, 2011 • Washington, DC**

www.americainbloom.org • 614-487-1117



facebook

twitter

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.
- 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.



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.

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

Al's Flower Pouch II™
The Earth-Friendly Alternative

A burst of beauty in a
DEGRADABLE bag!


800-338-1136
www.amaplas.com

EMPA

Check Out Our Newly
REDESIGNED SITE:
greenhousemanagementonline.com

FOR YOUR POT PLANTS & BASKETS
YOU NEED WHOJE YEAR

CLEAR VINYL SAUCERS

CLEAR BASKET LINERS



CLEAR DEEP LINERS



WHOLE YEAR TRADING CO., INC.
WHOLE YEAR

1-800-238-6694

117B Docks Corner Road • Dayton, NJ 08810
WholeYear@verizon.net • fax 732-238-1148

greenhousemanagementonline.com/readerservice - #34

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

Hugh Poole is director of technical services, Bob Steinkamp and Michael Tilley are technical services managers, and Jamie Gibson is director of research and development, Conrad Fafard Inc., Technical Services, (800) 722-7645; jamie.gibson@fafard.com; www.fafard.com.



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



Passion Defined

Terra Nova's 2011 Spring Catalog NOW Available



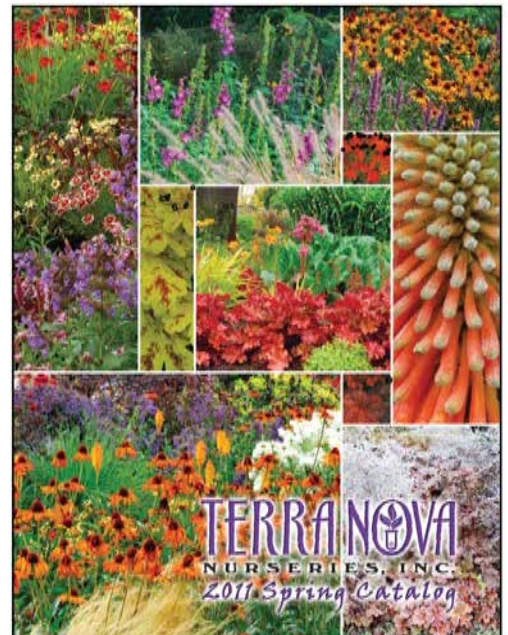
We're all about Passion at Terra Nova.

The passion of our breeders has made us your one stop destination for Echinacea, Heuchera, and the world's **hottest premier perennials**. We sell plants that offer pleasure and value for your customers over all four seasons. After all, why buy a Shasta Daisy that blooms for 2 weeks when you can have one of our reblooming varieties that flower till frost? More blooms and better performance equal happier customers, and plants that have a vastly greater sales window in the retail setting. The expanding worldwide network of our new partner labs and rooting stations continue to improve our availability.

Look To Our Catalog For:

- New genera are represented like Cyclamen, Cymbalaria, Gaillardia, Kniphofia, and Salvia with novel color forms and improved garden performance
- 26 Series of plants encompassing Agastache, Coreopsis, Cyclamen, Echinacea, Helleborus, Heuchera, Heucherella, Kniphofia, Penstemon, Sedum, Tiarella and Tradescantia
- 128 pages of delicious photography, informative cultural tips for growers, actual examples of nursery-grown plants grown without PGRs, and information on our new plant programs

To request a copy of our 2011 catalog please call us at (800) 215-9450 or download a copy at www.terravanurseries.com.



Can't wait? Download a copy today at www.terravanurseries.com

ON THE COVER:

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

Photo by Gallippo's Photography

Greenhouse[®]

MANAGEMENT

COVER STORY

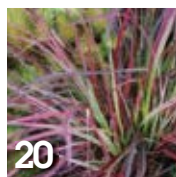
14 SOLD ON BRANDING

Schmidt Bros. Inc. started its own branded line of premium vegetables and herbs.



FEATURES

- 20 Grasses and grass-like plants**
Bold leaves, glittering spillage and fine textured foliage make these plants an important part of garden design.
- 28 Partners in perennials**
Proven Winners and Walters Gardens look to reinvigorate retail with exclusive perennial selections.
- 30 Becoming media storage savvy**
Knowing how storage affects growing mixes is vital to producing healthy, marketable plants.
- 58 Dutch deftness**
Growers in the Netherlands use technology to achieve a climate-neutral greenhouse.
- 67 Diseases of vegetable bedding plants**
Sanitation, cultural practices, resistant cultivars and proper fungicide use help minimize disease.
- 71 Recognizing disease symptoms**
Get familiar with the symptoms of economically damaging diseases for accurate identification.



DEPARTMENTS:

- 4 Outlook**
David Kuack
- 6 Culture**
Cyperus
- 8 Variety Notebook**
- 10 Say What?**
- 12 Case Study**
- 79 Classifieds**
- 81 Ad Index**
- 82 Back Page**

COLUMNS:

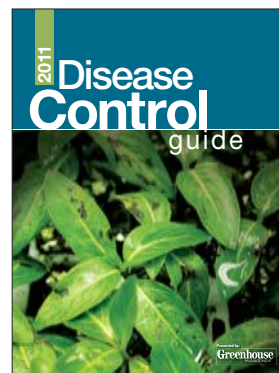
- 62 Growing Trends**
Julie Newman
- 63 Plant Health**
A. R. Chase
- 65 Tech Solutions**
John W. Bartok Jr.

8
↓



31 →

Use our comprehensive guide to help control diseases.



Greenhouse Management (ISSN 1080-6679) is published monthly. Copyright 2011 G.I.E. Media Inc., 4020 Kinross Lakes Parkway, #201, Richfield, OH 44286. All rights reserved. No part of this publication may be reproduced or transmitted by any means without written permission from the publisher. One year subscription rates: Free to qualified growers in the United States. Non-Qualified U.S. subscriptions are \$96 in the United States; \$120 for delivery outside the U.S.; U.S. funds drawn on a U.S. bank required for all foreign subscriptions. Single copy rate: \$8, plus postage while supplies last. Periodicals postage paid at Richfield, Ohio, and additional mailing offices. Postmaster: send changes to **Greenhouse Management**, 4020 Kinross Lakes Parkway, Suite 201, Richfield, OH 44286. Canadian Post: Publications Mail Agreement #40612608. Canada returns to be sent to Bleuchip International, PO Box 25542, London, ON N6C 6B2