

A hand is shown holding three small green seedlings with their roots exposed. The background is a blurred image of a seedling tray filled with many similar plants. The text is overlaid on the image.

Seeking Sustainable Alternatives to Peat

Investigative Research Report
November 2022

The logo for 'sizzle' features the word in a bold, lowercase, sans-serif font. It is enclosed within a stylized, jagged outline that resembles a lightning bolt or a starburst.

sizzle

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Background and Methodology

As part of their 'Our Natural World' strategy, the Esmee Fairbairn Foundation has an ambition to help ensure that peat is no longer a component of horticultural products and that people understand the implications of their buying choices on global peat stores and climate change.

The Foundation has long supported NGOs to deliver this ambition and continues to back their efforts to get a ban on the commercial sale of peat introduced. Despite 30 years of campaigning, such a ban has yet to be implemented. The Wildlife Trusts calculated that the delay to stop peat extraction in the UK has caused up to 31 million tonnes of CO₂ to be released since 1990.

Given the on-going delay in banning peat, the Foundation was interested to explore whether further impetus could be provided by backing a pioneering trial in one region to tackle some of the main barriers. They were particularly keen to see if forthcoming changes to waste management legislation would create new sources of sustainable peat alternative material from garden and food waste derivatives.

To investigate, Trewin Restorick from [Sizzle](#) interviewed 22 experts from across a range of sectors ([Appendix One](#)) to get their views and perspectives. Interviews lasted between 30 minutes to an hour and were unstructured conversations.



The sector faces significant challenges in replacing the 1.7 million cubic metres of peat currently required by growers and gardeners

Why has a ban not been introduced?

There have been many false dawns when it seemed likely that a ban would be introduced, but it has not yet come to pass. The drawn-out nature of the process has led peat to become a 'Cinderella' issue for many of the leading conservation NGOs and the resulting lack of focus and resources has allowed wriggle room for legislators and recalcitrant companies to push for a voluntary approach.

Frequent announcements of potential bans have led to customer confusion with many thinking that this is a done deal and not something on which they need to worry or push for change.

From an industry perspective, the sector has not acted at sufficient speed to replace the 1.7 million cubic metres of peat currently required by growers and gardeners. This is particularly the case for four challenging areas:

1. Peat free plug plants
2. Exploring the potential for existing and new waste products that can be used to support quality plant growth
3. Challenging plant groups (Carnivorous, Ericaceous, Proteaceous and other difficult plants)
4. Transitioning growing processes from peat to peat free without losing stock

The shift to peat free is complicated by the international nature of the sector. There is less pressure in other countries to reduce the reliance on peat with many of the imported plug plants sold into the UK market grown in peat as part of a complex supply chain. Consequently, peat is embedded across the whole horticultural sector.

Finding a replacement material that is cost comparative, truly sustainable and at the scale needed requires a fundamental shift in the way the sector operates. It is possible and change is happening, but the lack of a legislative driver and minimal consumer pressure has meant that there is limited imperative to act quickly.

Are we on the cusp of seeing a ban?

In May 2022, the government announced a ban on the sale of peat to amateur gardeners in England to be introduced from 2024. To come into effect new legislation is required. DEFRA confirmed that, despite the current political turmoil, Ministers are still minded progressing with the ban and the appropriate legislation is being drawn-up. The challenge will be to find legislative time for the ban to be introduced. On its own, the ban is insufficient to warrant parliamentary time so it will have to be part of a larger bill and DEFRA confirmed that a potential bill has been identified.

If introduced, DEFRA believe that the ban will cover 70% of peat sales in the UK, the remaining 30% is from the professional sector. Conversations are progressing with the Scottish and Welsh governments to try and ensure there is consistency across the developed nations, these two countries are currently determining their positions. Similar conversations are currently not possible in Northern Ireland because of the suspension of the Northern Ireland Assembly.

Discussions are taking place with the professional sector to seek an understanding of the specific challenges that they are facing. The ambition is to provide time-limited exemptions for certain plug plants and plant types ensuring that a total ban is introduced without causing unintended consequences.

DEFRA confirmed that the continued lobbying from NGOs has kept this issue on their agenda and that this pressure needs to continue until the legislation is introduced.

A close-up photograph of a person's hand holding a green watering can, pouring water onto several small green seedlings in black plastic pots. The pots are sitting in a garden bed filled with dark, rich soil. In the background, there's a wooden planter box with more plants. The scene is outdoors, with a wooden fence visible in the upper left.

Is there a sustainable alternative to peat available at the scale required?

Peat is a proven, stable and consistent growing medium particularly for the early stages of plant development. It is embedded across the horticultural sector with growers able to rely on its characteristics to create robust growing conditions for a wide variety of plants. This has resulted in the sector investing heavily in technology developed around peat such as pot filling, automatic watering systems, etc.

There is no 'silver bullet' replacement for peat as a growing medium. Consequently, a range of materials will need to be brought together requiring new and more complex systems. The sector acknowledges that this challenge can be overcome.

One major compost supplier to the household market committed to be peat free by 2023 largely driven by the expectations of their major customer and an understanding that a ban would eventually be introduced. To date, they have invested £7 million in the transition and are using a variety of products as a replacement for peat including coir, bark and green compost.

The transition has slowed their production process as a different 'recipe' is required for the variety of plant times. Costs have increased as some of the alternative materials need to be stored inside requiring additional storage space and more hoppers to process. The cost of acquiring replacement materials – particularly wood bark – is increasing as demand for this material grows with other sectors receiving government subsidies which are not available to the horticulture sector. The company estimates that these extra costs will increase the retail price of peat free compost by around 25%.

One major compost supplier to the household market committed to be peat free by 2023

The success of this company illustrates that transitioning from peat for the household market is difficult and potentially expensive, but not impossible. They have also demonstrated that alternative materials can be created for some of the more challenging plant types such as ericaceous.

There is still more to be done to address the challenges faced by commercial growers and for specific plant types. To fully explore viable alternatives the Royal Horticultural Society (RHS) has appointed a peat-free postdoctoral fellow to work with the horticultural trade to transition to new sustainable growing media technologies. A £1million co-funded five-year project led by the charity will convene government, growers and growing media manufacturers through the Growing Media Association and horticultural product supplier Fargro to research sustainable alternative growing media technologies to peat in large-scale commercial settings.

Five growers initially will work alongside the RHS, they are Allensmore, Hills Plants, Johnsons of Whixley, The Farplants Group and Vitacress who collectively produce more than 46 million plants every year.

Areas of focus for the group will include peat free plant and plug plant production, new growing media technologies to replace the estimated 1.7 million m³ of peat used by the UK horticultural industry in 2021, growing protocols, best practice use of the latest products, and developing peat-free solutions for challenging plant groups such as carnivorous and ericaceous species.

Findings will be shared ongoing with the wider industry, including specialist nurseries, as well as the UK's 30 million home and community gardeners who, armed with a better understanding of sustainable alternatives and best practice advice, can aid the transition to peat-free.



What can be done to hasten the transition to more sustainable alternatives?

Structured science-based research, such as that funded by DEFRA is essential, but is there more that can be done in the short-term to hasten the transition to more sustainable peat alternatives?

The research suggests that there are five areas that would be worthwhile exploring in a measured and open-sourced trial which follows the principals of the waste hierarchy by focussing initially on demand reduction.

1 Reducing inappropriate use and better understanding of alternatives

Increasingly extreme weather events caused by climate change will have an impact on UK gardening. Gardeners will have to cope with more drought, extreme heat and heavy rain. Costs will increase if they do not plant appropriately and they will have to pay more for peat free compost and fertilisers.

A new communications narrative is required promoting sustainable gardening focussing on the themes of 'Retain, Reuse and Refresh'. This could cover the importance of looking after soil, how to build plant resilience and drought resistant gardening.

The need for such a campaign has been revealed through customer research by garden centres which suggests that many amateur gardeners are using peat as a mulch or soil enhancer. There are other effective alternatives that should be used instead of peat. The industry believes that there is customer confusion about how best to use peat and that a concerted consumer campaign could help to reduce the sale of peat and boost the use of more appropriate alternatives.

There is a need to explain to growers and gardeners how to use peat alternatives. To be effective these will require different watering regimes, different use of nutrients, etc. This will need clear communication to avoid users believing that the replacements are sub-standard.

Communication on changing the habits and routines of growers and gardeners provides an opportunity to engage with key influencers and stakeholders promoting the concept of more sustainable gardening that is appropriate within a changing climate and the wider financial and social challenges being faced by the country.

A measured campaign in one locality could assess the impact of the approach on promoting sustainable gardening and highlighting the importance of a transition from peat as part of this process. This could be achieved and measured in several ways including how the use of mulches has changed before and after the campaign. Results could be highlighted and expanded nationally.

A new communications narrative is required promoting sustainable gardening focussing on the themes of 'Retain, Reuse and Refresh'



2 **Cutting demand by composting to fill the peat replacement gap**

A 2021 RHS survey revealed that the average person buys between 3 to 5 bags of 50 litre compost a year, so between 150 – 250 litres. A compost bin can produce 150 litres of compost a year as a minimum, the equivalent of three bags of compost. The same survey revealed that 20% of people do not compost green or food waste. If this number could be halved to 10% that could equate nationally to three million gardeners each producing 150 litres of compost equating to 450,000 cubic meters of compost that could fill the peat replacement gap. Boosting home composting would help local authorities to reduce waste disposal costs as food waste is heavy and expensive to deal with.

Exploring new ways to encourage home and community composting is a space where there is room for innovation and potentially, social business opportunities. For example, there are high value products on the market which can be used within the home that use both temperature and friction to speed up the composting process. These are too expensive for most people, but it would be worthwhile organising a competition for social innovators to see if a cost-effective version could be developed and tested in a trial area.

An engaging community-based education campaign could also highlight the positive effect of composting illustrating the environmental and financial benefits it could deliver.

A trial campaign could test the effectiveness of a targeted behaviour change campaign revealing the potential positive impacts on local authority waste collection costs. A design competition could reveal if there are more effective bins that could promote home composting including wormeries.



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Since 2019 the Greener Gardening Company has produced peat free compost which includes green and food waste derivatives

3 Undertaking further investigation into the role that green and food waste derivatives can play

A number of pioneering companies have demonstrated that it is feasible to find effective peat free alternatives. For example, since 2019 the Greener Gardening Company has produced peat free compost which includes green and food waste derivatives. They have sold 15 million bags per annum constituting between 15%-18% of the market share. These companies hold considerable expertise which could be used to increase the percentage of green and food waste derivatives used in the transition from peat.

A common refrain from the research is that there are pockets of ground-breaking activity but insufficient open sharing of potential solutions. There is also a lack of collaboration with other sectors – particularly waste management companies and local authorities – who could potentially play a role in finding peat alternatives which would also enable them to hit their sustainability targets.

A measured trial could seek to boost collaboration and transparency in which the following could be explored:

- The creation of a locally focussed stakeholder group tasked with rethinking how garden and food waste is collected and sorted so that it provides a new clean waste stream that could be used as a peat replacement. This group might consist of representatives from the RHS, local authority, the waste sector, horticulturalists, the growing media association, retailers and producers of larger quantities of green/food waste such as restaurants, country estates, the agriculture sector, etc.
- Targeted local initiatives testing the impact of different approaches.
- The potential for closer links with the AD and agricultural sectors seeking to use some of the 90 million tonnes of slurries and manures that are available to replace peat.
- The potential for using other waste materials to help replace peat.
- Exploration of the financial viability of boosting the level of green and food waste derivatives.
- Investigation of ways to reduce and treat contamination within the waste streams that could hinder the use of these materials as a peat replacement.
- Monitoring of potential legislative changes – particularly to waste products that could have a block on the use of this material as a potential peat replacement.

4 **Boosting collaboration and knowledge sharing**

Collaboration and information sharing is already happening, but an in-depth trial could add more richness by:

- Providing real life data.
- Boosting wider awareness of the issue and opportunities.
- Creating new avenues of dialogue between NGOs, industry, government and others by identifying areas of commonality which could hasten the transition.
- Bringing in a wider range of collaborators particularly local authorities, the waste industry, innovators, the agriculture, horticulture and landscape sectors, the growing media sector and creators of high levels of garden and food waste.

A trial could practically identify the obstacles that exist and advocate steps required by all parties to remove these barriers. These steps are likely to include:

- Greater capital investment, infrastructure allowances and fiscal incentives to help growing media manufacturers and growers to up-date their equipment, facilities and processes to increase the production and use of peat alternatives.
- Continued support for the Responsible Sourcing Growing Media Scheme.
- Removing red tape attached to waste products that could be developed by growing media manufacturers as peat alternatives.
- Investing in research and development into the production of alternatives to overcome specialist plant and plug plant production and to address supply chain issues - this is happening but more can be done.
- Linking Defra's Tree Strategy to the new Peat Strategy and delivery on this to increase the volume of wood products available as a raw material and peat replacement.
- Supporting the potential to unlock green growth strategy.

Crucially, a trial will shift the debate from behind the scenes to the public domain. This will highlight the need for action, increase awareness of the opportunities available and place a greater imperative on the need to overcome identified barriers through informed legislation, increased investment and collaboration.



Other areas of legislative developments could impact upon the viability of using green and food waste derivatives as a peat replacement



5 Engagement with legislators

DEFRA is consulting widely on the proposed ban, but it is possible that other areas of legislative developments could impact upon the viability of using green and food waste derivatives as a peat replacement. The trial could be used as a focal point to address these areas. Specifically:

1. There is a proposal to tighten the quality protocol of PAS100 particularly on plastics and sharps. This needs to be done in such a way as to make it feasible for gardeners and the green and food waste handlers to clean up these waste streams so the composting industry can hit the tighter requirements which will require consumer education.
2. The definition of 'biodegradable' plastics needs to be better defined with clearer consumer information as to what they should do with this material as it can cause a significant contamination issue.
3. Remove red tape of potential new waste streams and the process of obtaining and utilising them so that they could be used for peat free alternatives.
4. Identification of market inequalities which are placing the sector at a cost disadvantage in moving to peat replacement alternatives.
5. The potential to provide booster funding to support more small-scale AD plants which could generate more peat replacement materials and reduce waste.

Other areas of legislative developments could impact upon the viability of using green and food waste derivatives as a peat replacement

Next steps

- This draft report will be circulated to key stakeholders to check validity and to seek input and refinement.
- A stakeholder meeting with national organisations will further refine the report and help to define the scope and possible location for a measured trial.
- Once an area is selected a local stakeholder group will be created to ensure the approach is relevant for the locality.
- Their input will be used to create a detailed costed proposal for which funding will be sought from a range of relevant parties.

Appendix One

The following organisational representatives were interviewed or shared email views for this research. We would like to thank them for their time and willingness to share their extensive expertise.

Organisation	Person	Role
Suez	Adam Read	External Affairs Director
SEPA	Anna Griffith	SEPA Borderlands Lead
DEFRA	Judith Stuart	Peatlands Policy Specialist
Barton Green	Guy Topping	Managing Director
Freeland Horticulture	Andrew Goodard	R&D Manager
The Greener Gardening Company	Simon Blackhurst	Head of Quality and Innovation
Chris Baines Associates	Chris Baines	Nature Broadcaster
RHS	Prof Alistair Griffiths	Director of Science and Collections
Garden Centre Association	Mike Burks	MD – The Garden Group
South of Scotland Enterprise	Lucy Filby	Net Zero Programme Lead
REA	Jenny Grant	Herad of Organics and Natural Capital
Peter Young	Peter Young	Esmee Advisor
Plantlife	Jenny Hawley/Peter Dorans	Policy Lead
University of Southampton	Angie Bywater	Environmental Biotechnology Network Co-ordinator
Aqua Enviro	David Tompkins	Head of Knowledge Sharing
Consultant	Benedict Southworth	Consultant
Keenan Recycling	Fergus Healey	Head of Innovation and Net Zero
Southern Trident	Steve Harper	CEO
Evergreen Garden Care	Mark Portman	MD
Dalefoot Composts	Jane Barker	MD
Wildlife Trusts	Ailis Watt	Peat Policy Officer

Thank you

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