



# WORKSHOP GROW

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**Slovak University of Agriculture in Nitra**  
Slovakia

## Project GROW: SURVEY RESULTS FROM SLOVAKIA

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EIT Food RIS “Growing consciousness” project is aimed at revitalizing agri-food chains in rural areas through sustainable innovation. The project aims to foster skills, techniques and know-how aimed at revitalizing the cultivation of ancient and almost vanished varieties of cereals, medicinal plants, and aromatic herbs in rural areas. Moreover, the project aims to share knowledge about innovative, sustainable farming techniques as well as innovative tools and machinery for agricultural digitalization and increases in production yields. As part of the project, a survey was conducted that mapped the state of agriculture in Slovakia within grown traditional crops and medicinal herbs. The survey involved 30 respondents who answered questions through an online form about what is traditionally grown in Slovakia, as well as questions associated with the value of ancient crops, the recovery of traditional crops and medicinal herbs, specific machinery used in their cultivation/harvesting, the biological or integrated pest management approaches and the specific needs of the region in terms of agriculture.

**Key words: survey, ancient crops, medicinal herbs, recovery, biodiversity**

## INNOVATIVE APPROACHES TO CLIMATE CHANGE

*Terese Venus, Roberto Villalba, Amer Aitsidhoum*

Technical University of Munich, Chair Group of Agricultural Production and Resource Economics

Information about challenges of climate change in the context of the “Growing consciousness” project, as well as three case studies linking agriculture and climate change in the context of both of these issues, were presented within the introductory lecture. Under the new realities of climate change, it is critical to sustainably increase agricultural productivity in many developing countries. The first innovative case study was focused on ancient grains and innovative marketing approaches, including some examples of innovations with ancient grains. The second innovative case was focused on insights from the innovative business model for tractor hire in India – “uber for tractors” in developing countries, which aims to increase small farmers’ access to machinery by using digital tools. Finally, the third case study was focused on agri-environmental measures across Europe and the role of payments in increasing production efficiency, including Agri-environment schemes as one of the tools that can be used to reduce the impact of agriculture on our environment.

**Key words: climate change, ancient grains, innovative business models, agri-environment schemes**

## AGRICULTURE AND CLIMATE CHANGE

*Sergio Menéndez*

Project Manager at Grupo AN, soil expert

Climate change is a global problem that affects the whole world and it is influenced by anthropogenic causes. The agricultural sector plays an important role in the fight against climate change and contributes to the emissions of greenhouse gases such as carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O). The presentation aims at sustainable agriculture and the possibilities of limiting its impact on climate change. Nitrogen fertilization can be a great source of nitrous oxide due to different biological processes in the soil, which depend on the edaphoclimatic conditions. To mitigate greenhouse gas emissions, a number of management strategies are proposed to reduce the impact of agriculture on climate change. The presentation was focused on sustainable agriculture and the possibilities of limiting its impact on climate change.

**Key words: climate change, nitrogen cycle, nitrification inhibitors**

## GROWING AND PROCESSING OF MEDICINAL PLANTS

Iveta Čičová

National Agricultural and Food Centre, Genebank curator for Medicinal and Aromatic Plants

In Slovakia, the growing areas of medicinal plants range from 437 hectares to 6611 hectares, depending on the years and conditions for growers. The Genetic Bank of the Slovak Republic stores 191 genetic resources of medicinal herbs. The medicinal plants presented during the workshop were basil (*Ocimum basilicum*), marjoram (*Majorana hortensis*), marigold (*Calendula officinalis*), thyme (*Thymus vulgaris*), lavender (*Lavandula angustifolia*), peppermint (*Mentha piperita*), lemon balm (*Melissa officinalis*), oregano (*Origanum vulgare*), sage (*Salvia officinalis*), hyssop (*Hyssopus officinalis*), as well as ancient grain varieties such as buckwheat (*Fagopyrum esculentum*), amaranth (*Amaranthus*), quinoa (*Chenopodium quinoa*) and other aromatic herbs such as borage (*Borago officinalis*) and peril (*Perilla frutescens*). Moreover, the growth conditions, reproduction, use, and nutritional or therapeutic value were presented.

**Key words: medicinal herbs, ancient grains**

## ROUND TABLE DISCUSSION

*Ladislav Raček, Anna Glejdurová, Peter Čáky, Ľubomír Pastucha, Dominika Bírová*

The invited professionals from Slovakia who participated in the round table introduced themselves and their work on medicinal plants, ancient crops, and their reintroduction. The expert who led the workshop was Ladislav Raček, a representative of the organization Slow Food Tatry, which is dedicated to the support of traditional, native and endangered crops, plants, animal species, as well as the protection of biodiversity. The first presentation presented by Ladislav Raček was focused on ancient and almost vanished varieties: plum “Štôlska slivka”, white poppy (*Papaver somniferum*) – Albín variety and tuberous pea (*Lathyrus Tuberosus*) called “Spišské džuky”. The second presentation in the field of growing organic potatoes and spelled wheat, as well as the breeding of purebred sheep “Valaška” was presented by Anna Glejdurová, President of the Agricultural Cooperative Liptovská Teplička. The presentation of managing director Petr Čáky, TatraKap s.r.o., Švábovce, was focused on cultivation and processing of the original variety of cabbage “Dobrovodská kapusta biela” – Pourovo variety. Ľubomír Pastucha from Legumen, v.o.s., Piešťany, presented the research, breeding and cultivation of crops with a focus on ancient, traditional and forgotten or almost vanished legumes such as chickpea (*Cicer arietinum*) – Slovák variety, grass pea (*Lathyrus sativus*) and hemp (*Cannabis sativa*), as well as their reintroduction into cultivation and diet. Finally, Dominika Bírová, a representative of Michalove konzervárne s.r.o., presented organic farming and growing medicinal herbs, fruits and vegetables. Representatives of local organizations presented information and hands-on experience from the field and discussed sustainable agriculture and revitalizing agri-food chains.

**Key words: biodiversity, sustainability, agriculture, traditional crops, medicinal herbs, ecology**