



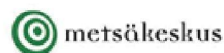
EUROPEAN
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NovelBaltic



A?
Aalto University



University of Latvia

Laboratory of Natural Product Research

More info:

<https://tki.centria.fi/hanke/novelbaltic/1956>

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LABORATORY OF NATURAL PRODUCT RESEARCH

The aim of the Laboratory of Natural Product Research is to investigate natural product composition and potential to be used as valuable source of bioactive substances as well as in other economically beneficial fields. Our team consists of scientists (chemists, biologists etc.) who have proven themselves in the field. Each year many students protect their bachelor and master thesis that have been developed in our laboratory, as well as several PhD thesis are in progress.

In laboratory we not only concentrate on research but also on cooperation with industry and development of technologies.



Berries and fruits

Properties, composition of berries and fruits, possibilities to obtain extracts



Plant materials

Composition of medical plants; their extraction possibilities, isolation of individual, biologically active substances



Peat and humic substances

Properties and application possibilities of peat, extraction of peat humic substances and their properties



Development and technologies

Development of technologies for production of plant extracts, active substances

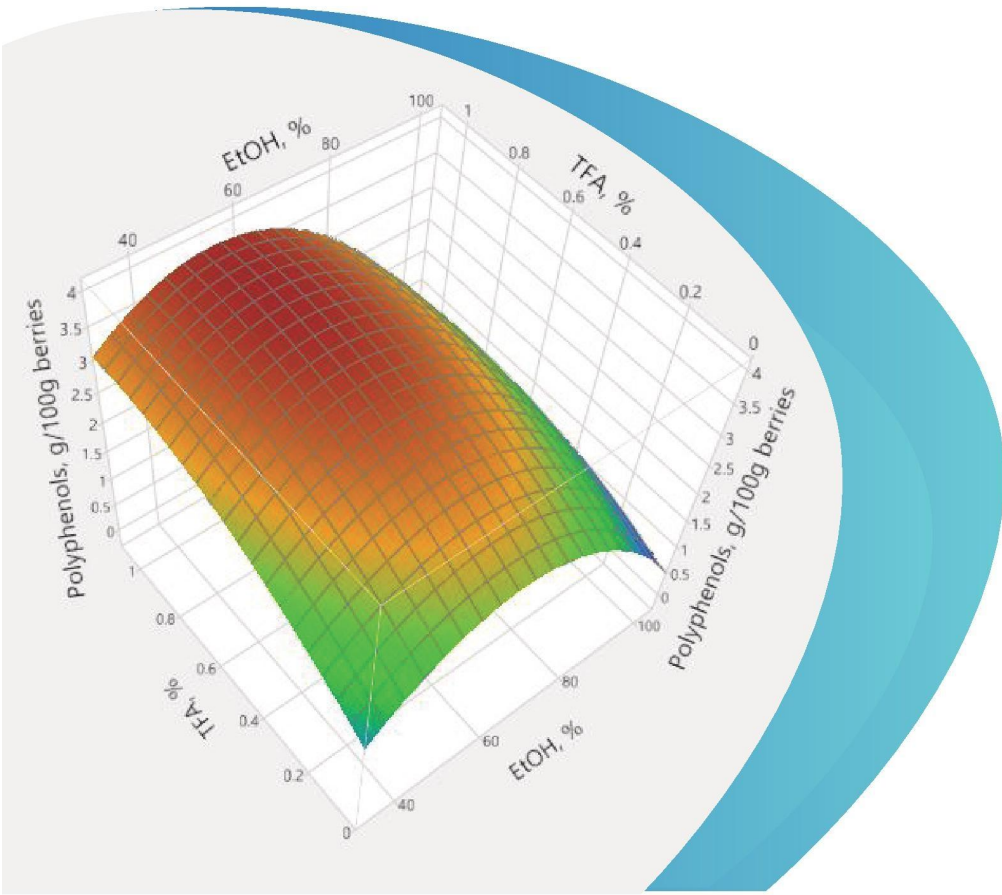


Education

Training and life-long-learning

RESEARCH

The aim of the activities of Laboratory of Natural Product research is to study composition of plants, berries, medical plants, extraction possibilities of biologically active substances as well as characterisation of original materials and obtained extracts. The used approaches concentrates on application of "green chemistry" concepts, wasteless technologies and optimisation of all processes. The ultimate aim – support development of new products and demonstration of their application potential – bioeconomy.



OUR APPROACH

We are working with samples from micro-amounts to lab and preparative scale as well as can consult development of production technology.



*"Green"
extraction and
technologies*



*Scientific
approach for
technological
development*



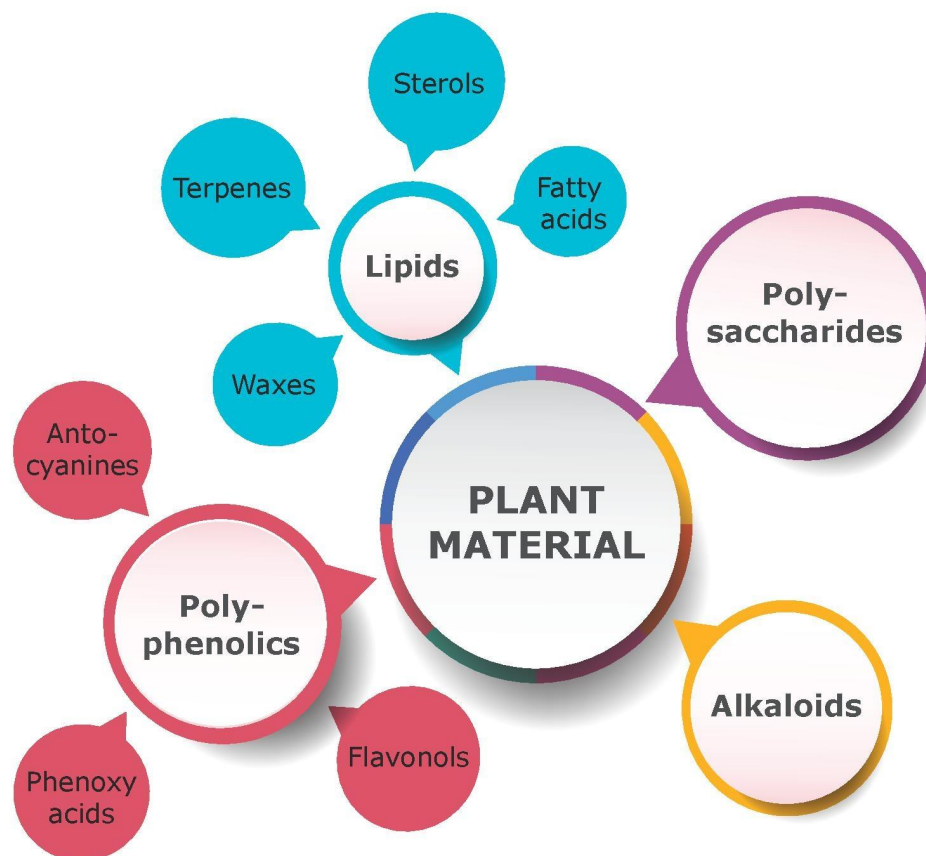
*Analytical
charecterization*



We have worked on many projects that concentrate on extraction optimization of different products, such as forest berries, Himalayan plants, medical plants etc. In our facilities we can provide all stages for research of natural product composition analysis, both of their organic and inorganic composition.

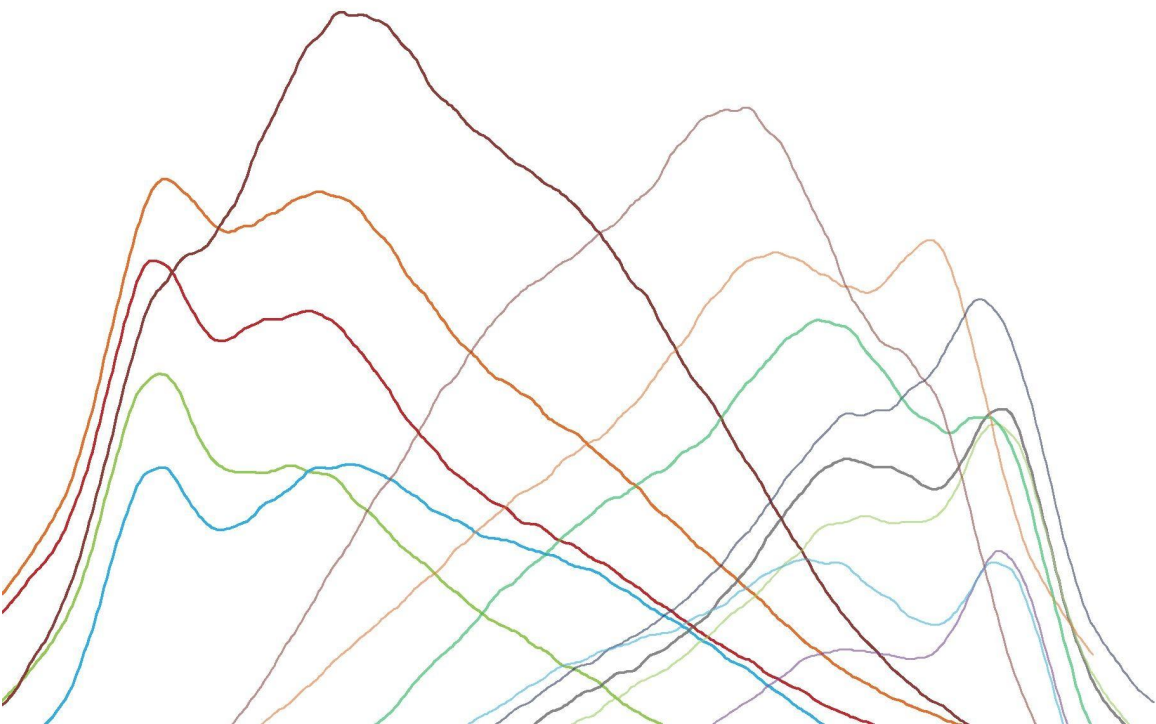
SOME OF THE **PROJECTS** WE HAVE WORKED ON INCLUDE:

- ✓ Genus Vaccinium berry processing using “green” technologies and innovative, pharmacologically characterized biopharmaceutical products
- ✓ Analysis and extraction optimisation of selected Himalayan plants
- ✓ Sea buckthorn berry extraction optimisation and composition analysis
- ✓ Algae extraction optimisation and composition analysis
- ✓ Moss extraction optimisation and chemical composition analysis



METHODS OF ANALYSIS WE CAN PERFORM:

- ✓ GAS CHROMATOGRAPHY
Mass Spectrometry
Mass Spectrometry-
Mass Spectrometry
- ✓ ULTRA PERFORMANCE
LIQUID CHROMATOGRAPHY
Mass Spectrometry
Ultraviolet Detection
- ✓ FOURIER INFRARED
SPECTRONOMY
- ✓ ELEMENTAL ANALYSIS
- ✓ STABLE ISOTOPE RATIO
ANALYSIS
- ✓ RADICAL SCAVENGING
ACTIVITY
- ✓ TOTAL POLYPHENOLICS
ANALYSIS
- ✓ BIOLOGICAL ACTIVITY
ANALYSIS
- ✓ TOTAL CARBOHYDRATE
ANALYSIS
- ✓ 3-D FLUORESCENTS
SPECTROMETRY



Our laboratory is located in University of Latvia, this has given us unique opportunity to work with many laboratories in order to explore the benefits of our prepared products.

Therefore we can provides not only analysis of plant extract chemical composition, but also to evaluate biological activity using chemical methods and test organisms.

In cooperation with Faculty of Medicine, Faculty of Biology and Faculty of Chemistry we can test biological activity on different cell cultures as well as on higher organisms.



Lab scale
Preparative
scale

Lab scale
Preparative
scale

