Growing Media Europe
Growing your food & Greening your life

January 2022

PEAT for HORTICULTURE and AGRICULTURE

Common Questions and Answers

1) **Why is peat the most important raw material for the production of growing media?**
   - QUALITY:
     Peat has specific physical, chemical and biological properties that provide optimum conditions for plant growth:
     - Peat improves soil structure, increases water retention and air capacity, stabilises pH variations and helps to reduce nutrient leaching
     - Peat is free of pathogens and weeds
     - Peat is often mixed-in to buffer and outbalance the unfavorable properties of other materials → peat enables the use of other and new circular materials that are less consistent in terms of their material properties

   ➔ Peat is the safest, purest and most-used raw material for growing

   - QUANTITY:
     Today, > 40 Mm^3 of horticultural peat are used globally for growing media production; In Europe, this refers to a share of about 75 % of the components in European growing media production. As peat is often used to complement other materials:

→ **Less than 10 % of growing media are fully peat-free today**

➔ Despite 40 years of research, no other material was found that can fully (!) replace peat in quality and quantity.

2) **How is the demand for horticultural peat developing?**
   - A Study of Chris Blok from Wageningen University predicts an increase in demand of 200 % for horticultural peat between 2017 and 2050 (*Source: Growing media for food and quality of life in the period 2020-2050, Professor Chris Blok* et al, Wageningen University & Research, 2018)
   - The overall demand for growing media is predicted to grow by 415 % in the same timeframe; this sharp rise is linked to political and societal developments
     - Fruits and vegetables consumption increasing
     - Trends in architecture and landscaping (green walls, green cities,...)
     - Afforestation and reforestation efforts

3) **Why does the world need more growing media (and therefore, more peat)?**
   - The world keeps losing arable land due to erosion, pollution and extreme weather conditions
   - Different ways of growing are needed to feel the world population

- Growing in pprotected cropping systems (controlled environment agriculture using growing media) leads to higher yields while using around 50% less water and 60% less fertilisers compared to open field growing. At the same time, less arable land is used.
- Growing in growing media enables food production closer to urban areas → less transport
- Plants grown in growing media are more healthy → longer shelf-life and less food waste

4) **What other applications for peat exist?**
   - Bedding for animals, increasing animal well-being:
     - Peat does not grow moldy unlike various other popular bedding material (like straw or wood), contributing to cleaner air in farms.
     - Peat has a bactericidal effect and is deodorizing.
     - Peat absorbs ammonia decreasing smells.
     - Bedding peat as a soft material enhances the feet health of poultry which decreases the need for the use of antibiotics.

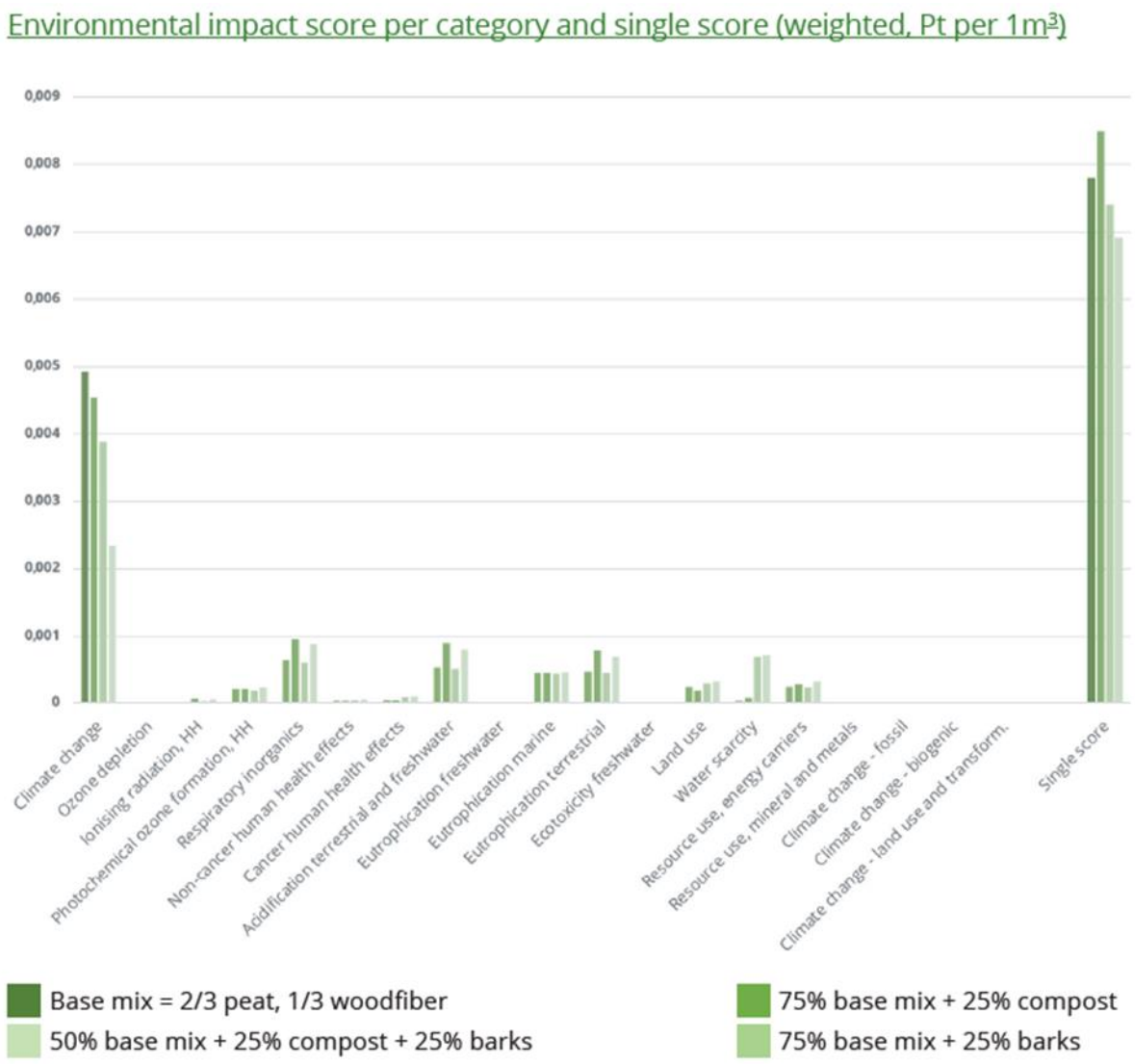
   - Soil improver: Due to its favorable characteristics, peat is used as a soil improver in many specific applications.
   - Activated carbon (e. g. wastewater treatment) to decrease carbon leakage:
     - Strongly decomposed peat is an excellent material for the manufacture of e. g. activated carbon that is used for cleaning water and air.
     - Activated carbon is a product in risk of carbon leakage, as most of world's activated carbon is made from coal outside the EU.
     - Activated carbon is used to treat various wastewaters and flue gases, and many critical nutrients and medicines need to be treated with activated carbon to be safe for humans.

   - Medical applications: Balneological treatments in peat pulp baths or skin treatments are peat therapies used in human health care.
   - Whiskey production: Peat is used during one stage of the whisky making process: the kilning of the malt, resulting in the whiskey's smoky flavour.
   - Oil absorbant: Weakly decomposed peat has proven to be an excellent absorbent used after oil spillages.

5) **Does peat have a higher environmental footprint than other components used in growing media production?**
   - ALL growing media components and all growing media end products ("mixes") have an environmental footprint; this footprint differs depending on the actual material(s) used as well as on the production process, transport distances, end-of-life, recycling etc..
   - The LCA project recently conducted by Growing Media Europe in strict accordance with the European Commission´s Product Environmental Footprint standard showed that the environmental impact of growing media

mixes cannot simply be ranked in accordance with their main components, but depends on a number of different factors.

➔ **Peat-based growing media do not by default have a higher environmental impact than peat-free growing media**; in fact, a peat-free growing media can have a higher environmental footprint than a peat-based mix.



(Source: Growing Media Environmental Footprint Guideline V 1.0 - https://www.growing-media.eu/single-post/gme-publishes-lca-guideline-for-growing-media)

6) **Does horticultural peat extraction destroy (pristine) mires?**
   - NO! In Europe, peat extraction is strongly regulated and can only be done on previously degraded peatlands; pristine mires and high conservation value wetlands are left untouched.
   - An after-use of the peatlands, i. e. rewetting and restoration after extraction activities have ceased, is a legal requirement.

- In past decades and centuries, peatlands (bogs and fens) were drained for founding settlements, for heating, agriculture and forestry. Peat extraction for horticulture/agriculture began in the middle of the 20th century.
- In addition to the legal requirements mentioned above, the well-established certification system "Responsibly Produced Peat" (RPP) https://www.responsiblyproducedpeat.org/ defines additional sustainability criteria for site selection and after-use of the peat bog; RPP is a multistakeholder organisation including environmental NGOs like Wetlands International.

7) What share of global peatlands are used today for horticultural peat extraction?

- Globally, the vast majority of peatlands (86 %) is undisturbed.
- Only 0,05 % of the global peatland area is used for horticultural peat extraction while peat extraction for energy is steadily decreasing (< 0,2 %).
- The remaining share of peatlands is used for agriculture and forestry.

8) What happens after the peat is extracted from the (degraded) peat bog?

- Peatland management includes rewetting and restoration of former extraction sites. Rewetting and restoration are legally regulated and carried out by the peat industry, who has an enormous expertise in this field.
- A growing share of peat is extracted under the "RPP" scheme – Responsibly Produced Peat- that applies even higher standards for peatland management from site selection to after-use. The RPP scheme is established in cooperation with environmental NGOs (i. e. Wetlands International), peatland scientists and peat extracting companies. RPP certification secures the best possible development after completion of peat extraction, with preference for restoration. Restoration of drained peatlands aims to restore peatlands damaged by drainage to a condition similar to their natural state by raising the water level in the peatland.

9) What about carbon emissions and carbon storage due to peat?

- Peatlands have been major global carbon sources for millennia but all peatlands, including pristine peatlands, emit GHGs.
- Peatlands drained for agriculture and forestry emit substantial amounts of CO_2. In comparison peat extraction sites release relatively small amounts of CO_2
- IMPORTANT: Restored peatlands become a net carbon sink!
- Carbon storage: Peat used for growing media enables carbon storage in plants, perennials and trees
- One cubic meter of peat can grow up to 8.000 saplings → these grow into trees that can take up 176 tons of CO2 per year → this is more almost 1000 times more than what is emitted by one cubic meter of growing media during its life cycle

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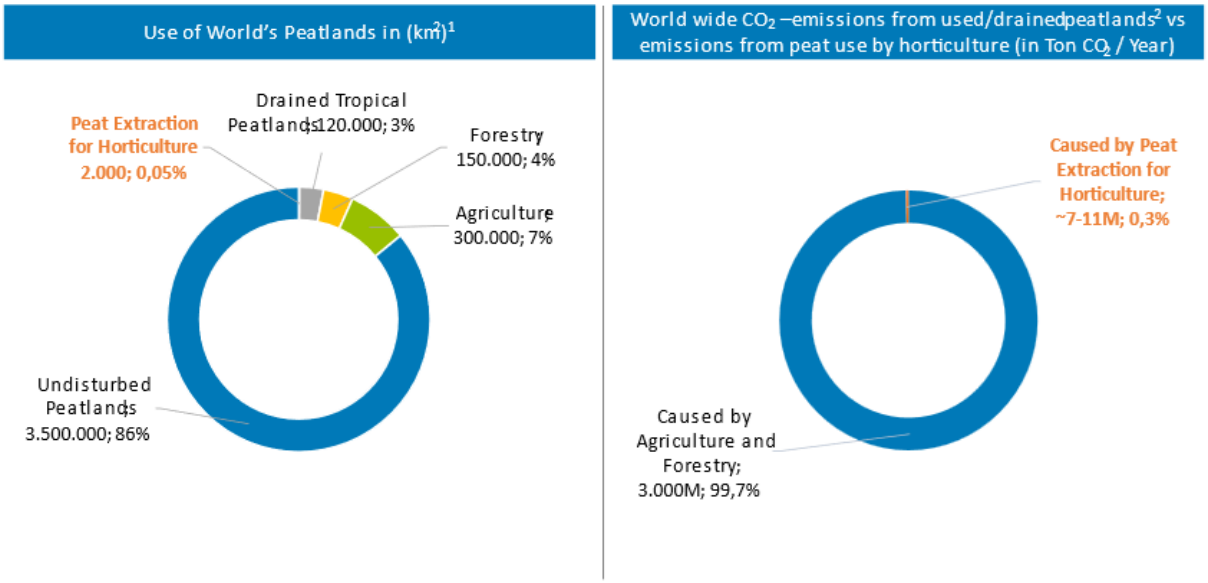
Assessment of climate impact of peat use in horticulture



Source 1: Strack, M. (Ed.). (2008). Peatlands and climate change. IPS, International Peat Society.
Source 2: Succow M (2006); Klimafaktor Moor. Die Narur im Klima-Deal, Hamburger Gesprache fur Naturschutz 2006, Michael Otto Stiftung

10) Is peat a fossil raw material?

- Peat is **NOT** fossil! Peat can be only a few years old or several thousand years old, but it is not fossilized like coal and gas which are fossil as they are millions of years old.
- Worldwide, more peat is growing every year than what is being used; therefore
- Peat is in fact classified as "slowly renewable".

11) What would be the environmental, economic and social consequences of banning the extraction and use of peat in horticulture and agriculture?

➔ **Environmental impact:**

If only non-peat materials would be used, the environmental impact would not decrease, because their overall performance would be inferior compared to peat-based growing media resulting is reduced crop harvest, increase used of fertilisers, water and chemical plant protection. Depending on the type of non-peat growing media used instead of peat and their production process, the environmental footprint of growing media production might increase considerably.

➔ **Economic and social impact:**

A total ban of peat production and peat use in Europe would have a devastating impact on horticultural production and the horticultural labor force. Agriculture would also be impacted heavily as many agricultural crops start their lives as seedlings cultivated in peat-based growing media.

- Horticulture represents 18% of the total value of agricultural production in the EU while it uses only 3% of the EU's cultivated land.
- The fruits & vegetables supply chain - that depends on horticulture - has an estimated turnover of more than EUR 120 billion and approximately 550 000 employees.
- Horticulture is also of critical importance for the ornamental sector that has a turnover of EUR 20 billion in production, EUR 28 billion in wholesale trade and EUR 38 billion in retail trade, providing jobs for approximately 650 000 people.
- The EU has about 18,000 holdings with nursery stock production (worth EUR 4.7 billion), that provide young plants, perennials or trees for open field cultivation.