NEOVA

INNOVATION
FROM
FINLAND

THE POWER OF FINNISH NATURE



PEAT-BASED BIOSTIMULANTS

PEAT AS A SOURCE OF BIOSTIMULANTS

What is peat?

Peat is a naturally occurring organic material formed through the slow decomposition of plant remains in wetlands. This process creates a complex material containing diverse bioactive compounds, including organic acids, humic and fulvic acids, lignins, sugars and phenolic compounds.

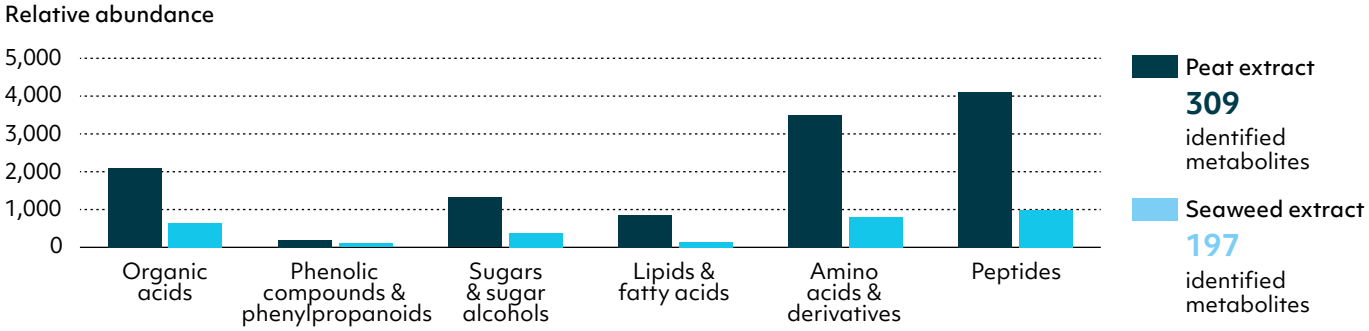
Finnish peat is a pure, high-quality natural raw material shaped by cold-climate conditions and slow decomposition. Neova operates under one of the strictest environmental regulatory frameworks and follows RPP certification. Carefully selected peat fractions form the active foundation of our liquid solutions.

Selected bioactive metabolite classes: peat extract vs seaweed extract

Metabolomics comparison of selected bioactive classes measured by MetaSysX (Germany, 2025). The chart shows relative abundance values for selected metabolite classes detected in peat extract and seaweed extract. These values reflect metabolomics signal intensity, not total ingredient concentration.

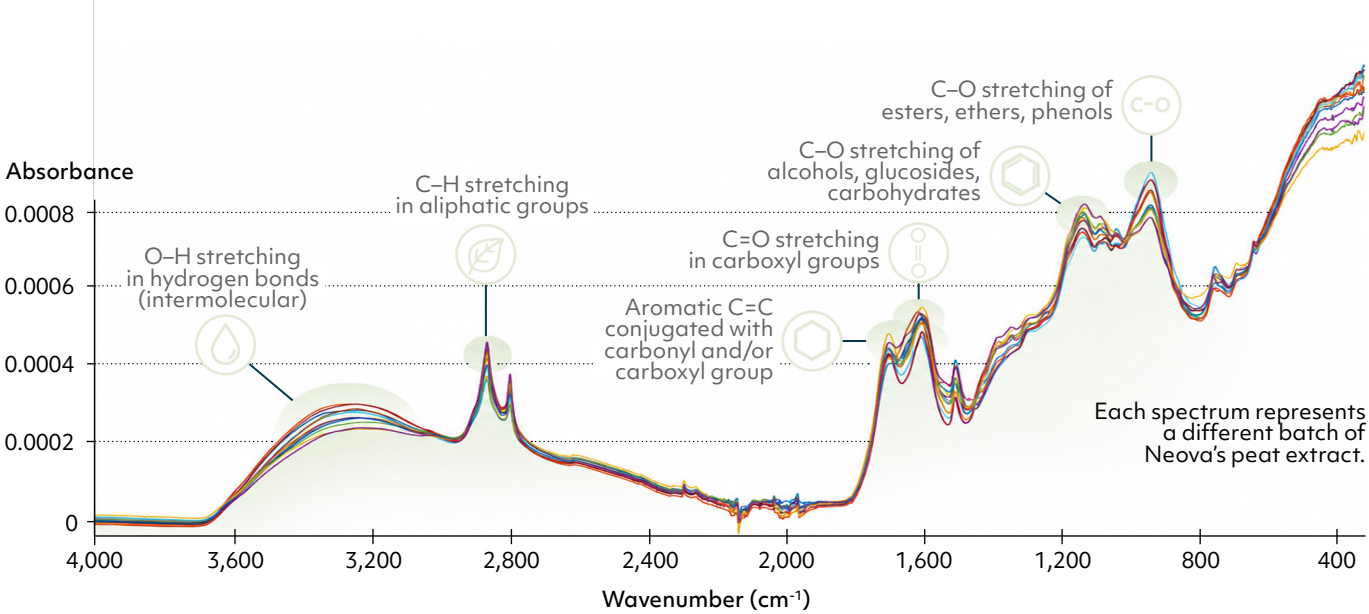
Results:

- Peat extract showed higher relative abundance values than seaweed extract across all selected classes.
- The largest differences were observed in peptides, amino acids & derivatives, and organic acids.



The molecular fingerprint of Finnish peat extract

FTIR spectra highlight the chemical diversity of the peat extract, including humic substances, carbohydrate-derived structures and phenolic compounds. The highly similar spectral profiles across different batches demonstrate a consistent chemical fingerprint. Together, these features are consistent with a complex mixture of highly humified organic matter derived from plant material.

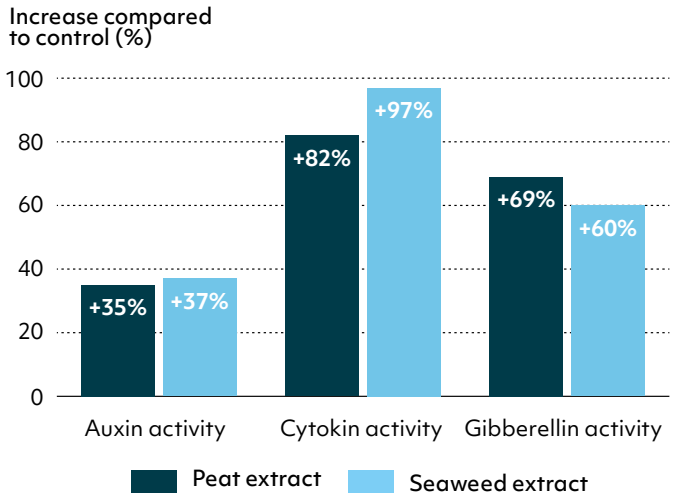


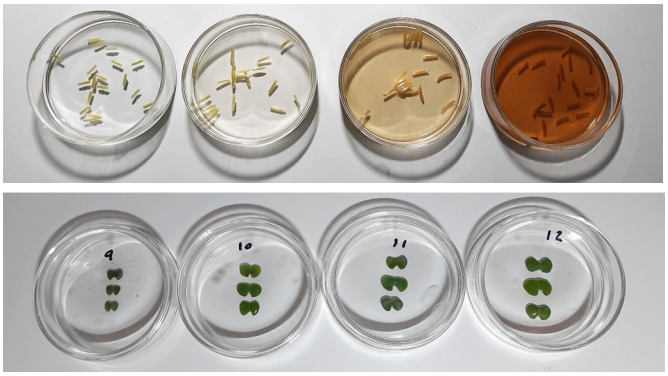
FROM BIOACTIVITY TO FIELD PERFORMANCE

Hormone-like activity

Peat extract showed auxin-, cytokinin- and gibberellin-like activity in bioassays, with responses comparable to a seaweed extract reference. These results indicate bioactivity associated with key plant growth and development processes.

Trial performed by Intra Radice (Spain, 2023).





Auxin and cytokinin bioassays at increasing treatment rates (Intra Radice, Spain, 2023).

Biological responses in plants

PHOSPHORUS UPTAKE

Peat extract treatment increased phosphorus-mobilising enzyme activity and improved plant P status in maize seedlings.

- Increased phosphatase and phytase activity
- Higher P concentration in roots and leaves
- Upregulation of P-related genes

Trial performed by the University of Padova (Italy, 2021).

ABIOTIC STRESS RESPONSE

Barley seedlings exposed to salt stress (150 mM NaCl) showed improved growth and reduced oxidative stress after peat extract treatment.

- Root growth +45%
- Shoot growth +31%
- H_2O_2 not detected
- Increased antioxidant enzyme activity (catalase and peroxidase)

Trial performed by Tecnova Laboratory (Spain, 2024).

Validated from greenhouse to field – demonstrated in over 60 scientific trials

+10%

average yield increase

Across European trials conducted in 2021–2025.

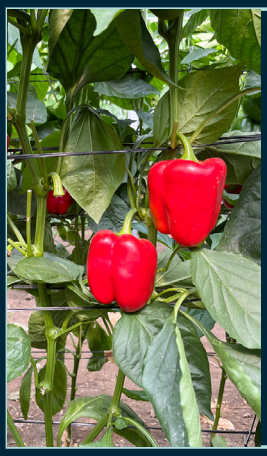


ROOT BIOMASS RESPONSE

Peat extract supported stronger root development in selected field trials, with statistically significant increases in root biomass observed in crops such as strawberry, tomato and turf.

FROM TECHNOLOGY TO CROP SOLUTIONS

Three commercial applications of Neova's peat-based technology

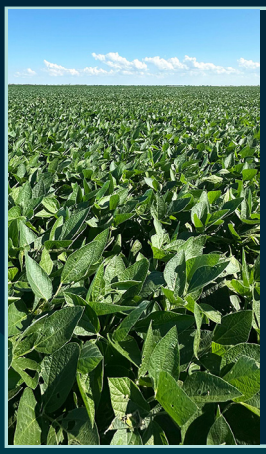


NEOCORE™

Root development and nutrient uptake enhancer

NeoCore™ is a peat-based solution containing naturally occurring bioactive compounds.

- Stimulates plant metabolism
- Promotes root development
- Supports nutrient uptake
- Enhances rhizosphere activity

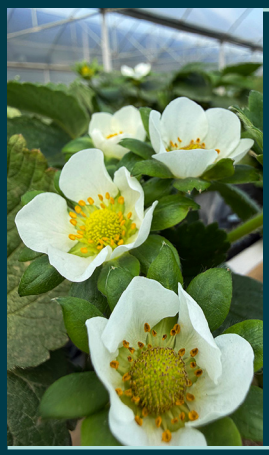


NEOCORE™ DUO

Growth and recovery enchancer

NeoCore™ Duo combines peat-derived bioactive compounds and plant-based amino acids.

- Stimulates plant growth
- Supports plant metabolism
- Promotes recovery from stress
- Enhances productivity



NEOFLORA™

Flowering and fruit set enhancer

NeoFlora™ combines peat-derived bioactive compounds with seaweed extract and added boron.

- Promotes flowering
- Supports fruit set
- Stimulates plant metabolism

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