



Growing media monitor

**Trends in the composition of UK growing
media supplied 2011 to 2020**



Department
for Environment
Food & Rural Affairs



Summary

Peat as a proportion of growing media fell from 48% in 2019 to 41% of total volume in 2020. The total volume of peat used rose 9% from 2.1 to 2.3m cubic metres. This was due to a 36% increase in the volume of amateur growing media to meet huge demand for gardening during the Covid-19 lockdown.

In 2020, demand for gardening increased hugely during the lockdown. Consumers, deprived of access to the wider leisure sector for most of the year, took to their gardens as never before. A key sign of this was that the volume of overall growing media sales for amateur use in 2020 increased by 36%. In the professional sector, volumes were comparatively flat, reflecting the halt to plant production during the early stages of lockdown.

In this context peat use in amateur retail increased by 9%, whilst the volume of peat alternatives in amateur growing media increased by 50%. Across all sectors, there was a 997,800 cubic metre increase in the supply of peat alternatives in 2020 compared with 2019.

This has placed unprecedented strain on supply chains. In order to satisfy demand, growing media manufacturers have had to draw down on reserves of raw materials, some of which (such as coir) have long supply chains dependent on global sourcing and supply. Similarly, extraction of peat from the Republic of Ireland has now effectively ceased, with reserves of peat from this source – which accounted for 51% of all peat used in growing media supplied to the UK – almost exhausted.

The implication of this for the industry is pressure on the availability of all of the major components of UK growing media, as well as volatility in the costs of all raw materials.



Summary tables: volume and proportions of materials in growing media

(volumes reported in millions of cubic metres)

Amateur	2019	2020
Growing media	3.15m ³	4.28m ³
Peat	1.30m ³	1.52m ³
Other materials	1.84m ³	2.76m ³
Percentage peat	41.5%	35.5%

Professional	2019	2020
Growing media	1.12m ³	1.16m ³
Peat	0.76m ³	0.72m ³
Other materials	0.36m ³	0.44m ³
Percentage peat	67.8%	62.3%

All (inc. exports)	2019	2020
Growing media	4.40m ³	5.59m ³
Peat	2.10m ³	2.29m ³
Other materials	2.30m ³	3.30m ³
Percentage peat	47.6%	41.0%

Introduction

This report provides the results of the 2020 joint Defra, AHDB, GMA and HTA growing media monitoring study. It takes the available data in the time series from 2011 up to 2020.

The study reviews the make up of growing media sold by manufacturers to the UK's retail, professional use and export sectors. The study measures and tracks the proportion and volume of ingredients used in growing media over time.

The study, funded by the Growing Media Association (GMA), Horticultural Trades Association (HTA), the Department for Environment, Food and Rural Affairs (Defra), and the Agriculture and Horticulture Development Board (AHDB), forms part of the work undertaken in the UK to maximise the sustainability of growing media. This builds on several years' work, which includes support for research and development into peat-free and reduced-peat mixes funded by the AHDB within CP 138 'Transition towards responsibly sourced growing media in UK horticulture' which culminated in a model to predict the performance of raw materials and blends.

Growing Media manufacturers have also developed and are in the process of launching a Responsible Sourcing Calculator with the support of Defra. The calculator assesses the sustainability of different ingredients in growing media on a range of criteria, helping the industry assess the overall footprint of its product on the environment as opposed to taking a narrow focus on any particular ingredient.

UK growing media manufacturers may appear small in the context of the UK's economy; each year UK consumers spend between £400m and £450m on growing media – around 0.1% or one pound in every thousand of UK retail spending. In spite of this the growing media industry has a major impact on the UK's GDP, employment and natural capital.



Research published by Oxford Economics highlights that the UK's horticulture and landscaping industry contributes £24 billion to the UK's GDP and supports (directly or indirectly) around 1 in 62 jobs in the UK economy.

Much of this economic benefit is 'pulled through' the economy by plants. The £1.5 billion or so of retail sales of plants (plus the billions more spent on plant care products, containers, and other ranges to support plants) rely at source on the growing media used by commercial plant growers to produce their crops. The plants and displays in our parks and gardens which contribute £2.9 billion to the UK's GDP through tourism rely on high performing growing media.

Access for UK growers to good quality growing media is essential in maintaining competitiveness against overseas suppliers to the UK horticulture market. At no point in time over recent years has this been more apparent than in 2020, where the Covid-19 pandemic, lockdowns, and the huge increase in participation in gardening placing huge strain on the supply chain. This report paints a picture of the changing use of raw materials on which the industry relies to deliver these benefits to the UK's economy and environment, and provides a brief discussion of some of the trends and market forces affecting the reported numbers.

Approach

The sample, method and approach have been designed to provide a robust assessment of the composition of growing media sold to UK markets since 2011.

Research objectives

The objectives of the research study are:

- > To measure and track over time the volume of growing media supplied by growing media manufacturers for retail and to professional customers, and for export
- > To measure and track over time the composition of this growing media in terms of the ingredients used
- > To provide a short explanatory commentary on the data and trends that affect the data

Method and sample

For around twenty years the growing media industry has collated data on the use of ingredients in its product. In 2012 a new project and method was developed with funding from the industry, Defra and the AHDB. This project ran to 2016, and provided data from 2011 to 2015. The project was re-commissioned in 2018 providing comparable data from 2011 to 2015, and 2018 to 2020.

To identify an appropriate sample for the research, the GMA conducted an audit of supply to the UK market based on their collective market knowledge and competitive intelligence. All companies so identified were approached to take part in the research, with most taking part. Over nearly a decade the market landscape has changed through acquisitions and mergers, but on the whole there have been few drop-outs or refusals to participate. Appendix 1 details businesses which submitted data for the 2018, 2019 and 2020 waves of this research and sampling considerations.



To validate the volume data supplied, HTA compares and reconciles the volume data with estimates of consumer spending on growing media. This allows a notional retail price for a 'statistically typical' 50 litre bag of compost to be calculated. In 2018 and 2019 respectively the results of this analysis were £7.22 and £7.14 (inc. VAT) subject to margins of error typical for sample consumer surveys. Taking into account that such a 'statistically typical' 50 litre bag of growing media would be made up of around 70% multipurpose product and 30% premium/specialist ranges with far higher prices per litre, this is a credible value given typical retail prices and suggests the sample for the study is likely to provide a good picture of the market.

At the time of printing, consumer survey spend data for 2020 was not available. However additional analysis was conducted on the increase in 2020 volumes of growing media supply in amateur, and the HTA's Garden Retail Monitor of garden centre sales. The data gathering for conducted shows an increase of 36% in the volume of supply in 2020, which is consistent with an increase in sales retail sales value of 42% in garden centres.

The data from manufacturers is collected by an independent consultant Paul Waller Consulting (PWC), and is provided on a confidential and anonymous basis. Participating companies provide a completed spreadsheet template to PWC detailing the volume of different growing media components that they used in their UK sales. On receipt of the data, PWC checks submissions for anomalies and clarifies these with participating companies, and PWC's work is then audited to check for errors or anomalies. Company level data is not shared with either Defra, the AHDB, HTA or the GMA. Each participating company in the study is provided with an output which shows their own business' performance relative to the average position for the industry.

Findings

The study provides detail separately on growing media for use by professional customers (e.g. commercial growers) and for retail (e.g. that sold to the general public). Full data for this report is on www.growingmedia.co.uk or email media.office@hta.org.uk



The retail sector

This study highlights three notable trends in the market; a substantial increase in the volume of overall growing media supplied to UK retail, an increase in the volume and relative proportion of peat-free products with peat use predominantly replaced by wood-based components, and an increase in the volume accounted for by soil improvers.

Charts one and two (overleaf) show the trends in volume (expressed in cubic metres) and proportions accounted for different products. The rise in volume and percentage of peat-free products is highlighted on the charts.

From 2011 to 2018, we saw a general trend towards multi-purpose mixes at the expense of specific mixes. In 2020 peat-free products (of all types) accounted for a substantially greater volume of retail growing media than in 2019 and the preceding years.

There has also been a slight increase in the proportion of soil improvers accounted for in the study since 2015. As soil improvers are only included in the study where they include peat, this has implications for tracking any underlying like-for-like trends in peat and other components in other growing media. Overall the affects are not material as even soil improvers with peat contain very little, however this is tracked and reported for transparency and discussed later in this report.

Chart 1. Overall volume (cubic metres) of growing media for the UK retail sector 2011 to 2020

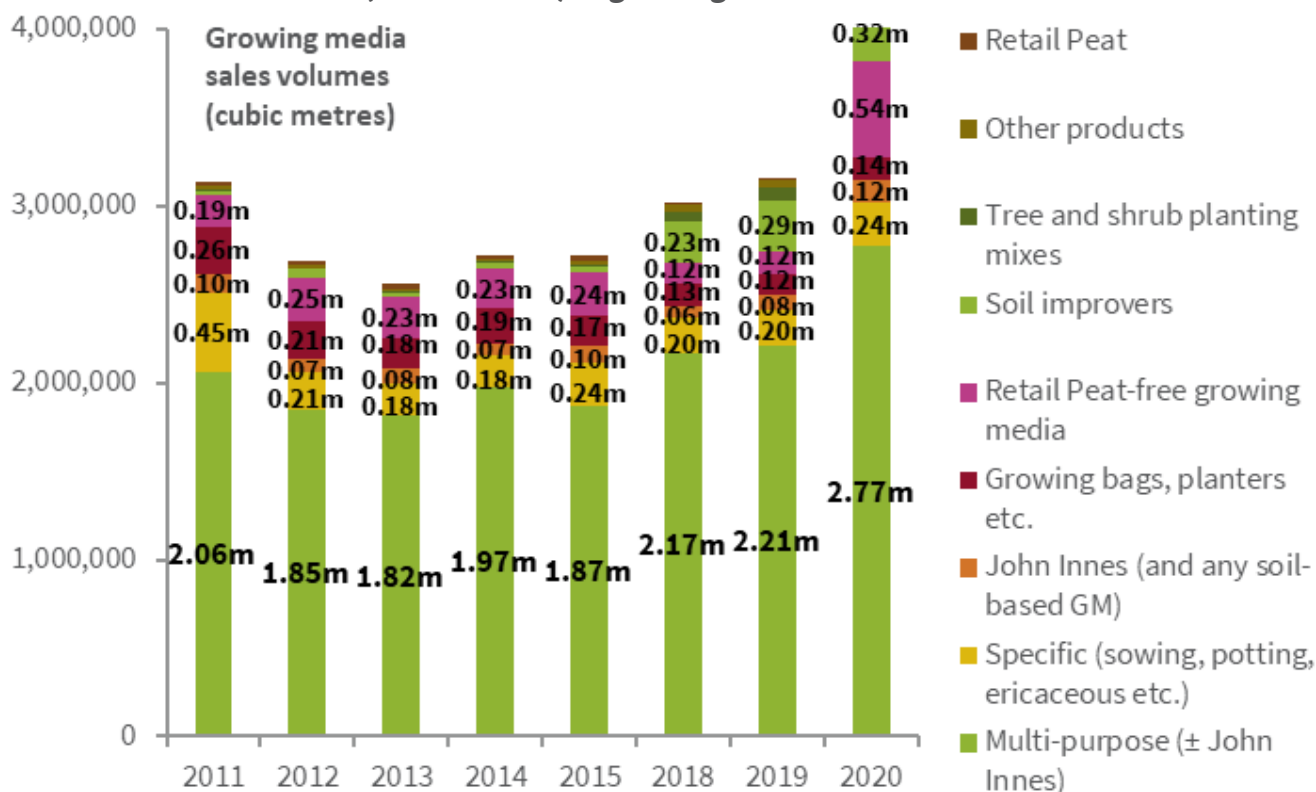
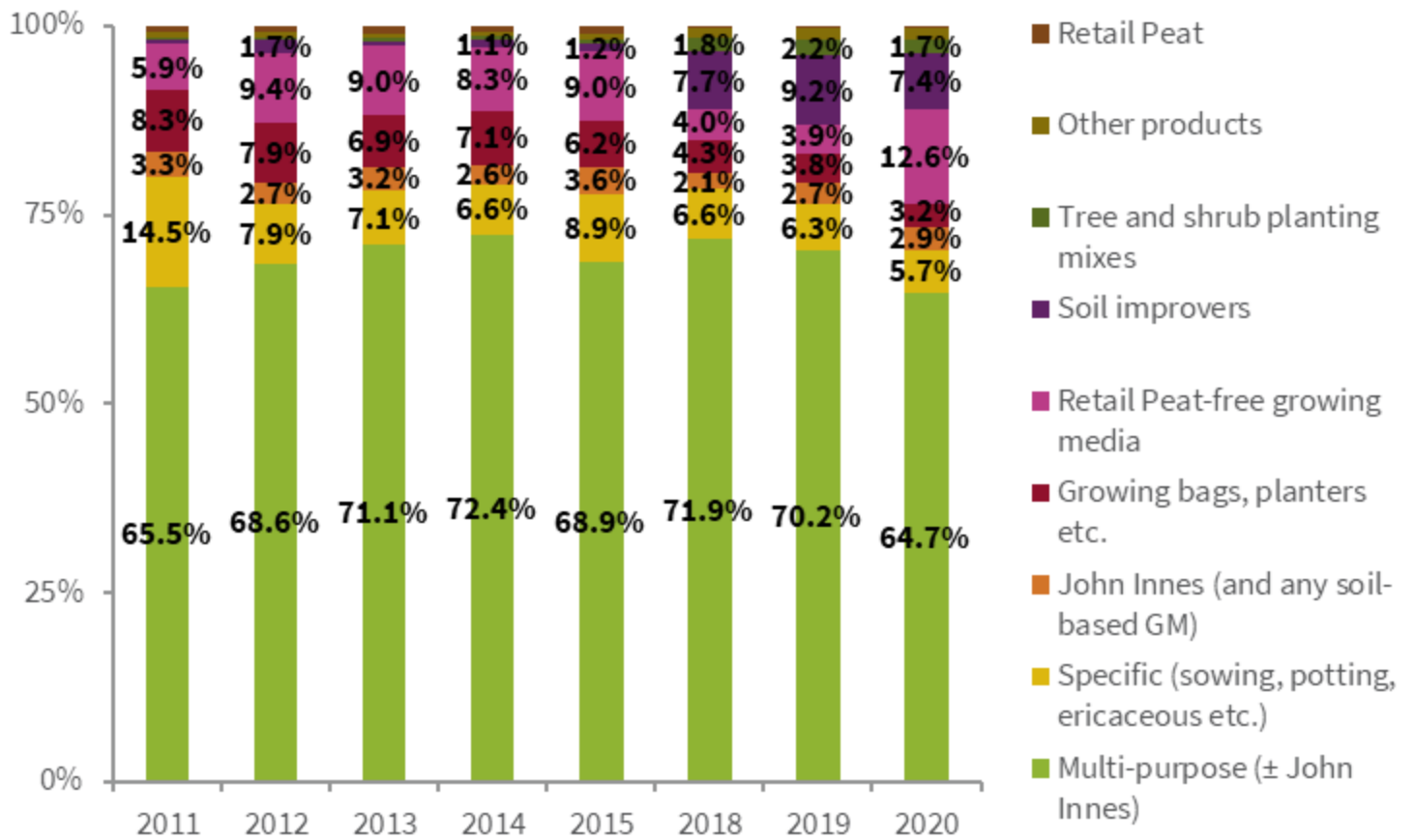


Chart 2. Overall volume (%) of growing media for the UK retail sector 2011 to 2020





The data on the composition of growing media supplied for retail (chart 3) shows that the proportion of volume accounted for by peat has fallen since 2015, with 35.5% of volume comprised of peat in 2020 (chart 4), although volumes have increased (chart 3). Peat use appears to have been replaced predominantly by wood-based fibres, bark and coir. The proportion of volume accounted for by composted green waste (green compost) fell from 2011 to 2019 but increased slightly in 2020 (chart 3).

The data since 2015 shows a pronounced increase in the volume and proportion of 'other' materials used in growing media (charts 3 & 4). Further investigation shows that this correlates closely with an increase in the volume of soil improver captured in the study (chart 2). This raises the question of whether the falling proportion of peat in the study is a function of a changing product mix rather than reflecting industry moves away from the use of peat.

To determine whether or not this was the case, further analysis on trends in component use was conducted based on volume excluding soil improvers.

Chart 5 (overleaf) shows that even with soil improver product excluded from the analysis there is still a pattern of movement away from peat and towards bark, coir and wood-based components. It is still notable that from 2018 to 2020 the proportion of volume accounted for by 'other' components was far higher than between 2011 and 2015. PWC was asked to recontact the participating companies who accounted for this volume to check its accuracy. The reporting companies confirmed to PWC that the data submitted is accurate, but did not want to specify the material due to concerns over commercial sensitivity.

Chart 3. Volume (cubic metres) of ingredients used in growing media for UK retail

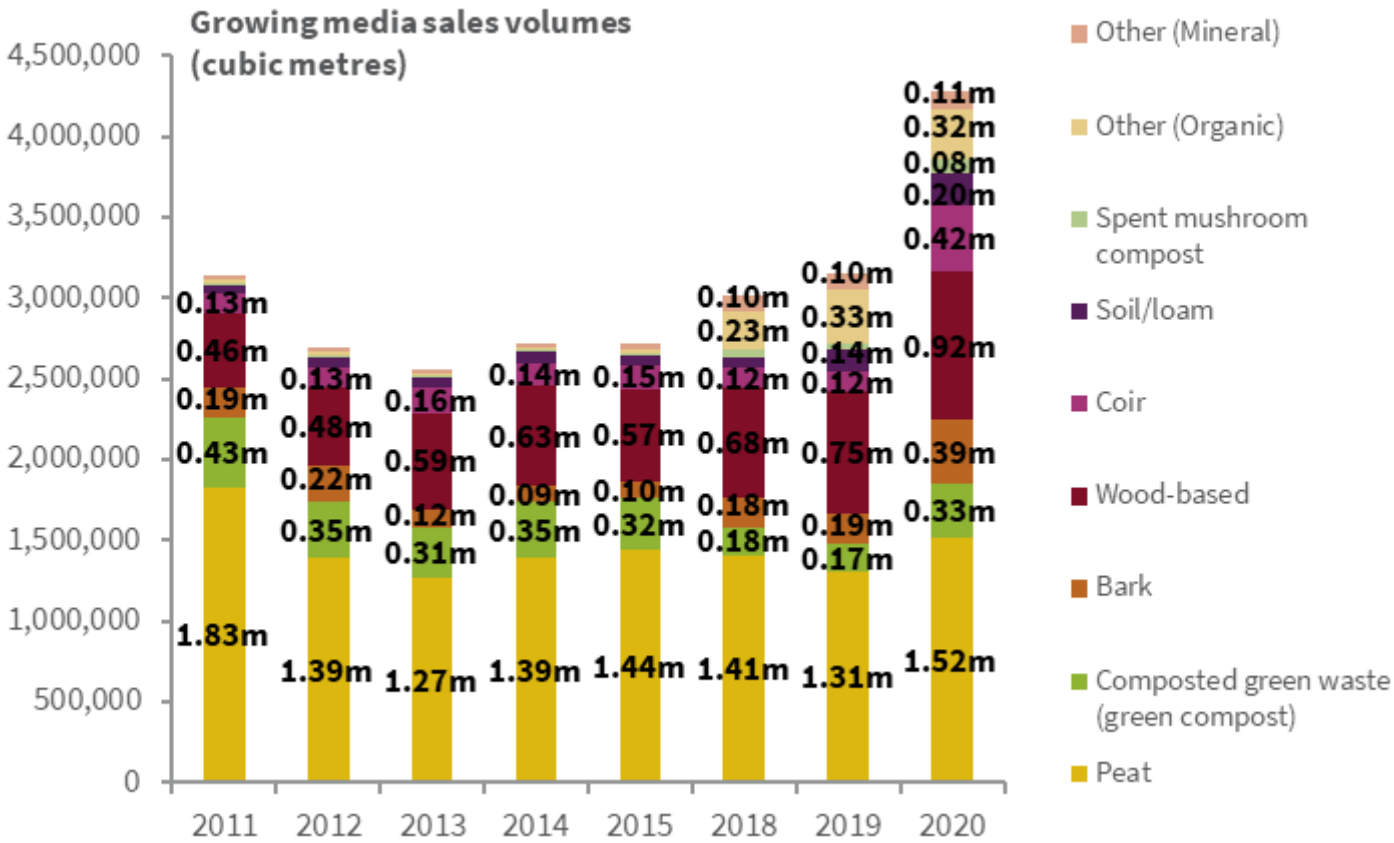


Chart 4. Proportion of volume of growing media for retail accounted for by different ingredients (2011 to 2020)

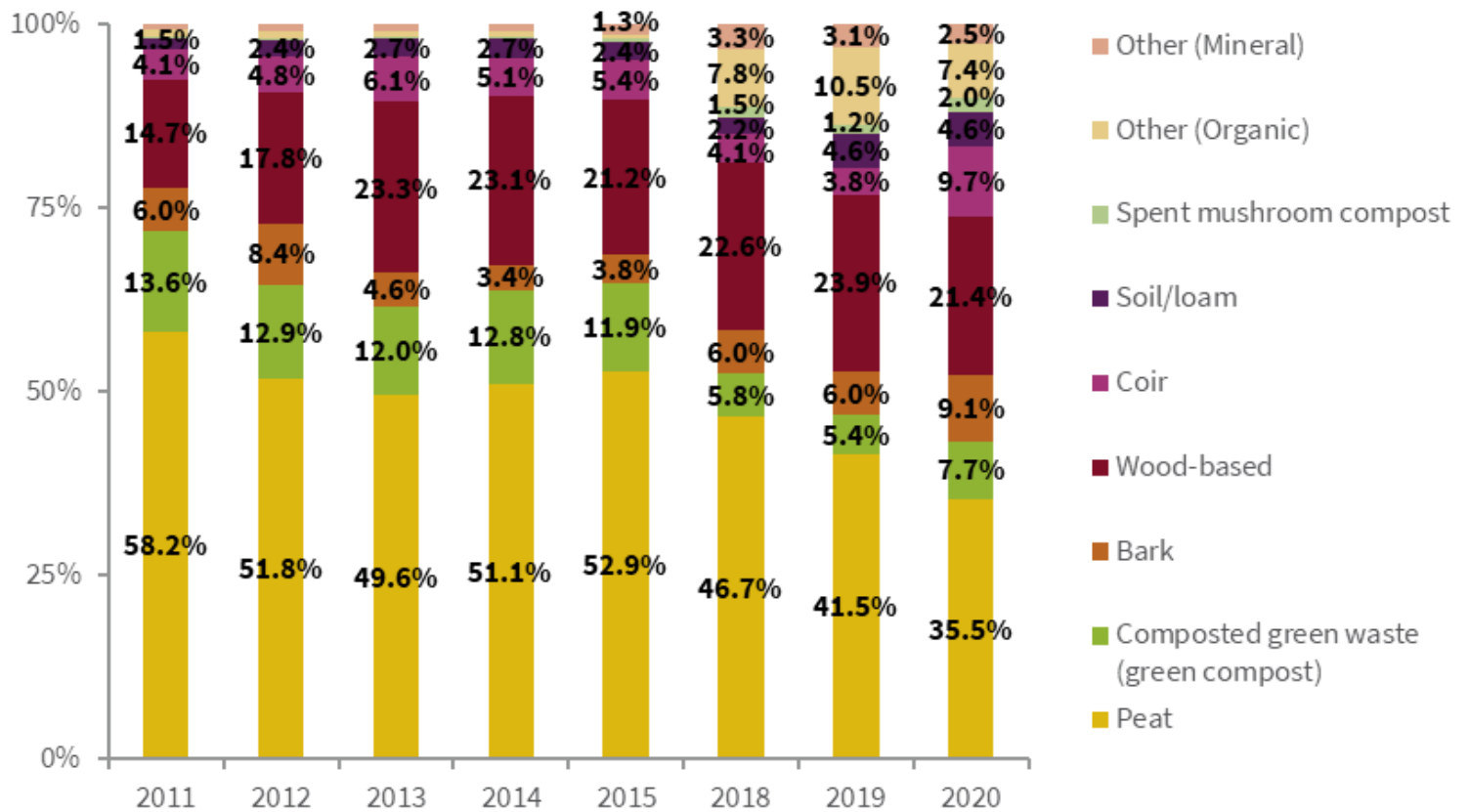
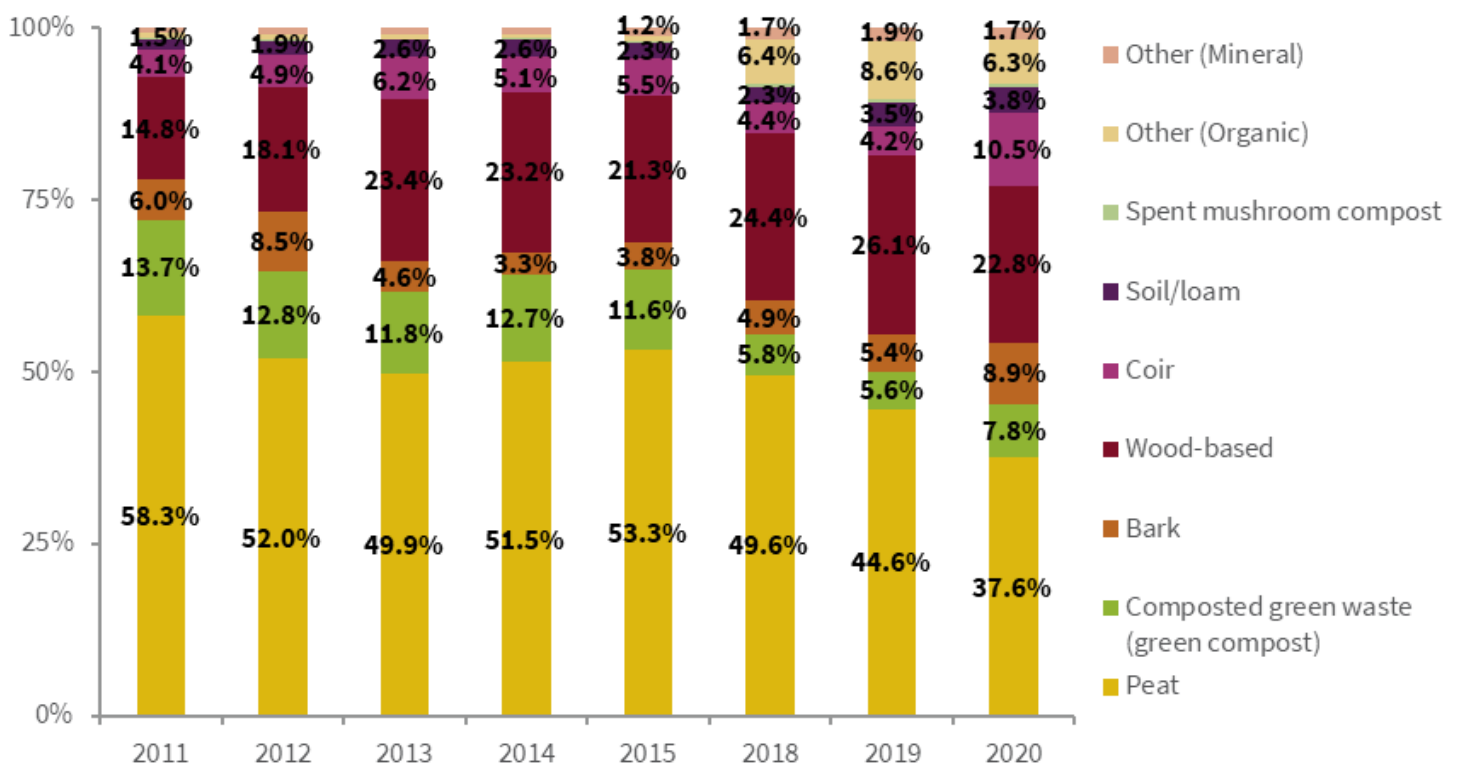


Chart 5. Proportion of retail growing media excluding soil improvers made up of different components (2011 to 2020)



The professional sector

The most noticeable trend in professional growing media in recent years has been the increase in volumes supplied since 2013. This is in line with the reported increase in the value of production of UK ornamentals over this period¹. Volumes of peat have remained more or less similar since 2014, whilst the volume of coir and to a lesser extent wood-based materials have increased.

In terms of components used in professional product, peat has been on a downward trend since 2011 and now accounts for 62.3% of volume (chart 7 overleaf). As noted earlier, coir and wood-based materials have displaced this volume, with these two components now accounting for 21.9% and 11.6% of volume respectively.

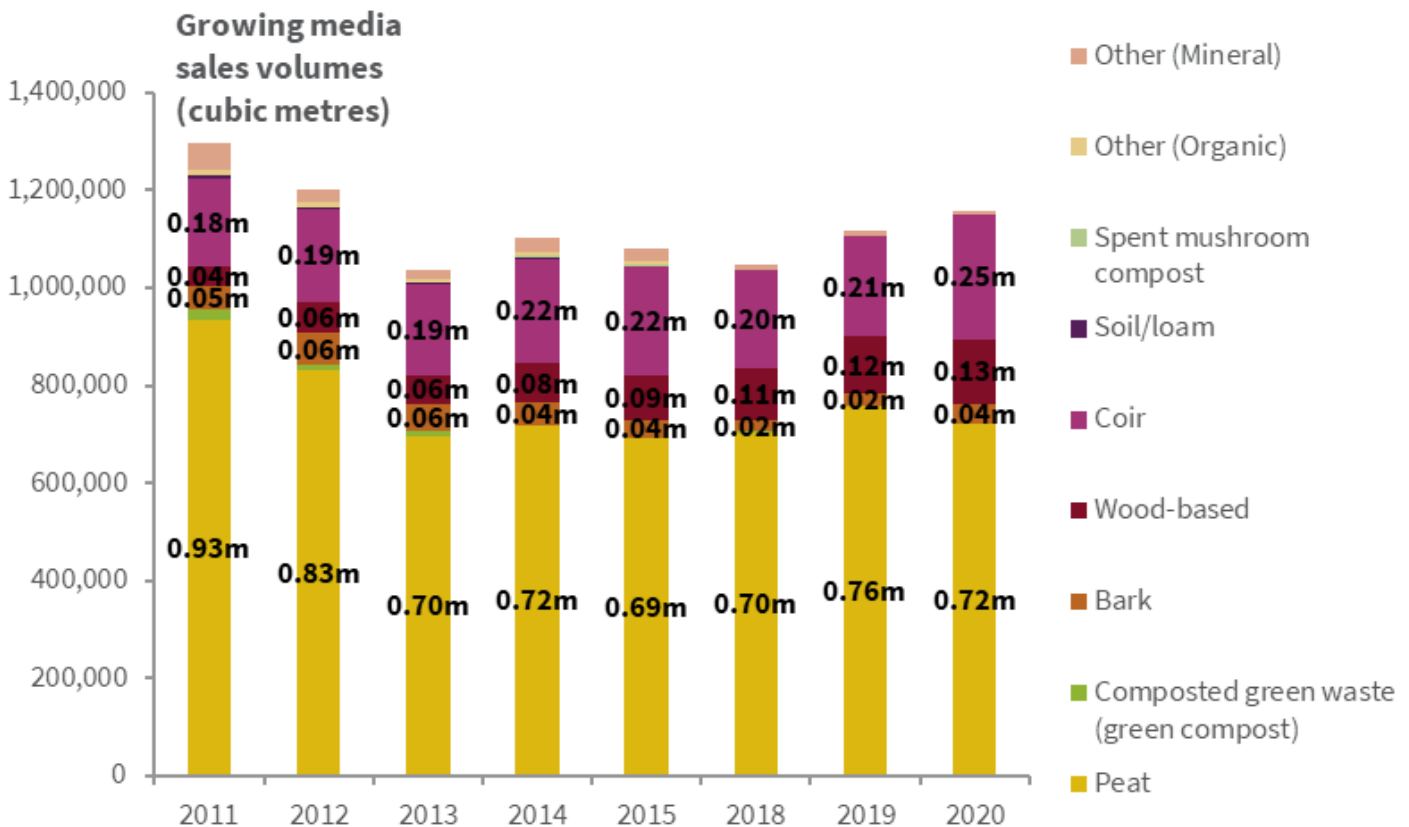
The volume of different product supplied to the sector has shown a gradual increase in product designed for bedding, pot and nursery stock crops (chart 8 overleaf).



Since 2011 the supply of peat bales has fallen gradually (chart 8). In 2020 there was a jump in the volume of peat-free product supplied for professional use (chart 8), suggesting response to demand from retailers for crops grown in peat-free media.

When viewed in terms of percentages we can see that as of 2020 peat-free product accounted for 21.3% of volume whereas peat bulk/bales had fallen to 2.3% of total volume (chart 9).

Chart 6. Volume of professional growing media supplied by component parts 2011 to 2020



1. Source: Horticulture Statistics 2019, Defra

Chart 7. Proportion of professional growing media volume accounted for by different components

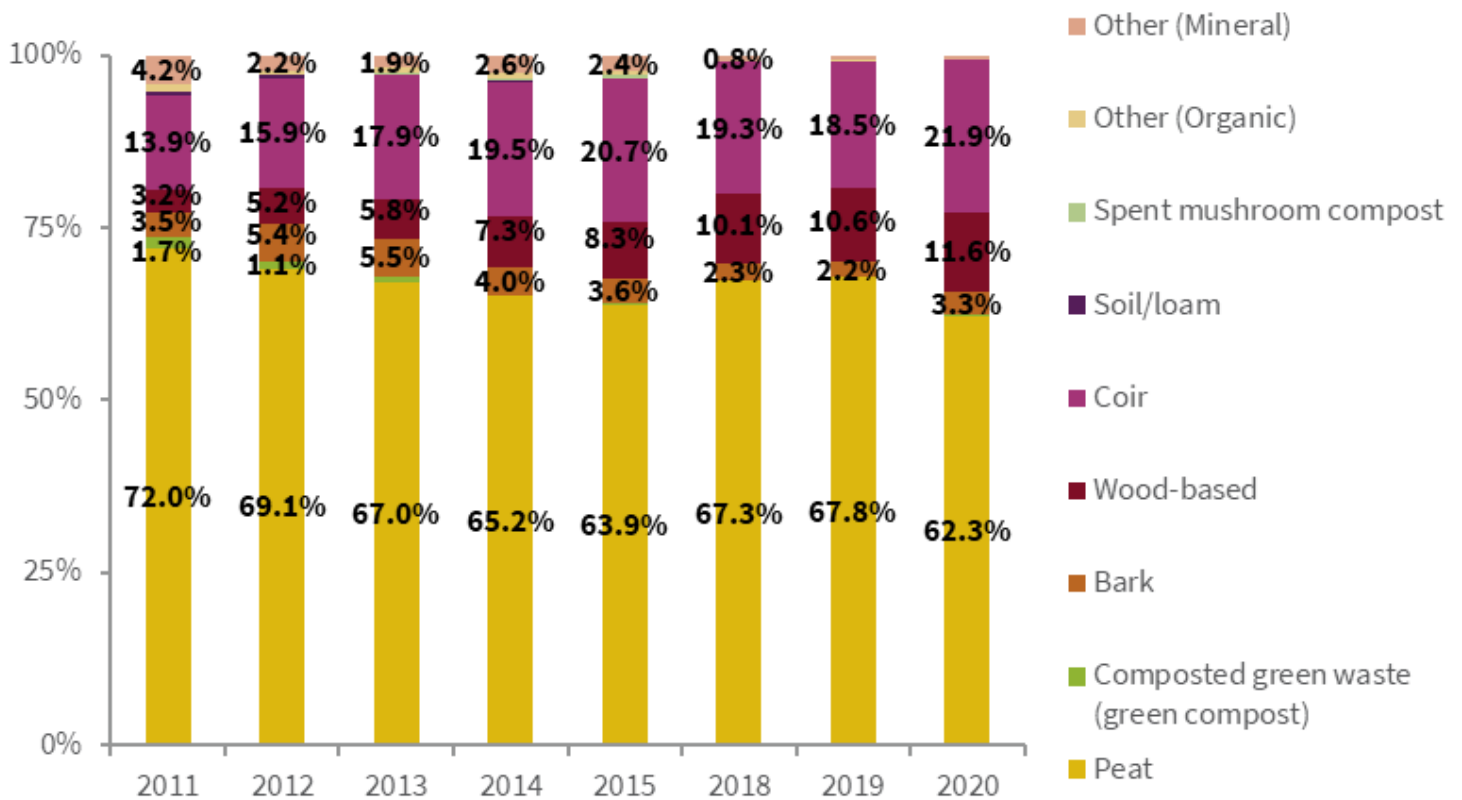


Chart 8. Volume supplied (cubic metres) of different professional growing media products

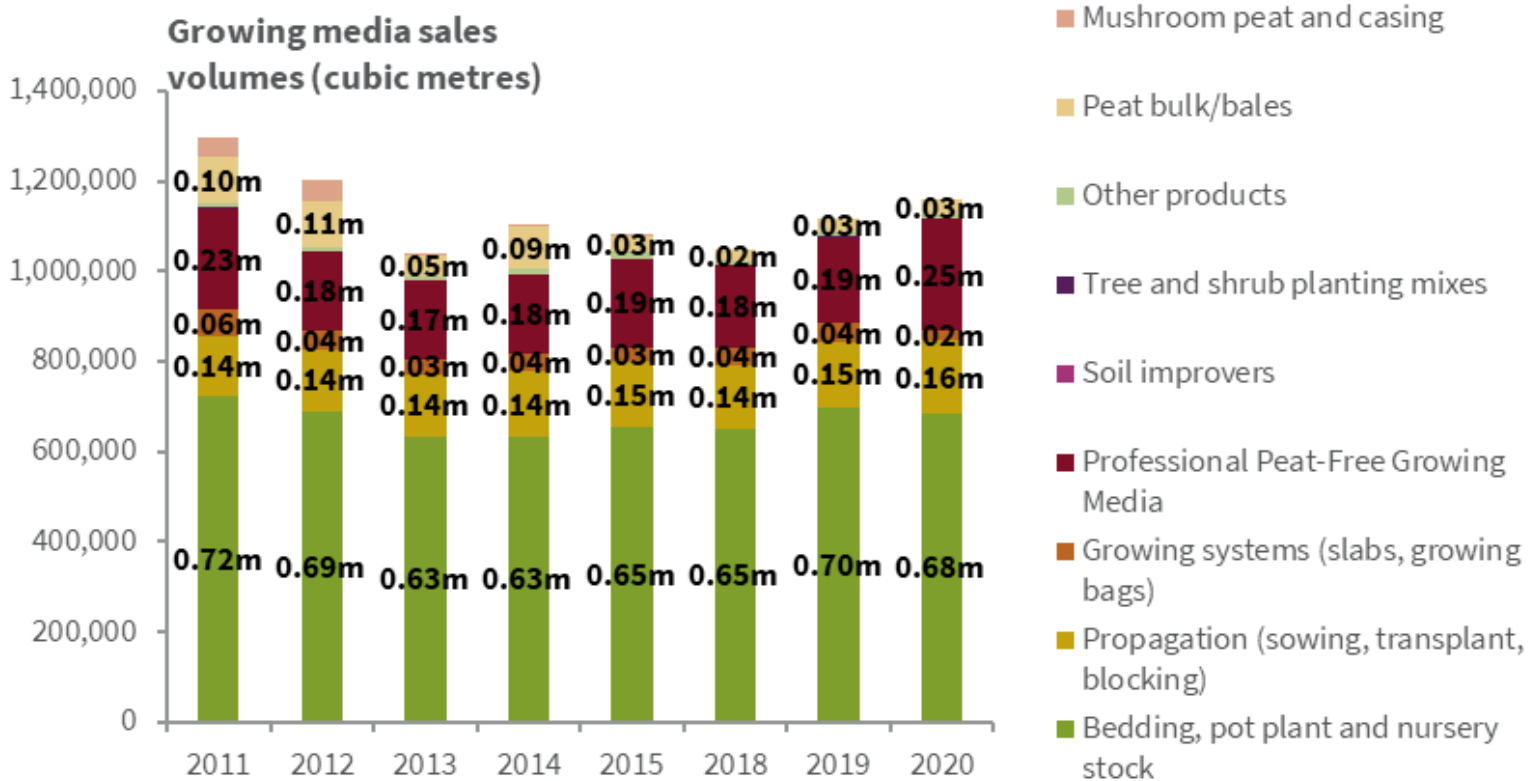
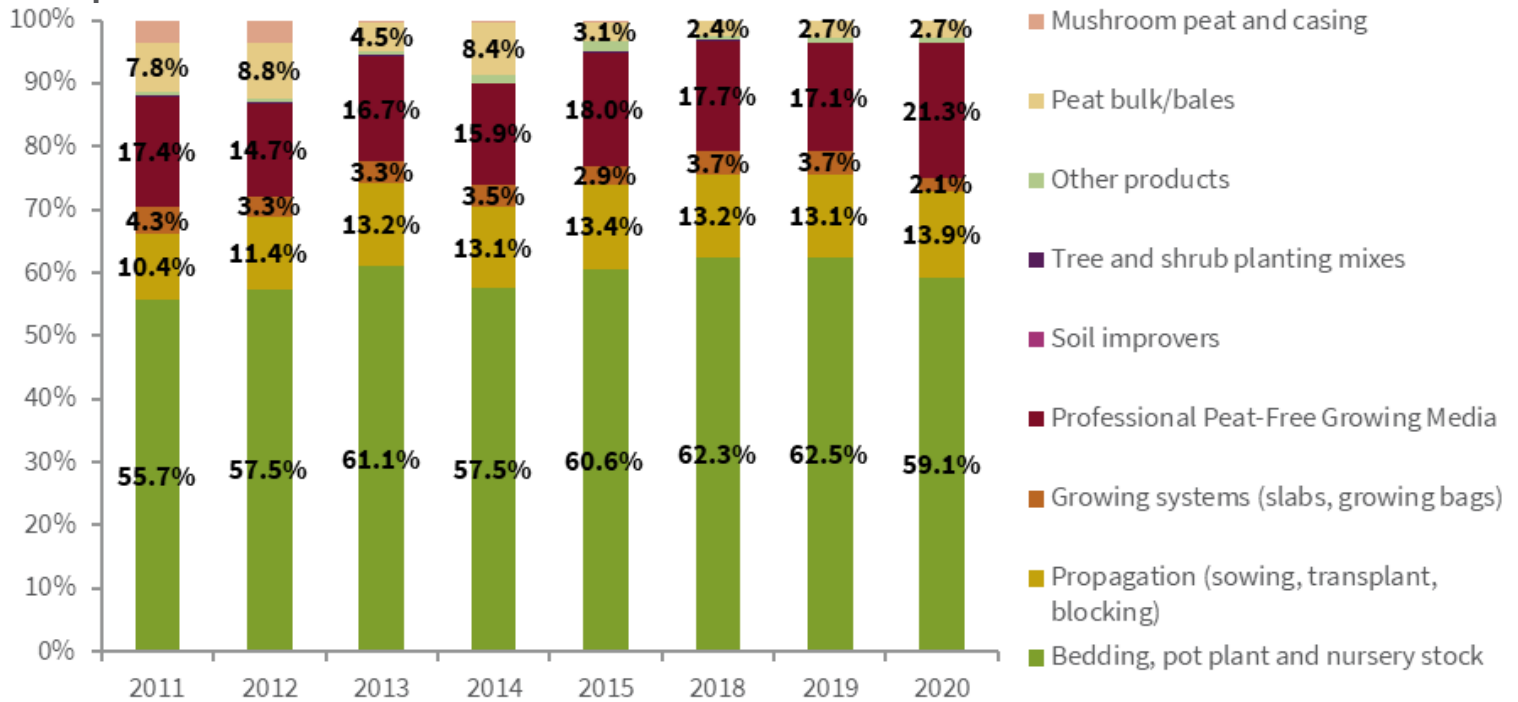


Chart 9. Proportion of total volume of professional growing media accounted for by different products

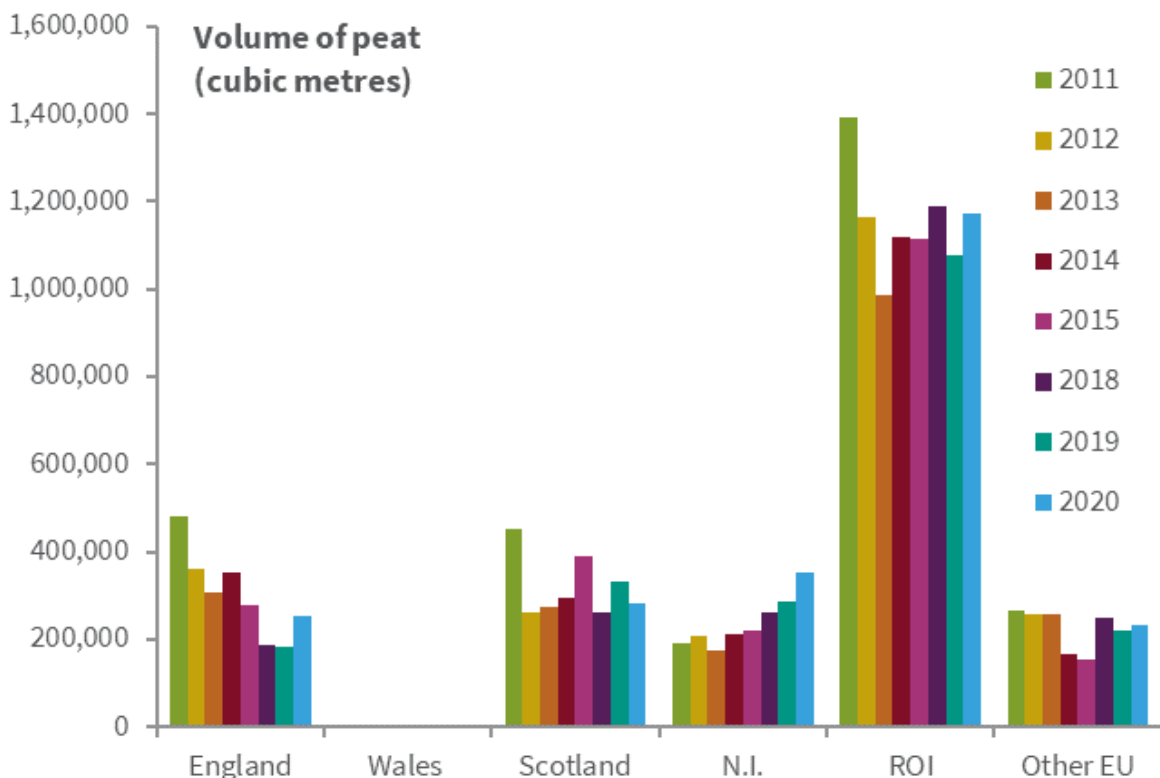


Origins of UK growing media’s peat

As part of the study, the origin of the peat that is used in the UK’s growing media is reported by participating companies. Chart 10 shows that most of the peat used in growing media is sourced from the Republic of Ireland; this has been the case for the lifetime of this study.

Since 2011 we have seen a gradual and consistent fall in the volume of peat that is sourced from England with the exception of 2020 which is likely to be exceptional and driven by hugely increased participation in gardening in 2020. There has also been an increase in the volume sourced from Northern Ireland which is more consistent.

Chart 10. Volume of peat used in growing media supplied to the UK by country of origin



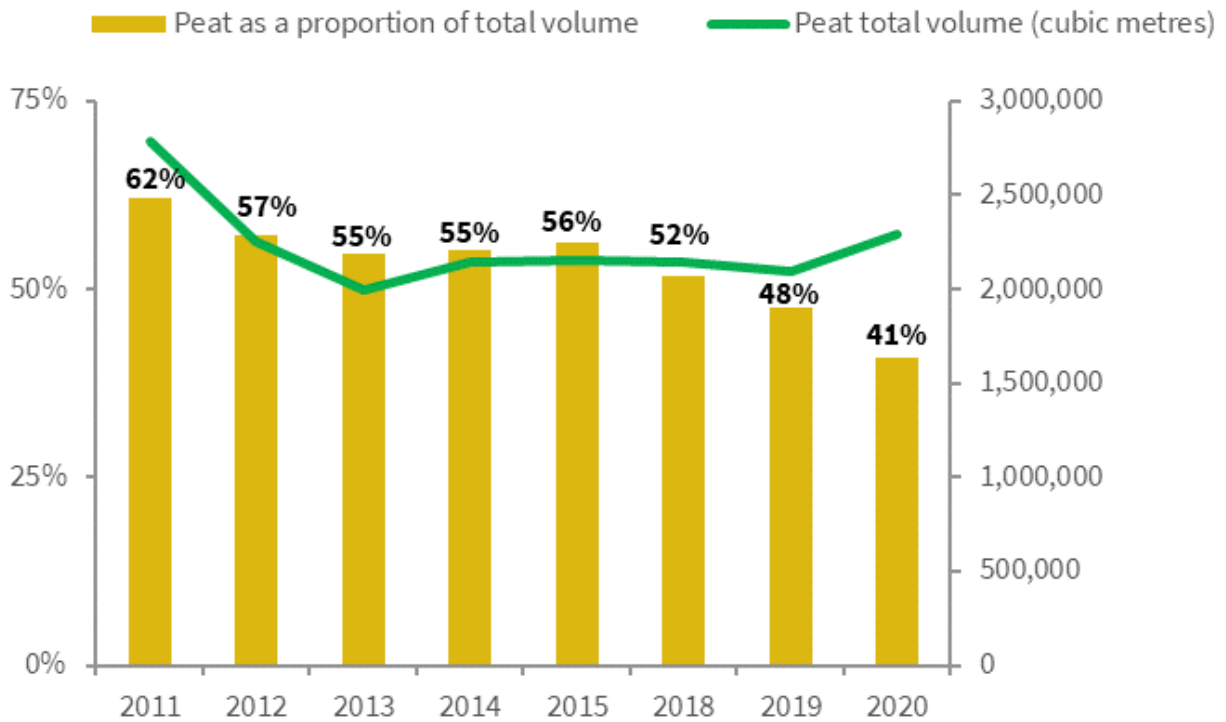
Overall peat use in growing media

Overall in 2020, the volume and proportion of total growing media accounted for by peat has remained flat in the professional sector. Meanwhile, peat used in the retail sector increased in actual volumes to meet high demand for growing media; but accounted for a lesser proportion of total growing media components.

In 2011, 2.8 million cubic metres of peat was used in growing media supplied to UK horticulture and in 2020 this was 2.3 million cubic metres. Chart 11 shows that in percentage terms across all sectors

of UK horticulture peat use fell to 41% in 2020. In context, between 2011 and 2019 the value of UK produced ornamental stock as reported in Defra's Horticulture Statistics increased by 23% in value (in constant prices), although the statistics are not granular enough to break out field-grown versus other crops and the different substrates likely to have been used. Whilst we are unable completely to correlate UK production value with amateur and professional use of growing media, it is likely that the measures are correlated given the association of plants and growing media

Chart 11. Proportion of total growing media (all sectors) volume accounted for by peat



Discussion

The fall in the volumes and proportion of peat in growing media for the UK has accelerated between 2015 and 2019 compared with the 2012 to 2015 period, but 2020 was an exceptional year due to the impact of Covid-19 and huge increases participation in gardening.

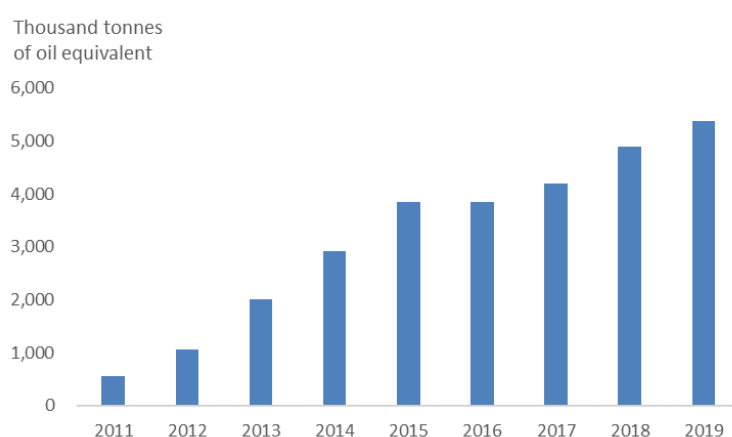
The changes in the mix of growing media product are a function of significant work across the sector to identify and adopt peat alternatives. Reliance on a single component of growing media (whether peat or any other) leaves the industry vulnerable to disruption in the supply chain. Investigation and uptake of alternatives to peat in growing media is increasingly part of the manufacturers' strategies to adopt sustainable and resilient business models.

The data has identified that since 2011 substantial displacement of peat has been achieved by the incorporation of bark, coir and wood-based components into product. In spite of the challenges presented to the industry by Covid-19, manufacturers still managed to source substantial volumes of peat alternatives to further reduce the proportion of overall volumes accounted for by peat. However there are several barriers to further uptake of this component related to the availability and affordability of peat alternatives.

As the European economy transitions away from energy generation from fossil fuels, demand has increased for use of biomass in energy generation. Use of biomass for energy is incentivised by the UK government, making supplies of wood-based materials for growing media difficult to obtain in greater volume. Chart 12 provides an illustration of the scale of the issue, and shows the increase in the use of biomass in the energy sector since 2011. Competition across the economy for access to peat alternatives such as wood-based materials presents a significant economic and logistical challenge for UK growing media manufacturers.



Chart 12: Electricity generated by plant biomass 2011 to 2019. Digest of UK Energy Statistics July 2020, table 6.1.1



Access to coir is similarly facing challenges around availability. Covid-19 has limited, and continues to limit the supply of labour available in Sri Lanka and south east India for coir production and processing over 2020, which is placing pressure on availability of materials for growing media production in 2021 and potentially beyond.

In the data there has been a notable fall in the proportion of volume accounted for by composted green waste (green compost) over the time series from 2011. Whilst there is availability of this material, its suitability for growing media can be affected by contamination with persistent herbicides which can enter the waste stream, for instance in the form of lawn trimmings with herbicide residues added to household and garden waste.

There are also major structural changes set to affect the industry in terms of the availability of peat from 2021. In the Republic of Ireland conservation groups called for a judicial review of the ROI Government policy in 2019. The High court ruled in favour of the conservation group challenges, so from September 2019 peat harvesting in the Republic of Ireland on sites larger than 30 hectares had to cease extraction pending a change in planning laws. Over 2020 some supply of peat from the Republic of Ireland continued from stocks of peat that had been harvested previously, however stockpiles of Irish peat from prior harvests are now approaching exhaustion, which is likely to present challenges over availability and increased costs associated with sourcing peat from alternative sources. The data in this report shows that – should peat alternatives not be available - replacing the volume of peat which until now has been sourced from the Republic of Ireland would either require substantial increases in sourcing from UK licenced sites and/or on imports from Europe (most likely the Baltic).

Based on the data in this report and on this brief discussion of the availability and affordability of the main components of growing media it is clear that the industry is set to face challenges in meeting increasing demand. At the time of writing this report, demand for gardening remains at historical high levels, with large parts of the leisure sector locked down. In the short term record high levels of demand are putting huge pressures and distortions on the supply chain.

In addition to this the increasing emphasis on UK horticultural production to meet urban greening and tree planting targets is likely to drive an increased demand for professional growing media among ornamentals growers at a time where supply of components is under extreme pressure. We anticipate that over 2021 this will lead to volatility in the proportion of different components used in growing media depending on how supply chains are affected by the impact of Covid-19



Manufacturers had planned to focus significant consumer brand and advertising campaigns for the 2020 gardening season on new peat-free and peat-reduced ranges. These were trailed in autumn 2019 at the main industry trade shows and were set to air as the pandemic took hold in the UK. In spite of the disruption to the supply chain the introduction of these new ranges appears to have begun to shift the market. In 2019 peat-free product accounted for around 4% of volume in retail, rising to 13% in 2020.

Significant effort continues across the horticulture supply chain to ensure the responsible sourcing of components for UK growing media. In 2021 growing media product for the retail sector will start to show labelling and scoring using the Responsible Sourcing for Growing Media scheme and calculator. This will begin to inform consumers and shoppers of the issues of sustainability pertaining to growing media.

In conclusion, since 2011 there has been a significant movement away from peat and towards a system of supply that is less reliant on this single component. This trend towards proportionately lower use of peat continued in 2020 in spite of the unprecedented demand for gardening driven by the pandemic. In spite of the immense stress placed on the supply chain, manufacturers sourced and processed nearly 1 million cubic metres of peat alternatives to sustain momentum away from peat use. However the industry (and by extension the 'upstream' horticulture supply chain that relies on it) still faces significant financial and structural barriers to sustaining this momentum. This includes competition from other industries for access to peat alternatives as well as the supporting R&D to accelerate the industry's journey towards increasingly sustainable and responsibly sourced growing media.

Appendix 1 - sampling

The sampling approach is designed to give as comprehensive a view as possible of growing media supplied to the UK market.



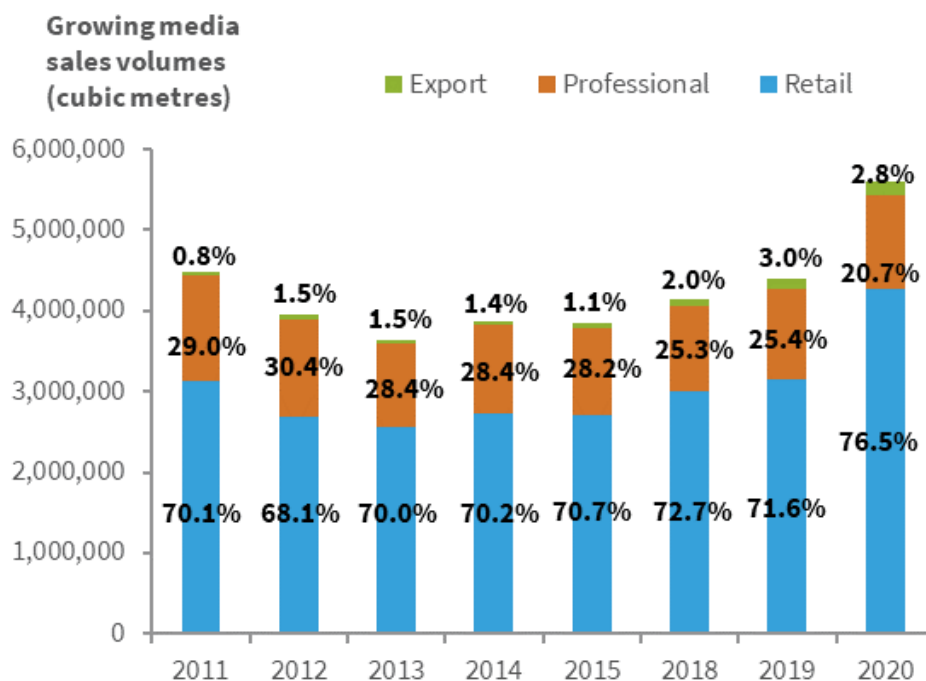
Approach to sampling

Businesses to be approached were identified by the GMA in 2011 as being likely to account for a substantial proportion of materials supplied to the UK growing media market. This included businesses inside the GMA and those outside it. This list is reviewed regularly, with businesses approached to take part on a voluntary basis. Data is provided to PWC on a commercial and in-confidence basis. Other members of the GMA and the HTA do not have access to participating businesses' individual data. Overall the bulk of volume supplied is to retail markets, with most of the rest accounted for by the professional market. The proportion supplied for export has remained negligible over the nine year life of the study.

In the 2018, 2019 and 2020 waves of the study data was provided by the companies listed in the table on page 15. Somerset peat producers were unable to provide a completed return in 2020, mainly due to the Covid-19 pandemic. However they provided a narrative reply to PWC indicating that their use of components had not changed substantially since 2015 and that re-using this data would provide an accurate view of their current position.

As noted earlier in this report, the data is provided by manufacturers and taken in good faith. Although checks on the validity and any exceptions are performed in the course of producing this report, neither PWC nor the HTA is in a position to audit, inspect nor verify the actual components of shipped product against the returns provided for this report.

Chart 13 Split in volume of growing media by sector



The table below lists businesses whose figures have been included in the time series data in this report.



Supplier/Brand	2011-2015 Cohort Data	2018 & 2019 Cohorts' Data	2020 Data
Bord na Mona (= Greener Gardening)	Yes	Yes	Yes
Bulrush Horticulture Ltd.	Yes	Yes	Yes
Durstons	Yes	Yes	Yes
Erin Horticulture	Yes	Yes	Yes
Evergreen Garden Care	Yes	Yes	Yes
EJ Godwin	Yes	Yes	Yes
Horticultural Coir Ltd.	Yes	Yes	Yes
ICL (was Everris Ltd)	Yes	Yes	Yes
Jiffy Products UK	Yes	Yes	Yes
Klasmann-Deilmann Ireland Ltd.	Yes	Yes	Yes
Melcourt Industries Ltd.	Yes	Yes	Yes
Roffey Ltd.	Yes	Yes	Yes
Smaller Somerset Producers	Yes	Yes	Yes
Tref B.V.	Yes	Yes	Yes
Westland Horticulture	Yes	Yes	Yes
White Moss Horticulture Ltd.	Yes	Yes	Yes
William Sinclair Horticulture	Yes	Yes	Yes
Botanicoir Ltd.	Yes	Yes	Yes
BVB Substrates	Yes	No	No
Kekkila (Vapo Oy)	Yes	No	No
Clover Peat	Yes	Yes	Yes
Dutch Plantin	Yes	Yes	Yes
Legro	Yes	No	No
Petersfield Growing Mediums	Yes	No	No
Premium Horticulture	Yes	Yes	Yes
Vital Earth	Yes	No	No
Evergreen Peat	No	Yes	Yes
Southern Trident	No	No	Yes

Since the study resumed in 2018 some smaller businesses declined to participate, and two (Evergreen Peat and Southern Trident) joined the study. No businesses joined or left the study between 2015 and 2018/19 that would have a material bearing on the conclusions drawn in this report.

Appendix 2 – peat extraction

Background

Defra requested that the HTA assess the current extent of peat extraction for horticulture in the UK to provide an updated input into the UK's national carbon accounts. The most recent previous data is from the Department of Communities and Local Government's mineral extraction survey in 2014, and which therefore provides an out-of-date view of peat extraction in Great Britain of 763 cubic metres in 2014.

To address this the HTA ran a pilot survey in late 2020 and early 2021 of GMA members asking for the hectareage from which peat was extracted in the UK in 2019, and the volume extracted (as opposed to the Mineral Extraction survey which only covered GB). Respondents were provided with the option to provide an average for 2017 to 2019 in terms of volumes to maintain commercial confidence. From this data HTA summed the returns to get to an estimate of UK hectareage and volume around the year 2019.

Extraction volumes will not exactly match use and sales data in this report due to fluctuations in storing and moving volumes of raw materials through the supply chain. Survey returns were received from all the main peat producers in the GMA known to extract from UK sites. Returns were received from Godwins, Durston's, Bulrush, Westland, Evergreen, and ICL. In UK peat extraction there is a 'long thin tail' of small companies outside of the GMA which extract peat from who did not provide data for this exercise.

To further validate the work on areas of extraction, The Growing Media Association conducted a review of the known sites from which peat is (in 2020) currently extracted. This will not exactly match with the survey data on extraction, as not all sites available for extraction will necessarily be used in any given year and the sampling approach is different. However the range should provide a robust assessment of peat extraction for horticulture that can be developed in future years.



Findings

The survey of GMA manufacturers recorded 811 hectares in the UK used in 2019 for peat extraction, although this excludes hectareage used by small, non-GMA members. This compares with the site by site review of hectareage from the GMA which found a maximum of 1,540 hectares of sites with the licensed *potential* to be used for extraction in the UK. Taking a mid-point between these areas would give 1,175 hectares, which would mitigate for any possible under-reporting due to sampling in the survey and any sites that have the potential to be extracted not being used in a given year.

In terms of volume, the survey returns totalled 588,324 cubic metres of peat extracted from UK sites in 2019. A caveat on this estimate is that two responding businesses reported a total across 2017 and 2019. In calculating the 588,324 estimate, these two returns were divided by three to arrive at an approximate annual figure. As noted, the data does not capture extraction from non-GMA businesses. The survey estimate compares with reported use of peat sourced from the UK in 2019 of 799,167 cubic metres (chart 10).

The variance between sales and extraction is likely due to a range of factors, first of which is the exclusion of smaller extractors from the sample. Secondly, the two returns which provided a total for 2017-2019 will introduce potential for error. Thirdly, as peat decreases in the mix of growing media, there is less commercial reason to retaining large reserves of peat as a raw material. If peat manufacturers were reducing reserves in line with a transition away from peat, we might expect extraction to fall short of sales. The conclusion we would draw from the available data is that in 2019 peat extraction from UK sites ranged from a likely minimum of 600,000 cubic metres to a likely maximum of 800,000 cubic metres, and has likely fallen compared with the 2014 Mineral extraction survey for Great Britain (noting that this survey excluded Northern Ireland).



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