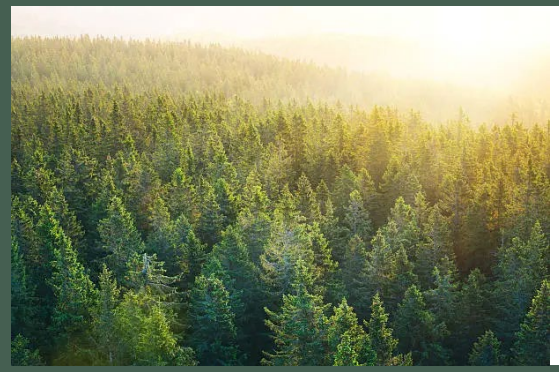


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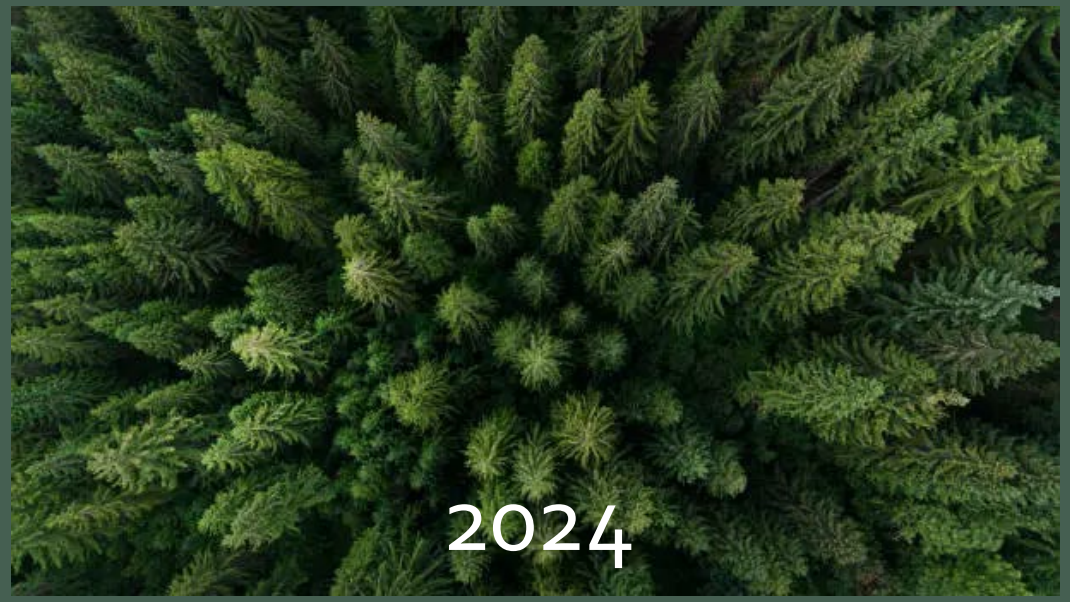
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CIRCULAR ECONOMY CEforestry

biolat®

Innovation in forestry biomass residue processing: towards circular forestry with added value products

Biolat: Bridging Tradition and Technology in Natural Product Development



ABOUT BIOLAT



- **Biolat** is a Latvian biotechnology company founded in 1993, specializing in the development and production of natural bioactive substances extracted from conifer trees.
- The company emerged from the Latvian State Forest Research Institute "**Silava**," leveraging over 70 years of scientific research and expertise in forestry and natural compounds.
- **Mission:** to harness the therapeutic potential of natural resources, particularly conifer needles, to create innovative health, wellness, and cosmetic products.
- **Vision:** to be a leader in providing natural, science-backed solutions that promote health and well-being while ensuring sustainable use of forest resources.

RAW MATERIALS AND SUSTAINABLE SOURCING

Primary Raw Materials

- Pine Needles (*Pinus sylvestris*):
  - Abundant in chlorophyll, vitamins C and K, carotenoids, and essential oils.
  - Source of polyprenols, compounds vital for cellular functions and potential therapeutic applications.
- Fir Needles (*Abies* species):
  - Rich in chlorophyll and bioactive substances like terpenes and flavonoids.
  - Known for antimicrobial, anti-inflammatory, and antioxidant properties.
- Green Extraction Techniques:
  - Use of environmentally friendly solvents and methods to extract bioactive compounds.
  - Processes designed to maximize yield while minimizing environmental impact.



BIOACTIVE COMPOUNDS

Chlorophyll and Sodium Chlorophyllin:

- Chlorophyll is the green pigment responsible for photosynthesis.
- Sodium chlorophyllin, a water-soluble derivative, is used for its antioxidant and detoxifying effects.

Polyprenols:

- Long-chain isoprenoid alcohols involved in the synthesis of dolichol, essential for protein glycosylation.
- Potential benefits include supporting liver health, enhancing immune function, and promoting cellular repair.



biolat®

Silbiol:

- A complex of bioactive compounds with antimicrobial and regenerative properties.
- Used in products aimed at skin health, wound healing, and mucous membrane protection.

BIOLAT'S KEY PRODUCTS

SODIUM CHLOROPHYLLIN (HO-FI ORIGINAL)



- Ho-Fi Original is Biolat's flagship product, derived from the chlorophyll found in conifer needles.
- Chlorophyll is converted into water-soluble sodium chlorophyllin for enhanced absorption.
- Properties and Health Benefits
  - Antioxidant powerhouse: neutralizes free radicals, reducing oxidative stress on cells.
  - Supports overall cellular health and longevity.
  - Detoxification support: binds to potential toxins and aids in their elimination from the body.
  - Promotes healthy liver function and assists in cleansing processes.
  - Immune System Enhancement: Stimulates immune responses.
  - May improve the body's natural defenses against pathogens.

BIOLAT'S KEY PRODUCTS SILBIOL (SILVASEPT LINE)

- Silbiol is a unique complex of bioactive compounds forming the basis of the Silvasept product line.
- Developed to harness the antimicrobial and regenerative properties of conifer extracts.
- Properties and Health Benefits
- Antimicrobial Activity:
  - Effective against a wide range of bacteria and fungi.
  - Helps prevent infections in wounds and skin lesions.
- Anti-Inflammatory Effects:
  - Reduces inflammation in affected tissues.
  - Soothes irritated skin and mucous membranes.
- Regenerative Properties:
  - Stimulates tissue repair and accelerates the natural healing process.
  - Promotes healthy skin regeneration.





BIOLAT'S KEY PRODUCTS
POLYPRENOLS (CAPSULES & OIL)

- Polyprenols are a key focus for Biolat due to their crucial role in cellular functions.
- Offered in capsule and liquid (oil) form for convenient supplementation.
- Involved in mitochondrial energy production.
- Supports metabolic activities at the cellular level.
- Health Benefits
- Liver Health:
  - May assist in liver regeneration and support detoxification pathways.
  - Potentially beneficial for individuals with compromised liver function.
- Immune Support:
  - Enhances the body's immune responses.
  - May improve resilience against infections and illnesses.
- Vitality and Wellness:
  - Helps reduce feelings of fatigue and exhaustion.
  - May improve mental clarity and overall sense of well-being.





BIOLAT'S SCIENTIFIC RESEARCH



Our previous research projects, such as the development of essential oils, plant-based antioxidants, and other biotechnological solutions from conifer residues, align perfectly with the CEFORESTRY's focus on forest-derived materials.

Biolat takes part in the development of innovative methods to utilize forest biomass, particularly from coniferous trees like pine and spruce.

Our focus is on extracting bioactive compounds from waste materials such as needles, bark, and cones, transforming them into high-value products for pharmaceuticals, cosmetics, and nutrition.

BIOLAT IN CEFORESTRY PROJECT

Biolat's involvement in CEFORESTRY is a natural extension of our ongoing research into bioactive compound extraction from plants.

This project enhances Biolat's innovative capacity in green chemistry and bioprocessing, expanding our work into more sustainable and commercially viable products, while reinforcing our commitment to leveraging natural resources for scientific advancement and economic growth.

Biolat supports the CEforestry project's goals of reducing waste and creating eco-friendly products, furthering the circular economy within the forestry sector.



BIOLAT'S CONTRIBUTION TO CEFORESTRY PROJECT





- Biolat's Contribution to CEforestry Business Model:
  - Market research on forestry biomass and its applications.
  - Analysis of circular economy business models in line with the Polish partner's (MEERI) project contributions .
  - Focused endeavors on maximizing the economic potential of green forestry residues.

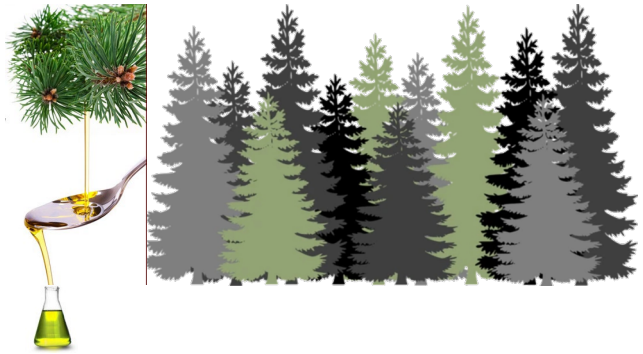
- Advancing Novel Research in Green Forestry:
  - Contributed know-how on extracting high-value compounds from forest biomass.
  - Supported development of biotechnologies utilizing forestry residues.
  - Contributed to new applications in pharmaceuticals, cosmetics, and nutraceuticals.
  - Aimed at fostering sustainable economic growth in the Baltic area.

THANK YOU FOR YOUR ATTENTION!

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