

BELL NURSERY
Springfield, Ohio

Take a New Look at Short-Day Growing

Like clockwork, growers coast to coast are once again into full production mode for the spring sales season and working hard to encourage lush plant growth this time of year. For many, it's "keeping the boiler running" that's the number one thing that keeps them awake at night, but watering is top of mind, too: What time of day to water? How to keep the foliage canopy dry going into nights to keep disease pressure at bay? And the biggie: How often to water so my plants get the nutrients they need but aren't so waterlogged the roots can't access air?

To tackle some short-day production issues and better understand what HydraFiber[®] brings to the table, we recently caught up with Ashley Smith, head grower at Bell Ohio. Ashley has been using HydraFiber for three seasons and currently grows in 40% HydraFiber blends. With the transition to HydraFiber, Ashley and his team have had to rethink watering, especially in short days. "My advice to growers starting out with HydraFiber is to have a different mentality with water," he noted. "You'll use considerably less early in the crop and in cooler, darker months. Adjust your watering a little bit and your rooting will be very uniform if you pay attention to the water."



SOME OF BELL'S O-H-I-O CREW WITH THEIR HYDRAFIBER PROCESSING UNIT

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Ashley Smith, Head Grower, Bell Nursery

Bell's production team typically gives the plants a thorough watering-in after transplant, then moves to a "look and see" process. No longer do they just check the tops of the pots before turning on the hose. Now when they see a nice dry crust, they stay away from the water and don't rewet until the plants need it, only saturating when the plants are dry. During this time of year, Ashley says they go seven to 10 days between irrigations and are seeing great rooting results. Thanks to HydraFiber's water-holding capacity, there is time for the roots to develop versus the traditional wet-dry-wet-dry method.

Ashley also pointed out the unique air space that HydraFiber delivers. "Roots need air to develop. If you can find the right balance between dry down and water frequency, it really helps to facilitate a great root system, which leads to a healthy plant, which in turn leads to a happy customer. The air space in our HydraFiber blends helps us to develop a strong root system before we develop a lot of plant mass. It's a win-win."

Another benefit Ashley noted from the reduced irrigation frequency was seeing fewer fungus gnats. With the surface drying and "crusty" top on the pot, moisture stays in and gnats are kept out.

But perhaps one of the biggest advantages for Ashley is the fact that HydraFiber provides him with a safety net of time. "I've learned that HydraFiber-grown plants don't need to be watered immediately. We know how to let the soils dry down yet not negatively impact the

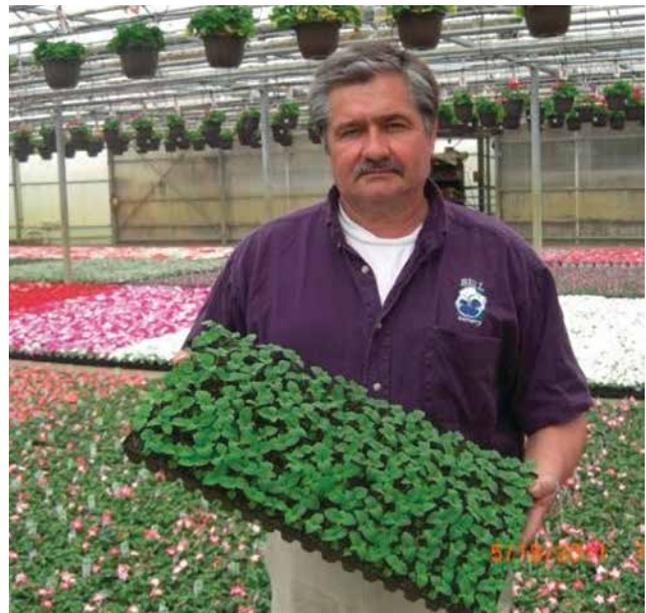
plant growth. During longer days, our HydraFiber blends act very much like a traditional peat / perlite blend. However, under these short-day production periods, we go up to 10 days before watering. The material rewets easily. It's nice to not have to worry about a crop drying out because the surface is dry and losing plants. With HydraFiber I have more time to get them watered."

With less frequent watering, it's natural to assume that more fertilizers are needed to realize good plant growth in HydraFiber blends. Ashley, now on his third season growing in HydraFiber, confirms that he has not changed a thing on his feed schedule. "We've not increased fertilizers with the switch to HydraFiber. Depending on the crop, we typically use between 100 and 400 ppm water-soluble fertilizer. Even during short-day growing conditions when we are watering less frequently, we keep everything the same. In fact, my sense is that our fertilizers aren't being leached out as much, so perhaps they are even working harder for us. I think the fertilizer is actually staying in the soil longer. Even though we are putting on less fertilizer by volume, we feel we are getting better efficiency out of the water soluble we are using."

Before we left the call, we asked Ashley to share some thoughts with growers who have not looked into HydraFiber yet. To growers either considering blending with HydraFiber onsite or buying a premix soil with HydraFiber in it, he says, "We trialed HydraFiber extensively over 18 months to get our growers knowledgeable about watering practices and other differences over a peat or perlite-based media, then made the switch to HydraFiber Ultra 160WB in December 2019. We started at 30% HydraFiber, are now at 40% and we're doing some tests at 50%. Increasing the rate, we see better water-holding capacity, better plants and cost savings."



QUART PANSIES - ABOUT 4 WEEKS AT BELL NURSERY



ASHLEY'S TOP TAKEAWAYS

- You'll be able to produce the same quality of plant. You can make the transition easily. The root quality in a HydraFiber blend is excellent.
- You will have more flexibility. I am not under pressure to water all the time. I have more time to visually check the crops because the guys won't have to check the crops all of the time.
- Fertilizers work more efficiently because they are not being leached out.

What's next for Bell? When we asked how he sees their HydraFiber use evolving, Ashley said they are hoping to bump up much of the production to a 50% HydraFiber rate by next season. His parting words: "I've been growing for a very long time and have trialed many of the 'next latest and greatest' with little fanfare and no success. HydraFiber has been the only one in my experience that's actually been a good addition to a peat-based media or soilless mix. HydraFiber is a game changer for us and our goal is to put everything into a HydraFiber mix."

Our thanks to Ashley for sharing his experiences with HydraFiber. If you're a grower or blender interested in learning more and starting your HydraFiber trials, check out our brochure now, visit hydrfiber.com for more information, or reach out to us at hydrfiber@profileproducts.com or 800-496-0955.

Short-day watering strategies from the HydraFiber team

For growers working with HydraFiber blends for the first time, especially under short-day conditions, it's important to know that water management will be different. During short days, it's critical to stay off the water and only irrigate when necessary. As days get longer and sunshine is more plentiful, the water frequency pattern returns to what is typical with a peat / perlite blend. The bottom line: HydraFiber allows you to conserve water and repurpose it for other uses!

After transplant:

- Do not saturate the mix right after transplant.
- Water as needed to keep the plug or liner moist.
- Oversaturation leads to algae growth.

Once plants are rooted in:

- Let your plants provide visual cues before watering – a dry surface doesn't necessarily mean water is needed.
- Before watering, pick up the pots and inspect the roots / media for saturation levels.
- Saturate soil once roots reach the bottom of the pot.
- For some growers, HydraFiber blends stay hydrated longer and typically need 10% to 20% less watering compared to peat / perlite mixes.
- In some instances, you might consider increasing fertilizer concentration. Care needs to be taken not to cause salt injury to the crop, so media EC, water quality, etc. should be considered. But the logic is that if a grower is irrigating 20% less than normal with their old mix, they in theory can increase their feed N ppm by 20%. If 100 ppm is 'normal', then increasing to 120 ppm should offset the reduced irrigation frequency.

- Growers with a crop in a mix they feel is staying too wet might find that drenching with certain surfactant products may help improve things. Always consult with the supplier / manufacturer for advice and recommendations.

	TRADITIONAL PEAT / PERLITE BLEND	PEAT / HYDRAFIBER BLEND
WEIGHT OF POT	HEAVIER	LIGHTER
SURFACE DRYING	SLOWER	QUICKER
WATER UPTAKE	MORE DIFFICULT	EASIER
ROOTING ESTABLISHMENT	SLOWER	FASTER

A few final pieces of advice:

- Coarser fibers enhance air space and help reduce water-holding capacity of the mix. Some HydraFiber customers use Ultra 365WB, our most coarse fiber, during the darkest days of production.
- Increasing the percentage of HydraFiber generally has a similar effect as using a coarse fiber and may be more efficient than having multiple HydraFiber grades onsite. Many of our more experienced HydraFiber customers are using it at inclusion rates of 40% or higher on everything being planted in a 4-inch or larger pot.
- A thorough calibration of all equipment is necessary at least one time per year. Chemical boxes, peat hoppers, HydraFiber processing unit (HPU), conveyors, etc. should be evaluated to assure that the expected mix is what is actually being made. We recommend that growers schedule during planned downtime to have a team spend enough time to make sure all equipment is operating correctly.

HYDRAFIBER MOISTURE LEVEL RECOMMENDATION

WE ENCOURAGE EVERY GROWER TO WORK WITH THEIR TEAM TO DEVELOP THEIR OWN MOISTURE LEVEL / SCALE.



LEVEL 5
AT CONTAINER CAPACITY, WATER DRIPPING OUT OF THE POT.



LEVEL 4
NO DRIPPING WATER, CAN SQUEEZE SOME WATER EASILY FROM MIX/POT.



LEVEL 3
LIGHTER COLORING VS LEVEL 4. FEELS MOIST, BUT CAN'T SQUEEZE WATER OUT.



LEVEL 2
LIGHTER COLORING VS LEVEL 3. PLANT NOT WILTING, FEELS DRY/LITTLE MOISTURE.



LEVEL 1
NO MOISTURE, DULL GREEN LEAVES, COULD START TO WILT.

Getting to the root of the matter

While there are many aspects that affect root development, the types of raw materials in your media mix can have a major impact. Getting the best results ultimately comes down to actively understanding and managing physical properties. Especially during these short-day production months, more and more growers are searching for a material that offers incredible flexibility and forgiveness as a 'must' and many are finding that in HydraFiber® Advanced Substrate products. As Dr. Will Healy, Senior Technical Manager at Ball Horticultural Company, has often shared with our industry, "Fish grow in water, roots grow in air." It's vital to find the right balance in drying down the soil so roots can thrive, while at the same time not allowing it to dry down so far that plants can't access nutrients and water.

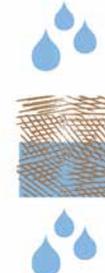
We often hear from growers switching to HydraFiber that short-day production can be challenging because the blends appear to stay wet longer. It's important to know that HydraFiber has been engineered to have tremendous surface area, with the unique particles providing air space as well as better water-holding ability. Similar to the way water beads up in a shower, water particles bead on the HydraFiber surface so the plant doesn't have to work as hard to access them.

When soils are staying too wet, it's important to look at the entire picture, explains Daniel Norden, Sr. R&D Manager at Profile Products, the parent company of HydraFiber. "Growers need to look at their current mix holistically, then determine if something is amiss. There may be a variety of reasons: equipment malfunctions, machine calibrations, raw material quality, etc. Some deals on raw materials may be tempting, but sometimes there are compromises on the quality and often this means low air space." Blends that incorporate engineered-fiber HydraFiber are lighter weight, dry faster on the surface, and make more water available to the plant so it doesn't have to work as hard to find the water. This means that plants can go longer between waterings, especially during cold, short-day growing conditions.

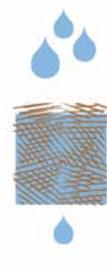
HYDRAFIBER'S TREMENDOUS SURFACE AREA MAKES WATER WORK MORE EFFICIENTLY



PEAT
PEAT'S WAXY CUTICLE SHEDS WATER AND DOESN'T STORE IT FOR THE PLANT.



HYDRAFIBER
HYDRAFIBER THERMALLY REFINED FIBERS STORE AND RELEASE WATER TO THE PLANT WHEN IT NEEDS IT.



COIR
COIR FIBERS TRAP WATER NEEDED FOR THE PLANT.

How much longer between waterings depends on how long the days are, what night temperatures are and how much water is being given in the first place. We highly recommend growers check out Dr. Healy's research in the January 2021 *GrowerTalks* feature "Training Your Team to Water Properly" by Bill Calkins to learn about the various aspects of watering and how an emphasis on proper watering technique can not only save you money but also help you take your crop production to the next level. The article is available at www.growertalks.com/Article/?articleid=25029.



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