

THE 28TH INTERNATIONAL SCIENCE CONFERENCE

THE PROBLEMS OF SUSTAINABLE AGRICULTURE, PROTECTION OF RURAL AREAS, WATER RESOURCES AND ENVIRONMENT

PROBLEMY ZRÓWNOWAŻONEGO ROLNICTWA, OCHRONY OBSZARÓW WIEJSKICH, ZASOBÓW WODNYCH I ŚRODOWISKA

On 21 and 22 September 2022, the 28th International Scientific Conference: "The problems of sustainable agriculture, protection of rural areas, water resources and environment" was held at the Institute of Technology and Life Sciences – National Research Institute in Falenty. The Conference was conducted under the patronage of the Vice-Premier, the Minister of Agriculture and Rural Development, Henryk Kowalczyk. The event was *on-line* transmitted.

During the Conference, the following problems were discussed and analysed:

- Sustainable agricultural production, circular economy, with the consideration of environmental protection, organic agri-

culture and preventing the climate changes;

- Innovative technological solutions for the sustainable agricultural production, including animal husbandry, together with renewable energy sources (Polish: OZE), with the particular consideration of employment of agricultural micro biogas plants;
- Innovative and intelligent agriculture, application of drones and artificial intelligence with the aim to improve the production effectiveness;
- The application of industrial hemp in agriculture and bio-economy, and in bio-energetic sector, e.g. production of construction elements (hemp blocs, insulating materials, chip-board panels), fibres being a raw material e.g. for production



Fig. 1. Presidium table – the 1st day of the Conference, from the left: dr hab. Andrzej Karbowy, Eng., – West Pomeranian University of Technology in Szczecin, dr Adam Brysiewicz, Eng., – Institute of Technology and Life Sciences, National Research Institute, dr hab. Adam Koniuszy, prof. of the West Pomeranian University of Technology in Szczecin, prof dr hab. Henryk Sobczuk – Institute of Technology and Life Sciences, National Research Institute, dr Kamila Mazur, Eng., – Institute of Technology and Life Sciences, National Research Institute, Prof. dr hab. Wacław Romaniuk – Institute of Technology and Life Sciences, National Research Institute, Dr Dorota Kluszczyńska, Eng., – Institute of Technology and Life Sciences, National Research Institute, dr Andrzej Seliga, Eng., – Institute of Technology and Life Sciences, National Research Institute



Fig. 2. Presidium table – the 2nd day of the Conference, from the left: Dr Adam Brysiewicz, Eng., – Institute of Technology and Life Sciences, National Research Institute, Prof. dr hab. Wiesław Dembek – Institute of Technology and Life Sciences, National Research Institute, Dr Kamila Mazur, Eng., – Institute of Technology and Life Sciences, National Research Institute, Dr Dorota Kluszczyńska, Eng., – Institute of Technology and Life Sciences, National Research Institute

- of cloth materials, bandages, underwear and production of biogas and manufacture of oils for the needs of medicine;
- Management of natural resources and soils, and nature protection;
 - Water and sewage and waste management and rural infrastructure;
 - Water protection and ecology, contamination of waters and impact on biodiversity.

The mentioned above presentations were delivered on the thematic sessions:

on 21 September 2022:

- Training session, conducted by the National Centre for Research and Development – national Contact Point: Horizon Europe – Cluster 6: Food, bioeconomy, natural resources, agriculture and environment;
- Energetics and OZE (renewable energy sources) at rural areas;
- Innovations in agriculture- drones and artificial intelligence;
- Innovations in agriculture – hemp;

The problems of sustainable agricultural production – part I

on 22 September 2022:



Fig. 4. The participants of the Conference



Fig. 3. Prof dr hab. Maciej Kuboń, PhD., – The Hugon Kołłątaj Agricultural University in Cracow

- Problems of the sustainable agricultural production – part II;
- Energetics and OZE (renewable energy sources) at rural areas;
- Water at rural areas, including sewage management;
- Environmental protection and infrastructure of rural areas.

The themes of the Conference and also, the suggested solutions, may contribute to the popularization of the sustainable development in agriculture. The subject-dedicated sessions may be summed up by the following statements:

- we should develop further agricultural farms in accordance with the principle of sustainability, with the particular consideration of introducing the innovations, reasonable management of fertilizer components, including natural manure and production of energy from alternative sources and also, waste coming from agri-food processing.
- We should take care of water in our country and all over the world due to its limited resources, by, *inter alia*, the choice of the reasonable management method.



Fig. 5. From the left: Dr Kamila Mazur, Eng., – Institute of Technology and Life Sciences, National Research Institute, Dr hab. Andrzej Borusiewicz, Eng., – International Academy of Applied Sciences in Łomża, prof. dr hab. Jerzy Barszczewski PhD., – Institute of Technology and Life Sciences, National Research Institute, Dr Kinga Borek, Eng., – Institute of Technology and Life Sciences, National Research Institute, prof. dr hab. Wacław Romaniuk, PhD., – Institute of Technology and Life Sciences, National Research Institute



Fig. 6. From the left: Dr Anna Konieczna, Eng., – Institute of Technology and Life Sciences, National Research Institute, Dr Kinga Borek, Eng., – Institute of Technology and Life Sciences, National Research Institute

The 28th International Scientific Conference was attended by more than 100 participants from Poland and abroad, representing the following institutions:

- Ministry of Agriculture and Rural Development,
- Koszalin University of Technology,
- International Academy of the Applied Sciences in Łomża,
- West Pomeranian University of Technology in Szczecin,
- Warsaw University of Life Sciences,
- The Hugon Kołłątaj University of Agriculture in Kraków
- The University of Life Sciences in Poznań,
- The University of Life Sciences in Lublin,
- Białystok University of Technology,
- Bydgoszcz University of Technology,
- University of Zielona Góra,
- Institute of Flow Research, Polish Academy of Sciences in Gdańsk,
- Mazovian Agricultural Advisory Centre,
- Polish Association of Hemp Producers and Processors,
- University of Ecology and Management,
- The University of Szczecin,
- Latvian University of Agriculture, Jelgava, Latvia,
- Università degli Studi di Palermo, Italy,
- University in Bologna, Italy,
- University in Bucharest, Rumania,
- University of Jaen, Spain,
- School of Life Sciences, University of Hyderabad, Haryana, India,
- Agricultural University in India,
- University Banja Luka, Bosnia and Herzegovina,
- University of Applied Sciences, Lubeka, Germany
- McGill University, Canada,
- Université 20 Août 1955, Skidda, Algeria,
- Flinders University, Adelaide, Australia,
- Lulea University of Technology, Sweden,
- University of Exeter, Great Britain,
- Agriculture and Biology Research Institute, Egypt,
- Bahaudin Zakariya University, Pakistan,
- Alanya Alaaddin Keykubat University, Turkey,

and also, private entrepreneurs:

- Ekolaby.net,
- barszcz.edu.pl,
- byteLAKE,
- drone-eye.pl,
- Smart Secure Networks,
- AGRAVES Ltd.,
- TRUSTT,
- Polish Cluster IoT and AI SINOTAIC,
- Cannabotanique,
- TESTMER Warszaw SA,
- WOLF System Ltd.,
- Plantalux.



Fig. 7. Mariusz Nazaruk – Cannabotanique Ltd.

During the Conference, 48 lectures in Polish and English language were delivered. The simultaneous translation was assured for all the participants of the mentioned event.

Organization of the 28th International Scientific Conference was possible owing to the co-organizers:

- Department of Engineering of Renewable Energy Sources, West Pomeranian University of Technology in Szczecin,
- International Academy of Applied Sciences in Łomża,
- Warsaw University of Life Sciences,
- The Hugon Kołłątaj Agricultural University in Cracow.

The sponsors of the Conference were:

- WOLFSystem Ltd.,
- TESTMER Warsaw, SA,
- Polish Association of Beef Cattle Breeders and Producers.

The media patronage:

- "Polish Technical Review" magazine,
- Internet Daily B2B "And now environment"
- Internet Portal 'Energy for Rural Areas'

As a result of the submitted papers by the Participants of the 28th International Scientific Conference, two monographs will be published:

1. Monograph entitled: "Problems of sustainable agriculture, including OZE (renewable energy sources) elements, protection of rural areas, water resources and environment"
2. Monograph entitled: "Problems of sustainable development in agriculture including environment protection and alternative energy production as well as biogas".

We express our words of gratitude to all Co-organizers, Sponsors, Patrons and Participants for their support and active participation in the Conference!