

Blended intensive programme

# **CONSIDERABLE ISSUES OF NATURAL PRODUCTS - A COMPREHENSIVE PATHWAY FROM BOTANY, THROUGH PHYTOCHEMISTRY AIMING AT PHYTOTHERAPY**

**INFORMATION GUIDE**



**Lithuanian University of Health Sciences  
Department of Pharmacognosy**

# MAIN INFORMATION

Duration	2024.02.26 - 2024.05.31
Physical duration	2024.05.27 - 2024.05.31
Credits	3 ECTS
Target	Pharmacy students
Number of students	Min 15
Part of course, elective or distinct program	A separate program dealing with scientific uncertainties and challenges related to the identification, quality and targeted use of natural products.
Hosting faculty	Pharmacy
Organising department	Department of Pharmacognosy, Faculty of Pharmacy, Lithuanian University of Health Sciences, Kaunas, Lithuania
LT Coordinator 1	Lina Raudonė; lina.raudone@lsmu.lt. +37068241377
LT Coordinator 2 and 3	Sonata Trumbeckaitė; sonata.trumbeckaite@lsmu.lt +37068256440 Nijolė Savickienė nijole.savickiene@lsmu.lt +37068770206

# SHORT DESCRIPTION

Plants are complex matrices containing many specialized metabolites with notable biological effects. There are different subspecies, cultivars and varieties that can have a significant impact on the efficacy and safety of the final product. Phytochemical profiles are highly dependent on genetic origin, collection of raw materials, environmental conditions of the place of growth, phenological cycle. The program aims to examine scientific uncertainties related to proper plant identification, determination of specialized metabolites in plants and bee products, which are important for pharmacognosy, apitherapy, phytotherapy, functionalization.

## PARTNERS



University of Kiel, Germany



Università di Basilicata, Italy



University of Naples Federico II, Italy



Medical University of Warsaw, Poland

# ONLINE LECTURES

Online lectures (2024.02.26 - 2024.05.03), 2 lectures per week, MS Teams platform.

Topic	Lecturer
Ensuring Quality in Medicinal Plants: Addressing Critical Issues	Prof. Valdas Jakštas
The Role of Phytotherapy in Modern Medicine: Bridging Nature and Healthcare	Prof. Nijolė Savickienė
Harmonizing Your Digestive Health with Phytotherapy: Nature's Remedies for a Healthy Gut	Prof. Nijolė Savickienė
Natural Compounds: Structure, Antioxidant Activity and Gene Expression	Prof. Luigi Minella
The Gender Dimension in Academia & Reserach	Prof. Valeria Costantino
Strategies of Testing Anti-inflammatory Activity of Plant Extracts and Natural Products <i>in vitro</i>	Prof. Sebastian Granica
Interactions of Natural Products and Plant Extracts with Human Microbiota	Assoc. prof. Jakub Piwowarski
Biotechnological Methods in Production of Plant Secondary Metabolites Used in the Therapy	Dr. Małgorzata Jeziorek
Natural Products from Seagrasses (Alismatales): Chemical Diversity, Bioactivity, and Ecological Function	Prof. Christian Zidorn
Seasonal, Geographical, and Ecological Variation of Bioactive Natural Products	Prof. Christian Zidorn
Chemophenetics of the Cichorieae (Asteraceae)	Prof. Christian Zidorn
Exploring the World of Apitherapy: Nature's Healing Gift from the Bees	Prof. Sonata Trumbeckaitė
The Potential Pro-Health Benefits of Phytosterols and Triterpenoids Occurring in Edible and Medicinal Plants	Prof. Prof. Anna Szakiel
Exploring the Rich Sources of Antioxidant Compounds	Prof. Lina Raudonė
Natural Products in Semisolid Formulations for Wellness	dr. Agnė Mazurkevičiūtė
Volatile and Nonvolatile Terpenoids – Old Uses, New Approaches	Prof. Oana Cioanca
Unified European Herbal Medicine Tradition: Reality or Fiction?	dr. Gabrielė Balčiūnaitė-Murzienė
The Rare and Protected Plants in Lithuania	dr. Sandra Saunoriūtė
Sorbus Fruits: A Phytochemical Treasure for Health and Nutrition	dr. Kristina Zymonė
Natural Antioxidant Compounds and neuroprotection: from <i>in vitro</i> studies to therapeutic application	Prof. Elena Gozalez Burgos

Day 1



Kaunas Botanical Garden

# A WEEK IN LITHUANIA

Day 2



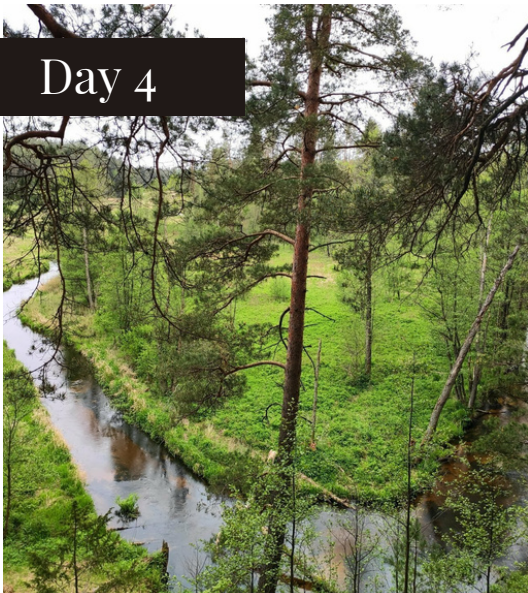
Natural Herbal Farm of Jadvyga  
Balvociute

Day 3



Baltic Coast and Curonian Spit

Day 4



Swamp "Ass of the Bear"

Day 5



Museum of Bees and Nature  
Synthesis

Day 1

# Get-Together and Kaunas Botanical Garden Visit

May 27, 2024

Since 1924 the introduction of medicinal, spice (aromatic) plants, phenological and phytochemical studies are carried out in the scientific collections of medicinal, spice and hops; development of cultivation and medicinal raw material preparation technologies; increasing and rational use of their resources for the development of herbalism in Lithuania. During the introduction, 37 promising species of medicinal, spice (aromatic) plants were selected and recommended for the pharmaceutical and food industry and for improving human health. <https://botanika.vdu.lt/>



## Day 2

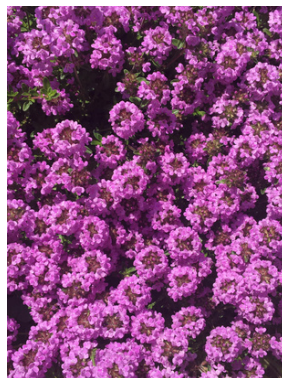
# Natural Herbal Farm Visit

May 28, 2024

Jadvyga Balvočiūtė's herbal farm. Her herbal tea recipes and production have brought together great things like:

- professional knowledge of local herbs;
- knowledge of traditional herbalism;
- organic farming;
- qualified collection of organic wild vegetation;
- great attention to quality, because this small farm in Žemaitija supplies the final product to the market;
- production from plants grown exclusively in Lithuania, presenting the country's natural wealth;

Jadvyga's herbal teas are a wonderful opportunity to practically get to know the rich world of Lithuanian plants, to feel their effect on the body and soul, to admire the scents of nature and the range of colors of teas. By choosing an organic product, you are not only taking care of your health. You encourage producers to protect nature, contribute to the preservation of biodiversity and beautiful landscapes, harmonious human existence with nature and respect for the equal rights of future generations to a clean environment.

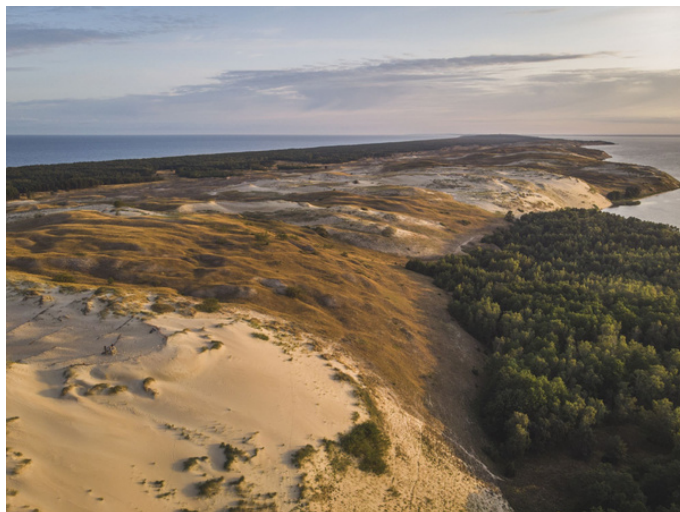


Day 3

# Baltic Coast and Curonian Spit Exploration

May 29, 2024

The Curonian Spit National Park is a state-protected territory in the western part of Lithuania, in the Curonian Spit. The eastern shores of the Curonian Spit National Park are washed by the Curonian Lagoon, and the western by the Baltic Sea. 576 species of plants grow on the territory of the Curonian Spit National Park, of which 34 species (*Eryngium maritimum*, *Erica tetralix*, *Centaureum littorale*, *Nymphoides peltata*) are listed in the Lithuanian Red Book. Other plants species – *Jasione montana*, *Viola littoralis*, *Linaria loeselii*. While traveling on foot along the educational trail, you can see the grey dunes also known as the Dead, dunes, overgrown places of former settlements, forest vegetation of spontaneous origin and the soil of hundred-year-old forests buried under the sand.



Day 4

# Visit to the Swamp "Ass of the Bear"

May 30, 2024

Dzūkija National Park, state protected territory in the territory of Varėna district, Alytus district, Lazdijai district and Druskininkai municipalities. 90.7% is occupied by forests (Dainava forest); one of the mushroomiest in Lithuania. Dry lichens and heather pine forests prevail. 754 species of higher plants, 210 species of mosses, 230 species of algae grow in the territory of Dzūkija National Park. *Tragopogon* (*Tragopogon gorscianus*) is a plant species of the Asteraceae family. It is widespread in Lithuania and Belarus. This species is endemic in the sand dunes of Połesie, it is found in places in Southern Lithuania (Dzūkija)) and *Silene lithuanica*, *Koeleria delavignei*, *Trifolium lupinaster*, *Festuca psammophila*, *Prunella grandiflora*.

## **Bear's ass**

In spring, *Andromeda L.* blooms here, *Eriophorum L.* fluff turns white. *Rhododendron tomentosum*, *Vaccinium uliginosum* grow in drier places, and the stalks of *Oxycoccus palustris* curl up on the marshes. On the way to Aklāžeris, fenced fields called Prūdais open up on the left side. The swamp near the village of Marcinkonys was named Bear's ass by the locals because mothers used to scare their children with bears in the village so that they would not wander far into the swamp: "Look, the bear's butt is behind the tree!"



Day 5

# Museum of Bees and Nature Synthesis

May 31, 2024

The only Beekeeping Museum in Lithuania is located in the north-western part of Aukštaitija National Park, in the oldest village of the park, Stripeikiai. It invites you to get acquainted with the secrets of life of bees and the power of their products. You will have a fun to visit interactive exhibits and learn more about bees, beekeeping, bee plants and apitherapy.



# What is important to take on a hike

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**Enough water.** Water is the most important thing that you must have with you on every hike. It is especially important on hot days when we lose a lot of fluids when we sweat. If your body does not get enough fluids, you may overheat or experience dehydration. For this reason, be sure to have cool water and sip it throughout the trip.

**Appropriate food.** It is likely that you will get hungry quickly during the hike, so it is recommended to take non-perishable snacks.

**First aid kit.** During long walks, you can unexpectedly encounter various dangers. If you cut yourself or rub blisters, have plasters, disinfectant ointment, bandages, antiallergic medication with you. Don't forget to put your daily medications.

**Appropriate clothing.** The right clothing will ensure that you feel comfortable during your trip. Dressing in layers is advised. In this way, you can always take off part of your clothes if you change. When hiking on hot days, be sure to have a hat with you to protect against overheating. Choose comfortable clothes for sports. Waterproof windproof jackets and comfortable trousers will make you feel comfortable during the hike. Pay attention to the material of the clothes. Avoid synthetic materials that trap moisture and prevent the body from breathing.

**Appropriate footwear.** Choosing the right footwear is no less important. Choose special hiking boots for long walks. A thick non-slip sole will ensure that you can move easily. It is advisable to buy one size larger shoes, as the foot tends to swell with a lot of walking, so you will feel more comfortable with larger shoes. Be sure to try your new shoes on at home before you leave to avoid chafing. Waterproof footwear is important when visiting swampy areas.

# Recomendations for accommodation

1. Algiro Hotel (Savanorių pr. 120, LT-44148 Kaunas)
2. Moja Accommodation ( Gedimino g. 28, LT-44319 Kaunas)
3. IBIS Styles Kaunas Centre (Vytauto pr. 25, LT-44352 Kaunas)
4. Diamond svečių namai (P. Lukšio g. 26, 49356 Kaunas)
5. Kaunas City (Laisves al. 90, LT-44251 Kaunas)
6. Queen Barbora Central Lofts (31 Žemaičių gatvė, 44175 Kaunas)
7. Green Hill Apartments (30 Merkinės gatvė, 44193 Kaunas)
8. Clinic Studio Apartments by Hostlovers (33 Eivenių gatvė, 50167 Kaunas)
9. SKY Apartments (17 K. Petrausko gatvė, 44162 Kaunas)
10. Radio city loft (31 Žemaičių gatvė, 44175 Kaunas)



More information



Registration

