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Neova Group's position paper to the public consultation on the bioeconomy strategy

Neova Group (Neova) welcomes the EU Commission's update of the EU Bioeconomy Strategy and efforts to increase circularity in bioeconomy while securing the competitive and sustainable supply of biomass for different industries.

Neova is Europe's leading peat producer, refining peat into high-value products such as biostimulants, activated carbon, and animal feed. The company also supplies peat and biofuels for energy generation and is actively involved in the development of renewable energy solutions, including solar and wind power. Its largest subsidiary, Kekkilä-BVB, is Europe's leading producer of growing media.

Specifically for the growing media industry we recommend the Commission to:

1) Secure the availability of critical bio-based raw materials for European horticulture and landscaping.
2) Develop European standards for circular growing media raw material safety and quality.
3) Advance best practises in the production of horticultural peat, with increased support for added benefits for biodiversity.

Sustainable use of bio-based materials in growing media and horticulture

The growing media industry utilises various biomass feedstocks to provide safe and purpose-fit media for plant cultivation. High quality substrates are a critical part of plant and food production across Europe, particularly in controlled environment agriculture, where they enable resilient and resource efficient plant production.

Growing media is essential for a wide range of sectors:

- Food production in greenhouses and vertical farms,
- Tree seedling cultivation for forestry and afforestation,
- Urban greening and landscaping initiatives,
- Hobby and home gardening.

Key bio-based raw materials in growing media

Growing media, or substrates where plants are cultivated, is made up of mixes of different raw materials. Key bio-based raw materials include horticultural peat, wood fibre, bark, coir, compost and agricultural residues.

Peat can be classified into black peat and white peat based on its decomposition stage and composition. Black peat is highly decomposed, rich in humic substances, and primarily found in deeper layers of peat bogs. White peat is a less decomposed, fibrous material found in the upper layers of peat bogs and the primary type used in horticulture and growing media, valued for its high water retention, aeration properties, and low bulk density. Coir is a by-

product of coir fibre, including coir husk, pith, and fibre. Wood fibre and bark are limited to coniferous softwood. Compost is made up of various qualities of green wastes but virtually no household waste.

Notable challenge for the growing media industry regarding the materials mentioned above is their future availability. All of the materials are facing increasing demand for bio-based economy applications such as replacing building materials and plastics. Price competition between different industries is limiting the availability of materials for growing media. As the most important domestic resource for growing media, peat will keep its crucial role in fulfilling European demand while coir imported mainly from India and Sri Lanka is expected to grow in significance. According to recent estimates from Wageningen University & Research, by 2050, global growing media volume will be made up of approximately 21% peat, 22% coir, 10% wood fibre, 12% bark, and 13% compost.[1] Peat is expected to play a more prominent role specifically in European markets.

Peat's unique role in enabling the use of other materials and circularity

Horticultural peat plays a vital role in enabling the use of other growing media materials, by supporting the integration of materials such as wood fibre and compost, by acting as a stabilising base in growing media blends, particularly in professional growing environments. For many products the amount of peat in the growing media mix can't be lowered below a certain percentage without causing unwanted negative effects for the plant's health and growth.

Peat's uniform composition ensures that the growing medium retains water and nutrients evenly, which is particularly important when integrating materials with variable properties, such as compost. This stability is essential in professional growing environments, where precision and predictability are critical for achieving consistent yields.

Compost, while nutrient-rich, can be inconsistent in quality and may introduce pathogens or weed seeds. Peat's sterility and ability to buffer pH help mitigate these challenges, creating a safer and more predictable environment for plant growth.

Responsible peat production

Sustainable peat will remain a critical resource for agricultural and horticultural applications in the short to medium term and needs to be produced responsibly. The global volume of peat extracted for horticulture use is approximately 59 Mm^3, with about 48 Mm^3 extracted from Europe.

Peat extraction in Europe occurs exclusively in previously ditched peatlands with low biodiversity value that are already emitting CO_2. After production, the areas can be rewetted or afforested and become carbon sinks after 10–20 years after restoration. Rewetting halts CO_2 emissions from degraded peatlands and fosters biodiversity by creating habitats for a variety of plant and animal species, reversing the environmental damage caused by drainage. When conducted responsibly, peat extraction leads to net biodiversity benefits for the production areas.

[1] The report is under peer review and will be published in a scientific journal in the coming months.

Peat extraction in EU Member States is a heavily regulated activity:

- Planning and Oversight; Every extraction project undergoes environmental assessment and involves consultation with local communities and stakeholders. This ensures that environmental risks are carefully considered and potential environmental impacts are reviewed and managed during the production period.
- Transparency and Traceability; through systems like Responsibly Produced Peat (RPP) certification, peat producers have possibility to demonstrate their commitment to transparent and measurable standards. This not only assures buyers and the public of responsible practices but also encourages continuous improvement across the industry.

In addition to committing to RPP, Neova is also investing in:

- Research to enhance sustainable extraction and usage practices,
- Research of new growing media raw materials,
- The next land use of peat production areas to support biodiversity,
- Potential opportunities for carbon farming practices in peatland areas.

Increasing circularity and sustainability in the growing media industry

The growing media sector is continuously diversifying the types of biomass it uses to reduce the environmental impact of materials while maintaining or enhancing the performance of substrates.

Neova's subsidiary, Kekkilä-BVB, is committed to increasing the share of circular raw materials in its products. The company aims to double the volume of these materials by 2027. Through its Circular Raw Materials Programme, Kekkilä-BVB is actively exploring new materials that offer both a reduced environmental impact and high performance in terms of plant growth and product longevity.

Some examples of Kekkilä-BVB's ongoing innovations projects include:

- Public-private partnership projects, co-funded by EU:
  - **Digested roadside grasses**: Production of local and carbon neutral biomethane and a sustainable peat substitute for potting soil from verge grass and nature grass clippings. One town (population 50.000) has yearly 1.000 Tonnes roadside grass clippings, which can be used to create: 280.000 Nm^3 green gas (150 households), 400 m3 peat reducer for potting soil.
  - **Locally sourced Silphie**: Silphie is a perennial crop that grows on marginal lands, stores carbon in soil, prevents nitrate leaching, and offers a habitat for insects. Harvested Silphie is a suitable feedstock for anaerobic digestion. This produces renewable gas and natural fibres with negative a carbon footprint. Using Silphie leads to lower fertiliser use as nutrients are recycled in a closed circular loop.
- Reed Canary Grass; Producing high quality reed canary grass on former peat production areas in Europe and mix into our substrates.
- Reused strawberry substrate; Used strawberry substrate from professional growers is taken back and processed. This is then mixed into new substrates, suitable for the consumer market to reduce the need for new peat.

Challenges to increasing circularity

Continuous research is needed to ensure that new raw materials do not harm food safety and plant's health. For example, residues of herbicides, including clopyralid, are increasingly being detected in growing media, organic fertilisers, and poultry or cattle manure. These residues can be harmful to sensitive plants such as tomatoes.

The growing levels of detected herbicides from soil and fertilisers have three main reasons:

- The increasing use of circular and organic raw materials, such as green compost and manure,
- The emerging use of herbicides, and a trend towards more 'environmentally friendly' herbicides, not leaching into water but more persistent in soil and plants,
- More advanced testing methods.

Conclusion

Introduction of increased circularity and new bio-based raw materials in the growing media industry can bring sustainability benefits and offer uses for different biomass feedstocks.
To support sustainable and resilient European horticulture, it is essential that the EU ensures the availability of key biomass resources for growing media while enabling innovation in circular and bio-based materials. Peat will continue to play a crucial role as a stable, high-performing component that supports the safe and effective use of new materials. The adoption of alternative raw materials must be aligned with maintaining plant health, food safety, and reliable yields for European growers.