



Central and Eastern European Conference on Health and the Environment (CEECH)

*Seeking Solutions for Environmental
Exposures and Disease Risks*

**THESSALONIKI, GREECE
JULY 15 – 19, 2024**

Poster 19.

Current Issues of Hygienic Risk Assessment of 2,4-D Herbicide for Human and Environmental Health in Ukraine

Presenter: Dr. Yuriy Chayka (Presented by: Dr. Olha Lytvychenko), Bogomolets National Medical University (Ukraine)

Email: yuriy_chayka@ukr.net

Co-Authors: Sergiy Omelchuk, Sergiy Sergeyev, Nataliya Kolontayeva

2,4-D is well known group of herbicides, known for its strong and stable effect and persistent pollution of environmental media and consumer products. It is applied for decades in different forms of acids and esters worldwide including Ukraine.

Scope of work was to study toxicological and hygienic properties of the herbicide, its distribution and persistence in environment during 25 years of its use in agriculture of Ukraine (1997-2022) incorporated in risk assessment model for proactive measures and ongoing control aligned with EU directives and FOA/WHO guidelines.

Methods of investigation. Toxicological tests, chemical assays for pesticide distribution in environment, pesticides risk assessment models for operators, bystanders, population including children, biomonitoring in human blood and urea.

Results. Investigations of toxicological properties of 2,4-D herbicides along with its behavior in environment in different agroclimatic zones of Ukraine during state field tests allow us to attribute 2,4-D group chemicals to moderately hazardous. Hygienic limits of pesticide in air of working zone, ambient air, cereals, water and soil were substantiated and approved, risk assessment of all possible harm factors including probable presence of dioxins was done. The annual assortment of 2,4-D herbicides in Ukraine is decreased for 20% of total value in 2002-2021 by MOH according to experts' decision and results of risk assessment. Herbicide risk assessment was done for personal small scale farmers using risk assessment model and distribution of pesticide in biomass of treated plants with appropriate risk minimization recommendations. Appropriate public health pesticide control measures guarantee export of Ukrainian wheat to consumers of EU and other countries according to appropriate safety standards despite full-scale Russian invasion.