Flower Walking, Scholarships & Stratified Substrates

News and commentary for the nursery & landscape market

GROWERTALKS MAGAZINE greenPROFIT MAGAZINE

WEDNESDAY, MAY 15, 2024

Nursery & LANDSCAPE INSIDER

News and Commentary for the landscape and nursery market

COMING UP THIS WEEK:

Flower-Walking Trend
Sydney B. Meadows Scholarship
IPPS Southern Region Scholarships
Stratified Substrates
Water & Fertilizer Sustainability
Peat Reduction
Root Productivity

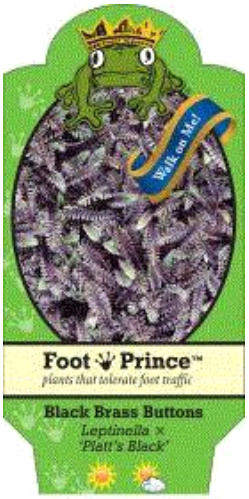
Flower-Walking Trend Inspired by FootPrince Perennials

Touching grass is so 2023. The latest in alfresco trends is “flower walking”—tiptoeing through springy, textured, fragrant, and sometimes flowering, perennials for a bit of grounding outdoor bliss.

I've worked in groundcovers a bit over the past few years and love the benefits they provide to landscapes and the environment, and I bet you do, too.

But isn’t it somewhat of a bummer that you take away the ability to use that space for recreation? I mean, that’s one of the best parts of the lawn—getting out and playing in it!

That’s where FootPrince Perennials from Little Prince of Oregon comes into play. A line of low-growing perennials that can handle compaction and traffic that are flowery, fluffy and fragrant. These are like groundcovers with the added benefit of lawn use—a win-win.



There are several genera in the FootPrince line, including:

- Dymondia
- Erodium
- Isotoma
- Leptinella
- Ophiopogon
- Pratia
- Sagina
- Thymus

Each makes for a great, lush option for low-maintenance lawnscapes.

These were selected for their ability to handle walk and wear, so you don't have to stay out of the groundcovers anymore!

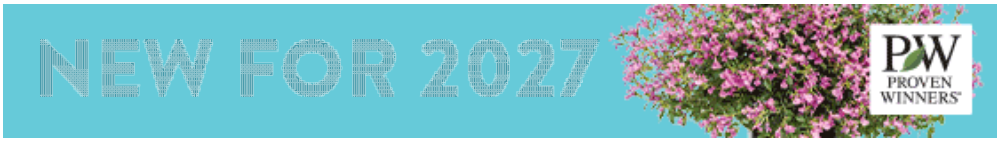
Check them out HERE.

Scholarship Alert: Sydney B. Meadows

Anyone who works with students interested in ornamental horticulture please make sure you have them apply for this game-changing scholarship.

The Sydney B. Meadows Scholarship Endowment Fund offers $2,000 direct scholarships to students in the Southern states to support their studies. Twelve students are selected annually. Students who've already won this award are eligible for a second (but only two) awards.

Applications are easy and due June 1. There are three weeks left—APPLY HERE.



IPPS Southern Region Scholarships

Sticking with some more scholarship news, the International Plant Propagator's Society-Southern Region has some scholarships for students and industry members to attend their upcoming meeting this October in Tulsa, Oklahoma. (Don't worry, you don't have to be a propagator to attend.)

If you're unfamiliar with the group, this is one of the top nursery and ornamental trade associations in the country and focuses on all aspects of ornamental horticulture, from propagation to production to plant material and everything in between.

IPPS
Sharing Plant Production Knowledge Globally
Southern Region
of North America

I can personally attest that this is a great meeting to meet and network with so many wonderful people with similar interests.

The Margie Jenkins Scholarship is for industry members who want to attend their first meeting. This will assist with attendance and is in honor of "Ms. Margie" who was from right here in Louisiana and had a storied career becoming recognized as a botanical authority across the south, all while mentoring and helping so many in the nursery industry.

If you’re in the industry and want to come, apply HERE.

The Coach Vince Dooley Student Scholarship is for students that want to come. If you're a student, I promise this will be an amazing opportunity. You can write a paper and submit to the student research competition. However, if you’re early in your student career you can apply to attend through the Vince Dooley Scholarship. Coach Dooley was the former coach of the UGA football team and a huge horticultural ambassador, helping support the horticulture program at UGA.

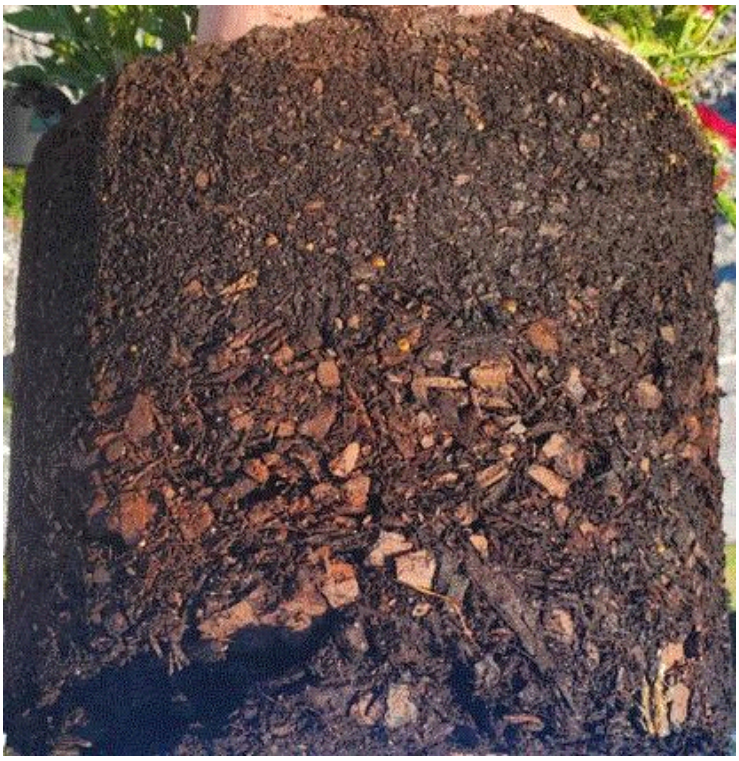
If you're a student, learn more and apply HERE.

Stratified Substrates: A Journey of the Deacde

Since starting this newsletter, I've been holding off on too much self-promotion (well ... maybe not). However, this week I'd like to take a good portion of this newsletter to discuss something that I hold very near and dear—that's my decade-long journey of research leading to soilless substrate stratification. Container production has certainly come a long way in recent decades, with exploration of different materials, processing, types/shapes of containers, irrigation and fertilizer that complements the potting media, and so on.

In nearly every instance, a stand-alone substrate or a blend is used to fill the container uniformly, and of course this has worked great. That being said, there's a reoccurring challenge—container substrates are inefficient. Fertilizer nutrients aren't particularly retained well and leach (quickly in my area due to excessive heat and precipitation). We select substrates that reduce water holding to ensure plants don’t stay too wet. Plus, in every container, regardless of substrate, a moisture gradient exists that isn't optimal for plant growth. In other words. gravity pulls water down, and as the sun evaporates, water or roots use it and it becomes dry on the top (requiring another irrigation) and stays wet at the bottom.

Substrate engineers and researchers have developed targeted blends to improve water and nutrient holding, but the problem still exists. After years of substrate research, we're finally beginning to understand how to manipulate water and nutrients storage and movement within the container.



Stratified substrates is a re-imagining of a container system to improve crop production with low effort.

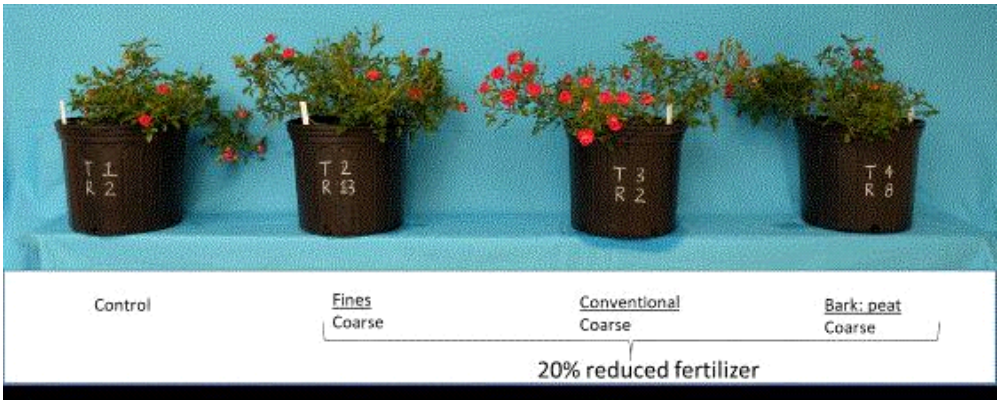
We all want to better the world, and sometimes, we try to “reinvent the wheel.” I've told my students that we're in the age of refinement, where we fine-tune our practices using ideas and information from the last 60-plus years, put it together, and create a tool that's kind of new, but incredibly powerful.

Stratified Substrates: Water and Fertilizer Sustainability

Stratification is a phenomenon that occurs naturally within soil over time and we've brought this into container production. Stratification occurs when different types of soils or substrates are layered.

A concept developed through a long-term partnership between myself and my Ph.D. advisor, mentor and friend—Dr. Jim Owen, a Research Horticulturist with the USDA-ARS (along with many others who added to the idea!), soilless substrate stratification was first built for outdoor nursery production. We began layering different types of substrates, like a blended (75:25) pine bark—peat moss or coconut coir over very coarse pine bark nuggets.

Initial studies were showing us that stratified substrates helped speed crop establishment in the first year of growth, aiding in shorter production times. In other studies, we found that we can produce the same or better quality crop growing with a 20% less fertilizer! Simply amazing for a crazy concept that every soils professor would tell you is unacceptable (I can't tell you how many brilliant professors told us this couldn't work and was a waste of time).



Stratification has shown to improve crop prodcution with reduced fertilizer applications due to improved nutrient retention.

Next, we wanted to see how different types of irrigation scheduling complimented when we stratified our substrates. After all, one of the primary goals is to rebalance water within the container, so irrigation should be more efficient. What we really wanted to know is can we reduce or turn down the irrigation and still get optimal growth without the water stress.

Indeed, we found that reduced irrigation and shorter, more frequent applications fit very well with stratified substrates, as water holding is optimized since the finer particles are in the top layer. The second benefit we found is that a stratified container system is built so robustly that we can dial back the irrigation by 25% and still produce a saleable nursery crop. We've seen this output regularly in research projects.

Stratified Substrates: Peat Reduction

At first, we were so excited about the nursery results, we never considered how beneficial this concept of stratified substrates can be in other aspects. I like to say how fixated I became on the reduction of water and fertilizer that we were blinded to the outside.

When I was talking about my research to my local nursery group, the Louisiana Nursery and Landscape Association, one of our growers (thank you, Tony Carter!) asked if we can use this to reduce soil/media costs. Something that we instantly jumped on. At the time, peatlite was costly, but more recently, there have been concerns with availability. Plus, we've all heard about the sustainability concerns associated with peat, albeit not necessarily accurate. However,

stratification gives a very easy opportunity to cut peat (or any specific costly substrate) by 50%!

You've seen it before, but we'll say it again—stratifying cuts peat use by 50%.

We were able to layer peatlite on top of pine bark to produce high-quality plants. This can reduce peat inputs and costs by nearly half without decreased growth in our crops. We've conducted more studies trying to find an optimal stratified ratio and growers who're interested in stratifying their potting soils can layer up to half the container volume (0% to 50%) and still produce saleable containers. However, we caution against more than 50% of the container profile, as there many not be sufficient water/nutrients held.

Stratified Substrates: Improved Root Productivity

As we've discussed some of the benefits in soilless substrate stratification, a great advantage is improving crop growth. We see similar or better qualities in the foliage, flowers and size of the shoot, however, the real magic that stratified-grown plants encompass are in their roots.

In study after study, we see increased root productivity in stratified-grown plants. In a study growing crepe myrtles in fine bark layered over coarse bark, we measured nearly 400% the root mass in stratified-grown plants! Plus, we also noticed a difference in how roots grow, with more horizontal rooting as opposed to vertical rooting.

My Ph.D. candidate Kristopher Criscione locked into this and has worked to understand root morphology changes in stratified-grown crops. Kris has found a way to manipulate root architecture for improved crop growth and providing crops a bit of resistance to drought stress.

Kristopher built his prototype Rhizoboxes to evaluate root growth in stratified systems. His new boxes look much better!

Stratified-grown roots grow wide, fully exploring that top half where roots can access water and nutrients more readily. This leads to sequential root growth or roots that spread out and move down the system. Thus, the plant produces more roots by filling in first as it moves down the profile, as opposed to a standard “down-and-out” root growth.

We're currently evaluating how this improved root growth supports better transplant success and longer shelf life in retail settings, but are confident that this improved root growth will improve plant health and contribute to more overall success.

Think big,

Jeb Fields
Editor-at-Large
Nursery & Landscape Insider

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