



Submission to the Department of Culture, Heritage and the

Gaeltacht in response to the Consultation paper

**“Review of Peat in the Horticulture Industry, Government of Ireland 2019”**

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## **About Us**

Westland Horticulture Ltd is one of the leading horticultural suppliers in Ireland and the UK to the consumer and professional gardening sectors. A key part of the business is the supply, manufacture and development of sustainable growing media for use in domestic gardens, by landscapers and through professional growers and nurseries.

Established in 1990 we now employ over 800 people and operate from 8 sites across Ireland and the UK. Over 450 members of our team are directly involved in the manufacture, supply, sourcing, development, sales and marketing of growing media in Ireland and the UK.

Westland is the brand leader in Ireland and the UK in this category.

We are passionate about gardening and about providing our customers with innovative, quality products which meet their needs. We are also passionate about protecting the environment and are committed to making continual changes across our business to ensure that we are leading the way as a responsible horticulture business.

## **Introduction**

Horticulture is a valuable sector of farming in Ireland with an estimated value of € 433m. The key crops in this sector include mushrooms, malt, flour, cut foliage, Christmas trees and bulbs, potatoes, field vegetables and outdoor Fruit (Bord Bia 2017 - 2019). As substrate manufacturers we are part of the global food chain. Moving towards a sustainable global food system will become more difficult as global population increases. A common perception is that global food supply is currently sufficient to feed the world's population, with timely distribution required to avoid hunger (World Hunger Organisation, 2016), but that food production must increase dramatically in the next decades as global population increases to ≈9.7 billion in 2050 (United Nations Department of Economic and Social Affairs, 2015). In order to meet this challenge we will continue to move more towards controlled growing environments using crop specific engineered substrates. It is well documented that greenhouse yields in Northern Europe are typically 10 times higher than equivalent outdoor yields, given the right conditions. This combined with complete environmental controls, faster crop rotation and reduced harvesting time means that the future of growing is undoubtedly out of the soil. In this environment the development of modern irrigation systems contributes more efficient use of water and nutrients and with know how we can now grow almost anywhere.

Research across the UK and Europe has shown that no one input material for growing media is perfectly sustainable. There are many factors to consider including energy use, water use, social compliance, habitat and biodiversity, pollution, renewability and resource use efficiency. Many of the input materials have long and complex carbon footprints stretching across the world. Some of the materials involved are relatively expensive and the most recent extension of low sulphur surcharges for shipping is likely to significantly add to the cost of these imports.

As a Nation it is expected that we will emit 60mt CO<sub>2</sub> eq in 2020 (EPA Irelands Greenhouse Gas emissions 2018 – 2040 p5). Given that peatlands managed for extraction result in CO<sub>2</sub> emissions of 6 tonnes per hectare per year (Derivation of greenhouse gas emission factors for peatlands managed for extraction in the Republic of Ireland and the United Kingdom, Wilson et al 2015 and Wilson 2019/ <https://www.oireachtas.ie/en/oireachtas-tv/video-archive/committees/2933/>). The 2,300 ha of peatlands currently managed by the independent peat producers of Ireland (for the production of peat for horticulture) will emit 13,800 tonnes CO<sub>2</sub> or 0.023% of total 2020 emissions. In real terms this represents the same emissions as 13,798 cows or 0.9% of the national cattle herd. The average person in the EU emits 11 tonnes (US 16.2 tonnes) of CO<sub>2</sub> per year (An Taisce/[www.greenhome.ie/Energy/Carbon-Footprint](http://www.greenhome.ie/Energy/Carbon-Footprint)). So the CO<sub>2</sub> emissions from the independent peat sector represents a population growth of 1,254 people per annum or the annual usage of 600 family saloon cars.

To put this further in perspective a recent BCG report showed that the Internet is responsible for the release of approximately one billion tons of greenhouse gases every single year. The carbon footprint of the Internet is 50% larger than the global aviation industry. It also consumes 10% of the world's electricity. As responsible operators, legislators and government, we must to look to our internet and electricity footprint with the same rigour that we do our land.

In Ireland there is over one million tonnes of food waste generated each year (<https://www.dccae.gov.ie/en-ie/environment/topics/sustainable-development/waste-prevention-programme/Pages/Stop-Food-Waste0531-7331.aspx>). This represents a carbon footprint of 3.6 million tonnes CO<sub>2</sub>e per year (Farmers Journal Nov 2019) or 6% of total emissions. If we are serious about climate change surely we need to start where we can have an immediate and sustainable impact.

As an Industry we are trying to manage our remaining limited resources effectively while we continue to develop alternative input materials. We want to work with all stakeholders to find the least impactful path. We must avoid an unjust transition that will deliver job losses, abandoned peatlands and a distorted food chain.

**A. What are your views on what more could be done to support and enable the switch to peat free horticulture at professional crop production level and consumer level?**

The single most important thing that the substrate industry needs today is time, to help growers at all levels. Growers simply cannot change overnight from peat based substrates to other alternatives. Neither the know-how nor the raw materials are available in sufficient quantities.

Most if not all suppliers offer a range of peat reduced and peat free substrates. Much of the research in developing these formulations has been funded by the individual companies involved. Much more needs to be done in this area and support in the form of funding for further research and development would facilitate a faster journey to peat reduction. We will need to collaborate to a much greater extent with higher education and technical advisors worldwide to help with solutions from a broader knowledge base.

We acknowledge that peat free compost is not as easy to grow in as peat based compost. In general, it requires a higher degree of skill. There will, no doubt, be a different watering regime as different substrates take up water at different rates. Peat free substrates have a different air fill porosity to peat based substrates and as a plant needs both air and water to grow it can be difficult to balance both. Peat free substrates tend to have a different colour, texture and have a different odour to peat based composts. There are also some species that are difficult to grow without peat. Rhododendron and Camelia are the two most commonly quoted examples. Plants can be expensive and it can, as a gardener, be frustrating if you have to replace them because of lack of knowledge about your chosen substrate. Education will be critical here to help gardeners particularly beginners to understand the differences and to master the art.

Peat reduced and peat free substrates have historically been much more expensive than peat. This is because we compete for the same raw materials as other industry sectors or the materials travel much further to get to us.

We compete with power generation for bark and wood fibre. Power generation is a subsidised industry so there is vastly greater buying power for biomass for power generation than for horticulture. The net result is that the less peat the greater the cost of the substrate to the consumer and the higher the demand on the same natural resources from competing industries.

Coir (coco husk) is not without its challenges either. It is not always available during the monsoon season (May to September) and the price can vary upwards quite dramatically when it is in short supply. It also has a significant carbon footprint in terms of freight (mainly from India and Sri Lanka) and processing.

Perlite, vermiculite, rockwool, clay and sand all play a role in the development of modern substrates and all come with environmental, geographic and commercial challenges. When we replace locally sourced peat with any of the above the outcome of the environmental equation is not positive.

The purchase and processing of alternative input materials is relatively expensive from both a carbon and cost perspective. Nothing to date is as effective as peat for a grower. Vastly more research is required in this area if we are to find viable alternatives.

There has been much discussion about the value and quality of peatlands as a carbon sink and the possible value that could be derived from preserving them for ongoing sequestering. However to date there has been no visible progress in this area. If we could quantify this value and establish a carbon market there would be a huge incentive for owners and operators on peatlands to preserve, rewet or restore their assets.

Based on the statistics provided (Review of Peat in the Horticulture Industry, Government of Ireland 2019) there are 682,380 ha of cut over or cut away peatlands. A robust plan for the rewetting of these areas could have a fundamental impact on the nation's carbon footprint and would provide an alternative revenue stream which could help finance further research and development into alternative substrates.

**B. What are your views on alternatives to the use of peat in the Horticultural Industry (from, for example, the perspective of the professional grower or consumer/amateur gardener)?**

As an industry we have been working tirelessly to find alternative raw materials to replace peat. As a company we have invested over £35m on research and development into peat free alternatives since 2006. We now use a wide variety of raw materials including coir (coconut husk), bark fines, wood fibre, organic compost, loam, perlite, vermiculite and sand as part of our formulations.

Coir (coconut husk) comes primarily from India and Sri Lanka. It works well as a substrate but it has a significant carbon footprint in terms of processing and travel. It also requires vast quantities of clean water to wash it in the manufacturing process at source to remove harmful salts. Once it arrives in Ireland, it requires significant volumes of water to reconstitute it as a substrate.

Both bark fines and wood fibre are excellent additives on the peat reduction journey. There is a limited and seasonal availability of bark fines unfortunately. The market for Pulp wood (for wood fibre) is very competitive and processing costs are very high (electricity and transport).

Green waste compost is another alternative but offers many quality and safety challenges in terms of extraneous materials, pathogen kill through the composting process and inconsistency of supply. The complete carbon footprint of this material is also complex as diesel is used to haul it to a composting site from all over the country, diesel is used to shred and turn it for 12 to 15 weeks. It is then screened to remove the oversize materials which go back through the process requiring further fossil fuel inputs. It does not form part of the solution for professional growers in general, due to lack of consistency and associated risks.

Perlite, vermiculite, rockwool, clay and sand all play a role in the development of modern substrates and all come with environmental, geographic and commercial challenges. When we replace locally sourced peat with any of the above the outcome of the environmental equation is not positive. Take perlite and vermiculite for example. Both bring strengths to the overall range of available materials but we compete for both with the construction industry, both come mostly from Asia or Turkey and both require very significant energy to process into a viable raw material.

Alternative materials to peat are more widely available and generally less expensive, outside of Ireland as are the primary markets for substrates (UK, Netherlands, Germany, France and China). Without some intervention it is likely that the manufacture of substrates (and associated capital investment and jobs) will be much more cost effective in the demand markets in future.

Some growers have made very significant investments in growing systems designed around the use of peat based substrates. The mushroom industry is one example but there are many others. Those growers will no doubt face major financial and technical challenges if and when they make a transition from peat.

Peat is widely available outside of Ireland. We continue to harvest it globally in an environmentally responsible manner, under licence and/or planning permission. Outside of Ireland, as an industry, we harvest in the UK, Scotland, Latvia, Lithuania, Estonia, Germany, Russia, Sweden, Finland, Denmark and Canada. If a grower (e.g. mushrooms, vegetables, ornamentals or nursery stock) chooses or needs to continue to use peat it is likely that it will come from one of these regions in the future. The delivery of peat based substrates to Ireland will have a significant carbon footprint and cost.

Our industry are working on the development of more sustainable forms of peat. Paludiculture or sphagnum moss farming is the cultivation of peat moss (*Sphagnum*) aiming for the production and harvest of peat moss biomass. For this purpose the Sphagnum is cultivated in order to gain renewable raw material for the production of horticultural growing media. There are many benefits including:

- conservation of carbon fixed in peat and reduction of CO2 emissions,
- has a near neutral climate impact, provides an alternative renewable material for peat and results in an economic use of land.
- water purification and water retention in peatlands as well as a local cooling effect due to increased water evaporation
- the provision of a renewable alternative to traditional peat harvesting
- job creation and alternative means of income in rural areas

In trials sphagnum growth rates up to 8.7 t dry mass per hectare have been recorded. With

improvements this could compete well with traditional peat harvesting. We will need significant support from government, universities and industry experts to meaningfully develop this opportunity.

**C. What are your views on whether Ireland should cut back or cease the export of peat for use outside of Ireland even if this would result in job losses in Ireland?**

Our industry is the backbone of soilless growing globally. There is an increasing demand for substrates worldwide. Growing Media Europe estimate that demand will reach 244 million cubic metres by 2050 (from 59 million cubic metres today). It is expected that responsibly sourced peat will play a major role in meeting some of this demand. This demand is directly linked to the need for efficiently produced protein and nutrient rich plant-based food for a growing world population. The crop yield per hectare must rise if the world's food supply is to be secured, putting enormous pressure on agricultural land.

As an industry we can and will have a positive impact on the achievement of at least 5 of our 17 Sustainable Development Goal's.

- Zero hunger (SDG2)
- Clean Water and Sanitation (SDG6)
- Responsible consumption and production (SDG12)
- Climate action (SDG13)
- Life on land (SDG15)

As a small open economy, we need to ensure that we can participate in this global market as regulated responsible operators.

**D. Do you consider that a working group should be established to advise on how best to overcome the barriers to reducing peat use in professional horticultural crop production and in the amateur horticultural market?**

I believe that a (Grower / Supplier (Retailer) / Manufacturer / Technical) cross functional working group should be established to advise and help understand the broader issues and challenges regarding both peat and the potential substitutes.



**E. If you are in favour of the establishment of a working group, which stakeholder groups do you think should be represented on it?**

It may be more efficient to create 2 working groups as the challenges facing professional growers (yield, mortality, cost, efficiency and disposal) and amateur growers (lack of knowledge, price and availability) are significantly different. We believe that manufacturers, growers, retailers, NGO's, the Department of Communications, Climate Action and the Environment and the Just Transition Commissioner should be involved.

**F. How do you think that those involved in harvesting peat for horticulture could be compensated for any loss arising from a cessation of this activity (for example, on the basis of the profit loss arising or related to the value in ecosystem services retained/provided)?**

This is a complex question. There are many models open for compensation. One option is for a Government body to acquire the relevant peatlands, convert them to SAC's or NHA's and remediate them going forward. One prominent UK example of this is the purchase of circa 190 ha of Bolton Fell peatlands. It was purchased in June 2014 by Natural England for £21.25m and has since undergone significant rehabilitation.

Another model would be to work with the current operators and compensate them to rewet part of the peatlands while operating on the remaining parts as a commercial revenue stream. Rehabilitation of peatlands is, no doubt "development" in planning terms. So in order to rehabilitate a bog an operator will need substitute consent from An Bord Pleanala, Planning permission from the relevant county councils and possibly either a licence from the EPA or some variation to an existing licence. All of these elements take time and money. If successful however this option would continue to create employment in the midlands while operators worked towards a different future.

Operators could submit audited accounts breaking out how much net profit they made over a preceding number of years from peat extraction. This could then be used as the basis of compensation for a number of years going forward.

Alternatively an orderly wind down allowing the industry to harvest and rewet the cut away over 10 to 15 years via just transition support would be a relatively low cost exit strategy.

**G. How do you think that those involved in harvesting peat for horticulture could be guided towards alternative activities, for example, developing an environmentally suitable alternative material that could replace peat in professional horticultural crop production?**

The argument in the consultation paper of engaging in publicity designed to inform the public about the downside of using peat moss as a growing medium to encourage them to choose sustainable alternatives assumes that there are adequate cost effective supplies of sustainable alternatives.

Most of the alternative materials (green waste, coir, perlite, vermiculite, rockwool, and horticultural clay) are not readily available in the midlands. Studies have shown that biomass cannot be grown commercially on bogland (BOGFOR 2008). Indeed most crops cannot be grown commercially on bogland. This significantly narrows the opportunity for sustainable employment after traditional peat harvesting.

Paludiculture or sphagnum moss farming is the cultivation of peat moss (*Sphagnum*) aiming for the production and harvest of peat moss biomass in the short term on rewetted bogs. The Sphagnum is cultivated in order to gain renewable raw material (Renewable Peat) for the production of horticultural growing media.

Trials have been conducted in Germany to study the challenges and viability of growing this renewable peat. With the correct preconditions, a field experiment on former bog in lower Saxony enabled the establishment of a thick, dense and productive peat moss lawn 1.5 years after field preparation with annual Sphagnum growth rates up to 8.7 tonnes dry mass per hectare (International Peat Congress 2016). While this sector is still in its infancy it is showing real promise for the future. More research is needed on crop selection, ground preparation, processing and harvesting technology and yield management. The midlands are ideally suited for further research, trails and development in many of these areas.

**H. What do you consider the value of peatlands to be to (please score out of 100):**

<b>Carbon Storage</b>	<b>20</b>
<b>Nature Conservation</b>	<b>20</b>
<b>The provision of ecosystem services</b>	<b>15</b>
<b>The Economy</b>	<b>20</b>
<b>Social and Cultural Needs</b>	<b>25</b>
	<b>100</b>

**I. In your opinion should the use of peat within (i) the amateur horticultural market and (ii) the professional horticultural industry be phased out over the next 3, 5, 10, 15 or 20 years and if so, how should this be done bearing in mind the potential job losses and the difficulties with alternative growing media?**

We have been working for almost 20 years now to find a viable replacement for peat, particularly within the amateur sector. Realistically it will take a minimum of 15 years to successfully replace traditional peat for all sectors and for all crop types. This will require very significant input from the Industry in terms of time and resources, from Government in terms of Research and Development and financial support and from universities and research centres for trials and studies.

The challenge and the opportunity for the amateur market is significant. There are almost 3 million households on the Island and over 27 million in our nearest market, the UK, where gardening is the number one hobby. The challenge lies in

- a) Research and Development
- b) Sourcing the volumes of alternative raw materials at an environmentally and commercially viable cost
- c) Ensuring that the new alternatives are scientifically and environmentally sound and are at least as efficacious as the current market offering
- d) Developing the technology to scale up to process these materials
- e) Educating the consumer on how to use these new products to get the same or better results

Failure to create great products that consumers will embrace will undoubtedly damage the market.

The Professional sector has been even more reliant on peat. It is estimated that the Horticulture industry in Ireland is worth €433m (€359m food and €74m amenity horticulture). The mushroom industry is the largest sector that will be affected from a food perspective. The Horticulture industry in the UK is worth in excess of €4.1bn (DEFRA 2017) and still has a significant demand for peat. The challenges for professional growers who use peat is to find a substrate that is environmentally better that delivers the same or better results in terms of safety, quality, yield, mortality and cost.

**J. Does more need to be done to educate and build consumer awareness of peat free products which are available at retail level?**

Quality alternatives at the right price are the start point for amateur growers. From observation all garden centres and DIY retailers offer peat reduced and peat free compost to the consumer. Undoubtedly more is required by way of education. Our challenge is to change consumer perceptions around peat and peat alternatives. Consumers will only make the change to peat reduced or peat free products when they are convinced that they will have growing success. Communication at all levels will form a key part of helping consumers to make the change.

Professional growers on the other hand are in general more familiar with the options available. Once proven alternatives are available at an acceptable homogenous standard, cost and volume there is likely to be another financial challenge. In many cases Growers will have committed to a greenhouse design and growing system that works best for peat. Therefore capital investment along with education will be required to facilitate a switch away from peat. Working through a programme of peat reduction rather than peat elimination may be a better solution for this sector, particularly for certain crops.