

UNICOM Meeting Prague (2023)



Biogas Research Team

2.-6.10.2023

**Czech University of Life Sciences Prague
Faculty of Tropical AgriSciences
Room 313 and 315**



Welcome at CZU – Czech University of Life Sciences Prague

Experience Sharing – *Third mission of universities & University-Community cooperation*

Dear colleagues, Ladies and gentlemen, esteemed guests, and fellow scholars,

It is a great honor and privilege to welcome you all to this distinguished gathering where we come together to explore a vital aspect of higher education and research – the **third mission of universities and university-community cooperation**. In this week (2.-6.10.2023), we embark on a journey of experience sharing, a journey that promises to shed light on how universities can serve as catalysts for positive change in their communities and beyond.

Our focus today lies at the intersection of academia and society, where the impact of universities extends far beyond lecture halls and laboratories. Universities have long been recognized as the cradles of knowledge, nurturing young minds and producing cutting-edge research. Yet, they are increasingly being called upon to fulfill a broader role – a role that goes beyond teaching and research, a role often referred to as the "third mission."

„The third role of CZU is an important aspect of the university's mission, helping to connect the academic community with the broader society and contributing to the sustainable development of the region.”

Assoc. Prof. Dr. Hynek Roubík



The third mission encompasses the idea that universities have a duty to engage with the wider community and contribute to social and economic development. It emphasizes the importance of sharing knowledge, resources, and expertise for the betterment of society. Universities are not isolated ivory towers; they are dynamic institutions that have the potential to be powerful forces for positive change.

This week's event is particularly significant as we have the distinct pleasure of hosting all of you at the Czech University of Life Sciences Prague. Your visit offers us a unique opportunity to exchange insights, experiences, and best practices in the field of university-community cooperation. This collaboration not only strengthens our academic bonds but also reinforces our commitment to addressing the real-world challenges faced by our communities.

Throughout the course of this event, we will look into the strategies, initiatives, and partnerships that have enabled our institutions to make a meaningful impact beyond our campuses. We will learn from one another's successes and challenges, and we will chart a course toward even more effective and sustainable collaboration.

University-community cooperation is not a one-size-fits-all concept. It takes various forms, from community outreach programs to research partnerships, entrepreneurship support, and more. It's about universities becoming responsive and responsible agents of positive change, tailored to the specific needs and contexts of our communities.

As we embark on this journey of exploration and collaboration, I encourage all of us to approach the discussions with an open mind and a shared commitment to fostering the third mission of universities. Let us remember that the knowledge we create and share today can pave the way for a brighter, more inclusive, and more prosperous future for all.

Once again, I extend a warm welcome to our distinguished guests from all over Europe and also specifically from Ukraine here at the Czech University of Life Sciences Prague, and I thank all of you for your presence here. Together, we have the potential to shape a future where the impact of universities reaches far beyond academia, transforming the communities we serve.

Sincerely,

Assoc. Prof. Dr. Hynek Roubík

Group leader of Biogas Research Team

Faculty of Tropical AgriSciences

Czech University of Life Sciences Prague

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General guidelines and practical information

Visa information

For information on visa requirements, different visa types, and the application procedure as well as for downloading the application form please consult the website of the Czech embassy in your country.

General requirements

According to the Schengen Agreement, tourist and business visas issued by a mission of one of the following countries are valid for travel to all other countries listed: Austria, Belgium, Denmark, Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden and Switzerland.

However, you always have to apply at the mission of the country which is your main destination.

You should file your visa application in the state of your citizenship or residency. If there is no diplomatic mission of the Czech Republic in this state, the application should be filed at a diplomatic mission which is accredited for that state (usually in a neighbouring state) or at a diplomatic mission of another Schengen Area state which represents the Czech Republic in this state.

Please note that the processing of a Schengen visa category C (short-term visa - for visits to the Czech Republic of up to 90 days), takes at least two weeks and it is not possible to expedite the visa processing. Therefore, be sure to apply for a visa in time.

At most Czech embassies it is crucial to make an appointment before the necessary documents can be handed in - usually by phone, email or website booking system. Please be sure to book an appointment at least 6-8 weeks prior to the intended time of travel - in most cases you do have to start obtaining an appointment much earlier. You will find all necessary information on the website of the Czech embassy in your country.

Please read carefully the visa application information available on the website of your Czech embassy before scheduling an appointment or to go there.

Invitation letter

If you wish to receive such a letter, please contact us via BRT@ftz.czu.cz.

Be aware that we can only issue such letters electronically (pdf format) and are not able to send you or the embassy a hard copy.



Venue

How to get to the university campus can be found [HERE](#).

The main programme will take place at the [Faculty of Tropical AgriSciences](#).

Search term for Google Maps: [Biogas Research Team](#).

How to get to CZU

The basic reference point for making your way to the CZU campus is the Dejvická A metro station. After you make your way to the Dejvická station via any of the methods specified below, take bus number 107 (heading to Suchdol) or 147 (heading to Výhledy) and go to the "Zemědělská univerzita" stop. Here you will find the entrance gate to CZU.

Travelling by train

Most passengers coming to Prague via train will arrive at one of Prague's two large central stations: The Main Train Station -Hlavní nádraží (Wilsonovo nádraží), or the Holešovice station. Both stations are on metro line C (red). The Main Train Station is usually the terminal station for trains arriving from the west or from the east (Paris, Frankfurt, Stuttgart, Zurich, Warsaw, Moscow), and the Holešovice station for trains from other directions (Berlin, Dresden, Vienna, Budapest, Zagreb). To get to the Dejvická station, first take the C line (red) metro to the Muzeum station and then transfer to the A Line (green) and make your way to the Dejvická station. Passengers from Western and North-western Bohemia and Pardubice can also arrive at Masarykovo nádraží where the trains terminate. If you arrive here, then take the metro via the B line (yellow) from the Náměstí republiky station (one of the entrances to this station is right next to the exit from Masarykovo nádraží!) one stop to the Můstek station and transfer to line A (green) and continue on to Dejvická.

Travelling by long distance bus

Passengers travelling via long distance bus from any direction, country or part of the Czech Republic will arrive at the Florenc bus station, which is right next to the Florenc metro where two metro lines intersect (B = yellow and C = red).

It is a very short trip to the Dejvická station via the metro line B first to the Můstek station, where you will transfer to line A (green), and from there you will make your way to the Dejvická station. The Prague Metro has three lines: A (green), B (yellow) and C (red). In order to get to our university, you will need to get on line A (green) and make your way to the Dejvická station. From here, using the same ticket you purchased or the metro, get on bus 107 (heading to Suchdol) or 147 (heading to Výhledy). Both stop at Zemědělská univerzita. The bus ride takes about 10 minutes.

Travelling by plane

The Václav Havel Airport is located 15 km west of the city centre. You can make your way to our university from the airport via public transport or taxi.

A public transport ticket costs 40 CZK. You have to buy it in advance, it's not possible to buy it on the board (only in selected vehicles, payment only by credit card). The tickets are valid for transfers to all public transport in Prague (buses, trams, metro, some trains in Prague and the cable car to Petřín) for 90 minutes (see details on the ticket). From the Václav Havel Airport, take bus 119, which will take you to the Metro A Veleslavín station. From the Veleslavín station, take the metro two stations towards Skalka/Depo Hostivař all the way to the Metro A Dejvická station.

The complete price list of the public transport can be found at pid.cz/tarif-web/?lang=en.

Parking

Parking is available on the university campus. You can enter it by the [main gate](#) (there is a sign for university guests).

Accommodation

Close to the venue with an approximate price for two nights:

[Hotel International Prague](#) – 250 euro

[Vienna House Diplomat Prague](#) – 180 euro

[Hotel Schweiger](#) – 135 euro

[Hotel DAP](#) – 120 euro

[Vila Lanna](#) – 110 euro

[Masarykova kolej](#) (dormitories) – 100 euro

[a&o Prague Rhea Hotel](#) - 80 euro (further from campus)

Dormitories of our University also have some capacity for hotel rooms, but preferably contact us as soon as possible, and we will make a reservation for you. Rooms are perfectly fine for a short stay, but you may have to experience some student evening activities. The price is low, usually around 20 euros per night.



Program of the UNICOM meeting

Monday, 2.10.2023

| Time | Topic | Responsible person | ROOM |
|-------------|---|--|------|
| 10:00-13:00 | Arrival & Registration | | 313 |
| 11:00-12:00 | Voluntery option to participate in: Biogas Research Team regular meeting | | 315 |
| 14:00 | Offical Welcome | Hynek Roubík | 313 |
| 14:30-15:00 | Presentation of BRT activities | | |
| 15:00-17:00 | Importance of communication and ways of strenghtening third mission of universities | Stacy Denise Hammond Hammond Hammond | 313 |

Space for your notes



Tuesday, 3.10.2023

| Time | Topic | Responsible person | |
|-------------|--|--------------------|-----|
| 9:00-10:00 | Arrival & Registration | | 313 |
| 10:00-12:00 | National regulation on third missions of HEIs | Hynek Roubík | 313 |
| 12:00-14:00 | Lunch break | | |
| 14:00-15:30 | Practices of the university-community cooperation at European HEIs | Hynek Roubík | 313 |
| 15:30-17:00 | AI and third mission of universities | Ing. Jan Staš | 313 |

Space for your notes



Wednesday, 4.10.2023

| Time | Topic | Responsible person | |
|-------------|--|--------------------|-----|
| 9:00-10:00 | Arrival & Registration | | 313 |
| 10:00-12:00 | Third mission in practice – examples of CZU | Hynek Roubík | 313 |
| 12:00-14:00 | Lunch break | | |
| 14:00-17:00 | Third mission in practice – thinking of the next steps | Hynek Roubík | 313 |

Space for your notes



Thursday, 5.10.2023

| Time | Topic | Responsible person | |
|----------------------|--|---------------------------|--|
| 8:00 - 9:00 | Registration and Check-In | | |
| 9:00 - 10:30 | Opening Ceremony | Hynek Roubík | |
| 10:30 - 11:30 | Coffee Break | | |
| 11:30 - 12:30 | Session 1: Exploring Sustainable Development and Economics | Hynek Roubík | |
| 12:30 - 13:30 | Lunch Break | | |
| 13:30 - 17:30 | Session 2: Waste to Energy: Opportunities and Challenges, Environmental Sciences, Medicine and Veterinary medicine, Agrobiology | Hynek Roubík | |
| 18:00 | Dinner | | |

Space for your notes



Friday, 6.10.2023

| Time | Topic | Responsible person | |
|----------------------|--|---------------------------|--|
| 9:00 - 10:30 | Session 3: In-Person Poster Presentations | Hynek Roubík | |
| 10:30 - 11:30 | Coffee Break | | |
| 11:30 - 12:30 | Session 4: Online Poster Presentations | Hynek Roubík | |
| 12:30 - 13:30 | Lunch Break | | |
| 13:30 - 16:30 | Session 5: Advancements in Agriculture Engineering, Food security: Challenges to come, Ukraine - Current challenges and opportunities | Hynek Roubík | |



Space for your notes

Program of MCYR

See the pages below.



Session 1: Exploring Sustainable Development and Economics

| | | | |
|--------|---|---|---|
| Room 1 | Development of methodology for comparison of manure and biogas plants digestate for fishpond fertilising | Jan Staš, Miloslav Petrtýl, Hynek Roubík | |
| | Influence of Chitosan and Glycerol-Sorbitol Concentrations on Physical Properties of Palm Oil Empty Fruit Bunches-Based Bioplastics | Ellyas Alga Nainggolan, Dedy Anwar, Maria Natassija Sariati, Meiyer Marthen Kinda, Klára Urbanová | |
| | Ugly Shade of Manual Scavengers in India: Insides and Recommendation | Rupak Kumar, Anuradha Saha |  |
| Room 2 | Studying the economic feasibility of growing barley and using it as green fodder for animals | Ghaith Amin Ali, E. Sliman Nedal Moualla |  |
| | Intrinsic Drivers of Agricultural Land Abandonment: A case study of Nigeria | Oluwaseyi Olosoji, Miroslava Bavorova | |
| | Grid parity economic assessment of decentralized solar PV generation: Nigeria as a case study | B.G Danshehu, N. H Umar, H. M Maikafi, A Modibbo, Birinchi Bora | |

Session 2: Waste to Energy: Opportunities and Challenges, Environmental Sciences, Medicine and Veterinary medicine, Agrobiology

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|--|---|--|---|
| Room 1 | Contribution of biogas technology to Global South nations attainment of sustainable development and circular economy: a bibliometric analysis | Tewodros Tarekegn Lapiso, Hynek Roubík | |
| | Invasive common reed as a prospective bioenergy feedstock | Nariman Tanyrbergenov, Kseniia Paramonova, Olzhas Talipov, Tatiana Alexiou Ivanova, Talgat Zhakupov | |
| | Technological Readiness and User Acceptance of Koko Bioethanol Cookstoves in Nairobi City County, Kenya. | Gerald Tagoe | |
| | The biochar effect on miscanthus biomass quality as biofeedstock | Iryna Klimkina, Serhii Krasovskiy, Mykola Kharytonov, Iryna Rula, Nadia Martynova |  |
| | Farmers' knowledge and use of bioslurry for soil health: A case of the Kenya highlands | Esther Mwendu Muindi, Andrew Wekesa Wamukota, Paterson Njeru, Stephen Kimani, Kevin Kinusu, Hynek Roubík | |
| | Effect of phosphogypsum addition on anaerobic digestion process | Viktoriiia Chubur, Yelizaveta Chernysh, Hynek Roubík | |
| | The optimal mixing ratio of cow manure with food waste using a laboratory UASB reactor | Kinda Ali, Read Jafer, Adel Awad, Hussam Saboh |  |
| | The effectiveness of pollutant removal in biogas effluent using a biofilter in Anaerobic Baffled Reactor (ABR) as liquid organic fertilizer | Lydia Mawar Ningsih, Udin Hasanudin, Hynek Roubík |  |
| | Towards harmonization of biogas technology: a systematic review of key parameters to identify research extent and standardization. | Antoine Bercy, Hynek Roubík | |
| | Comparison of conventional anaerobic digestion methods and the UASB reactor | Kinda Ali, Read Jafer, Adel Awad, Hussam Saboh |  |
| Determinants of Biogas Technology Adoption in West Java, Indonesia | Ricardo Situmeang, Jana Mazancová, Hynek Roubík | | |

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|---|--|---|---|
| | Financial and legislative aspects of biogas development in Poland and Ukraine | Dmytro Hopkalo, Iryna Vaskina, Jacek Dach, Roman Vaskin, Oleh Boiko |  |
| Room 2 | The Potential of Green Ammonia Production From Animal Waste in EU and Ukraine | S A Zhadan, Ye B Shapovalov, A I Salyuk, O M Zhadan |  |
| | Rural development of Guimaras Island, Philippines: How climate change threatens local mango-driven development? | Tadeáš Hrušovský, Tomáš Lošák, Rhea Joy D. Flora | |
| | Adsorption of methylene blue and malachite green from the binary component system on the biochar derived from solid biogas digestate | Van Hau Duong, Nguyen Xuan Phuong, Phan Thi Duy Thuan, Dinh Van Dung, Le Dinh Phung, Dinh Quang Khieu, Hynek Roubík | |
| | Perception of water pollution and environmental risks in direct administered municipalities of China | Veronika Vaseková | |
| | Composting: an effective municipal sewage sludge treatment method in aerobic conditions | Thi Cam Tu Le, Katarzyna Bernat, Dorota Kulikowska |  |
| | Analysis of EIA outcomes for constructions of road transport infrastructure | Petra Dvořáková, Tereza Hanušová, Zdeněk Kekena | |
| | From waste to feed raw material: utilising freshwater Cladophora glomerata macroalgal biomass in rabbit diets for the assurance of their physiological status | Monika Nutautaitė, Asta Racevičiūtė-Stupelienė, Vilma Vilienė |  |
| | Intestinal immune response of rainbow trout (<i>Oncorhynchus mykiss</i>) supplemented with probiotic-based diet after <i>Aeromonas salmonicida</i> infection | Natália Chomová, Marek Ratvaj, Ivana Cingelová Maruščáková, Peter Popelka, Jana Koščová, Miroslava Palíková, Jan Mareš, Rudolf Žitňan, Martin Faldyna, Dagmar Mudroňová | |
| Effect of Tau pathology on Mitochondria | Muhammad Khalid Muhammadi, Tomas Smolek, Neha Basheer, Norbert Zilaka | | |
| Room 3 | Sowing quality of rapeseed depending on treatment with electromagnetic radiation of different modes as an environmentally way of increase yield | Oksana Pankova, Sergii Kharchenko, Kirill Sirovitskii | |
| | Genome-wide identification of the microbial opsin protein in <i>Leptosphaeria maculans</i> and <i>Fusarium oxysporum</i> | Marzieh Mohri, Ali Moghadam, Lenka Burketova, Pavel Ryšánek | |
| | Publication bias in scientific findings – the case of <i>Prunus persica</i> | Stacy Hammond | |
| | Moisture accumulation in typical chernozem under soil protection farming system | Yurii Dehtiarov, Zinaida Dehtiarova |  |
| | Use of electrophysical indicators during growing strawberries on drip irrigation | Yurii Dehtiarov |  |
| | Influence of fertilizer products on yield and quality of corn grain | Elina Zakharchenko, Oksana Datsko, Yurii Mishchenko, Serhii Butenko | |
| | Weed control for corn in organic farming | Yurii Mishchenko, Elina Zakharchenko, Oksana Datsko, Volodymyr Ilchenko | |
| | Influence of cover crops on soil agrochemical properties | Roman Yaroshchuk, Elina Zakharchenko, Svitlana | |

Yaroshchuk, Bogdan
Nagorniak, Mykola
Kravchuk

Session 3: In-Person Poster Presentations

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| Room 1 | Ethnobotanical uses and production constraints of Drumstick tree (<i>Moringa oleifera</i> Engl., Moringaceae) in Kilifi County, Kenya | Boniface Mwami, Zbynek Polesny, Prasad Henry, Alice Muchungi |
| | Effect of diurnal solar radiation regime and tree density on sap flow of Norway spruce (<i>Picea abies</i> [L.] Karst.) in fragmented stands | Vivek Vikram Singh, Khodabakhsh Zabihi, Aleksei Trubin, Rastislav Jakuš, Pavel Cudlín, Nataliya Korolyova, Miroslav Blaženek |
| | Digitalization and Environmental Concerns: How the Internet Affects Data Processing in Environmental Studies | Krystyna Sumtsova, Yelizaveta Chernysh, Hynek Roubík |
| | Human -wildlife conflict in forest arm interface of Guraferda and Arsi negele, District's, Ethiopia | Melese Merewa Reta |
| | In vitro biodegradation of zearalenone by the cell-free supernatants of <i>Lactobacillus</i> spp. and <i>Bacillus subtilis</i> | Michaela Harčárová, Eva Čonková, Pavel Nad' |
| | Mimicking the porcine intestine: establishing an in vivo-like model | Zuzana Kiššová, Eudmila Tkáčiková, Dagmar Mudroňová, Róbert Link |
| | Prevalence of <i>Malassezia globosa</i> and <i>Malassezia restricta</i> on the healthy human skin | Zuzana Malinovská, Eva Čonková, Peter Váci |
| | SARS-CoV-2 inhibiting antibodies were discovered in the sera of one leopard and two rhinoceros during serosurveillance on Dvůr Králové Zoo animals | Jignesh Italiya, Petra Straková, Lukáš Pavlačík, Jiří Váhala, Jaroslav Haimy Hyjánek, Jiří Salát, Daniel Růžek, Dominika Komárková, Jiří Černý |
| Ticks, its hosts and pathogens located in urban and peri-urban areas in Slovakia: new hazards for public health. | Cellengová Z., Vargová B., Peňko B. | |
| Room 2 | Synthetic polyploid induction improves essential oil yield and other agronomical traits in <i>Melissa Officinalis</i> L. | Rohit Bharati, Aayushi Gupta, Pavel Novy, Eloy Fernández-Cusimamani |
| | Integrative meta-analysis of <i>Brassica napus</i> transcriptome infected by <i>Leptosphaeria maculans</i> | Marzieh Mohri, Ali Moghadam, Lenka Burketova, Pavel Ryšánek |
| | Agricultural production in the functional urban area of Győr (Hungary) | Andrea Pozsgai, Tamás Hardi |
| | Sustainable Approach to Reduce Negative Impact of Emission from Open-Burning Crop Residue on the Environment | Hidayatul Fitri, Hynek Roubik |
| | Organisational mechanism for providing social support for projects on the use of biogas | Mariia Popova, Yelizaveta Chernysh, Hynek Roubík |
| | Utilisation of lignocellulosic biomass from tomato production for energy purposes | Kamil Witaszek, Marcin Herkowiak, Yelizaveta Chernysh, Viktoriia Chubur, Hynek Roubík |
| | The resilient nature of yacon: Opportunities for its biomass for potential energy production, a systematic review | Okafor Uche Cyprian, Iva Viehmannova |



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| | Sustainable solution of soil remediation for Ukraine's postwar reconstruction under bioenergy production | Yelizaveta Chernysh, Volodymyr Havryliuk |
| | Analysis of the consequences of the impact of military actions on environmental components | Olena Hanoshenko, Marion Huber-Humer, Mykola Halaktionov |

Session 4: Online Poster Presentations

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|--------|---|--|
| Room 1 | Conversion of biogas CO ₂ into environmentally friendly motor fuels | Viktoriia Ribun, Sergii Boichenko |
| | The field of biogas in Ukraine: realities and prospects | Alina Simanovska |
| | Modelling scenarios of agricultural production development on the basis of sustainable development with the use of biogas technologies | Sergii Kudria, Yurii Tarariko, Nadiia Kudria, Yelizaveta Chernysh, Viktoriia Chubur, Hynek Roubík |
| | Comparative evaluation of the different inoculation techniques for effective food waste composting | Ester Kovaříková, Martina Vršanská, Stanislava Voběrková |
| | Novel Applications of <i>Sida hermaphrodita</i> (L.) Rusby using In Vitro Culture Systems | Šarlota Kaňuková, Marcela Gubišová, Ján Kraic |
| | Impact of <i>Trichoderma viride</i> against <i>Meloidogyne incognita</i> on ginger by analyzing its photosynthetic pigments and sugar content | Manaswini Mahapatra, Sumanta Das, Jyoti Prakash Sahoo, Rupak Jena |
| | Classification of Plant Electrical Signals for Early Detection of Viral Diseases | Elham GHasemi, Esmail Ebrahimie, Ali Niazi |
| | The co-expression analysis of soybean transcriptome to the identification of key drought stress-responsive genes | Fatemeh Mahmoodi Khaledabadi |
| | Powdery mildew species diversity on the Asteraceae family in the Czech Republic | Markéta Michutová, Mária Neoralová, Ivana Šafránková |
| | Reflection of ecology and sustainability themes in contemporary radio plays produced by Radio and Television of Slovakia | Zuzana Belková |
| | Comparative Eco-Footprints of Solar EVs vs. ICE Vehicles in 2023 Central Europe | Endre Hamerlik |
| | Pre-sowing inoculation system and its associated expenses | Zubko Vladyslav, Zhyhylii Dmytro, Shelest Mykola |
| Room 2 | Psychological aspects of management enterprises in Spain and Ukraine | Leonid Taraniuk, Karina Taraniuk, Anastasiia Karepina |
| | Development and simulation of on-farm activities non-linear optimized programming model for small-scale (A1) farms of Zvimba district | Welcome Zimuto, Tomas Ratinger |
| | What really makes food-based entrepreneurs succeed: evidence from young entrepreneurs in Ghana. | Bernard Kwamena Cobbina Essel |
| | Evaluation of the reliability of microscopic diagnosis of <i>Nosema</i> spp. by duplex PCR | Beáta Hurná, Monika Sučík, Petra Kandráčová, Martin Staroň, Štefan Tutka, Zuzana Maková, Alexandra Valenčáková |
| | Typification of <i>Cryptosporidium muris</i> and <i>Cryptosporidium andersoni</i> using MLST analysis | Monika Sučík, Alexandra Valenčáková, Oľga Danišová, Igor Valocký, Petra Kandráčová, Beáta Hurná |
| | Biotopic distribution of helminths of ungulates of Ukraine | Olexandra Boyko, Victor Brygadyrenko |
| | The improved identification of ultrastructure of rumen ciliate using cryopreservation technique combined with the electronic microscopy | Svetlana Malyugina, Andrea Staffa |

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| Civil Engineering inspection integrated with artificial intelligence and Fuzzy Logic, destined for residential properties appraisals | Vladimir Surgelas, Irina Arhipova, Vivita Puķīte |
| Experimental investigation of an innovative complex air cleaner efficiency | Vivian Achão Surgelas, Tadas Prasaukas, Vivian Surgelas |
| Perception, purchasing behaviour and determinants of local rice consumption among different income strata of Ghana. | Bernard Kwamena Cobbina Essel |
| Methodology for Detecting Depressive States in Adolescents During Wartime | Liliia Molhamova |
| Treatment of contaminated water during (Zaporizhzhia) Nuclear Power Plants operation by ion exchange | David Kovtun |

Session 5: Advancements in Agriculture Engineering, Food security: Challenges to come, Ukraine - Current challenges and opportunities

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|--------|--|---|---|
| Room 1 | Enhancing Selective Coffee Harvesting in Challenging Terrains: A Modal Analysis and Vibration-Based Approach | Eduardo Duque-Dussán, Jan Banout | |
| | Moisture Management in Solar Drying of Coffee: Comparing Different Methods to Prevent Remoisturizing | Paula A. Figueroa-Varela, Eduardo Duque-Dussán |  |
| | Conflict and rurality as determinants of food security: Evidence from the Kurdistan Region of Iraq | Niga Abdalla, Miroslava Bavorová, Ayat Ulla | |
| | Application perspective of water extract from honeysuckle leaves and its effect on the quality of fresh chicken meat | Naijuan Nan, Tetiana Stepanova, Bo Li |  |
| | Gender-specific Vulnerability on Climate Change and Food Security Status - A catchment approach on agroforestry systems - a multi-country case study | Zerihun Yohannes Amare | |
| | How remote sensing can help through the prediction and mapping of toxic elements in the soil environment? | Vahid Khosravi, Asa Gholizadeh, Mohammadmehdi Saberioon | |
| Room 2 | Metataxonomic studies of phosphogypsum as a substrate for bioprocesses: a review | Yelizaveta Chernysh | |
| | Ukraine as a food supplier and guarantor of food security: pre-war and wartime realities | Larysa Satyr, Ruslana Zadorozhna, Valentyna Kepko, Leonid Stadnik |  |
| | Ways of optimizing state regulation of the agricultural sector in war conditions | Bohdan Osypenko |  |
| | Ukrainian village through the prism of modernity (on the example of Kharkiv region) | Anastasiia Lapchenko |  |
| | Assessment of Ammonia Production Potential from Animal Wastes in Ukraine: A Promising Approach for Sustainable Resource Management | S A Zhadan, Ye B Shapovalov, A I Salyuk, O M Zhadan |  |
| | EU practices for sustainable economy implementation | Olena Kasian | |
| | Overview of sunflower cultivation areas in Ukraine in the period from 2021 to 2023 | Andrii Kysylchuk, Elina Zakharchenko, Yehor Bolshakov | |



Co-funded by the European Union



Consortium

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Czech
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Prague



Biogas Research Team



About Czech University of Life Sciences

The Czech University of Life Sciences Prague (CZU) is one of the leading European institutions in the field of life sciences (Around 50th place worldwide in Agriculture and Forestry).

CZU is not just a life sciences university, but a place of innovative scientific research and discovery.

We live in a world where natural resources are being depleted at an alarming rate.

CZU emphasizes education and research in sustainable development and the conservation of biodiversity along with the responsible use of natural resources and alternative, renewable means of energy production.

CZU Prague is situated on the outskirts of Prague, on a quiet and well-equipped campus that is easily reachable from the city centre by public transport.

CZU is one of the largest universities in the Czech Republic, offering over 220 Bachelor's, Master's, and PhD study programmes. Over 50 study programmes are taught entirely in English.

More than three hundred students from our university travel each year in the framework of the Erasmus+ mobility programme, traveling to 27 countries in Europe to study for a semester or one academic year at over 200 universities throughout Europe.



About Faculty of Tropical AgriSciences

The Faculty of Tropical AgriSciences (FTA), the Czech University of Life Sciences Prague (CZU) is a unique institution in our country with over fifty years of tradition in tropical agriculture, rural development and the sustainable management of natural resources in the tropics.

The mission of the Faculty:

The mission of the faculty is the higher education of foreign and Czech students in the fields of tropical agriculture, rural development and the sustainable management of natural and energy resources in the tropics. An integral part of our mission is Research and Development in the field of tropical life sciences and the application of R&D results to the specific conditions of tropical and/or developing countries.

The vision of the Faculty:

To be an excellent and very specific institution in the Czech Republic orientated towards the transfer of the latest knowledge and technology between the Czech Republic, the EU and tropical regions respecting the traditional values of the local communities of the developing world as well as their level of socio-economic and technological development.



About Biogas Research Team

The main objective of the solved research at the Biogas Research Team is to determine the real impact of small biogas plants (both in developing and developed countries) on the environment, climate change and society and to contribute crucially to the current global debate on small biogas technology.

Biogas = Biogas is a mixture of gases, primarily consisting of methane, carbon dioxide and hydrogen sulphide, produced from raw materials such as agricultural waste, manure, municipal waste, plant material, sewage, green waste and food waste. It is a renewable energy source. And we do like these kinds of sources.

The main long-term research interest of the Biogas Research Team is to reveal the current state, bottlenecks and perspectives of biogas plants in both developing and developed countries.

Biogas plant = We can't speak about the term "biogas" without mentioning the biogas plants. These are simply the places where the biogas production process occurs. In plain English, a biogas plant is a system that provides an Anaerobic (oxygen-free) environment where bacteria transform biomass into biogas. It can come in different sizes and forms, and it serves to create carbon-neutral energy.

Our team is covering what we call the whole research life cycle – which, from our point of view, means that we do everything from feasibility studies, system studies, technology development, laboratory scale research, towards implementation. Furthermore, we continue with socio-economic studies and implications, gender studies as well as various environmental studies.

The research lifecycle = covers everything from the conception of a research idea through securing funding for it, building the team, partnerships or collaborators who will work on it with you, taking the project to completion and then beyond communication and dissemination to impact. The research lifecycle – with attending strategies and processes – applies as much to a small research project (for instance a fellowship) as well as major programmes of investment (such as the Global Challenges Research Fund).

What are we starting to work on more intensively?

There are several areas that Biogas Research Teams is starting to focus on to advance the development and implementation of biogas technology. Here are some examples:

Feedstock diversity and optimization: Biogas research teams investigate new and underutilized feedstocks, such as algae, seaweed, and aquatic plants, to expand the range of materials that can be used for biogas production. Trying to explore ways to optimize the use of current feedstocks to improve biogas yields and reduce costs.

Advanced biogas production techniques: There is still much to be learned about the most efficient and effective ways to produce biogas, particularly in terms of reactor design, temperature and pH control, and pre- and post-treatment processes. Biogas Research Teams investigates novel reactor configurations, such as membrane-based and two-phase systems, and new techniques for nutrient and pH control.

Biogas utilization and storage: Once biogas is produced, it must be stored and utilized efficiently and effectively. Biogas Research Teams plans to explore new storage and utilization technologies, as well as ways to optimize existing storage and utilization methods.

Environmental and social impacts of biogas production: As biogas production continues to expand, it is important to understand the environmental and social impacts of this technology. Biogas Research Teams studies the emissions and ecological impacts of biogas production and use, as well as the social and economic benefits and challenges of biogas implementation.

Integration of biogas into energy systems: Biogas production can be integrated into existing energy systems in a variety of ways, such as by using biogas to supplement or replace fossil fuels in electricity generation, heating, and transportation. Biogas Research Teams investigates the technical and economic feasibility of these integration strategies, as well as the policy and regulatory frameworks needed to support them.

Overall, there are many exciting opportunities for Biogas Research Teams to contribute to the development and implementation of this promising renewable energy source.

Waste management side of Biogas Research Team

An inseparable part of work of Biogas Research Team is waste management research. Some of these areas include:

Waste Reduction: One of the most important goals of waste management is to reduce the amount of waste generated in the first place. Waste reduction strategies can include better product design, more efficient manufacturing processes, and greater use of recycling and reuse.

Resource Recovery: Another important area of waste management research is the recovery of resources from waste. This can include the extraction of valuable materials from waste streams, such as metals and other minerals, as well as the generation of energy from waste.

Technological Innovation: Waste management research is also focusing on the development of new technologies that can improve the efficiency and effectiveness of waste management. These are new sorting and separation technologies, advanced recycling processes, and new methods for converting waste into energy. Especially those focused on low-cost and simple implementation.

Circular Economy: The concept of a circular economy, in which waste is minimized and materials are kept in use for as long as possible, is becoming increasingly important in waste management research. This approach emphasizes the importance of closing the loop on materials and reducing waste generation through the redesign of products and business models.

Social and Behavioral Factors: Waste management research focusing on the social and behavioral factors that influence waste generation and disposal. This could include research on consumer behavior, public attitudes towards waste management, and the role of education and outreach in promoting sustainable waste management practices.

Overall, activities of Biogas Research Team and waste management research is driven by a combination of technological innovation, environmental sustainability, and social and behavioral factors. As waste management becomes an increasingly pressing issue in many parts of the world, there is likely to be growing investment in research and innovation in this area.

