



Sveučilište u Zagrebu  
Agronomski fakultet



University of Zagreb  
Faculty of Agriculture



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



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***45<sup>th</sup> International Symposium "Actual Tasks on Agricultural Engineering"***  
**SYMPOSIUM PROGRAMME**

***21<sup>st</sup>-24<sup>th</sup> February 2017, Grand hotel "Adriatic" Opatija, Croatia***

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**MONDAY 20.02.2017**

**18.00-19.00 Registration of participants**

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**TUESDAY 21.02.2017**

**8.00-9.00 Registration of participants**

**9.00-9.30 OFFICIAL OPENING**

**Prof. dr. sc. Zoran Grgić, Dean of Faculty of Agriculture University of Zagreb**

**Prof. dr. sc. Silvio Košutić, President of Scientific Committee of ATAЕ**

**Prof. dr. sc. Istvan Szabo, CASEE representative, Faculty of Mechanical Engineering SZIE, Hungary**

**9.30-11.00 PAPER PRESENTATIONS**

**M. Medici, D. De Wrachien, S. Mambretti**

Classical and quantum water droplet dynamics: challenges and opportunities

**R. Halbac-Cotoara-Zamfir, S. Herban, Th. Petursdottir, D. C. Finger**

Applied hydrotechnics in agriculture – an answer to water scarcity

**R. Halbac-Cotoara-Zamfir, S. Herban, Th. Petursdottir, D. C. Finger**

Innovative sustainable land management practices for landscapes under climate changes threats

**S. Muraru, V. M. Muraru, P. Cardei, C. Muraru-Ionel, L. Vladutoiu**

Scanning equipment to assess physical soil properties

**C. Vilcu, Gh. Voicu, C.B. Lehr, E. Maican, P. Tudor, V. V. Safta**

3SWQM – watermark for pollution control of surface water

**11.00-11.30 COFFEE BREAK**

### **11.30-13.00 PAPER PRESENTATIONS**

**E. Šarauskis, V. Naujokiene, A. Adamaviciene, S. Buragiene, K. Vaitauskiene, K. Romaneckas, Z. Kriauciuniene, V. Liakas, A. Jasinskas, V. Butkus**

The influence of biological preparations on physical soil properties and tillage fuel consumption

**D. Steponavičius, A. Kemzūraitė, D. Juknevičius, A. Katkauskas**

The relationship between apparent soil electrical conductivity and particle size distribution of light-textured soils

**Z. Kriauciuniene, R. Cepulienė, R. Velicka, V. Naujokiene, E. Sarauskis, J. Sasnauskiene, A. Adamaviciene, L. Masilionyte, A. Marcinkeviciene, R. Kosteckas, A. Sinkeviciene, S. Matuizienė, S. Meskauskas, M. Kazlauskas**

The influence of biological preparations and organic fertiliser on soil temperature, electrical conductivity and CO<sub>2</sub>

**M. Mederle, H. Bernhardt**

Analysis of influencing factors on infield logistics in Germany

**J. Bauerdick, G. Piringer, I. Kral, A. Gronauer, H. Bernhardt**

Precision grassland farming – state of the art and future research topics

**R. Polat, M. Güner, D. Erdoğan, İ. Gezer, Ü. Atay, T. Aktaş**

Determination of optimum shaking frequency and amplitude of prototype body shaker used for mechanical harvesting of pistachio

### **13.00-15.00 LUNCH BREAK**

### **15.00-17.00 PAPER PRESENTATIONS**

**M. Reger, H. Bernhardt, J. Stumpfenhausen**

Navigation and personal protection in automatic feeding systems

**E. Pužauskas, D. Steponavičius, A. Kemzūraitė**

A theoretical investigation of concave bars for corn ears threshing

**K. Romaneckas, A. Adamavičienė, A. Sinkevičienė, R. Kimbirauskienė, V. Bogužas, E. Šarauskis, V. Butkus, A. Jasinskas, S. Buragienė, S. Čekanauskas**

Influence of five tillage patterns on faba bean productivity parameters

**D. Stajanko, M. Lakota, P. Vindiš**

Productivity and fuel consumption of tractor driven inter-row mulcher LOTTI IT 26 a in a different slope level vineyards

**P. Vindiš, D. Stajanko, M. Lakota**

Different soil tillage and ecological footprint in rape production

**Z. Dimitrovski, S. Dimitrov, S. Cvetkov, R. Kukutanov**

Condition of the pesticide application equipment in part of the Mediterranean region in the Republic of Macedonia

**A. Banaj, L. Šumanovac, G. Hefer, V. Tadić, Đ. Banaj**

Yield of corn grain by sowing in twin rows with MATERMACC - 2 planter

**V. Nagy, G. V. Mnerie, D. Mnerie, F. Bodin**

Study of technical and human influence factors on the efficient using of hog casings processing equipment

### **17.00 WELCOME RECEPTION**

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**WEDNESDAY 22.02.2017**

### **9.00-11.00 PAPER PRESENTATIONS**

**A. Jasinskas, D. Streikus, D. Steponavičius, E. Šarauskis, V. Kučinskas, K. Romaneckas**

Peat pellets production and usage as environmentally-friendly local fuel

**K. Kūūt, V. Raide, R. Ilves, A. Kūūt, J. Olt**

Endurance test methodology and assessment of common rail fuel supply system wear while using bioethanol fuels

**I. Kral, M. Mauch, G. Piringer, N. Barta, A. Bauer, J. Bauerdick, H. Bernhardt, A. Gronauer**  
Comparing the efficiency of automated versus manual steering during grassland harvest operations in Western Austria

**P. Schulze Lammers, O. Schmittmann, L. Klingbeil, M. Wieland, H. Kuhlmann**  
Coordinate controlled placement of sugar beet seeds

**V. Vlăduț, E. Marin, I. Grigore, S.Șt. Biriș, N. Ungureanu, G. Gheorghe, M. Matache, C. Persu, I. Voicea, D. Cujbescu, S. Bungescu, I. Kiss, C. Vlad**  
Field and laboratory wear testing of integral seedbed implement's chisel tines point

**V. Vlăduț, G. Gheorghe, E. Marin, S. Șt. Biriș, G. Paraschiv, D. Cujbescu, N. Ungureanu, I. Găgeanu, V. Moise, S. Boruz**  
Kinetostatic analysis of the mechanism of deep loosening system of arable soil

**V. Tadić, Đ. Banaj, D. Knežević, D. Petrović, Anamarija Banaj, D.Kaličić**  
Impact of technical spraying factors on leaf area coverage in a vineyard with Hardi Arrow radial fan mistblower

### **11.00-11.15 COFFEE BREAK**

### **11.15-13.00 PAPER PRESENTATIONS**

**M. Jančić**  
The use of Agriclim model in agriculture production analyses in Novi Sad

**W. G. Valdez, A. N. Espino**  
Application of gsm network for automated soil moisture index (SMI) monitoring

**D. Cujbescu, M. Matache, V. Vlăduț, Gh. Bolintineanu, C. Persu, I. Voicea, Gh. Voicu, N. Ungureanu**  
Validation of mathematical model regarding the horizontal movement of seeds detached from the orifices of distributing disk

**M. Chițoiu, Gh. Voicu, G. Paraschiv, G. Moiceanu, V. Vlăduț, M. Matache, I. Grigore, G. Bunduchi, I. Voicea, I. Găgeanu**  
Comparison of energy consumption of a hammer mill during chopping miscanthus stalks and energetic willow

**S. Maris, P. F. Nenu, S-A. Maris, T. Slavici**  
Estimating the calorific value of pellets from different blends of biomass

**P. F. Nenu, S. A. Maris, L. Forgacs, S. Maris**  
Use of biomass in coal steam boilers

**E. M. Nagy, G. Fodorean, C. Coța, N. Cioica, Z. Gyorgy**  
Influence of natural fibers on the mechanical properties of starch based bioplastics

### **13.00-15.00 LUNCH BREAK**

### **15.00-15.30 COMMERCIAL PRESENTATIONS**

**INA MAZIVA:** Field testing and comparison of INA motor oils in CASE MAGNUM and JOHN DEERE tractors

### **15.30-17.30 PAPER PRESENTATIONS**

**K. Soots, J. Olt**  
Testing the adjustable drum belt sorter for blueberry size sorting

**M. Arak, J. Olt**  
Determination of the connection force between berries and stem in blueberry plants

**Ph. Hemrattrakun, D. Boonyakiat, K. Nakano, S. Ohashi, P. Poonlarp, P. Theanjumpol, P. Maniwara**  
Nondestructive evaluation of soluble solids content in persimmon fruit CV. Xichu

**B. Ivancu, C. Persu, M. Matache, Gh. Voicu**  
Vibration analysis using power spectral density of a generated signal in a vibrating feeder

**Gh. Voicu, T. Casandroi, G.A. Constantin, E.M.Stefan, M.G. Munteanu**

Considerations about the sheeting of dough pieces to obtain bread

**O. B. Oprea, L. Gaceu, D. Tucu**

Valorisation of winery waste by using GSP (grape seed powder) as flour substitution in bakery industry

**M. Frioui, M. Shamtsyan, L. Gaceu, O. B. Oprea, D. Mnerie**

Rheological influence of (1–3)(1–6) mushrooms  $\beta$ -glucan, used as flour substitution in bakery industry

**I. A. Istrate, M. N. Dincă, M. Ferdeş, D. M. Cocârță**

The use of ozone in combination with electrochemical treatment for the remediation of organic polluted soils

## **20.00 OFFICIAL DINNER**

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### **THURSDAY 23.02.2017**

#### **9.00-11.00 PAPER PRESENTATIONS**

**S.Șt. Biriș, N. Ungureanu, N.E. Gheorghită, E. Maican, V. Vlăduț**

Theoretical research on enhancing the performance of cultivators working bodies

**J. Čepl, A. Svobodova**

Options of volunteer potato management in subsequent crops in the rotation

**B. Šundek, A. Dimitrijević, R. Miodragović, Z. Mileusnić**

Microclimatic parameters during raspberries production in tunnel type greenhouse

**S-A. Maris, D. Tucu, T. Banabatsas, V. Nagy, S. Maris, P-F. Nenu**

Possibilities of using the robots in greenhouses

**M. Hovi, A. Allik, K. Hovi, A. Andersson, A. Annuk**

Decreasing pollutants emission of stoves with high energy storage capacity

**M. Janžekovič, J. Turk, I. Grgić, J. Prišenk**

Preliminary comparison results of different bedding materials for horses

**C. Ramescu, F. M. Frigura-Iliasa, S. Musuroi, M. Frigura-Iliasa**

Refurbishment project for command and control of a grain tank

#### **11.00-11.15 COFFEE BREAK**

#### **11.15-13.00 PAPER PRESENTATIONS**

**I. Kral**

Carbon footprint of electricity from biogas with steam explosion pretreatment

**V. Jejčić, F. Al Mansour, I. Škrjanec, Tomaž Poje**

Options for the introduction of new biogas technology on family farms

**J. Lizasoain, B. Wlcek, J. Gittinger, A. Shevidi, A. Gronauer, A. Bauer**

Biogas production from maize straw after pretreatment with steam explosion

**M. Viskovic, M. Martinov, Dj. Djatkov**

Sustainability of biogas production and utilisation – Case studies

**Dj. Djatkov, M. Viskovic, M. Golub, M. Martinov**

Corn cob pellets as a fuel in Serbia: opportunities and constraints

**O. Hijazi, Dj. Djatkov, M. Effenberger**

Calculating greenhouse gas mitigation from the utilization of biogas for combined heat-and-power production

**T. Poje**

Analysis of pesticide application equipment on Slovenian farms

#### **13.00-15.00 LUNCH BREAK**

## 15.00-17.00 PAPER PRESENTATIONS

**E. Maican, I-C. Duțu**

CFD validation of a novel heat generation equipment for greenhouses and hothouses

**P. Picuno**

Biosystems engineering techniques for habitat restoration in protected areas

**D. Statuto, P. Picuno**

Micro-climatic effect of shading plastic nets for crop protection in Mediterranean areas

**F. Bodin, D. Mnerie, D. Țucu, V. Nagy**

Elements to optimize of the educational and formative management of engineers specialized for jobs in the agriculture's mechanization

**I. Grgić, V. Levak, K. Kovačević, J. Gugić, J. Prišenk, M. Zrakić**

The possibilities and limitations in the agronomists employment: attitudes of students of University of Zagreb Faculty of Agriculture

**I. Grgić, M. Zrakić, L. Hadelan, M. Makaš, E. Bećirović**

Students' knowledge about the agricultural mechanization on University of Zagreb Faculty of Agriculture and University of Sarajevo Faculty of Agriculture and Food Science

**G. C. Crisan, D. Tucu, R. Boboescu**

Improvement of safe & healthy work systems in agricultural SME's

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***FRIDAY 24.02.2017***

## 09.00 Annual meeting of Croatian Society of Agricultural Engineering

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Registration fee payment information is accessible on website of the Symposium: <http://atae.agr.hr/>

**All authors are kindly asked to limit the presentations to 15 minutes!**

Information about hotel accommodation You can get directly from hotel's booking service:

Grand Hotel Adriatic

tel: +385 51 719-010, fax: +385 51 719-015

web: <http://www.hotel-adriatic.hr/en/> mail: [info@hotel-adriatic.hr](mailto:info@hotel-adriatic.hr)

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

Organiser

**45<sup>th</sup> International Symposium “Actual Tasks on Agricultural Engineering”**

**45. Međunarodni simpozij “Aktualni zadaci mehanizacije poljoprivrede”**

<b>EUR</b>	<b>Adriatic I****</b>	
	Single room	Double room
Congress package 1 (breakfast and dinner)	69,00	48,00
Congress package 2 (breakfast+ lunch + dinner)	82,00	61,00

- Prices expressed in EURO per person/day
- Visitor's tax € 1,00 per person daily
- Payment should be effected directly on the reception in cash (in HRK) or by credit card (AmEx, Diners, Visa, EC/MC )

<b>HRK</b>	<b>Adriatic I****</b>	
	Jednokrevetna	Dvokrevetna
Kongresni aranžman 1 (večera + doručak)	516,00	360,00
Kongresni aranžman 2 (večera + doručak + ručak)	611,00	455,00

- cijene su izražene u HRK, po osobi i danu
- boravišna pristojba nije uključena u cijenu, a iznosi 7,00 kn/dan
- plaćanje se vrši direktno na recepciji gotovinom ili kreditnom karticom (AmEx, Diners, Visa, EC/MC)