



We hereby certify that

**Yurii Mandro**

attended in a training course:

**“FIELD COURSE ON CHERNOBYL FALLOUT IN THE ENVIRONMENT”**

5-8<sup>th</sup> September 2016

at

**Ukrainian Institute of Agricultural Radiology (UIAR),  
National University of Life and Environmental Sciences of Ukraine  
(NUBiP of Ukraine)**

in cooperation with

**Centre for Environmental Radioactivity (CERAD),  
Norwegian University of Life Sciences (NMBU)**

funded by

**EU project: Coordination and implementation of a pan-European instrument for  
radioecology, COMET  
with support from the SiU project**

Course content

Lectures	Field and laboratory exercises
The Chernobyl accident	Water sampling
Contamination of the 30 km ChEZ	Water fractionation
Radionuclides speciation, mobility and bioavailability and influence on its environmental behavior	Fish sampling and dissecting Biota sampling
Biological uptake, accumulation, dose estimates and biological responses	Soil sampling and sample preparation
Relevance of hot particles, speciation and characterization of particles	Particle hunting in soil and sediments
The use of sequential extractions to estimate mobility	Sequential extractions
Ecosystem transfer to wildlife	Radiochemistry/separation
Sampling of soils, plants/biota and animal products	Measurements of radionuclides
Impact and risk estimates – overall uncertainties	
The migration of radionuclides in the unsaturated zone and with groundwater	

Course leaders:

Valeriy Kashparov

Brit Salbu

Lindis Skipperud

Sviatoslav Levchuk

**Kiev-Chernobyl, Ukraine**