

**„Plant productivity and food safety:  
Soil science, Microbiology, Agricultural Genetics and Food quality”  
15-17.09.2021 r.**

Workshops (17th of September 2021)

Trainer: MSc Sylwia Pindral

**Workshop 1:** Introduction to GIS techniques with QGIS (9:00 – 12:00)

This workshop will allow to fully understand the basics of Geographic Information Systems (GIS) and Remote Sensing, learn how to use the open-source program QGIS and how to get and download freely available sources of geodata. All participants will gain experience in vector and raster data preparation, layout development, and finally, maps creation.

**Workshop 2:** Basics of Satellite Image Analysis in QGIS (13:00 – 16:00)

This workshop is designed to guide through and learn participants with the practical knowledge of land use and land cover mapping, which is one of the core skills for any Geographic Information Systems and Remote Sensing analysis. Land use and land cover maps can be an input data for other environmental spatial analyses. After the workshop, you can gain a background of land use mapping and detection of land use/land cover changes. The course is ideal for professionals such as geographers, soil scientists, geologists, and GIS technicians, and all other experts who need to use land use maps in their field and would like to learn the fundamentals of Remote Sensing. The course program includes the use a classification algorithms and map algebra tools for advanced spatial analysis.

**Workshop 3:** Mapping the Species Distribution and Diversity (17:00 – 20:00)

This workshop is dedicated to biologists (ecologists) who are interested in the practical use of QGIS in biodiversity and species distribution. The aim of the workshop is to use advanced techniques and QGIS plugins to analyze and visualize the vector data for environmental monitoring purposes. It is aimed at those who want to learn how to integrate GIS tools into their species distribution and biodiversity modelling projects. The workshop assumes that you have a basic knowledge of GIS. The course program includes: an introduction to the concept and practical application of species distribution and biodiversity modelling using QGIS software, including selection of environmental variables, processing data, creating spatial visualisations, and validating the biodiversity within selected area.

