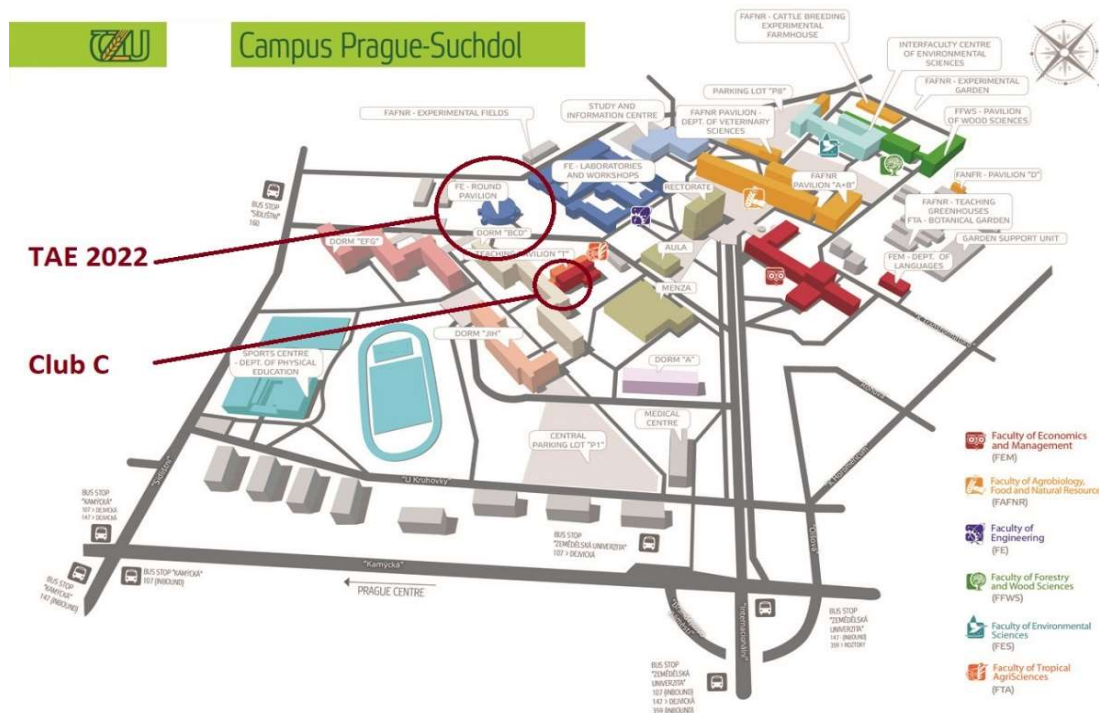


TAE 2022

Conference program

8th International Conference on Trends in Agricultural Engineering 2022



September 20th 2022 – September 23rd 2022
Prague, Czech Republic

Conference venue:

Conference TAE 2022, Round Hall, Faculty of Engineering, Czech University of Life Sciences Prague
Kamýčká 129, Praha 6, 16500

This conference program can be slightly modified.

All conference rooms are equipped with a computer, data projector and presenter.

The computers will run MS Windows. PowerPoint and PDF presentation formats will be supported.

Presentations are limited to 10 minutes (15 minutes for plenary sessions) plus 5 minutes for discussion.

There is no possibility of extending this time, so please ensure that you keep it.

All posters will be exhibited during TAE Conference. Posters should be installed in the morning before the first poster session on the 22nd of September.

Authors are expected to accompany their posters during posters sessions.

The poster should be prepared in the format of A0 portrait mode.

The dress code of TAE 2022 and all-conference events is business casual.

Round Hall (Kruhová Hala), Faculty of Engineering, Czech University of Life Sciences Prague

20.09.2022	21.09.2022	22.09.2022	23.09.2022
Tuesday	Wednesday	Thursday	Friday
	8:00 – 10:00 Registration		
	10:00 – 10:30 Opening ceremony		
	10:30 – 12:10 Plenary session I/ II	10:30 – 12:00 Parallel Sessions VII/ VIII	
	12:10 – 14:00 Lunch	10:30 – 12:00 Poster Session	
	14:00 – 15:30 Parallel Sessions III/ IV	12:15 – 13:00 Coffe Break	
	15:30 – 16:00 Coffe Break		
	15:30 – 16:30 Poster session		
17:00 – 19:00 Registration	14:00 – 18:00 Parallel Sessions V/ VI		
19:00 – 21:00 Welcome Party Round Hall	19:00 – 22:00 Cultural program - Round Hall	19:00 – 22:00 Closing ceremony + Gala dinner - The Strahov Monastic Brewery	

Sightseeing trips and excursions. Optional trips
(admission fee is not included in conference fee).

20.09.2022**Tuesday****Faculty of Engineering - Round Hall**

17:00 - 19:00 Registration

19:00 - 21:00**Welcome Party****21.09.2022****Wednesday****Faculty of Engineering - Round Hall**

Plenary Session – Congress Room**Chairman: doc. A. Kabutey**

8:00 - 10:00 Registration

10:00 - 10:30 Opening Ceremony

10:30 - 10:50 MONITORING AGRICULTURE, A REMOTE SENSING PERSPECTIVE*Inigo Molina SANCHEZ*

10:50 - 11:10 RECENT TWO TOPICS OF TORREFACTION: USE OF FOOD WASTE AS RAW MATERIAL AND USE OF BOILER FLUE GAS AS SWEEP GAS*Yoshimitsu UEMURA*

11:10 - 11:30 ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING FOR AGRICULTURAL APPLICATIONS IN MALAYSIA*Samsuzana Abd AZIZ*

11:30 - 11:50 APPLICATION OF PULSED ELECTRIC FIELDS FOR PROCESSING OF AGRICULTURAL PRODUCTS*Nikolai I. LEBOVKA*

11:50 - 12:10 RESEARCH IN AGRICULTURAL ENGINEERING - JOURNAL OF CAZV*František KUMHÁLA*

12:10 - 14:00**Lunch - Club C**

21.09.2022

Wednesday

Faculty of Engineering - Round Hall

Parallel Session I – Room RKU 1

Chairman: prof. F. Kumhála

- 14:00 - 14:15 **A QUALITATIVE AND ECONOMIC EVALUATION OF THE SPREADING OF DIFFERENT ORGANIC FERTILIZERS**
Kristina LEKAVIČIENĖ, Raimonda ZINKEVIČIENĖ, Eglė JOTAUTIENĖ, Vilma NAUJOKIENĖ, Zita KRIAUCIŪNIENĖ, Algirdas JASINSKAS, Egidijus ŠARAUSKIS
- 14:15 - 14:30 **EFFECT OF MAP-BASED SITE-SPECIFIC SEEDING USING PROXIMAL SENSING DATA ON WHEAT YIELD PARAMETERS AND ECONOMY**
Marius KAZLAUSKAS, Egidijus ŠARAUSKIS, Kęstutis ROMANECKAS, Vilma NAUJOKIENĖ, Indrė BRUČIENĖ, Sidona BURAGIENĖ, Dainius STEPONAVIČIUS, Algirdas JASINSKAS, Dovydas VAICEKAUSKAS, Abdul Mounem MOUAZEAN
- 14:30 - 14:45 **USE OF AERIAL APPLICATION OF POD SEALANTS IN CANOLA CROPS**
František KUMHÁLA, Jitka KUMHÁLOVÁ, David BEČKA, Martin MADĚRA
- 14:45 - 15:00 **COMBINING THE SURVEILLANCE OF UNMANNED AERIAL VEHICLE AND DEEP LEARNING METHODS IN SAGO PALM DETECTION**
Sri Murniani Angelina LETSOIN, Ratna Chrismiari PURWESTRI, David HERÁK
- 15:00 - 15:15 **SUSTAINABLE IRRIGATION USING INTERNET OF THINGS**
Zisis TSIROPOULOS, Vasilios LIAKOS, Athanasios MAKRIS, Georgios PROIAS, Ioannis RAPTIS, Eleni WOGIATZI, Ioannis GRAVALOS
- 15:15 - 15:30 **QUANTIFYING THE TRAFFIC FOOTPRINT OF ZERO-TILLAGE SYSTEMS**
Guido F. BOTTA, Gustavo F. NARDON, David RIVERO, Mauro E. REMERSARO, Enrique E. CONTESSOTTO, Fernando BIENVENIDO, Diego G. GHELFI, Diogenes L. ANTILLE

15:30 - 16:30

Poster Session - Congress Room

15:30 - 16:00

Coffee Break - Round Hall Cafeteria

21.09.2022

Wednesday

Faculty of Engineering - Round Hall

Parallel Session III – Room RKU 1

Chairman: prof. G. Gurdil

- 16:00 - 16:15 **A COBOTIC AND FLEXIBLE SOLUTION FOR HANDLING OF HEAVY LOADS**
Vigen ARAKELIAN
- 16:15 - 16:30 **COMPUTATIONAL FLUID DYNAMICS ANALYSIS FOR GREENHOUSE WITH DIFFERENT VENTILATION OPENINGS AND ORIENTATIONS IN SAMSUN, TURKEY**
Bilal CEMEK, Muminah MUSTAQIMAH, Erdem KÜÇÜKTOPCU, Gürkan Alp Kağan GURDIL
- 16:30 - 16:45 **ACQUISITION OF 3D MODELS OF PARTS BY REVERSE ENGINEERING PROCESS**
Martina HAJKOVÁ, Róbert DRLIČKA, Martin KOTUS, Monika TÖRÖKOVÁ, Juraj CANDRÁK
- 16:45 - 17:00 **DISCRETE ELEMENT MODELS OF A COHESIVE SOIL**
Rostislav CHOTEBORSKY, Jiří KURE, Egidijus KATINAS
- 17:00 - 17:15 **MODELLING OF COMPOSITE REINFORCEMENTS IN AGRICULTURAL EQUIPMENT**
Jaroslav MLÝNEK, Michal PETRŮ, Roman KNOBLOCH
- 17:15 - 17:30 **TENSILE TESTING AND FEA SIMULATION OF A 3D PRINTED ONYX SPECIMEN**
Martin BARÁTH, Martin KOTUS, Patrik KÓSA, Danica ČERVINKOVÁ

19:00 - 22:00

Cultural program - Round Hall

Faculty Brewery "Suchdolský Jeník" Excursion

Reception

Wednesday

Faculty of Engineering - Round Hall

Parallel Session II – Room RKU 2

Chairman: doc. Z. Aleš

14:00 - 14:15	USING ANN IN MODELLING THE MECHANICAL PROPERTIES OF LOADING POSITION AND STORAGE DURATION OF PEAR FRUIT <i>Elçin YEŞİLOĞLU CEVHER, Demet YILDIRIM, Gürkan Alp Kağan GÜRDİL</i>
14:15 - 14:30	RHEOLOGICAL PROPERTIES OF FRUIT DISTILLATES <i>Ján CSILLAG, Daniela KUNECOVÁ, Tomáš HOLOTA, Matúš BILČÍK, Monika BOŽIKOVÁ</i>
14:30 - 14:45	THE EFFECT OF FIELD ROBOT PARAMETERS ON WEED CONTROL EFFICIENCY <i>Indrė BRUČIENĖ, Egidijus ŠARAUSKIS</i>
14:45 - 15:00	ASSESSMENT OF THE POSSIBILITY OF EXTENDING THE INTERVALS BETWEEN ENGINE OIL CHANGES ON BIOGAS POWERED UNITS <i>Jerzy KASZKOWIAK, Marcin ZASTEMPOWSKI, Lubomir HUJO</i>
15:00 - 15:15	MULTI-CROP BIOMASS PRODUCTION FOR ENERGY PURPOSES <i>Kęstutis ROMANECKAS, Jovita BALANDAITĖ, Austėja ŠVEREIKAITĖ, Algirdas JASINSKAS, Saira KALJEVA</i>
15:15 - 15:30	GEOSPATIAL DATASET FOR EVALUATION OF FIELD SCALE EXPERIMENT <i>Miroslav MACÁK, Jitka KUMHÁLOVÁ, Jana GALAMBOŠOVÁ, František KUMHÁLA, Marek BARÁT, Vladimír RATAJ, Jan CHYBA</i>

15:30 - 16:30

Poster Session - Congress Room

15:30 - 16:00

Coffee Break - Round Hall Cafeteria

Wednesday

Faculty of Engineering - Round Hall

Parallel Session IV – Room RKU 2

Chairman: doc. R. Mishra

16:00 - 16:15	THE TEMPERATURE OF PHOTOVOLTAIC PANELS AND THE EFFECT ON THEIR EFFICIENCY <i>Martin LIBRA, Sona GRIGORYAN, Vladislav POULEK, Tomáš PETRÍK, Pavel KOUŘÍM, Jan SEDLÁČEK, Václav BERÁNEK</i>
16:15 - 16:30	ANALYSIS OF ULTRASOUND SIGNAL ON REFLECTION FROM A SHARP CORNER SURFACE <i>Vladimír MADOLA, Vladimír CVIKLOVIČ, Stanislav PAULOVIČ</i>
16:30 - 16:45	MULTI-CROP BIOMASS UTILIZATION FOR BIOENERGY PURPOSES AND EVALUATION OF PRESSED BIOFUEL PROPERTIES <i>Rita PETLICKAITĖ, Algirdas JASINSKAS, Rolandas DOMEIKA, Kęstutis ROMANECKAS, Jiri MAŠEK</i>
16:45 - 17:00	NEW DESIGN SOLUTIONS FOR WORKING UNITS OF MACHINES IN TERMS OF EFFICIENCY OF THEIR OPERATION <i>Marcin ZASTEMPOWSKI, Andrzej BOCHAT, Jerzy KASZKOWIAK, Lubomir HUJO, Maciej JANIEC</i>
17:00 - 17:15	FIELD INVESTIGATIONS OF THE EXPERIMENTAL CLEANER OF THE ROOT CROP HEADS FROM THE TOP RESIDUES <i>Volodymyr BULGAKOV, Ivan HOLOVACH, Valerii ADAMCHUK, Yevhen IHNATIEV, Aivars ABOLTINS, Semjons IVANOV</i>
17:15 - 17:30	INFLUENCE OF HEAT PUMP CONTROL ON PERFORMANCE PARAMETERS <i>Pavel MÍŠEK, Radomír ADAMOVSÝ, Pavel NEUBERGER</i>

19:00 - 22:00

Cultural program - Round Hall

Faculty Brewery "Suchdolský Jeník" Excursion

Reception

Thursday

Faculty of Engineering - Round Hall

Parallel Session VII – Room RKU 1

Chairman: prof. D. Herák

10:30 -10:45	APPLICATION OF DIGITAL TECHNOLOGY IN AGRICULTURE: POTENTIAL SUPPORT FOR WINEGROWERS <i>Oskars JAVA, Bernward ASPIRION, Torsten PRIEBE, Eszter SÁRKÖZI</i>
10:45 - 11:00	A REVIEW OF ENVIRONMENTAL IMPACT OF MOTORIZED VEHICLE ON HUMAN <i>Debela JIMA, Tibor SIPOS, Retta ZEWDIE</i>
11:00 -11:15	A REVIEW ON ORGANIC FARMING IN SUSTAINABLE ENVIRONMENT <i>Elnaz AMIRAHMADI, Jan MOUDRÝ</i>
11:15 - 11:30	A META-ANALYSIS ON INFLUENCE OF OXIDIZED-BIOCHAR ON CROP YIELD <i>Mohammad GHORBANI, Petr KONVALINA, Marek KOPECKÝ, Ladislav KOLÁŘ</i>
11:30 - 11:45	TEMPERATURE RELATIONS OF SOME MUSTARDS RHEOLOGIC PROPERTIES <i>Peter HLAVÁČ</i>
11:45 - 12:00	DEVELOPING OF CONTROL SYSTEM FOR INDOOR HYDROPONIC VERTICAL FARMING <i>Miroslav STROB, Jiří ZHOŘ, Pavel OLŠAN, Martin FILIP</i>
12:00 - 12:15	INFLUENCE OF SOIL COMPACTION ON GROWTH OF SPRING BARLEY <i>Marek BARÁT, Miroslav MACÁK, Vladimír RATAJ, Jana GALAMBOŠOVÁ, Róbert LÁMOŠ</i>
10:30 - 12:00	Poster Session - Congress Room
12:15 - 13:00	Coffee Break - Round Hall Cafeteria

Thursday

Faculty of Engineering - Round Hall

Parallel Session VIII – Room RKU 2

Chairman: doc. Z. Aleš

10:30 -10:45	INNOVATIONS OF BARN CONSTRUCTIONS FOR BETTER PARAMETERS OF THE BREEDING ENVIRONMENT <i>Jana LENDELOVÁ, Ingrid KARANDUŠOVSKÁ, Milada BALKOVÁ, Miroslav ŽITŇÁK</i>
10:45 - 11:00	LOADING ACCURACY OF TOTAL MIXED RATION COMPONENTS AS A DIGITAL TOOL ENSURING THE OPTIMAL BREEDING CONDITIONS AND WELFARE IN DAIRY FARMING <i>Gabriel LÜTTMERDING, Roman GÁLIK, Štefan BOĐO, Jana LENDELOVÁ</i>
11:00 -11:15	MECHANICAL PROPERTIES OF BIOMASS PELLETS <i>Maroš SZENTESI, Viera KAŽIMÍROVÁ, Ľubomír KUBÍK</i>
11:15 - 11:30	AN EVALUATION OF THE GRAPE VINE GROWTH AFTER DEEP COMPOST INCORPORATION <i>Patrik ZATLOUKAL, Vladimír MAŠÁN, Patrik BURG, Alice ČÍŽKOVÁ</i>
11:30 - 11:45	WHEAT AND LEGUMES MIXTURES INFLUENCE GRAIN QUALITY <i>Trong Nghia HOANG, Marek KOPECKÝ, Mohammad GHORBANI, Yves Theoneste MURINDANGABO, Dang Khoa TRAN, Karel SUCHÝ, Petr KONVALINA</i>
11:45 - 12:00	STRUCTURE AND TRIBOLOGICAL PROPERTIES OF SINGLE AND DOUBLE LAYER DEPOSITS <i>Róbert DRLIČKA, Radovan ŠOŠKA, Martin KOTUS, Peter ČÍČO</i>
12:00 - 12:15	MEASUREMENT OF THE PROCESS OF MAKING WINE WITH THE HELP OF IOT <i>Jakub VOŠAHLÍK, Jan HART</i>
10:30 - 12:00	Poster Session - Congress Room
12:15 - 13:00	Coffee Break - Round Hall Cafeteria

19:00 - 22:00

Galla Dinner

Dinner in Prague's Old Town at Klášterní pivovar Strahov - <http://www.klasterni-pivovar.cz/>
(transportation will be arranged) - The Strahov Monastic Brewery, Klášterní pivovar Strahov, Strahovské nádvoří 301, Prague 1

Wednesday
Thursday

Faculty of Engineering - Round Hall

15:30 - 16:30		Poster Session - Congress Room
1	KNOWLEDGE OF PACKAGING WASTE IN THE CZECH REPUBLIC: A STUDENT'S AWARENESS STUDY <i>Vlastimil ALTMANN, Shuran ZHAO</i>	
2	WATER TREATMENT TECHNOLOGY SUPPLEMENTED BY ELEMENTS FROM INDUSTRY 4.0 – A REVIEW <i>David GUTH</i>	
3	STUDY OF CONTINUOUS SENSING OF THE SPEED OF BELTS IN A HOP DRYER <i>Petr HEŘMÁNEK, Adolf RYBKA, Ivo HONZÍK</i>	
4	Dynamic biaxial LOA DYNAMIC BIAxIAL LOADING OF CAR SEATSDING OF CAR SEATS <i>Petr LEPSHÍK, Vítězslav FLIEGEL, Aleš LUFINKA</i>	
5	EVALUATION OF ELECTRODES WITH CONDUCTIVE INK FOR FLEXIBLE TACTILE SENSOR <i>Viktor NOVÁK, Jaromír VOLF, Vladimír RYŽENKO, Stanislava PAPEŽOVÁ</i>	
6	INCREASE IN THE HOP BELT DRYER DRYING INTENSITY <i>Adolf RYBKA, Petr HEŘMÁNEK, Ivo HONZÍK</i>	
7	THE PROBLEMATIC OF PRECISION SOWING <i>Ladislav ŠEVČÍK, Michal PETRŮ</i>	
8	PARAMETERS OF HEMP OIL FILTRATION USING A PLATE FILTER <i>Jiří SOUČEK, Petr JEVIČ, Martin DĚDINA, Veronika TOMÁNKOVÁ, Kornél SZALAY, Vladimír MAŠÁN, Algirdas Jasinskas</i>	
9	QUANTIFICATION AND DETERMINATION OF MUNICIPAL WASTE AND ITS RELATION TO HOUSEHOLD SIZE IN THE CZECH REPUBLIC <i>Shuran ZHAO, Vlastimil ALTMANN, Jan ŠONSKÝ, Petr VACULÍK</i>	
10	COMPARISON OF TWO METHODS FOR TREE UPROOTING FORCE MEASUREMENT <i>Jakub ČEDÍK, Radek PRAŽAN, Marian RYBANSKY, Ladislav JÍLEK, Vladimír ŠLEGER, Martin HAVLÍČEK</i>	
11	CHARACTERISTICS OF ECOLOGICAL ENERGY CARRIERS USED IN AGRICULTURAL TECHNOLOGY <i>Lubomír HUJO, Romana JANOUSHKOVÁ, Mirko SIMIKIĆ, Marcin ZASTEMPOWSKI, Matej MICHALIDES, Monika HAJDÁKOVÁ</i>	
12	DIGESTATE APPLICATION RATES WITH REGARD TO EMISSION OF GREENHOUSE GASES <i>Jaroslav KORBA, Petr ŠAŘEC, Václav NOVÁK, Pavel BROŽ, Antonín DOLAN</i>	
13	THE BRAKE DECELERATION OF THE FORKLIFT TRUCKS AND THE WAREHOUSE SAFETY <i>Eva OLMROVÁ, Martin PEXA, Jan PALÁTKA</i>	
14	THE IMPORTANCE OF THE INFORMATION PROVIDED BY THE VEHICLE FROM THE DRIVER'S POINT OF VIEW <i>Jakub POVÝŠIL, Sudeep Sangamesh BABU, Michal HRUŠKA, Stanislav JELEN, Petr VACULÍK, Petr BENDA, Anna Maria ZIFIA</i>	
15	MOISTURE CONDITIONING OF BULK RAPESEEDS AND DETERMINATION OF MECHANICAL PROPERTIES AND PERCENTAGE OIL YIELD UNDER UNIAXIAL COMPRESSION LOADING <i>Nor Hafiy Adli RAZALI, Emir Asyraf AGUS, Je Zen CHEONG, Abraham KABUTEY, David HERÁK, Čestmír MIZERA</i>	
16	USING SIMULATION TO OPTIMIZE PREVENTIVE MAINTENANCE INTERVAL <i>Zdeněk ALEŠ, Jan NOVÁK, Marián KUČERA, Jindřich PAVLŮ</i>	

17	COMBINING SIMULATION AND MTM TO IMPROVE GLASS EYES PRODUCTION <i>Vladimír SOJKA, Petr LEPŠÍK</i>
18	DESIGN OF SERVICE UNIFYING INFRASTRUCTURE FOR CHARGING OF ELECTRIC VEHICLES <i>Štěpán PÍCHA, Martin KOTEK, Veronika HARTOVÁ, Veronika ŠTEKEROVÁ, Tomáš PÍCHA</i>
19	SPECTRAL INDICES AS A TOOL FOR HOP GROWTH EVALUATION <i>Jana SEIDLOVÁ, Pavel PROCHÁZKA, Jitka KUMHÁLOVÁ</i>
20	LANDFILLING OF BIODEGRADABLE WASTE AND GENERATION OF LANDFILL GAS <i>Jan ŠONSKÝ, Shuran ZHAO, Petr VACULÍK, Vlastimil ALTMANN</i>
21	DIGESTATE APPLICATION RATES WITH REGARD TO EMISSION OF GREENHOUSE GASES <i>Jaroslav KORBA, Petr ŠAŘEC, Václav NOVÁK, Pavel BROŽ, Antonín DOLAN</i>
22	SOIL EROSION DURING SECONDARY TILLAGE <i>Pavel BROŽ, Josef HŮLA, Petr NOVÁK, Jitka EDROVÁ, Jaroslav KORBA, Václav NOVÁK</i>
23	ANALYSIS OF FLUID FLOW IN RADIAL CENTRIFUGAL PUMP <i>Jan ČERNÝ, Martin POLÁK</i>
24	POSSIBILITIES OF SAR IMAGES FOR POPPY EVALUATION <i>Jakub DVORÁK, Kristýna BALÁŽOVÁ, Karel STARÝ, Zdeněk JELÍNEK, Jan CHYBA, Jiří MAŠEK, Jitka KUMHÁLOVÁ</i>
25	A QUALITATIVE AND ECONOMIC EVALUATION OF THE SPREADING OF DIFFERENT ORGANIC FERTILIZERS <i>Kristina LEKAVIČIENĖ, Raimonda ZINKEVIČIENĖ, Eglė JOTAUTIENĖ, Vilma NAUJOKIENĖ, Zita KRIAUCIŪNIENĖ, Algirdas JASINSKAS, Egidijus ŠARAUSKIS</i>
26	INVESTIGATION OF INFRARED AND HOT AIR OVEN FOR DRYING FRESH APPLE SLICES AT DIFFERENT TEMPERATURES <i>Oldřich DAJBÝCH, Abraham KABUTEY, Čestmír MIZERA, David HERÁK</i>
27	SPATIO-TEMPORAL VARIABILITY OF RICE CROP FROM REMOTE SENSING <i>Fiorentino COSTANZA, Barracu FRANCESCO, Spanu ANTONINO, D'Antonio PAOLA, Francesco TOSCANO</i>
28	APPLICATION OF ARTIFICIAL NEURAL NETWORK IN PREDICTING THE DRYING KINETICS AND CHEMICAL ATTRIBUTES <i>Kemal Çağatay SELVI, Alfadhl Yahya KHALED, Taner YILDIZ</i>
29	EXPERIMENTAL DETECTION OF THE PELLETS DRYING CHARACTERISTICS <i>Monika BOŽIKOVÁ, Matúš BILČÍK, Ján CSILLAG, Tomáš HOLOTA, Maroš SZENTESI</i>
30	ENERGY ANALYSIS OF COOLING SOURCES IN DISTILLATION COLUMN <i>Tomáš HOLOTA, Mária HOLOTOVÁ, Ján CSILLAG, Matúš BILČÍK, Peter KUCHAR</i>