

Dr Brian Jackson:

"It's essential to reconsider how we extract peat"

Environmental sustainability is consistently being put at the top of growers' priorities. Of all the things that have a significant carbon footprint on crop production practices, there is one, in particular, that is increasingly being perceived as a sort of boogeyman: peat. "Many things have changed in the growing media industry, over time," says Dr. Brian Jackson, professor and Director of the Horticultural Substrates Laboratory at North Carolina State University. "Since the 1990s, there has been quite a number of reports on the sustainability of peat used in horticulture. The concern over peat sustainability and its environmental impact primarily stems from peat extraction practices (and their effect on natural peat ecosystems) that have occurred in Europe for hundreds of years." Aside from horticultural use in recent decades, peat has historically been harvested for fuel and agricultural/forestry needs.

Peat extraction practices in Europe

Peat has been indeed extracted in many European countries for fuel for a very long time, and only a small percentage of it was destined for agriculture. Then, horticulture too started using peat. "In the early years of peat extraction and use, the Europeans didn't manage the resources as appropriately as they should have, based on what was known at the time about carbon release and peatland management practices," he continues. "Due to the CO₂ release from harvested peatlands, there are valid environmental concerns that have to be, and are, being addressed. If you look at the global peat supply, only about 0.5% has been harvested for horticultural use. This means that peat as a resource is incredibly important globally."



Dr Brian Jackson, North Carolina State University

Wanted dead or alive: peat

Over the past 60 years, peat has been the number one material used in soilless growing media. Over time, with increasing environmental regulations, public awareness, and perception have started to escalate globally thanks to social media and other outlets, which has led to peat having “a target on its back”. “I would say that depending on whom you talk to, there is evidence of data from various studies and reports that is cherry-picked to support individual narratives, initiatives, and marketing campaigns.” The bottom line is that scientists (public and private) are providing new data and guidance on the holistic impact of peat extraction and use as well as peatland restoration efforts and management plans to mitigate ecosystem destruction and carbon loss as much as possible.

Current efforts are aimed at evaluating, limiting, and in some cases banning peat extraction in Europe due to the global concern over its use. “In 2020, Ireland outright banned the extraction of peat, and the UK is projected to stop the use of peat for the hobby market by 2024, and the professional market by 2030,” Brian continues. “At the same time, peat use is not going to stop in the near future. Will it be harvested differently, as in, in different ways and implement new rigorous restoration management plans? Yes.”

Sustainable practices are possible

Brian continues to explain that Canada, for instance, extracts peat too, but as a newer industry (~50-70 years) compared to many in Europe, the Canadian producers have done it differently based on a better understanding of the impact extraction has on the environment. “That’s why there’s no dire demand for shutting down peat extraction in North America compared to areas in Europe.” Chris Bloc, a researcher at Wageningen University, conducted a survey where he determined that demand for growing media globally will increase nearly four-fold by 2050. “That is because there are so many new plants that traditionally have been field-grown crops that are now being grown in soilless systems. Leading the way is the soft fruit industry (blueberries, strawberries, raspberries, etc.) and Cannabis. So, what you have is a rapidly growing industry with new and novel crops for soilless culture, and yet there is the threat of lower peat extraction.”



Thus, what is necessary is not to straight up cancel peat use, but rather make it as sustainable as possible via extraction methods and restoration efforts. Even if peat is to be phased out over time (years or decades) a gradual, focused, science-based, and strategic transition is critical so that global plant production can continue to meet the demands of a growing world. Ending peat immediately would not allow that to happen, right now. “My life, not even my career – I have devoted my life to supporting the growing media industry. I consider myself an advocate for peat and non-peat use in horticulture. However, I have spent the majority of my career developing alternative peat- materials to extend peat supplies/resources or grow entirely peat-free.”

More materials, more sustainability

That’s indeed the key point: using peat in combination with other materials to have high quality and consistent growing media products is a high priority for substrate scientists. Second to peat, the material that is being increasingly used globally is coconut products (coir, fiber, chips, etc.). “This too is a beautiful material,” says Brian. “These materials are primarily exported out of the Philippines, Sri Lanka, India, Mexico and the industry is struggling to keep up with the global demand. On the other hand, there’s currently tremendous interest in developing new organic substrate materials that may come from perennial grass biomass (Miscanthus, oil palm, bamboo etc.), hemp fiber or other agricultural or municipality wastes/by-products. There are a lot of organic products (biochar, composts, digestates, etc.) that are being looked at to figure how they can be utilized in new growing media formulations, and offer some peat extenders or alternatives.”

“Wood fiber is being used and considered by most all major growing media companies and industry organizations,” Jackson says. “It has the potential to be the biggest, largest volume material to meet the demand of growing media in addition to peat and coir. This aside, everything comes down to how we choose the material that has the least or most manageable carbon footprint, and how we mitigate these issues as much as possible.” It is essential to realize and remember that all growing media components have some environmental impact. To say one is “more sustainable” than another is not always accurate.

All in all, it is a challenging and exciting time for the global growing media industry. “I can’t stress enough that we are not going to stop using peat all of a sudden,” Brian remarks. “That is an essential resource for our crops and many local and national economies. What we need to reconsider is how we extract peat, and how we can complement that with other materials for a more sustainable future. It’s an exciting time to be a researcher!”

For more information:

Dr Brian Jackson

North Carolina State University

[LinkedIn](#)

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Author: [Andrea Di Pastena](#)

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