

# Technical Services TRAINING GUIDE



# Frequently Asked Questions Guide on Wood Fiber

AN ARTICLE BY:

Brian Cantin

Senior Grower Advisor





## Your Expert

**Brian Cantin** graduated from the University of Guelph with a Honors Science Degree in Environmental Horticulture. He majored in Plant Physiology, with a minor in Plant Protection (plant pathology and plant entomology).

Subsequently, Mr. Cantin took on a greenhouse research position with the Brooks Horticultural Research centre in Brooks, Alberta. During his tenure, he continued post-graduate studies, majoring in soil sciences and substrates, at the University of Alberta and Texas A&M University.

After his studies, Mr. Cantin took a position with the R&D division of the Alberta Gas Trunk line. He collaborated with other associates to design and develop waste heat greenhouses that could harness the energy from pumping stations. Once greenhouses in Princess and Joffre Alberta were built, he continued to manage two waste heat projects.

Mr. Cantin was then hired by Yoder as Head Grower and Manager of Technical Support. While at Yoder, he conducted applied research, which eventually turned into a consulting business, Applied Techniques.

Today, Mr. Cantin is a grower advisor at Berger, transforming his vast background in horticulture into inestimable value for the company's customers. He helps customers to resolve their cultivation challenges and improve their growing practices. Mr. Cantin also ensures that all client trials are conducted with the highest of Berger's standards.



# Frequently Asked Questions on **Wood Fiber**

In 2012, Berger was the first substrate producer in North-America to introduce wood fibers into its line of professional growing media as a renewable aggregate. A few years later, Berger can be proud to support many successful growers who have reduced their production time with the exclusive NF Wood products.

The NF Wood substrates are made with high-quality wood fibers, which offer optimum water-holding capacity, ensuring healthy growth and excellent yield. Furthermore, NF Wood is an eco-friendly additive!



1

Question N° 1

## How does Wood Fiber change my growing practices?

In all the trials, there has been a minimal change made to growing practices. However, regardless of which new mix is being trialed, there are always precautionary measures to take and recommendations to follow.

Question N° 2

## Will a grower need to adjust his water management?

In regards to water applied, the BM4 NF Wood tends to have increased water retention compared to classic peat perlite mixes and early watering practices should be based on this ability to hold slightly more water. In retrospect, it has always been a recommendation that early watering practices for all mixes abide by the same precautions. Certain growers have found that the dry-down cycles are more predictable.

2

3

Question N° 3

## Why isn't there perlite in the mix?

The interfacing and nesting of the NF Wood amongst the sphagnum peat moss creates large cavities (macro pores) that allows for excess water to drain after irrigation. In essence, the wood fiber acts as an aggregate and is an adequate alternative to perlite. It is always important to remember that the main component in most growing media recipes is peat, therefore the quality and consistency of the peat used to manufacture the substrate remains fundamental. In the BM4 NF Wood products, the physical characteristics of both the peat and the NF Wood are designed to obtain optimal porosity to enhance and help develop a healthy root system.



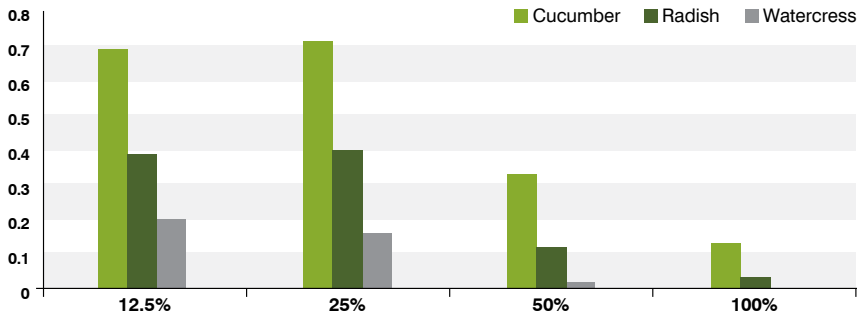
4

Question N° 4

# Will the wood rob nutrients or tie up nitrogen in the media similar to some bark mixes?

Wood fiber is not completely inert. However, internal research has found that there is negligible drawdown of nitrogen in mixes where the percentage of NF Wood is less than 30% by volume. Greenhouse trials done by growers have confirmed this observation and we have seen no evidence to indicate any immobilization of nitrogen with our BM4 NF Wood products. None of these trials have required feed practices out of the norm.

## Total Dry Weight (g)



Initial Greenhouse trials with recommended fertilizer program for soilless growing media.

## New Guinea Impatiens Trial at Berger R&D Facilities



Question N° 5

## Will this mix help the shelf life of finished crops?

5

The increased water retention provides crops with a greater water reserve. Several of the growers trialing the mix did indicate that the dry down period with the BM4 NF Wood was more predictable and the overall frequency of irrigations was reduced. Moreover, a good reserve of nutrients can be established thanks to the high cation exchange capacity (CEC) of both peat moss and NF Wood, providing a well-managed nutrient program should prepare the finished product for post-harvest shelf life.

Question N° 6

## What types of crops should I use NF Wood for?

As with any soilless mix, discretion has to be used when choosing a mix. The one issue that always stood at the forefront of success has been a good understanding of water management. Consult your sales representative if you are wary about using this product for a particular crop. With access to Berger's Technical Services and a team of grower advisors, they can provide the appropriate support.

6

7

Question N° 7

## Is the NF Wood product hydrophilic or hydrophobic?

With its low surface tension, this product is hydrophilic. In other words, it has an affinity for water which significantly improves water distribution and the wettability of the substrate.

8

Question N° 8

## Does using NF Wood help our environment?

Since it is a natural by-product of the wood industry, it is sustainable and renewable. It utilizes a greener production process when compared to other aggregates typically added to substrates. Moreover, although it is very stable thanks to its manufacturing process, NF Wood is completely biodegradable thanks to the fact that it is comprised of organic matter.

9

Question N° 9

## What is the wood species and where is it produced?

In-house trials of different wood species were done in order to select the ideal raw material to produce the NF Wood. The NF Wood is produced in North America with yellow pine sapwood residues of the lumber industry. Sapwood is the active, living portion of wood where the sap flows, which is partly why the wettability of this material is so good.

Question N° 10

## Why doesn't Berger use a colored wood fiber in their products?

Color is added purely for aesthetic purposes. This is typically achieved by adding bark dust during the manufacturing process of the wood fiber. The bark dust adheres to the wood fiber and give it a brown color. However, a large fraction of the bark dust doesn't stick to the fibers, thus increasing the proportion of fine particles present in the mix. This additional dust can be detrimental to the physical characteristics of the substrate, which is why Berger opted not to color the wood fiber used in its products.

10

Question N° **11**

## Can you use it as a germinating mix?

The BM4 NF Wood product line wasn't designed for seed germination and growers will have difficulties filling small cavity trays due to the overall coarseness of the mix. **Please visit our website** to find our extensive line of BM2 products and select the perfect propagation or seed germination mix for your needs.

**11**

**12**

Question N° **12**

## Why does it root faster?

The coarse peat particles interface and combine with the intertwining NF Wood product to produce optimal aeration and porosity to allow excess water to drain and make oxygen readily available to enhance root production. Moreover, preliminary research has demonstrated that roots have an affinity for the NF Wood and appear to use the strands as a path which allows a more rapid development.

Question N° **13**

## Will my crops grow faster in NF mix?

Physiologically, it takes energy for a young transplant or a young seedling to establish a root system. With a root system developing rapidly in BM4 NF Wood products, the plant can now shift its energy to producing vegetative growth.

**13**



Question N° **14**

## **Can you be successful direct sticking into the final container using the NF Wood product?**

Yes, this can be achieved. However, the degree of success will be highly dependent on water management, environmental control, and the quality of the cuttings that are used in the process. Of course, using calloused cuttings significantly increases your chances of success.

**14**

**15**

Question N° **15**

## **How should I expand the mix?**

The same way any other Berger mix should be expanded; by fluffing the material carefully without causing excessive damage to the particle size and by adjusting the water content to optimal levels for potting. This will allow you to get the full benefits from all of our growing media. This can be done mechanically for skyscrapers and 3.8 compressed cubic feet bales, or manually for 3.8 compressed cubic feet bales.

Question N° **16**

## **How much water should I add while potting?**

Ideally, you want to add enough water so that when you compress a handful of mix and reopen your hand, the ball of moistened material holds together. If it falls apart, you can add more water. However, very little water should be running out of the mix when you squeeze the material, only a couple of drops, if any. As a general rule of thumb, for most horticultural greenhouse growing media produced by Berger, you can add approximately ½ gallon of water per cubic foot of mix.

**16**

17

Question N° 17

## Why does it expand more than traditional mixes and how does this benefit me?

Unlike perlite and other solid aggregates which cannot be compressed, NF Wood is very compressible and also extremely light weight. In fact, pure NF Wood can be compressed up to 10:1 without causing any damage to the fibers. Moreover, since it has such a low density, the weight of the bale won't increase significantly even though there is more material in each bale compared to traditional substrates.

Question N° 18

## Can I get this mix with a different initial pH, include a CRF or some beneficial microorganisms?

18

Our formulations are customizable in order to cater to your particular needs. All custom mix requests go through a methodical process of evaluation that takes many factors into consideration including the agronomical feasibility. If necessary, we will run some tests in our laboratories or trials in our greenhouse to make sure we deliver a substrate that meets your expectations.

19

Question N° 19

## What are the advantages over other alternative components?

Compared with other natural aggregates such as rice hulls, coir or peanut shells, a growing media with wood fiber gives much more predictable results. You also avoid potential issues that have been associated with some of these alternate components; weed contaminations, allergic reactions, high salinity, attracts vermin...



With Berger's NF Wood products, you also get more—for less, thanks to greater volumes per bag and per shipment. And the advantages don't stop there!

Brian Cantin, Senior Grower Advisor



To get more information on solutions tailored to your day-to-day challenges, contact your Berger specialist today!

