



Sveučilište u Zagrebu
Agronomski fakultet



University of Zagreb
Faculty of Agriculture



**FACULTY OF AGRICULTURE ZAGREB
AGRICULTURAL ENGINEERING DEPARTMENT
FACULTY OF AGROBIOTECHNICAL SCIENCES OSIJEK
FACULTY OF AGRICULTURE AND LIFE SCIENCES
UNIVERSITY OF MARIBOR
INSTITUTE OF AGRICULTURAL ENGINEERING, BOKU, VIENNA
AGRICULTURAL INSTITUTE OF SLOVENIA
NATIONAL INSTITUTE FOR AGRICULTURAL MACHINERY - INMA BUCHAREST
CROATIAN AGRICULTURAL ENGINEERING SOCIETY**



49th International Symposium “Actual Tasks on Agricultural Engineering”

PROGRAMME

February 28th – March 2nd 2023, Opatija, Croatia

TUESDAY – February 28th

9.00-10.00 REGISTRATION OF PARTICIPANTS

10.00-10.30 SYMPOSIUM OPENING

Sandra VOĆA, Vice Dean for teaching and study programs, Faculty of Agriculture University of Zagreb

Krunoslav ZMAIĆ, Dean of Faculty of Agrobiotechnical sciences in Osijek

Andreas GRONAUER, Head of Institute of Agricultural Engineering, BOKU, Vienna

Igor KOVAČEV, Chairman of the ATAE Organising Committee

10.30-11.30 PAPER PRESENTATIONS

Moderator: Mateja GRUBOR

Vladimir PEJAKOVIĆ, Andreas GRONAUER

Agricultural robots for the field operations

Fredrik REGLER, Max KRUEGER, Heinz BERNHARDT

Using a digital maintenance assistant to independently maintain the PTO shaft

Giovanni CARABIN, Lorenzo BECCE, Andreas MANDLER, Fabrizio MAZZETTO
Integrated determination of tractor centre of gravity and lateral rollover angle

Lorenzo BECCE, Giovanni CARABIN, Fabrizio MAZZETTO
Evaluation of air flow influence on sprayer nozzle performance by shadowgraphy

Kęstutis ROMANECKAS, Jovita BALANDAITE, Austėja ŠVEREIKAITĖ, Algirdas JASINSKAS, Ugnius GINELEVIČIUS, Deividas PAKALNIS
Impact of maize, hemp and faba bean intercropping on the soil properties

11.30-12.00 COFFEE BREAK

12.00-13.30 PAPER PRESENTATIONS

Matija BALALA, Igor KOVAČEV, Lepomir ČOGA, Sanja SLUNJSKI, Fabio CELLA, Stjepan SITO, Željko JUKIĆ

Influence of nitrogen fertilization on the rupture force of maize kernels

Algirdas JASINSKAS, Rita PETLICKAITĖ, Edvardas VAICIUKEVIČIUS, Kęstutis ROMANECKAS
Processing and utilization of large-stemmed herbaceous plants for energy conversion

Gvidas GRAMAUSKAS, Algirdas JASINSKAS, Ramūnas MIELDAŽYS
Evaluation of the processing and utilization of invasive herbaceous plants for the production of biofuel pellets

Bojan SRDJEVIC, Zorica SRDJEVIC
Multicriteria and social choice methods in agriculture, water management and forestry

Zorica SRĐEVIĆ, Bojan SRĐEVIĆ, Senka ŽDERO, Milica ILIĆ, Laslo GALAMBOŠ, Tanja BOŠNJAK
Reducing drought risks in wetlands: analysis of causality relations between regulating measures using dematel

Anamarija BANAJ, Đuro BANAJ, Bojan STIPEŠEVIĆ, Dominik MIKOLČEVIĆ
Application of the newly designed seed eliminator for the vacuum sowing machine

Dumitru TUCU, Gabriel MALAIMARE, Vasile LEȘ, Nicolae LONTIS
Performance evaluation of photovoltaic system in conditions of independent farm

Jurica PLUKAVEC, Dubravko FILIPOVIĆ, Igor ĐUKIĆ, Krešimir ČOPEC, Igor KOVAČEV
Analysis and comparison of the noise of hand-held and back-pack type grass trimmers

Zita KRIAUCIŪNIENĖ, Lina SALDUKAITĖ, Sidona BURAGIENĖ, Aida ADAMAVIČIENĖ, Andrii ZABRODSKYI, Egidijus ŠARAUSKIS
Effect of strip tillage and direct seeding on winter wheat yield, diesel consumption and environment

Ante GALIĆ, Stjepan PLIESTIĆ
Technological innovations and new approaches in agricultural production

13.30-15.30 LUNCH BREAK

15.30-17.00 PAPER PRESENTATIONS

Vjekoslav TADIĆ, Davor PETROVIĆ, Petra MIŠKULIN, Goran PAČAREK, Ivan VIDA KOVIĆ, Željko BARAČ

Protection systems against late spring frosts in permanent crops

Anamarija GUDELJ-VELAGA, Nikola BILANDŽIJA, Mateja GRUBOR, Ivana TOMIĆ, Zorana KOVAČEVIĆ, Tajana KRIČKA
Enzymes for lignocellulosic biomass degradation as an approach to green technology

Emil Călin KAZOMIR, Dumitru ȚUCU
Safety improvement of integrated biomass combustion systems by simulation

Zorana KOVAČEVIĆ, Anja ZERGOLLERN, Ksenija VIŠIĆ
Analysis of fibres extracted from corn husk

Larisa Georgiana MATEI, Andrei-Alin VOINESCU, Alexandru SUCIU, Narcis GHITA, Marius FATU, Gabriel GARBAN, Titus SLAVICI

New system of manufacturing molds using Industry 4.0 for pellets and briquettes

Božidar MATIN, Tajana KRIČKA, Alen ĐUROVIĆ, Mateja GRUBOR, Ana MATIN, Alan ANTONOVIĆ
Lignocellulosic composition and heating value of forest and agricultural biomass: A review

Djordje DJATKOV, Aleksandar NESTEROVIC, Miodrag VISKOVIĆ, Milan MARTINOV
Small biogas plants in Serbia- prerequisites for profitability

Miodrag VISKOVIĆ, Djordje DJATKOV, Aleksandar NESTEROVIC, Milan MARTINOV
Possibilities for financing of new biogas plants in Serbia

Aleksandar NESTEROVIC, Djordje DJATKOV, Miodrag VISKOVIĆ, Milan MARTINOV
Sustainable crop residues potential for the production of lignocellulosic bioethanol in Serbia

Mateja GRUBOR, Nikola BILANDŽIJA, Ana MATIN, Vanja JURISIĆ, Darija BILANDŽIJA, Tajana KRIČKA

The influence of precipitation on the energy properties of wheat biomass

17.00-18.00 OKRUGLI STOL

Nikola BILANDŽIJA

Okrugli stol u okviru projekta br. KK.05.1.1.02.0016, "Proizvodnja hrane, biokompozita i biogoriva iz žitarica u kružnom biogospodarstvu"

20.00 OFFICIAL DINNER

WEDNESDAY – March 1st

10.00-11.30 PAPER PRESENTATIONS

Peter BERK, Andreja URBANEK KRAJNC, Mario LEŠNIK, Andrej PAUŠIČ, Denis STAJNKO, Peter VINDIŠ, Damijan KELC, Miran LAKOTA, Aleš BELŠAK, Tomaž POJE, Viktor JEJČIČ, Mojca MAVRIČ ŠTRUKELJ, Simona HAUPTMAN, Marko BREZNIK, Marko HOČEVAR, Matej SEČNIK
Automated spray mixture application process in the "Rebula" variety vineyard

Erik RIHTER, Damijan KELC, Denis STAJNKO, Rajko BERNIK, Peter VINDIŠ, Vasilije FEMIĆ, Peter LEPEJ, Miran LAKOTA, Jurij RAKUN

An approach to save on plant protection products in cherry orchards

Nicolae LONTIS, Gabriel MALAIMARE, Dumitru TUCU

Stability analysis of a trailed farm sprayer aggregate by simulation model

Egidijus ŠARAUSKIS, Marius KAZLAUSKAS, Indrė BRUČIENĖ, Kęstutis ROMANECKAS, Vilma NAUJOKIENĖ, Sidona BURAGIENĖ, Dainius STEPONAVIČIUS, Abdul Mounem MOUAZEN
Winter wheat productivity and profitability at variable seeding rate and depth

Damijan KELC, Denis STAJNKO, Miran LAKOTA, Peter VINDIŠ, Jurij RAKUN, Erik RIHTER, Peter BERK
Efficiency of alternative weed control with mechanical systems in the vineyard

Jaroslav ČEPL, Pavel KASAL, Andrea SVOBODOVA

Influence of potato weed management on yield and quality of potato

Denis STAJNKO, Peter BERK, Damijan KELC, Miran LAKOTA, Jurij RAKUN

The effect of different led lighting on the growth of *Eruca sativa* (Mill.)

Ivan BRANDIĆ, Neven VOĆA, Josip LETO, Nikola BILANDŽIJA

Application of machine learning models in miscanthus x giganteus yield estimation

11.30-12.00 COMMERCIAL PRESENTATIONS

POLJO-NOVA d.o.o.

12.00-12.30 COFFEE BREAK

12.30-14.00 PAPER PRESENTATIONS

Tomaž POJE

Analysis of registered tractors in Slovenia in the year 2021

Viktor JEJČIČ, Tomaž POJE, Fouad AL-MANSOUR

Energy consumption for production rapeseed oil on family farms

Florian KITZLER, Norbert BARTA, Reinhard W. NEUGSCHWANDTNER, Andreas GRONAUER, Viktoria MOTSCH

Multi-class plant species semantic segmentation – introduction of WE3DS dataset with benchmark results

Emilia DOBRIN, Nicușor-Alin SÎRBU, Gabriela-Victoria MNERIE

Research on the ultrasonic extraction of volatile sea buckthorn oils

Bogdan Raul MIRCEA, Rudolf MIRESCU, Dumitru TUCU

The use of gauge R&R method in manufacturing of agricultural machinery

Rudolf MIRESCU, Alexandru TUCU, George Catalin CRISAN, Emil KAZOMIR, Dumitru TUCU

Causes and consequences of work events in the food industry enterprises from Timis county

Rudolf MIRESCU, Alexandru TUCU, Bogdan Raul MIRCEA, Dumitru TUCU

Occupational risk management by systems ergonomics in manufacturing of ice cream sticks

Alexandru TUCU, Anca-Alexandra PURCĂREA, George Catalin CRISAN, Vlad MĂRĂZAN, Dumitru TUCU

Perception of control in motivating compliance with ohs requirements in rural SMEs

Ariana-Bianca VELCIOV, Iasmina Madalina ANGHEL, Maria RADA, Vlad MĂRĂZAN, Antoanela COZMA

Valorification of the nettle plants from spontaneous flora as nettle powder – mineralizing potential in animal feed

14.00-16.00 LUNCH BREAK

16.00-18.00 PAPER PRESENTATIONS

Cristian BEJERITA, Adriana-Carmen CAZAN, Nicoleta CONDESCU-ULARU, Liliana DORNEANU, Cristian COSARIU, Simina MARIS

Statistical methods and artificial neural networks in the optimization of heating pellets and briquettes

Ramona DZITAC, Ileana MOGOȘANU, Simina-Ștefania MARIȘ, Gabriela-Victoria MNERIE, Mihaela POPUȚA

Some particularities of telework activities practiced in agriculture

Adriana-Carmen CAZAN, Cristian BEJERITA, Alexandra SUTA, Andrei-Alin VOINESCU,

Larisa Georgiana MATEI, Simina MARIS, Daniel BOTEZ, Titus SLAVICI

Contemporary manufacturing techniques used in agricultural engineering

George IPATE, Cristian CIOBANU, Gheorghe VOICU, Filip ILIE, Madalina STEFAN, Paula TUDOR, Iuliana GAGEANU, Petru CARDEI, Dan CUJBESCU

Estimation of the parameters of the portland cement clinker grinding equation in the ball mill

Pietro PICUNO, Roberto PUGLISI, George SPYROU, Evangelos DIMITRIOU, George PAPADAKIS, Maria SMYRNIOTAKI, Violetta KOUTSOGIANNNOPOULOU, Christine STAVROPOULOU, Tina PAPASIDERI, Mercè BALCELLS, Lluís MARTÍN CLOSAS, Luca BRONDELLI DI BRONDELLO, Cristina MATA, Anna FARRUS, Fátima BAPTISTA, Vasco FITAS DA CRUZ, Maria Elena MUR CACUHO, Teresa BATISTA, Firmino CORDEIRO, Zoe GODOSI, Delphine MARGOUT-JANTAC

Training a new generation of farmers and agricultural entrepreneurs to implement the concept of circular economy in agriculture: the tango-circular Erasmus+ project

Augustina PRUTEANU, Mihaela NITU, Cristian SORICA

Research on the analysis of fruit and vegetable juice yield

Cătălina TUDORA, Cristina STROE, Floarea BURNICHI, Adriana MUSCALU, Valentin Nicolae VLĂDUȚ

Interactive, modulated system for the protection of vegetable crops

Vlad MĂRĂZAN, Alexandru ȚUCU, Hortensia RĂDULESCU, Rareș HĂLBAC-COTOARĂ-ZAMFIR
Squall phenomena in the Banat-Crișana plain of Romania and their impact on agriculture in a changing climate

Vlad MĂRĂZAN, Codruța CHIȘ, Antoanela COZMA, Rareș HĂLBAC-COTOARĂ-ZAMFIR
Quantitative analysis of precipitation and the liaison with agriculture in western Romania

Antoanela COZMA, Ariana VELCIOV, Iasmina Madalina ANGHEL, Bogdan COZMA, Vlad MĂRĂZAN
Development of chicken eggshells powder as agricultural fertilizer and soil conditioner

Gheorghe VOICU, Mircea-Bucur LAZEA, Paula TUDOR, Gabriel-Alexandru CONSTANTIN, Bianca-Stefania ZABAVA
Plastic waste behaviour during compaction in horizontal press with continuous feeding

Nikola BILANDŽIJA, Andreja PUŠKARIĆ, Neven VOĆA, Vanja JURIŠIĆ, Jona ŠURIĆ, Anamarija PETER
The energy potential of the beer spent grain in small craft breweries – case study “Zmajska pivovara”

18.00 CLOSING SYMPOSIUM

THURSDAY – March 2nd

10.00 Godišnja skupština Hrvatske udruge za poljoprivrednu tehniku

All authors are kindly requested to limit the time of presentations at 10 minutes!

We wish You a pleasant time in Opatija and useful contacts during Symposium.

ATAE organiser

Symposium Venue is [Palace Bellevue hotel in Opatija](#).

Accommodation reservation: <http://moveg.hr/accommodation-reservation-atae/>