IASI UNIVERSITY OF LIFE SCIENCES (IULS)

FACULTY OF AGRICULTURE

INTERNATIONAL SCIENTIFIC CONGRESS

Symposium of Agriculture and Food engineering

21 - 22 October 2021
Iasi, Romania

SCIENTIARUM VITAE CONGRESSUM

PROGRAMME
BOOK OF ABSTRACTS

SPEAKER OF THE PLENARY SESSION

THURSDAY, OCTOBER 21st, 2021
10.00 – 10.30
PhD, Prof. Rod SNOWDON
Justus Liebig University Giessen, Germany
UNRAVELLING THE GENETICS AND PHYSIOLOGY OF CROP YIELD STABILITY

FIRST SECTION

WATER AND SOIL

PLANT NUTRITION AND SOIL CHEMISTRY
SOIL MANAGEMENT AND AGRICULTURAL TECHNIQUES
SOIL BIOLOGY
AGRICULTURAL CADASTRE
TOPOGRAPHY
CROPS IRRIGATION
LAND RECLAMATION SYSTEMS
PEDOLOGY
LANDSCAPE ARRENGEMENT
ENVIRONMENT ENGINEERING
LAND PLANNING
AGRICULTURAL CONSTRUCTIONS

PLENARY SESSION

Chairpersons: **PhD, Prof. Daniel BUCUR**
PhD, Assoc. Prof. Feodor FILIPOV

THURSDAY, OCTOBER 21st, 2021

14.30 – 14.45
BİLALOĞLU İsa, ACAR Bilal
Selçuk University, Faculty of Agriculture, Department of Farm Buildings & Irrigation, Konya, Turkey
ASSESSMENT OF SPRINKLER IRRIGATION SYSTEMS USED FOR PEANUT IRRIGATION IN MEDITERRANEAN ZONE, TURKEY

14.45 – 15.00
LUCA Alexandru-Lucian, STICEA Andrei-Stefan, MARCOIE Nicolae
"Gh. Asachi" Technical University Iasi, Romania

REHABILITATION AND MODERNIZATION OF IRRIGATION PLOTS FOR CURRENT OPERATING CONDITIONS

15.00 – 15.15

CĂPȘUNĂ Sorin, FILIPOV Feodor, CALISTRU Anca Elena, JITĂREANU Gerard
University of Life Sciences, Iasi, Romania

THE ASSOCIATED EFFECT OF AMELIORATIVE WORKS AND SOIL TILLAGE ON THE SOIL TEXTURE FROM FIELD TERRACE OF THE COMPLEX SLOPE LAND OF URSULUI VALLEY-IASI COUNTY

15.15 – 15.30

FILIP Manuela, CARA Irina Gabriela, RUSU Mariana, ȚOPA Denis, JITĂREANU Gerard
University of Life Sciences, Iasi, Romania

NITROGEN ASSESSMENT UNDER ORGANIC AND CONSERVATIVE CONDITIONS, DIFFERENCES AND SIMILARITIES

15.45 – 16.00

BARBU Sebastian[1], MATACHE Alexandru[1], MANU Laurenţiu Cătălin[1], PETRESCU Nicolae[2]
[1]UASVM Bucharest, Romania
[2]Valahia University of Targoviște, Romania

RESEARCH ON OPERATING BEHAVIOUR AND PROPOSALS TO INCREASE THE RELIABILITY OF LAND IMPROVEMENT WORKS IN THE WATER CATCHMENT AREA OF HOMORICIU BASIN, TRIBUTARY OF IALOMITA RIVER, DAMBOVITA COUNTY

16.00 – 16.15

CIOCAN Florin[1], MANU Laurenţiu Cătălin[1], MATACHE Alexandru[1], PETRESCU Nicolae[2], MURĂTOREANU George[2]
[1]UASVM Bucharest, Romania
[2]Valahia University of Targoviște, Romania

THE DEGREE OF SOIL FERTILITY IN THE DRAINAGE BASIN OF RÂUL ALB STREAM, DÂMBOVIŢA COUNTY, UP TO THE POINT IT MEETS BĂRBULEŢU STREAM, EXPRESSED THROUGH THE SOIL REACTION AND THE SUPPLY OF NUTRIENTS (ORGANIC MATTER, NITROGEN, PHOSPHORUS AND POTASSIUM)

16.15 – 16.30

COJOCARU Olesea, ŞUŞU Vasile
State Agrarian University, Moldova

ENVIRONMENTAL IMPACT ASSESSMENT AND THE CHARACTERISTIC OF NATURAL RESOURCES IN SCULENI VILLAGE

16.30 – 16.45

ANDRIUCĂ Valentina[1], LOZAN Raisa[2], TĂRÎŢĂ Andrei[2]
[1]State Agrarian University, Moldova
[2]Institute of Ecology and Geography, Moldova

IRRIGATION POSSIBILITIES OF THE SOILS FROM THE NORTHERN AGRICULTURAL REGION OF THE REPUBLIC OF MOLDOVA LOCATED IN THE RIVER BASIN OF THE PRUT

16.45 – 17.00

JIGĂU Gheorghe, STADNIC Anjela, TURCHIN Boris, BORȘ Natalia, LEȘANU Mihai, SPRÂNCEAN Eugen, PLĂCINTĂ Nina
State Agrarian University, Moldova

MANIFESTATIONS OF ANTROPO NATURAL ARIDIZATION IN THE AGROGENIC LAYER OF ARABLE CHERNOZEMS: FACTORS, MECHANISMS

17.00 – 17.15

ALEXANDRU Mihai, ȚOPA Denis, CALISTRU Anca Elena, CĂPȘUNĂ Sorin, FILIPOV Feodor, JITĂREANU Gerard
University of Life Sciences, Iasi, Romania

THE SALINITY OF THE SOILS ON THE WESTERN SLOPE OF THE BEJENEASA FARM – COTNARI

17.15 – 17.30

FILIPOV Feodor, ȚOPA Denis, GALEȘ Daniel Costel, CĂPȘUNĂ Sorin
University of Life Sciences, Iasi, Romania

CRITERIA FOR THE DEFINITION OF TECHNOSOLS IN THE ROMANIAN SOIL TAXONOMY SYSTEM (SRTS-2012) AND IN THE WORLD REFERENCE BASE OF SOIL RESOURCES (WRB 2014)

17.30 – 17.45

AGAPIE (MEREUȚĂ) Ioana, LUCA Mihail, GHERASIM Paul-Marian
"Gh. Asachi" Technical University, Iași, Romania

DESIGN OF GNSS DEFORMATION MONITORING NETWORKS TO DAMS MADE OF LOCAL MATERIALS

17.45 – 18.00

DOMINTE (CROITORU) Violeta, LUCA Mihail, AGAPIE (MEREUȚĂ) Ioana

"Gh. Asachi" Technical University Iasi, Romania

DEGRADATION OF EARTH'S DAMS UNDER THE EFFECT OF CLIMATE CHANGE

18.00 – 18.15

BALAN Isabela, DĂNILĂ Anca, CUCUTEANU Adelina, BALAN Ioan, CRENGANIȘ Loredana, CORDUNEANU Flaviana, ȚOPA Denis

University of Life Sciences, Iasi, Romania

STUDIES REGARDING THE SAFETY IN OPERATION OF THE NEGRENI RESERVOIR, BOTOȘANI COUNTY, ROMANIA

18.15 – 18.30

BALAN Ioan, GIURMA-HANDLEY Raluca, DĂNILĂ Anca, CUCUTEANU Adelina, CERCEL Petru, TOPOLNICEANU Alexandru, BALAN Isabela

University of Life Sciences, Iasi, Romania

FLOOD RISK ASSESSMENT FOR THE PRUT RIVER HYDROGRAPHIC BASIN IN ROMANIA

18.30 – 18.45

RADU Oprea[1], CUREA Daniel[2]

[1]University of Life Sciences, Iasi, Romania

[2]OSPA Iasi, Romania

LIMITING FACTORS OF AGRICULTURAL LAND IN CUCUTENI ADMINISTRATIVE TERRITORY, IASI COUNTY

18.45 – 19.00

ACATRINEI Ligia

NIRDBS - Institute of Biological Research, Iasi, Romania

ECOPHYSIOLOGICAL PARAMETERS OF THE HERBACEOUS PLANT COMMUNITY IN THE VICINITY OF CROPS IN THE DANUBE DELTA NATURE RESERVE AND THEIR INTERACTION

POSTER SESSION

Chairperson: PhD, Lecturer Oprea RADU

FRIDAY, OCTOBER 22nd, 2021

9.00 – 9.05

LEAH Tamara, CERBARI Valerian

"Nicolae Dimo" Pedology, Agrochemistry and Soil Protection Institute, Moldova

EVOLUTION OF KNOWLEDGE OF VIRGIN AND ARABLE FOREST SOILS IN THE FOREST-STEPPE AREA OF THE REPUBLIC OF MOLDOVA

9.05 – 9.10

COJOCARU Olesea, CUCU Mihai

State Agrarian University of Moldova - Chisinau, Moldova

APPRECIATION OF CHANGING CLIMATIC CONDITIONS, HYDROGRAPHY AND SOIL DISTRIBUTION IN COSTULENI VILLAGE

9.10 – 9.15

PETCU Elena, SCHITEA Maria, POPA Mihaela

National Agricultural Research and Development Institute Fundulea, Romania

RELATIONSHIP BETWEEN STOMATAL CONDUCTANCE AND DROUGHT SUSCEPTIBILITY INDEX IN ALFALFA (*MEDICAGO SATIVA* L.)

9.15 – 9.20

GHERASIMI Paul-Marian, DIMA Mihai, AGAPIE (MEREUȚĂ) Ioana, DUDĂU Cornel

"Gh. Asachi" Technical University Iasi, Romania

STUDY OF THE URBAN HEAT ISLAND IN IASI MUNICIPALITY USING REMOTE SENSING AND GIS

9.20 – 9.25

TOTOLEA Cristian, POPOVICI Cătălina, NENCIU Daniela, BUCUR Daniel

University of Life Sciences, Iasi, Romania

SOIL EROSION CONTROL ON AGRICULTURAL LAND IN BACAU COUNTY DURING 1990-2020

9.25 – 9.30

POPOVICI Cătălina, TOTOLEA Ionuţ Bogdan, HUŢANU (TOTOLEA) Adriana Mihaela, PRUTEANU Sergiu, BUCUR Daniel

University of Life Sciences, Iasi, Romania

STUDY OF MOISTURE DISTRIBUTION IN DRIP-IRRIGATED CAMBIC CHERNOZEM IN THE CRACAU PLAIN

9.30 – 9.35

MOCANU Ionuț, NENCIU (COADĂ) Daniela, BUCUR Daniel

University of Life Sciences, Iasi, Romania

STUDY ON THE ECONOMIC YIELD OF WHEAT CROPS IN THE SPECIFIC CONDITIONS OF THE GREAT ISLAND OF BRĂILA IN IRRIGATED AND NON-IRRIGATED SYSTEM

9.35 – 9.40

COADĂ (NENCIU) Daniela, POPOVICI Cătălina Ionela, MOCANU Ionuț, SORIN Damian, BUCUR Daniel

University of Life Sciences, Iasi, Romania

IRRIGATION REGIME FOR BEANS IN THE CONDITIONS OF THE ROMANIAN PLAIN

9.40 – 9.45

DAMIAN Sorin Lucian, PREPELIȚĂ Cătălina Ionela, PRUTEANU Sergiu Ionuț, BUCUR Daniel

University of Life Sciences, Iasi, Romania

RATIONAL USE OF OFF-SEASON RAINFALL AND WATER CONSUMPTION IN IRRIGATED CROPS IN THE CONDITIONS ON THE UPPER BASIN OF THE RIVER PRUT

9.45 – 9.50

RADU Oprea

University of Life Sciences, Iasi, Romania

QUALITY OF AGRICULTURAL LANDS IN CUCUTENI COMMUNE, IASI COUNTY

9.50 – 9.55

TOTOLEA Cristian, POPOVICI Cătălina, MOCANU Ionuț, BUCUR Daniel

University of Life Sciences, Iasi, Romania

RESEARCH ON THE TECHNICAL EFFICIENCY OF ANTI-EROSION WORKS IN THE IZVORU BERHECIULUI HYDRO-AMELIORATION SYSTEM

9.55 – 10.00
TOPAK Ramazan, CERAN Ramazan
University of Selçuk, Konya, Turkey
ENERGY USE AND RELATED GREENHOUSE GAS EMISSIONS OF GROUNDWATER-IRRIGATED OIL SUNFLOWER PRODUCTION

10.00 – 10.05
CĂLUGĂR Adina
Institute of Biological Research Iasi, Romania
MESOSTIGMATID MITES AS A PIECE OF THE BIOINDICATORS PUZZLE

SECOND SECTION

AGRICULTURAL TECHNOLOGIES

BIOLOGICAL AGRICULTURE
PASTURELAND AND FORAGE CROPS
PROCESSING OF AGRICULTURAL PRODUCTS
PLANT PATHOLOGY
PLANT PHYSIOLOGY
ECOLOGY
ENTOMOLOGY
CROPS SCIENCE
AGRICULTURAL MACHINERY
EXPERIMENTAL DESIGN IN AGRICULTURE

PLENARY SESSION

Chairpersons: **PhD, Assoc. Prof. Dănuț SIMIONIUC**
PhD, Assoc. Prof. Florin Daniel LIPȘA

THURSDAY, OCTOBER 21st, 2021

14.30 – 14.40

GEORGESCU Emil[1], CANĂ Lidia[1], ŢUICĂ Maria[2], RÂŞNOVEANU Luxita[3,4]
[1]NARDI Fundulea, Romania
[2]UASVM Bucharest, Romania
[3]Bucharest University of Economic Studies, Romania
[4]Agricultural Research Development Station Viziru, Braila, Romania

HOW EFFECTIVE IS FABACEE EXTRACT ORGANIC INSECTICIDE FOR CONTROLLING OF THE MAIZE LEAF WEEVIL (*TANYMECUS DILATICOLLIS* GYLL) AT MAIZE CROP?

14.40 – 14.50

NAZARE Adrian-Ilie, SAMUIL Costel, STAVARACHE Mihai, VÎNTU Vasile
University of Life Sciences, Iasi, Romania

POSSIBILITIES TO IMPROVE THE PERMANENT GRASSLANDS OF *DICHANTHIUM ISCHAEMUM* (L.) ROBERTY FROM THE MOLDAVIAN FOREST STEPPE

14.50 – 15.00

PRODAN (POALELUNGI) Tudoriţa[1], JOITA-PACUREANU Maria[2], ION Viorel[3], DUCA Maria[4], DAN Mihaela[2], RÎŞNOVEANU Luxita[5], LIPŞA Florin Daniel[1], FLOREA Andreea-Mihaela[1], BRAN Alexandru[6], SAVA Elisabeta[6], ULEA Eugen[1]

[1]University of Life Sciences, Iasi, Romania
[2]NARDI Fundulea, Romania
[3]UASVM Bucharest, Romania
[4]State Agrarian University of Moldova - Chisinau, Moldova
[5]Agricultural Research Development Station Viziru, Braila, Romania
[6]State Institute for Variety Testing and Registration, Bucharest, Romania

SUNFLOWER GENOTYPES WITH HIGH TOLERANCE TO DROUGHT AND EXTREME TEMPERATURES, HAVING GOOD RESISTANCE TO SOME SPECIFIC DISEASES

15.00 – 15.10

VELICHI Eugen

"Dunarea de Jos" University Galati, Romania

THE INFLUENCE OF TREATMENTS WITH VARIOUS PHYTOSANITARY PRODUCTS (FUNGICIDES) ON THE ATTACK OF SOME PHYTOPATHOGENIC FUNGI ON WHEAT HARVEST - AIRBUS VARIETY - IN 2020 PEDOCLIMATIC CONDITIONS OF THE EASTERN BARAGAN

15.10 – 15.20

LUNGOCI Constantin, JITĂREANU Carmen Doina, GHIŢĂU Carmen Simona, ROBU Teodor

University of Life Sciences, Iasi, Romania

RESEARCH ON THE INFLUENCE OF FOLIAR FERTILIZERS ON PHYSIOLOGICAL AND BIOCHEMICAL PROPERTIES IN THE SPECIES *NEPETA RACEMOSA* LAM.

POSTER SESSION

Chairperson: **PhD, Assist. Vlad ARSENOAIA**

THURSDAY, OCTOBER 21st, 2021

15.45 – 15.50

MUTU Ana, CLAPCO Steliana, DUCA Maria
Moldova State University, Republic of Moldova
EFFICIENCY OF MICROSATELLITE MARKERS IN GENOTYPING OF OROBANCHE CUMANA POPULATIONS

15.55 – 16.00

JITĂREANU Carmen Doina, SLABU Cristina, MARTA Alina Elena, COVAȘĂ Mihaela
University of Life Sciences, Iasi, Romania
BIOSTIMULANTS EFFECTS ON PHOTOSYNTHESIS PROCESS TO BASIL PLANTS

16.00 – 16.05

COVAȘĂ Mihaela, SLABU Cristina, MARTA Alina Elena, JITĂREANU Carmen Doina
University of Life Sciences, Iasi, Romania
THE ACTION OF GROWTH REGULATORS ON THE PHOTOSYNTHESIS PROCESS IN TOMATO PLANTS

16.05 – 16.10

PETCU Victor, TONCEA Ion
NARDI Fundulea, Romania
EFFECT OF CLIMATIC CONDITIONS ON SOME PHYSIOLOGICAL INDICATORS OF WINTER WHEAT CULTIVATED IN ORGANIC FARMING SYSTEM

16.10 – 16.15

CIUCĂ Matilda, TURCU Alina-Gabriela, CONTESCU Elena-Laura, DUMITRU Alexandru, DANIEL Cristina
NARDI Fundulea, Romania
SCREENING WINTER WHEAT GERMPLASM FOR DETECTION OF 1-FEH-W3 VARIANTS FOR IMPROVEMENT OF DROUGHT TOLERANCE USING KASP ASSAY

16.15 – 16.20

DANIEL Cristina, TURCU Alina-Gabriela, MARINCIU Cristina-Mihaela, ŞERBAN Gabriela, CONTESCU Elena-Laura, MANDEA Vasile, CIUCĂ Matilda

NARDI Fundulea, Romania

DNA MARKERS-ASSISTED SELECTION TO PYRAMID RUST RESISTANCE GENES IN WHEAT BREEDING LINES

16.20 – 16.25

IVAN Elena Ştefania[1], MOCANU Maria-Narcisa[2], PETRE Mariana Valentina[2], NIŢU Oana Alina[1]

[1]UASVM Bucharest, Romania

[2]National Administration of State Reserves and Special Issues Popesti, Ilfov, Romania

RESEARCH ON THE INCIDENCE OF MICROMYCETES ON WHEAT SEEDS DURING STORAGE IN VIEW DAMAGE CONTROL

16.25 – 16.30

PETCU Valentina Mihaela

UASVM Bucharest, Romania

RESEARCH ON THE INFLUENCE OF SLAG FROM THE STEEL INDUSTRY ON MAIZE CULTIVATION

16.30 – 16.35

FLOREA Andreea-Mihaela, GAFENCU Andrei-Mihai, LIPŞA Florin-Daniel, ULEA Eugen

University of Life Sciences, Iasi, Romania

CONTRIBUTION TO THE KNOWLEDGE OF THE MICROMYCETES FROM THE SPONTANEOUS FLORA SPECIFY TO IASI COUNTY, ROMANIA

16.35 – 16.40

NEGRUŞERI Nichita, GAFENCU Andrei-Mihai, FLOREA Andreea-Mihaela, LIPŞA Florin-Daniel, ULEA Eugen

University of Life Sciences, Iasi, Romania

REACTION OF POTATO GENOTYPES TO THE ACTION OF *PHYTOPHTORA INFESTANS* (MONT) DE BARY IN DIFFERENT CONDITIONS OF CULTURE

16.40 – 16.45

CHIRILĂ Constantin

University of Life Sciences, Iasi, Romania

ASPECTS REGARDING THE OPERATION OF SOME PULSATORS FOR MILKING EQUIPMENTS

16.45 – 16.50

PINTILIE Andreea, ISTICIOAIA Simona-Florina, BUBURUZ Alexandra-Andreea, PINTILIE Paula-Lucelia, BĂRCAN Maria Diana, AMARGHIOALEI Roxana Georgiana, EȘANU Sabina Andreea
Agricultural Research and Development Station (A.R.D.S.) Secuieni, Romania
THE BEHAVIOR OF SOME ROMANIAN WINTER WHEAT VARIETIES IN A.R.D.S. SECUIENI PEDOCLIMATIC CONDITIONS, DURING 2019-2021

16.50 – 16.55

LEONTE Alexandra, ISTICIOAIA Simona-Florina, AMARGHIOALEI Roxana Georgiana, EȘANU Sabina Andreea, PINTILIE Paula Lucelia
Agricultural Research and Development Station (A.R.D.S.) Secuieni, Romania
BEHAVIOR OF WHITE AND BLUE LUPINE VARIETIES IN PEDOCLIMATIC CONDITIONS OF THE A.R.D.S. SECUIENI

16.55 – 17.00

VELICHI Eugen
"Dunarea de Jos" University Galati, Romania
THE INFLUENCE OF TREATMENTS WITH VARIOUS PHYTOSANITARY PRODUCTS (FUNGICIDES) ON THE ATTACK OF SOME PHYTOPATHOGENIC FUNGI ON BARLEY HARVEST, DONAU VARIETY, IN 2020 PEDOCLIMATIC CONDITIONS OF THE EASTERN BARAGAN

17.00 – 17.05

ANTON Florin Gabriel[1,2], PĂCUREANU-Joița Maria[1], DAN Mihaela[1]
[1]NARDI Fundulea, Romania
[2]UASVM Bucharest, Romania
SUNFLOWER DOWNY MILDEW OBSERVATION IN YEAR 2021, IN THE EAST PART OF THE ROMANIAN PLAIN

THIRD SECTION

ECONOMIC SCIENCE AND HUMANITIES

AGROTOURISM
AGRICULTURAL CONSULTANCY
ACCOUNTANCY
RURAL DEVELOPMENT
AGRICULTURAL ECONOMICS
AGRICULTURAL LEGISLATION
MODERN LANGUAGES
MANAGEMENT
MARKETING
PEDAGOGY AND METHODOLOGY
AGRICULTURAL POLITICS
RURAL SOCIOLOGY

PLENARY SESSION

Chairpersons: **PhD, Assoc. Prof. Carmen COSTULEANU**
PhD, Assoc. Prof. Gabriela IGNAT

THURSDAY, OCTOBER 21st, 2021

14.30 – 14.40

JIDOI (TOPLICEAN) Monica, LUPU Mihaela Luminiţa
„Gheorghe Asachi" County Library, Iasi, Romania

RESEARCH OF THE INVOLVEMENT OF THE MEMBERS OF THE PROJECT TEAMS IN ACCESSING THE FINANCING OF THE PROJECTS OF THE HIGHER EDUCATION INSTITUTIONS FROM ROMANIA

14.40 – 14.50

GOLBAN Artur
State Agrarian University, Moldova

MONEY LAUNDERING WITHIN THE ILLEGAL WILDLIFE TRADE: HOW CAN FINANCIAL INSTITUTIONS PLAY A ROLE IN COMBATTING THIS NEGATIVE PHENOMENON?

14.50 – 15.00

STANCIU Mihai

University of Life Sciences, Iasi, Romania

THE DEVELOPMENT OF RESILIENCE IN THE GENERAL CONTEXT OF WELL-BEING IN THE ACADEMIC ENVIRONMENT

15.00 – 15.10

UNGUREANU George, COSTULEANU Carmen Luiza, LEONTE Elena, IGNAT Gabriela, UNGUREANU Bianca Antonela

University of Life Sciences, Iasi, Romania

ASPECTS REGARDING SYSTEM OPTIMIZATION OF CROSS-COMPLIANCE IN SINGLE PAYMENTS FOR FARMERS

15.10 – 15.20

MIHĂILĂ Mioara, JITĂREANU Andy-Felix, BOGHIȚĂ Eduard, ROBU Alexandru-Dragoș

University of Life Sciences, Iasi, Romania

RECONSIDERING THE MARKETING MIX FROM THE PERSPECTIVE OF CIRCULAR ECONOMY

15.20 – 15.30

COLIBABA Cintia, GHEORGHIU Irina, CONSTANTIN Anca, DINU Claudia-Elena, URSA Ovidiu, ANTONIŢA Carmen

University of Life Sciences, Iasi, Romania

THE ENTRECOMP CERTIFICATE PROJECT - A BRIDGE BETWEEN SCHOOL EDUCATION AND THE WORLD OF WORK

15.30 – 15.40

MIHĂILĂ Mioara, LEONTE Elena, JITĂREANU Andy-Felix

University of Life Sciences, Iasi, Romania

THE MODIFICATION OF FOOD CONSUMPTION BEHAVIOUR UNDER THE INFLUENCE OF PROMOTIONAL ACTIONS

15.40 – 15.50

CREANGĂ Diana Elena, ŞTEFAN Gavril, COCA Oana, TUDORAN Alexandru Sorin

University of Life Sciences, Iasi, Romania

TODAY'S ROMANIAN VILLAGE: A PARADOX OF THE SMART VILLAGE CONCEPT

15.50 – 16.00

PELIN Raluca Ștefania

University of Life Sciences, Iasi, Romania

THE IMPACT OF ENGLISH LANGUAGE LEARNING ON THE ACQUISITION OF SOFT SKILLS SUCH AS CRITICAL THINKING AND EMOTIONAL LITERACY SKILLS

16.00 – 16.10

SÎRGHEA Alina, BREZULEANU Olguța

University of Life Sciences, Iasi, Romania

A VIEW OF ONLINE TEACHING AND LEARNING DURING THE PANDEMIC

16.10 – 16.20

PINTILEI Nicoleta Aura, BREZULEANU Stejărel

University of Life Sciences, Iasi, Romania

ISSUES RELATED TO EDUCATIONAL MANAGEMENT – A FACTOR OF ECONOMIC GROWTH IN THE BUSINESS ENVIRONMENT

16.20 – 16.30

CIUȘTEA (BUTNARU) Mintenica Mariana

University of Life Sciences, Iasi, Romania

DIAGNOSTIC ANALYSIS ON THE PERSPECTIVES OF SUSTAINABLE DEVELOPMENT OF THE RURAL ENVIRONMENT IN THE CONTEXT OF THE IMPLEMENTATION OF THE REGIONAL DEVELOPMENT STRATEGY

16.30 – 16.40

PINTILEI Nicoleta Aura, BREZULEANU Stejărel

University of Life Sciences, Iasi, Romania

ELEMENTS OF THE ECONOMIC EDUCATIONAL MANAGEMENT SYSTEM

POSTER SESSION

Chairperson: **PhD, Lecturer Dragoș ROBU**

THURSDAY, OCTOBER 21st, 2021

17.00 – 17.05

COBZARI Ludmila, ȘARGU Nicu
University of European Studies of Moldova, Chisinau, Republic of Moldova

CRIMINAL PROSECUTION ACTIVITY AND INVESTIGATIONS ON ECONOMIC CRIMES ASSIGNED TO THE STATE FISCAL SERVICE

17.05 – 17.10

ȘARGU Lilia[1], COBZARI Ludmila[2], BIVOL Teodor[3], IGNAT Gabriela[4]
[1]University of European Studies of Moldova, Chisinau, Republic of Moldova
[2]Academy of Economic Studies of Moldova, Republic of Moldova
[3]"Ion Creangă" Chișinău State Pedagogical University
[4]University of Life Sciences, Iasi, Romania

CHANGE MANAGEMENT: A CASE STUDY IN THE REPUBLIC OF MOLDOVA THROUGH THE PRISM OF BUSINESS EFFICIENCY

17.10 – 17.15

DASCALIUC Daniela
University of European Studies of Moldova, Republic of Moldova

BUSINESS DEVELOPMENT IN AGRICULTURE: BETWEEN MYTH AND REALITY FOR MOLDOVAN MIGRANTS

17.15 – 17.20

BOGHIȚĂ Eduard, COSTULEANU Carmen Luiza, MIHĂILĂ Mioara, UNGUREANU George, VIZITEU Ştefan, ROBU Maria
University of Life Sciences, Iasi, Romania

ANALYSIS OF THE ROMANIAN RURAL AGRI-FOOD POTENTIAL

17.20 – 17.25

TUDORAN Alexandru Sorin, ŞTEFAN Gavril, COCA Oana, CREANGĂ Diana Elena

University of Life Sciences, Iasi, Romania

ECONOMIC DEPRECIATION OF MECHANIZED ASSETS IN VEGETABLE FARMS

17.25 – 17.30

VIZITEU Ștefan, BREZULEANU Stejărel, ROBU Alexandru Dragoș, BOGHIȚĂ Eduard

University of Life Sciences, Iasi, Romania

THE INFLUENCE OF MANAGEMENT ACTIVITIES REGARDING AGRICULTURAL MACHINES MAINTENANCE AND REPAIR ON THE OVERALL FARM ECONOMIC EFFICIENCY

17.30 – 17.35

MIHALACHE Roxana

University of Life Sciences, Iasi, Romania

STYLISTIC AND SYNTACTIC STUDY OF ROMANIAN AND MOLDAVIAN ADVERTISING SLOGANS FOR WINE

17.35 – 17.40

ROBU Alexandru-Dragoș, BREZULEANU Stejărel, VIZITEU Ștefan, BOGHIȚĂ Eduard, COSTULEANU Carmen-Luiza

University of Life Sciences, Iasi, Romania

RISK MANAGEMENT AND INSURANCE PREMIUMS FOR CROPS, ANIMALS AND PLANTS: FRAMEWORK, INFLUENCE, FINANCIAL IMPACT, FORECASTS

17.40 – 17.45

MORARU Radu-Adrian, SIMEANU Cristina

University of Life Sciences, Iasi, Romania

A SYNTHETIC PROFILE OF THE RURAL TOURISM CONSUMER

17.45 – 17.50

UNGUREANU Bianca Antonela, LEONTE Elena
University of Life Sciences, Iasi, Romania

RESEARCH ON THE DECISION TO PURCHASE AND CONSUMPTION FOR AGRI-FOOD PRODUCTS ON THE IASI MUNICIPALITY MARKET

17.50 – 17.55

CIUȘTEA (BUTNARU) Mintenica Mariana
University of Life Sciences, Iasi, Romania

ANALYSIS OF COMMUNITY IMPLICATIONS ON AGRICULTURE IN THE NORTH-EAST REGION

17.55 – 18.00

BREZULEANU Mădălina Maria, IACOBUȚĂ-MIHĂIȚĂ Andreea-Oana
”Alexandru Ioan Cuza” University Iasi, Romania

ASPECTS REGARDING THE RELATION BETWEEN ECONOMIC FREEDOM, DEMOCRACY AND DEVELOPMENT

18.00 – 18.05

UNGUREANU George[1], COSTULEANU Carmen Luiza[1], LEONTE Elena[1], VÎNTU Cătălin Răzvan[2], UNGUREANU Bianca Antonela[1]
[1] University of Life Sciences, Iasi, Romania
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MODELS OF OPTIMIZATION AND SIMULATION OF AGRICULTURAL CROP PLANS IN AGRICULTURAL HOLDINGS IN ROMANIA

18.05 – 18.10

DONOSĂ Dan
University of Life Sciences, Iasi, Romania

DIGITAL ECONOMY AND DIGITAL EDUCATION

FOURTH SECTION

FOOD ENGINEERING

TECHNOLOGY AND CONTROL IN WINE INDUSTRY
PRINCIPLES AND METHODS FOR CONSERVATION OF FOODSTUFFS
MILK TECHNOLOGY
TECHNOLOGY OF MEAT AND MEAT PRODUCTS
TECHNOLOGY AND CONTROL IN THE BREWING INDUSTRY AND DISTILLATES
QUALITY FOOD OF ANIMAL ORIGIN
QUALITY FOOD OF PLANT ORIGIN
MANAGEMENT OF FOOD QUALITY
FOOD MICROBIOLOGY

PLENARY SESSION

Chairpersons: PhD, Prof. Radu ROȘCA
PhD, Assoc. Prof. Petrică CÎRLESCU

THURSDAY, OCTOBER 21st, 2021

14.30 – 14.45

STICI Valentina, COSTIN Tatiana, RACUL Adrian

State Agrarian University, Moldova

UV-VIS SPECTROPHOTOMETRY FOR THE MALONDIALDEHYDE ESTIMATION AS A QUALITY MARKER IN THE PORK TRACEABILITY

14.45 – 15.00

CÂRLESCU Petru Marian, BĂETU Marius, CIOBANU Virginia, ȚENU Ioan, ROȘCA Radu

University of Life Sciences, Iasi, Romania

COMPARISON OF TWO MICROWAVE DRYING TECHNIQUES OF CEREAL SEEDS AND DETERMINATION OF PHYSICAL PARAMETERS

15.00 – 15.15

RADU Steluţa
University of Life Sciences, Iasi, Romania
COFFEE CAFFEINE EXPERTISE AND ITS EFFECTS ON NUTRITION AND CONSUMERS HEALTH

15.15 – 15.30
FRUNZĂ Gabriela, POP Ioan Mircea
University of Life Sciences, Iasi, Romania
PRODUCT DESIGN IN FOOD INDUSTRY. APPLICATION OF QFD METHODOLOGY FOR IMPROVEMENT OF CHOCOLATE QUALITY

15.30 – 15.45
POSTOLACHE Alina Narcisa, VELEȘCU Ionuț-Dumitru
Dancu Cattle Breeding Research and Development Station - Iasi, Romania
IMPROVING FOOD SAFETY CULTURE IN ROMANIA: A REVIEW OF PRACTICAL ISSUES

15.45 – 16.00
VELEȘCU Ionuț-Dumitru, POSTOLACHE Alina Narcisa
Dancu Cattle Breeding Research and Development Station - Iasi, Romania
DETERMINANTS FOR CONDUCTING FOOD SAFETY CULTURE RESEARCH

16.00 – 16.15
NISTOR-ANTON Mariana, MACIUC Vasile, CIOCAN-ALUPII Maria
University of Life Sciences, Iasi, Romania
RESEARCH ON THE QUALITY OF MILK PRODUCTION ZOOTECHNICAL HOLDINGS FOR CATTLE BREEDING IN NEAMȚ COUNTY

16.15 – 16.30
RAȚU Roxana Nicoleta[1], USTUROI Alexandru[1], POSTOLACHE Alina Narcisa[2], USTUROI Marius Giorgi[1]
[1]University of Life Sciences, Iasi, Romania
[2]Dancu Cattle Breeding Research and Development Station - Iasi, Romania
TECHNOLOGY AND QUALITY CONDITIONS OF AN ASSORTMENT OF CHEESE OBTAINED EXCLUSIVELY FROM WHEY (URDĂ)

MANUFACTURING IN MILK AND MILK PRODUCTS MICRO PRODUCTION WORKSHOP WITHIN IULS

16.30 – 16.45

RAȚU Roxana Nicoleta[1], USTUROI Alexandru[1], POSTOLACHE Alina Narcisa[2], USTUROI Marius Giorgi[1]

[1]University of Life Sciences, Iasi, Romania

[2]Dancu Cattle Breeding Research and Development Station - Iasi, Romania

SENSORY AND PHYSICO-CHEMICAL CHARACTERISTICS OF A NEW ASSORTMENT OF CHEESE OBTAINED IN THE MILK AND MILK PRODUCTS MICRO PRODUCTION WORKSHOP WITHIN IULS

POSTER SESSION

Chairpersons: PhD, Lecturer Otilia MURARIU

THURSDAY, OCTOBER 21st, 2021

17.00 – 17.05

MURARIU Otilia Cristina, GHIMPEȚEANU Oana Mărgărita, PUIU Ioan

University of Life Sciences, Iasi, Romania

RESEARCH REGARDING THE OBTAINING BAKERY CLEAN LABEL PRODUCTS WITH NATURAL YEAST IN THE BAKERY SECTION OF IAȘI UNIVERSITY OF LIFE SCIENCES

17.05 – 17.10

CREȚU Carmen, RUSU Raluca Oana, TĂNASE Irina Oana, HORHOGEA Cristina, DARABAN Florentina, DASCĂLU Anca, SPĂTARU Mihaela

University of Life Sciences, Iasi, Romania

CORRELATIONS BETWEEN THE ADAPTABILITY IN BUCOVINA OF LIMOUSINE COWS AND THE NUTRITIONAL QUALITY OF THE MILK OBTAINED

17.10 – 17.15

BULAI Isabela Voichița, GEORGESCU Mara, TĂPĂLOAGĂ Dana, GHIMPEȚEANU Oana Mărgărita, RAITA Ștefania Mariana, ILIE Lucian Ionel UASVM Bucharest, Romania

PORK SAUSAGES FORTIFIED WITH VARIOUS CONCENTRATIONS OF LAVENDER ESSENTIAL OIL: MICROBIOLOGICAL AND SENSORIAL PROPERTIES

17.15 – 17.20

CIOBANU Marius Mihai[1], MANOLIU Diana Remina[1], CIOBOTARU Mihai Cătălin[1], POSTOLACHE Alina Narcisa[2], BOIȘTEANU Paul Corneliu[1] UASVM [1]Iasi University of Life Sciences (IULS), Romania
[2]Dancu Cattle Breeding Research and Development Station - Iasi, Romania

THE INFLUENCE OF TECHNOLOGICAL PARAMETERS ON THE SENSORY QUALITY OF PORK PATÉ

17.20– 17.25

BOIȘTEANU Paul Corneliu, CIOBOTARU Mihai Cătălin, MANOLIU Diana Remina, CIOBANU Marius Mihai
University of Life Sciences, Iasi, Romania

THE IMPORTANCE OF TECHNOLOGICAL PARAMETERS ON THE SENSORY QUALITY OF SMOKED MACKEREL

17.25– 17.30

ARSENOAIA Vlad Nicolae, CÂRLESCU Petru Marian, VELESCU Ionut, BĂETU Marius, ZAPODEANU Cezara, ȚENU Ioan
University of Life Sciences, Iasi, Romania

THE INFLUENCE OF AIR TEMPERATURE AND SPEED ON CORN DEHYDRATION

17.30 – 17.35

NECULAI-VALEANU Andra-Sabina, ARITON Adina-Mirela
University of Life Sciences, Iasi, Romania

INCORPORATED WITH GREEN SYNTHESIZED SILVER NANOPARTICLES

17.35 – 17.40

RADU Steluţa

University of Life Sciences, Iasi, Romania

THE EFFECTS OF ALKALINE WATER VERSUS FLAT AND MINERAL WATER ON HUMAN HEALTH

17.40 – 17.45

FILIMON Vasile Răzvan, FILIMON Roxana Mihaela, NECHITA Ancuța, BORA Florin Dumitru, COTEA Valeriu

University of Life Sciences, Iasi, Romania

COMPOSITIONAL CHARACTERISTICS OF LOW-ALCOHOL WINES OBTAINED BY STAGGERED GRAPE HARVESTING TECHNOLOGY

17.45 – 17.50

FRUNZĂ Gabriela

University of Life Sciences, Iasi, Romania

THE APPLICATION OF THE FAILURE MODES AND EFFECTS ANALYSIS (FMEA) METHODOLOGY TO IMPROVE MEAT PRODUCTS QUALITY

17.50 – 17.55

ARITON Adina-Mirela, NECULAI-VĂLEANU Andra-Sabina, POROȘNICU Ioana, UNGUREANU Elena, TRINCĂ Lucia Carmen

University of Life Sciences, Iasi, Romania

EFFICIENCY OF SOME SCREENING METHODS USED IN MONITORING THE QUALITY OF VEGETABLE SUBSTRATES AND THE PRESENCE OF MYCOTOXINS

17.55 – 18.00

NISTOR-ANTON Mariana, MACIUC Vasile, CIOCAN-ALUPII Maria

University of Life Sciences, Iasi, Romania

STUDY OF MILK PRODUCTION INDICES IN THE SPOTTED ROMANIAN RACE EXPLOITED IN FARMS IN NEAMȚ COUNTY

SPEAKER OF THE PLENARY SESSION

SNOWDON Rod
Justus Liebig University Giessen, Germany

Unravelling the genetics and physiology of crop yield stability

Crop yield is a highly complex trait with quantitative inheritance and a very strong dependency on crop management and environmental fluctuations. Breeding for yield stability therefore requires detailed information about genotype*environment*management (G*E*M) interactions. However, it can be very challenging to suitably evaluate large breeding populations in sufficiently variable environments to obtain the quantity and quality of phenotypic data that is needed to reveal and understand the genetic basis of yield stability. To better understand yield stability, we investigated retrospective breeding progress in a large panel of elite European winter wheat grown for multiple years under contrasting conditions in a broad range of environments and crop management scenarios. This enabled us to dissect the genetic basis of breeding progress for a multitude of relevant traits. We found that genetic gain for traits related to yield and yield stability is maintained by long-term, incremental accumulation of hundreds to thousands of positive, small-effect alleles impacting yield and quality components, biotic/abiotic stress tolerance, nutrient/water use efficiency and related physiological processes. In this context, breeding for sustainable, long-term yield improvement will be best achieved by methods that allow us to more accurately, efficiently select interesting genotypes and phenotypes for complex yield stability traits.

Key words: crop yield, stability, genetics

FIRST SECTION

WATER AND SOIL

AGROCHEMISTRY
AGROTECHNICS
SOIL BIOLOGY
AGRICULTURAL CADASTRE
TOPOGRAPHY
CROPS IRRIGATION
LAND IMPROVEMENTS
PEDOLOGY
LANDSCAPE ARRENGEMENT
ENVIRONMENT ENGINEERING
LAND PLANNING
AGRICULTURAL CONSTRUCTIONS

PLENARY SESSION

BİLALOĞLU İsa, ACAR Bilal
University of Selçuk, Konya, Turkey

Assessment of sprinkler irrigation systems used for peanut irrigation in Mediterranean zone, Turkey

This study was conducted to evaluate irrigation practices of sprinkler-irrigated peanut farms at Kadirli-Osmaniye province of Turkey. The seasonal number of irrigations in the examined farms varied from 3 to 5. Sprinklers with double nozzle had flow rates ranging from 1.5 to 2.2 m3/h. The average rate of sprinkler precipitation was found as 13 mm/h with a 20 h of water application under four irrigation events to the peanut during whole growth cycles, and seasonal applied irrigation water was around 314 mm. Average net grain yield was between 3.15 and 3.50 t/ha. Total labor and irrigation energy costs were 200 USD/ha and 158 USD/ha, respectively. The sprinkler irrigation system was found well suited for peanut irrigation. High quality management of irrigation water resources is necessarily prerequisites for sustainable agro-production particularly at water shortage agro-zones.
Key words: peanut, sprinkler irrigation systems, irrigation cost, water management

LUCA Mihail, STICEA Ștefan-Andrei, MARCOIE Nicolae
"Gh. Asachi" Technical University Iasi, Romania

Rehabilitation and modernization of irrigation plots for current operating conditions

The optimal exploitation of irrigation systems and in particular of irrigation plots after 1989 imposes a series of conditions determined by the political regime, the

form of land ownership, the deficit, the labour force and the influence of climate change in the last period of time. Irrigation plots in Romania, basic components of large irrigation systems made before 1989, are in an advanced wear phase and no longer meet the current technical requirements in terms of management. A requirement for the existence of an irrigation system is dictated by the presence of a viable water source in volume and permanence during the irrigation season. The form of private ownership of agricultural land imposed a restructuring of irrigated areas depending on the way of association of owners or farms. Climate change coupled with labour shortages in the agricultural sector requires the adoption of irrigation methods with a reduction in irrigation norms and the use of automated irrigation equipment. All this requires a rehabilitation and modernization of the old irrigation plots in order to adapt to the new political, economic, climatic and management conditions in the distribution of water to plants. The paper aims to present a series of directions for rehabilitation and modernization of irrigation plots resulting from studies and research conducted in existing irrigation systems in the area of Moldova and fed by the Prut river.

Key words: irrigation plots, climate change, Prut river

CĂPȘUNĂ Sorin, FILIPOV Feodor, CALISTRU Anca Elena, JITĂREANU Gerard

University of Life Sciences, Iasi, Romania

The associated effect of ameliorative works and soil tillage on the soil texture from field terrace of the complex slope land of Ursului Valley-Iasi County

The main objective of the research was to establish the associated effect of erosion improvement works and work on the soil texture on the field terrace from complex slope of the "Valea Ursului" (Bear Valley). This slope has the North-North East exposure and is part of the geomorphological subunit of the Mogosesti-Strunga Transition Coast. This Coast makes the transition from the Jijia-Bahlui Depression to the Central Moldavian Plateau. The dominant soils in the cultivated terrace are represented by the Haplic Chernozems (i), Colluval Chernozems (ii) Gleyic Chernozems (iii), Eroded Chernozems (iv), Humc Technosols. The studies were carried out on the complex slope of the Bear Valley, from the Ezăreni farm. The climate is characterized by average annual temperature of 9.5 ^{o}C, and average annual rainfall of 544 mm. In the period 2018-2020, soil samples were collected from each pedogenetic horizon of the 12 soil profiles from representative locations along a depth of 150 cm. In agricultural practice, the texture of the soil is considered to be a property that is practically unchangeable or very difficult to change only in certain climatic conditions and over a long period through migration and deposition of clay particles by eluviation and illuviation processes. Following the laboratory analysis of soil samples and the processing of the data obtained, it was found that the slope modeling works contributed to the local change in soil texture in the arable layer and even in the underlying horizons. Knowing the texture of the soil is of particular importance as it influences most of the physical properties of the soil such as plowing resistance, porosity, permeability to water and air, the ability to retain water, etc. We consider that this study is useful for the sustainable

management of the soil resources on the culivated terraces within the complex slope of the Valea Ursului.

Key words: field capacity, complex slope, ameliorative works

FILIP Manuela, CARA Irina Gabriela, RUSU Mariana, ȚOPA Denis, JITĂREANU Gerard

University of Life Sciences, Iasi, Romania

Nitrogen assessment under organic and conservative conditions, differences and similarities

For productive crops and agricultural sustainability, tillage system and nitrogen fertilizers management are essential variable. Through organic or chemical fertilizers and other residues degradation, high concentrations of nitrate are produced, which can contaminate the groundwater via precipitation or/and irrigation. Nitrogen plays an important role in plant nutrition, which is a fundamental element along with phosphorus and potassium. The paper aims to evaluate the total nitrogen content and soil solution forms which behave as dissociated nitrates and ammonium ions that are adsorbed by plants. Soil samples were collected at two different depths from 0 to 20 cm among two different tillage system on Galați - ecological system and Ezăreni Farm of IULS under conservative tillage. The total nitrogen content was performed by Kjeldahl method, while the exchangeable ammonium and nitrates by Bremer method. Soil total nitrogen concentration declined from the surface soil layer to the deeper soil layer, while ammonium and nitrates values had relatively small variations among systems. Conservative tillage system had higher total nitrogen content over organic system due to the nutrient input through residues crop left on the soil surface. Also, the conservative tillage system had higher nitrate values than organic system, that do not exceed the maximum admissible limits (LMA =100 ppm). This study generates a complete data set of soil nitrogen forms and their fluctuation under different tillage system. The information generated, that the quantity of nitrates does not represent a risk under conservative tillage could improve plant-environmental connections.

Key words: soil, organic, conservative, ammonium, nitrates

BARBU Sebastian[1], MATACHE Alexandru[1], MANU Laurenţiu Cătălin[1], PETRESCU Nicolae[2]

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[2]Valahia University of Targoviște, Romania

Research on operating behaviour and proposals to increase the reliability of land improvement works in the water catchment area of Homoriciu Basin, tributary of Ialomita River, Dambovita County

The research is made between 2017 and 2020 in the hydrographic basin of Homorîciu Valley, tributary of the stream Ialomicioara by Runcu, Dambovita county, aiming at identifying areas with high erosion, vulnerable areas to landslides and performing maximum flow calculations. The water surface of the watershed of Homorîciu Valley is 329,758 ha and it falls under the category of small torrential basins. For the calculation of the maximum flow, besides the calculation formulas,

we have executed a series of maps with the ArcGis program (with delimitation of river basin, level curves, hydrography, categories of use). Within the hydrographic basin of the Homoriciu stream there are several phenomena of fluvial erosion, deep erosion, landslides, they are conditioned by certain factors such as: the slope of the terrain, the speed of the water flow, the geological and tectonic structure of the slopes, grubbing up and intensive grazing, improper use of land in vulnerable areas to landslides. Both all over the world and in Romania, several research studies have been developed in order to determine the maximum flow rate in small hydrographic basins. In the hydrographic basin of the Homorîciu Valley, we have identified 5 sub-basins with 32 categories of use and we have calculated the maximum flow resulting in a value of 39,202 mc/s. For this calculated maximum flow, the eroded sediment was determined, generating the phenomena of landslides.

Key words: surface erosion, talveg erosion, maximum flow, landslides

CIOCAN Florin[1], MANU Laurenţiu Cătălin[1], MATACHE Alexandru[1], PETRESCU Nicolae[2], MURĂTOREANU George[2]

[1]UASVM Bucharest, Romania

[2]Valahia University of Targoviște, Romania

> The degree of soil fertility in the drainage basin of Râul Alb Stream, Dâmboviţa County, up to the point it meets Bărbuleţu Stream, expressed through the soil reaction and the supply of nutrients (organic matter, nitrogen, phosphorus and potassium)

The field research took place between 2019-2020, in the higher drainage basin of Râul Alb stream, located in the north-western part of Dâmboviţa County, the analysis covering an area of 4034 ha. The research into the complex phenomena of erosion in the analysed area was based on a pedological study, which consisted in performing 46 pedological profiles in representative areas of the analysed region. After centralizing the results, it was noted that 59.42% of the entire analysed area display a low alkaline reaction, at least at the level of the upper layer, because of its $CaCO_3$ content, which exacerbates the risk of landslide. From the point of view of the supply of nutrients (humus), most of the soils have a low and extremely low supply of these elements at the level of the upper layer, namely 73.42% of the analysed area; as for the nitrogen supply, 58.01% of the entire surface of the drainage basin display severe shortages of this element. The situation is really serious in the case of the supply of mobile phosphorus in the soil, 3280.27 ha of the analysed surface are low and very low in phosphorus, namely 76.20%, while the levels of potassium supply in the soils in the higher drainage basin of Râul Alb stream are mostly moderate and good, only 620.85 ha (14.42%) are extremely low and low in potassium supply.

Key words: drainage basin, organic matter, nitrogen, phosphorus, potassium

COJOCARU Olesea, ŞUŞU Vasile

State Agrarian University, Moldova

> Environmental impact assessment and the characteristic of natural resources in Sculeni village

The environment and natural resources are the main components of the functioning of the agricultural system from an economic point of view. These are the "natural foundation of agricultural activities", which can favor or limit the development of society. Insofar as we consider man as part of the natural environment, we can appreciate that the natural environment has a decisive role in the development of society. In this paper will be examined the impact on the environment and the characteristics of natural resources in Sculeni village, Ungheni district. The Prut River is one of the largest rivers in the studied territory. Further south of the village of Sculeni in the west is the Central Moldavian Plateau. This plateau (Codrii) is strongly dismembered by the deep valleys of the rivers, by numerous ravines and valleys, by the innumerable landslides from the upper part of the hills. Compared to the period of 2020 and the period of 2021 until May on the territory of Sculeni village, it was reported with the usual weather according to the thermal regime and predominantly with precipitations. As of April 8, 2021, the reserves of productive moisture in the arable soil layer on land with autumn crops were in the center of the country - 35-45 mm (125-155% of the norm). The territory - the square of the Center of Family Physicians "Sculeni" is 1 pedunculate Oak tree of IUCN III category: as a natural monument located in Ungheni district, Sculeni village, - code MD-UN-mn.Cb-115. At the moment, in Sculeni village, 1 land is pre-selected for the location of household and solid waste landfills. I am in the process of elaborating the execution and authorization projects of the respective area. There is a danger that for 4-5 years a considerable part of the land will be completely degraded and removed from the agricultural circuit. No threshold systems are created in the complex with the planting of forest protection strips. The scientifically substantiated crop rotations are not respected, practically the simple rotation of the crops has been passed. On the lands of the locals, maize is mainly cultivated in monoculture. The forest protection strips were destroyed.

Key words: environment, natural resources, Sculeni village, Ungheni district

ANDRIUCĂ Valentina[1], LOZAN Raisa[2], TĂRÎŢĂ Andrei[2]
[1]State Agrarian University, Moldova
[2]Institute of Ecology and Geography, Moldova

Irrigation possibilities of the soils from the Northern Agricultural Region of the Republic of Moldova located in the river basin of the Prut

Currently, irrigation is considered one of the main factors for regulating and improving the soil moisture regime, but the establishment of soil irrigation systems for fruit trees in some agricultural areas of the Republic of Moldova is problematic and deficient. Researching soil cover within the river basins, evaluating the suitability of lands and soils for irrigation, highlighting the ecological problems that may occur, simultaneously with evaluating the quality of various water types suitable for irrigation represent current and important issues for all agricultural areas of the Republic of Moldova. The problem becomes even more pressing in connection with the adoption of the „Regulation on the use of groundwater for drip

irrigation of agricultural land occupied by horticultural crops" (GD RM 635/2020 of 19.08.2020). Previously, the irrigated land in the Republic of Moldova included mostly typical and carbonate chernozems and some alluvial soils. The paper aims to avoid and minimize the impact of anthropogenic degradation of soils affected by intensive agriculture, under different crops, including fruit plantations and consequently not compromising long-term investments, such as establishing horticultural plantations, given that groundwater is unacceptable for irrigation, therefore the soils, depending on their suitability, can create ecological irrigation problems. Soil cover and water quality in various localities of the 2nd ecopedological district of the Republic of Moldova were investigated. The soil cover of Moșeni village, administrative district Râșcani, consists of cambic chernozems in proportion of 75%. Here, over 100 ha of intensive orchards were established and the water suitable for irrigation is missing.

Key words: irrigation, chernozems, groundwater, water quality, irrigation indices

JIGĂU Gheorghe, STADNIC Anjela, TURCHIN Boris, BORȘ Natalia, LEȘANU Mihai, SPRÂNCEAN Eugen, PLĂCINTĂ Nina

State Agrarian University, Moldova

Manifestations of antropo natural aridization in the agrogenic layer of arable chernozems: factors, mechanisms

The anthropo-natural aridization of arable chernozems is a complex process that involves not only the reduction of water reserves in the soil but also the radical change of the water regime materialized in the formation of hydrophysical profiles that differ significantly from those characteristic of native chernozems. The current evolution of arable chernozems is influenced by the intercalated action of aridizational and degradative processes and involves changes in the meaning and intensity of typogenetic processes at all hierarchical levels of structural-functional organization of the soil ecosystem.

Key words: natural aridization, natural-anthropogenic aridization, degradative processes, hydrophysical profiles

ALEXANDRU Mihai, ȚOPA Denis, CALISTRU Anca Elena, CĂPȘUNĂ Sorin, FILIPOV Feodor, JITĂREANU Gerard

University of Life Sciences, Iasi, Romania

The salinity of the soils on the western slope of the Bejeneasa farm – Cotnari

Soil salinity is a measure of the minerals and salts that can be dissolved in water. The process of increasing the salt content is known as salinization. The accumulation of salt in the rootzone of grapevines have negative effects on their growth and yield. At very high concentrations, soluble salt will even kill plants. Our studies performed on the Bejeneasa Farm, Cotnari vineyard from North - East part of Romania. The studied area is about 6 hectares. It is situated on the upper part of slope. The absolute altitude ranges between 152m and 172.5 m and the average annual precipitation and annual temperature values are 524.9 mm and 8.9°C. In order to highlight the causes that determined the weak growth of the vine on the slope with a slope of 8% and with the western exposure, 5 soil profiles were

made in re-representative locations following the cutting clearing of the vine plantation. The soil profiles were made after cutting the vine stems due to the growing stagnation and the small obtained yields of the grapes. The soil profiles were located in the upper and lower parts of the slope, both in the part with uniform slope and on the deluvio-colluvial glacis located in the contact area with the land with lower slope. From each soil horizon, soil samples were collected for laboratory analysis. The analytical data showed the presence of a high content of soluble salts. Laboratory data showed that in the soil there is a weak salinization starting even with a depth of 30 cm. In the soil layers located at a depth of more than 50 cm, a soluble salt content of more than 1% (w / w-1) was noticed. We consider that the high content of soluble salts in the soil is one of the main causes that have severely limited the production of grapes in the vineyard

Key words: soil salinity, soil type, Cotnari

FILIPOV Feodor, ȚOPA Denis, GALEȘ Daniel Costel, CĂPȘUNĂ Sorin
University of Life Sciences, Iasi, Romania

Criteria for the definition of technosols in the Romanian soil taxonomy system (srts-2012) and in the World Reference base of Soil resources (WRB 2014)

Studies on urban soils have contributed to a better understanding of the heterogeneity of soils in urban areas and to the identification and forecasting of soil changes resulting from the expansion of residential areas. The purpose of this paper is to present some peculiarities of some soil units of Technosols. We mention that these soils were introduced in the Romanian Soil Classification System (SRTS 2012) in 2012. Our studies were conducted in the northeastern part of Romania. During the field stage, several soil profiles were made and described and soil samples were taken in the natural and modified location in order to perform laboratory analyzes. The studied soils were diagnosed in accordance with the Romanian Soil Taxonomy System and the World Reference Base for Soil Resources (WRB 2014). The soil cover in the studied areas is characterized by a pronounced spatial heterogeneity due to the contribution of different exogenous materials and the mixing of material from different pedogenetic or lithological horizons. Case studies conducted in several locations have shown that some soil units of Technosols have some properties of the initial soil of lithological soil horizon and some new features due to the contribution of different exogenous materials. We consider that the obtained results are useful for the easier identification and diagnosis of some units of Technosols and updating and completing the current soils classification systems.

Key words: technosols, Romanian soil taxonomy systems, classification systems

AGAPIE (MEREUȚĂ) Ioana, LUCA Mihail, GHERASIM Paul-Marian
"Gh. Asachi" Technical University, Iași, Romania

Design of GNSS deformation monitoring networks to dams made of local materials

To properly monitor the movement of earth dams, an appropriate horizontal and vertical deformation tracking network must be established. Data obtained from the

monitoring network should be used in earth dam stability analysis programs. Periodic monitoring of earth dams, using GNSS technology, provides high-precision spatial deformation analysis. The research in this study was performed for the Podisu earth dam located on the Valea Oii river, Bahlui river basin, Iasi county. As a first step, in 2019 and 2020, the local geodetic tracking network was created, whose station points were determined during two cycles of measurements. For the monitoring of the earth dam, four control landmarks on the crest and seven control landmarks on the downstream slope were materialized in 2021. Measurements of deformations and their analysis require the use of highly accurate surveillance equipment, methods of analysis and software. The fast static GNSS monitoring method has the advantage of determining displacements with high precision. The observation sessions use fixed stations at two points in the local geodetic network, which were determined in the first stage of research. Four Trimble GNSS receivers were used to perform the measurement sessions. The resulting data was processed with the Trimble Business Center program. The final conclusions highlight the performance of GNSS technology in the monitoring process, which provides millimetric determinations with high spatial and temporal accuracy.

Key words: control landmarks, earth dam, geodetic network, GNSS, static measurement

DOMINTE (CROITORU) Violeta, LUCA Mihail, AGAPIE (MEREUȚĂ) Ioana

"Gh. Asachi" Technical University Iasi, Romania

Degradation of Earth's dams under the effect of climate change

The paper presents a synthesis of the phenomena of degradation of earth dams under the action of changing climatic conditions. Climate change over the last 30 years has led to hydrological risks in the hydrographic network, represented by rapid, frequent flash floods over short periods of time. Precipitation is no longer evenly distributed throughout the year, but is concentrated in short intervals of time and has a very high intensity. This is one of the main causes of the degradation of earth dams. According to ICOLD, fill dams are the most exposed to accidents caused by climate change, accounting for about 69%. Most damage occurs due to floods associated with structural faults, mechanical faults, or hydraulic faults. This situation is confirmed by the events that have taken place in the last 30 years at a series of existing earth dams in Suceava County (eg. Crujana, Grănicești, Iezer, Horodnic etc.). Destructive actions have been manifested by structural degradation in the dam's body, the large water unloader, the bottom drain, the drainage system, etc. In order to prevent adverse events, the term "safety" of hydrotechnical constructions must be taken into account at all stages of the design, execution and operation work. The evolution of technology, as well as the superior materials used today, make a significant contribution to the process of supervision in operation of hydrotechnical works. In order to prevent possible accidents that could occur by the failure of a dam, simulations and modelling are carried out in specialized programs.

Key words: climatic changes, failures, floods, water drains

BALAN Isabela, DĂNILĂ Anca, CUCUTEANU Adelina, BALAN Ioan, CRENGANIȘ Loredana, CORDUNEANU Flaviana, ȚOPA Denis
University of Life Sciences, Iasi, Romania

Studies regarding the safety in operation of the Negreni Reservoir, Botoșani County, Romania

The dam of Negreni reservoir, located on the Bașeu River, is an earth dam with a maximum height of 12.4 m, which provides global retention to the crest of 25.869 million m^3. The Negreni reservoir is a part of the hydro-technical works set, that were built to protect against the floods the localities within the river Bașeu catchment area, in Botoșani county (Săveni, Știubeni, Petricani, Chișcăreni, Bozieni). The dam is of homogeneous type, made of clayey-dusty sands and it has several installations both for external stresses and for the response to stresses. Between the years 2008 and 2012 investment works were implemented, under the project „Safety re-enforcement of Cal Alb and Negreni reservoirs, located on Bașeu River, in Botoșani county". The project was set out to build the following works: rehabilitation of dam body (repairs to the concrete tiles on the downstream slope), rehabilitation of the hydromechanical equipments, rehabilitation of the bottom outlet, rehabilitation of the evacuation channel of the surface outlet, installation of a water management information and warning-alarm system, rehabilitation of the behavior monitoring system. The special events recorded during the execution of the dam and during its operation have imposed the implementation of a systematic behavior monitoring of the hydro-technic constructions at the Negreni reservoir. This paper presents a brief history of the dam in its construction and exploitation phases, focusing on aspects regarding the behavior monitoring of Negreni reservoir during the years 1997 - 2020.

Key words: safety re-enforcement, rehabilitation of hydrotehnical constructions, reservoir, hydrostatic level, behavior monitoring

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Flood risk assessment for the Prut River hydrographic basin in Romania

The eastern part of Romania is frequently affected by floods. The flood regime in the Prut river catchment is characterized by short, high intensity intensity rainfall, coupled with low infiltration in the soil, that lead to flash floodings in the upland areas. The upper catchment is controlled by the Stanca-Costești reservoir that greatly influences the flow regime and decreases significantly the flood risk for the downstream areas. Significant floods were recorded during 2005 - 2020, with historic maximum flows and total volumes. Through successive discharges of different downstream flows, safe transit of volumes was achieved, without endangering downstream objectives. This paper presents a comparative study of the maximum flows registered at the hydrometric stations and flood propagation times between the successive control sections. In order to maintain the safe operation of the defense lines on the Prut River (the dykes), the personnel of Water

Basinal Administration Prut - Barlad carried out immediate interventions at the critical points highlighted on the embankment network (infiltrations, erosions, areas under the projected elevation, under passages), depending on their seriousness and their negative effects. This paper can be used to further improve the existing basinal flood defense plans.

Key words: catchment, high intensity flood, river warning levels, hydrograph

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Limiting factors of agricultural land in Cucuteni administrative territory, Iasi County

Soil is the result of the action of various processes determined by environmental factors, continuously adapting to natural and/or artificial changes in the environment, recording and memorizing through certain phenomena, processes and characteristics, the main moments of evolution. From the analysis of the geomorphological indicators, of the Cucuteni territorial administrative unit, regarding the land slope, landslides, deep erosion (ravenation) and pedological indicators on organic matter content, soil reaction, soil texture, siltation / stagnation, salinization and alkalization, it turns out that the soils in the studied territory have a high degree of degradation. Among the limiting factors of agricultural production, in descending order of affected areas, are: surface erosion (560.58 ha), landslides (506.53 ha), pseudogleization (367.46 ha), acidification (318.05 ha), gleyzation (168.70 ha), soil volume (139.00 ha), floodability (93.14 ha), salting (86.87 ha) and deep erosion (71.18 ha). Frequently, on the territory of Cucuteni commune, the limiting factors are associated on most of the lands, so that their control requires a set of agro-improvement and special measures.

Key words: soil erosion, gleying, stagnogleying, landslides, soil acidification

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Ecophysiological parameters of the herbaceous plant community in the vicinity of crops in the Danube Delta Nature Reserve and their interaction

Ecophysiological studies was carried out on representative species, cultivated and spontaneous, from RBDD ecosystems (Beștepe, Sarinasuf and Plopu) in the region of the Razim-Sinoe Lake lagoon complex. Steppe meadows, ruderal areas and agricultural lands situated on alluvial gley soils, limnosoils and psamosoils were studied. The gas-exchange parameters at leaf level (instantaneous rate of photosynthesis, of respiration, stomatal conductance), indicators of carbohydrate metabolism (mono-, di- and polysaccharides) and photosynthetic pigments (chlorophyll a, chlorophyll b and total carotenoid pigments) were analyzed. The analysis of specific ecophysiological indicators of crops showed that cultivated species such as *Zea mays*, *Helianthus annuus* and perennial species, *Medicago sativa* record increased values of photosynthesis (between 20-32 µmol m^{-2} s^{-1}). Spontaneous species, halophilous or salt-tolerant, such as *Halimione verrucifera,*

Elymus elongatus, *Trifolium fragiferum* registered lower values (between 0.51 - 3.36-µmol m^{-2} s^{-1}) in comparison with ruderal / segetal such as *Cynodon dactylon*, *Sorghum halepense*, *Atriplex tatarica* (between 3.03 - 42.80 µmol m^{-2} s^{-1}) grown in the vicinity of cultivated areas. Natural halophytes are being interdependent with the other species within the community for the exploitation of biotope resources. Regarding the carbohydrate fractions, the cultivated species, *Helianthus anuus, Zea mays, Hordeum vulgare*, accumulated the increased quantity of disaccharides, being productive crops. The spontaneous species, such as *Atriplex tatarica, Phragmites australis, Artemisia austriaca, Sorghum halepense*, accumulated especially insoluble polysaccharides. Among native species, the ratio between insoluble and soluble fractions of carbohydrates is over 2 in annual species (*Xeranthemum annuum, Sinapis arvensis*) and can reach to 5 (*Artemisia santonica, Halimione verrucifera, Elymus elongatus, Cynodon dactylon*, etc.) in perennials, the most common. Spontaneous plants have a strategy of interspecific competition, insoluble accumulated polysaccharides are used for reserves and plastic reconstruction and resistance / adjustment to habitat conditions, to soil salt conditions. A negative influence on the species, especially on those halophiles, can be noticed in the Sarinasuf plot, intensely grazed, their values being reduced in comparison to the steppe species from other plots, such as Plopu and Murighiol.

Key words: photosynthesis, plant respiration, photosynthetic pigments, RBDD, spontaneous species, crops

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Evolution of knowledge of virgin and arable forest soils in the forest-steppe area of the Republic of Moldova

The evolution of the genesis of forest soils (gray and brown) in the forest-steppe area of the Republic of Moldova knows several hypotheses that can be reunited in three groups: 1) primary formation as a special type of soil, evolved under deciduous forests; 2) secondary formation following the degradation of chernozemic soils and the planting of woody vegetation on these surfaces; 3) their formation from virgin (natural) podzolic soils following the development of the process of substituting the woody vegetation with the grassy vegetation of steppe and meadow. According to recent research, gray and brown soils on the territory of the Republic of Moldova are polygenetic soils and were formed as a result of going through different phases of pedogenesis: virgin gray and browns soils, formed under deciduous forests → arable gray and brown soils, formed after deforestation and the use of arable land → gray and brown soils from the stage of evolution towards chernozems, under the secondary steppe vegetation, restored on the former agricultural lands, abandoned during the migration of peoples from east to west → arable leached (cambic) chernozems.

Key words: brown soils, gray soils, genesis, evolution, Republic of Moldova

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Appreciation of changing climatic conditions, hydrography and soil distribution in Costuleni village

The climate of Republic of Moldova and its Central Region is temperate continental with a transitional character and is formed under the influence of three groups of climatogenesis factors: radiative, dynamic and physical and geographical. Also, the climate of our Republic is characterized by mild and short winters, with little snow, long, hot summers, but with an insufficient amount of rainfall, which fall predominantly in the warm period of the year in the form of showers (Nedealcov et al., 2013). In this paper will be examined the ecological status of Costuleni locality, Ungheni district. The evaluation and study were carried out according to the standards and normative acts in force for the Republic of Moldova. The research consists in identifying the ecological status of the locality, through observations, comparisons, as well as, data collection, organization and evaluation. Environmental impact assessment - represents the assessment (quantification) of the effects of human activities and negative natural processes on natural elements and factors, ecosystems, human health and safety, as well as on material goods. Various specialized publications, scientific papers, legislative and normative acts, plans and strategies for sustainable development, statistical and activity reports of the Ministry of Environment and State Ecological

Inspectorate, as well as those of the Ungheni Ecological Inspection were studied. Ensuring the long-term survival of ecological systems, the main provider of resources on which development and human well-being depend, can only be achieved in the case of sustainable development. Equally important is the role of biodiversity in providing services provided by ecological systems, such as determining soil and climate conditions, water purification, mitigating the effects of natural disasters, etc.

Key words: environmental impact, climatic conditions, hydrography, soil, Costuleni village

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Relationship between stomatal conductance and drought susceptibility index in alfalfa (*Medicago sativa* L.)

Global climate change highlights an increase in drought frequencies. In this context the strategies for sustainable use of water and drought resistance improvement based on the physiological traits are important and physiological approaches should be integrated in conventional breeding. Research was performed on 16 alfalfa genotypes under vegetation house conditions at two watering levels and field analyses. The objective was to identify the available genetic variation and to establish efficient testing methods for characters which might positively influence alfalfa performance under drought conditions. Our research was focused on stomatal conductance and chlorophyll content. There is a very significant negative correlation between the drought sensitivity index and the stomatal conductance of alfalfa genotypes sown for fodder (r = -0.70***). This means that genotypes with a higher stomatal conductance were more productive (low drought sensitivity index means better drought adaptability, so higher production) indicating that stomatal resistance has a very significant impact on production under stress conditions. There is a very significant positive correlation between the chlorophyll content and the stomatal conductance of alfalfa genotypes from the comparative culture sown for fodder (r = 0.80***), which shows that stomatal closure is the main factor limiting photosynthetic activity under water limiting conditions.

Key words: alfalfa, stomatal conductance, chlorophyll content, drought susceptibility index

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Study of the urban heat island in Iasi Municipality using Remote Sensing and GIS

Current climate change in urban areas is manifested due to the rapid urbanization of cities around the world. The island of urban heat is represented by a metropolitan area significantly warmer than the environment. It is important to find a balance between urban expansion and the temperatures recorded in these areas to guarantee sustainable urban development. This paper is a study to highlight the temperature

of the ground surface (LST values) both during the day and at night, for the area of Iasi municipality. Remote sensing and GIS techniques were used for the case study. In order to make LST maps, MODIS images, taken daily by the Terra and Aqua satellites between 2013-2018, were used as primary data. Also, a number of 8 sensors were installed on the ground in the study area in order to monitor the temperature in the 2013-2018 period. The conclusions of the study indicate the need and the importance of carrying out such analyzes in the study of environmental issues.

Key words: GIS, heat island, LST, MODIS, remote sensing

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Soil erosion control on agricultural land in Bacau county during 1990-2020

The changes in the ownership structure of agricultural lands because of the application of the Land Fund Law in 1991 caused a decrease in the concern for soil erosion control on the agricultural lands located on the slope of Bacau County. The significant increase of the sloping arable areas ploughed from the hill valley was favored by the increased fragmentation of the large fields into rectangular plots oriented predominantly with the long side on the line of the highest slope. The centralized situation at the county level shows that the arable area on the slope includes almost 83,500 plots with an area of 1 to 2 ha. Strip culture systems, with grassy strips, on bench terraces and agroterraces, more effective for anti-erosion than simple work along contours, currently represent less than 11,000 ha, decreasing by about 3.2 times compared to the situation in 1990. The high erosive potential of these lands, the inappropriate anthropic intervention in the natural environment as well as the existence within each category of land use of some lands in an advanced state of degradation by slope processes require the reconsideration of anti-erosion concerns. Among the agricultural uses, the most affected is the arable area (2036 ha) and among the processes responsible for the almost complete loss of soil production capacity on some sloping agricultural lands, excessive surface erosion is in the first place (1499 ha) followed by the gully erosion (610 ha) and landslides (169 ha).

Key words: soil, erosion, culture systems

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Study of moisture distribution in drip-irrigated cambic chernozem in the Cracau Plain

Dripping irrigation allows the supplement of water necessities of plants by a slow wetting of the soil on a small surrounding area, using special devices which distribute water drop by drop. The main advantage of dripping irrigation as against the classic irrigation methods is represented by the fact that the necessary water amount it considerably reduced, by wetting the soil strictly in the area explored by

the plant roots, allowing a rigorous dosage of the distributed water amount. In the Cracau Plain, on a clay loam cambic chernozem, with a present moisture content of 19% g/g, a field capacity of 23.2 % g/g, a wilting coefficient of 14.8% g/g and a bulk density of 1,36 g/cm^3 (mean values for a depth range of 0 - 80 cm), we performed water irrigation for a 10 hours duration, using spiral microtube dripping devices. The total water discharge per dripping unit ranged between 19.6 – 36.1 l, and the water flux ranged between 1.96 – 3.65 l/hour. Twenty-four hours after irrigation, we observed that the distribution of about 20 l of water, with a water flux of about 2 l/hours, provides a soil wetting of the zone under the dripping device at higher values than the field capacity at a 80 – 90 cm depth. The diameter of the wetting contour ranged between 60 – 100 cm at a depth of 40 – 50 cm, and the border diameter of the wetting zone ranged between 100 – 400 cm at a depth of between 50 – 70 cm. Higher water flux values, or longer irrigation durations result in a longer overwetting state in the upper half of the active layer of the soil, and in water losses by percolation.

Key words: drippers, cambic chernozem, moisture content, wetting contour

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Study on the economic yield of wheat crops in the specific conditions of the Great Island of Brăila in irrigated and non-irrigated system

From the point of view of the area under wheat, Romania (5.2 million hectares) ranks fourth in Europe, on the same position as the United Kingdom, after France (5.1 million hectares), Germany (3.2 million ha) and Poland (2.3 million ha). Obtaining productions that ensure a financially comfortable producer must be done by optimizing all the factors that contribute to the development of the plant without forcing the obtaining of large productions by exaggerated application of fertilizers and other growth stimulants that create imbalances both in plant and and environment. The aim of the research paper is to identify the best forms of wheat hybrids in terms of economic efficiency in irrigated and non-irrigated conditions. The research was carried out in conditions specific to the plain area, more precisely the Great Island of Brăila, where the wheat crop occupies a significant area. This study intends to make a contribution in order to optimize some elements of wheat crop technology, related to the irrigation regime in order to improve economic performance both by increasing production yield and by significantly eliminating losses resulting from the production process.

Key words: irrigation, economic yield, monitoring, wheat

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Irrigation regime for beans in the conditions of the Romanian Plain

Compared to other crops, beans have moderate moisture requirements, but are very sensitive to drought during flowering and fruiting. It has been established that in the short interval between flowering and binding, the beans have maximum

sensitivity to excess, but especially to the lack of water in the soil. In our country, research has established that drought during flowering and fruiting greatly reduces production by shortening the duration of these phases, by reducing pollen fertility, reducing pods and grain weight. The sensitivity of beans during flowering to atmospheric drought has been noted by other authors. The production increases obtained were, from an economic point of view, significantly higher through the increases of net income achieved per hectare. The cost price for irrigated variants was lower than the non-irrigated one by about 10%, sometimes increasing in other years. This paper summarizes the results of research on the influence of irrigation on production in 2018-2021.

Key words: water recovery coefficient, irrigation water, soil moisture, aridity indices

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Rational use of off-season rainfall and water consumption in irrigated crops in the conditions on the upper basin of the River Prut

Water consumption of agricultural plants can be considered one of the main elements of assessing the need for irrigation. Based on the knowledge of water consumption of an agricultural crop, it is established the application of a correct irrigation regime during the growing season. Covering the water needs during the vegetation period is done by applying irrigation. Quantitative studies on evapotranspiration performed on corn and sunflower crops have shown different values. The average water consumption calculated after the Thornthwaite method recorded the highest values in June, July and August. For maize crop, the highest water consumption was achieved in July (1480 m^3/ha or 27.1% of the total consumption), during which the inspection, the growth of the cobs and the formation of the grain take place. At sunflower crop the highest consumption was also recorded in July (1302 m^3/ha or 28.2% of the total consumption) and corresponded to the phases of growth of flowering head (inflorescence) and seed formation. The paper presents the results of water consumption in corn and sunflower crops, calculated according to the Thornthwaite method, as well as the correction coefficients for the potential evapotranspiration conditions on the upper basin of the river Prut.

Key words: evapotranspiration, irrigation, Thornthwaite, water consumption

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Quality of agricultural lands in Cucuteni Commune, Iasi County

The quality of agricultural lands is determined by rating, based on which agricultural land in Romania is classified into five quality classes. Agricultural land reclamation is based not only on soil fertility, which is undoubtedly the most important factor, but also on climate, relief and hydrology factors. The Cucuteni territorial administrative unit is climatically located in the temperate-continental area, with an average multiannual temperature of 9.0°C and average multiannual

rainfall of about 510 mm. Following the pedological mapping, carried out on the surface of 2225 ha, 44 simple soil units from the classes Protisoils, Cernisoils, Luvisoils, Hydrisoils, Antrisoils and 8 complex soil units were identified. Based on the average rating notes, the arable area (1381.47 ha) and pasture area (514.22 ha) were included in the third quality class, with 53 and 43 rating points, respectively. The areas with hay use (103.83 ha), vineyards (160.46 ha) and orchards (35.79 ha) fall into the 4th quality class with rating notes between 34 and 38 points.
Key words: agricultural land reclamation, homogeneous ecological territory, soil units, land quality classes

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Research on the technical efficiency of anti-erosion works in the Izvoru Berheciului hydro-amelioration system

This paper presents the evolution after 1990 as well as the current state of some measures and anti-erosion works related to the agricultural land within the hydro-improvement system of Izvoru Berheciului. The surface corresponding to the hydroameliorating system Izvoru Berheciului is about 600 km2 and has over 75% sloped fields that occupy the hydrographic basins of Drobotfor and Berheci. The high intensity of the erosion process by water in this area required the execution of several different anti-erosion works in the above-mentioned hydrographic watershed, which considerably slowed the soil degradation, the inundation and the clogging of the depression zones as well as the deterioration of the environment. The best technical efficiency among the management systems was in the forestry works and the anti-erosion hydrotechnical works. The works on slopes for the prevention and control of surface erosion were mostly destroyed by the impact of the application of Law 18. The data obtained highlight the need to revive anti-erosion activities for the conservation of soil production capacity on slopes and the efficient use of land in the reference area.
Key words: soil, erosion, culture system

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Energy use and related greenhouse gas emissions of groundwater-irrigated oil sunflower production

In this study, oil sunflower production irrigated by groundwater was analysed in regards to the energy efficiency and greenhouse gas (GHG) emission. This research was performed at 19 farms growing sunflower under the irrigation area of Konya-Başgötüren town groundwater irrigation cooperative for 2019 vegetation cycle. The farmers applying drip and sprinkler irrigation systems were 6 and 13, respectively and they applied different irrigation levels. In that regard, by grouping farmers in accordance of irrigation methods and irrigation water regimes, separate treatments were obtained. In the context of the research, inputs used, amount of inputs as well as yield were determined individually in the

farmer basis. By using unit energy equivalent of inputs and GHG emission factors energy input and GHG emission were determined and were assessed by using the relevant indicators. In results, sunflower production with drip irrigation system was found more successful in regard to the energy productivity. None difference was found between both the irrigation systems in term of the environmental impact. Drip irrigation with 250-350 mm water application was found the most successful in respect to the yield, energy productivity and low GHG emission.
Key words: sunflower oil, groundwater irrigation, energy efficiency, GHG emissions

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Mesostigmatid mites as a piece of the bioindicators puzzle

Mites belonging to the order *Mesostigmata* have different types of life, those which populate soil habitats and litter being generally free-living predators. They are used as bioindicators and for pest control. This study explored in a comparative way the edaphic gamasid communities from a series of forest ecosystems, meadows and agroecosystems in order to evaluate the impact of natural and anthropic factors and to highlight the bioindicator value of these mites. Both a quantitative and a qualitative analysis were performed. The degree of anthropization could be evidenced at the level of all analyzed ecosystems. A reduction of the number of species and individuals in the ecosystems marked by human interventions was observed. Generally, the phenomenon was more pronounced in forest ecosystems than in the praticolous ones. From the point of view of the ecological peculiarities of the species, a differentiation was noticed that in the natural forests the silvicolous species are dominating while in the plantations, meadows and agroecosystems the praticolous ones are the majority. In the case of the natural forests the best represented family is *Zerconidae* with 2 genera and 8 species. In the rest of the studied ecosystems on the first place is the *Hypoaspididae* with 1, 2 or 3 genera and 5 species or even more. The financial support was obtained partially from BIOREMED - Biodivers3 Project (Code 19-270301/2019-2021).
Key words: mites, bioindicators, *Zerconidae*

SECOND SECTION

AGRICULTURAL TECHNOLOGIES

BIOLOGICAL AGRICULTURE
PASTURELAND AND FORAGE CROPS
PROCESSING OF AGRICULTURAL PRODUCTS
PHYTOPATHOLOGY
CROPS SCIENCE
PLANT PHYSIOLOGY
ECOLOGY
ENTOMOLOGY
AGRICULTURAL MACHINERY
EXPERIMENTAL DESIGN IN AGRICULTURE

PLENARY SESSION

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How effective is *Fabacee* extract organic insecticide for controlling of the maize leaf weevil (*Tanymecus dilaticollis* Gyll) at maize crop?

In this paper, we present results of two years study, in field conditions, at NARDI Fundulea, located in the south-east of Romania, concerning the effectiveness of the biological control of the maize leaf weevils (*Tanymecus dilaticollis* Gyll) at maize crops, with organic insecticide on a base of plant extracts from the *Fabaceae* family (0.3 %) applied both, like seed coating and foliar spray. It has assessed weevils attack intensity at maize plants on a scale from 1 (plants not attacked) to 9 (plants complete destroyed), saved plants percent at 30 days from maize emergence and plants height at 50 days from plants emergence. At maize untreated plants, the weevils attack intensity was 3.16 in 2020 and 5.71 in 2021, while at variants treated with organic insecticide on a base of plant extracts from the *Fabaceae* family the weevils attack intensity ranged from 3.08 to 3.14 in 2020 and from 5.65 to 5.68 in 2021. The lowest value of the weevils attack intensity was registered in the case of the variant with seeds treated with imidacloprid active ingredient (I=2.56 in 2020; I=4.46 in 2021). The highest values of saved plants percent were registered in the case of the variant with seeds treated with imidacloprid (94.04 % in 2020, respectively 86.80 % in 2021). Both years haven't registered significant statistical differences concerning plant heights at 50 days from the maize emergence. In this two years study, in field conditions, in the south-east of Romania, organic

insecticide on a base of plant extracts from the *Fabaceae* family (0.3 %) wasn't effective in controlling the maize leaf weevil attack at maize crop.
Key words: maize, weevils, organic insecticide, attack

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Possibilities to improve the permanent grasslands of *Dichanthium ischaemum* (L.) Roberty from the Moldavian Forest Steppe

The enhancement of permanent meadows involves conducting complex research, in order to know the limiting factors in the optimal development of vegetation, specific improvement measures to be taken to increase production capacity, feed quality and grazing capacity. The quantity and quality of the vegetation of the permanent meadows are largely conditioned by the characters of the seasonal conditions, to which are added the anthropogenic influences through the exploitation system. The objectives of this study were to highlight the influence of harvesting phenophase and fertilization with mineral or organic fertilizers on the productivity and quality of the forage, with important implications for obtaining high quality forage, depending on the type of fertilizer and the size of application doses. The experience field was organized on a permanent grassland of *Dichanthium ischaemum* (L.) Roberty, in Andrieşeni locality, Iaşi county, framed between the parallels 47°30'45.2"N and 27°15'42.0" E. The experimental factors were represented by the harvesting phenophase, with three graduations: a_1-harvesting at plants height of 15-18 cm, a_2-harvesting at the ear formation (control), a_3-harvesting to full flowering and fertilization with seven graduations: b_1-unfertilized (control), b_2- $N_{50}P_{50}$ kg/ha^{-1} annually, b_3- $N_{75}P_{75}$ kg/ha^{-1} annually, b_4-$N_{100}P_{100}$ kg/ha^{-1} annually, b_5-10 t/ha^{-1} sheep manure annually, b_6-20 t/ha^{-1} annually and b_7-30 t/ha^{-1} annually sheep manure applied at two years. From the results obtained on the *Dichanthium ischaemum* meadow, it was found that its productivity is very low, and the level of dry matter production can increase considerably depending on the harvesting phenophase and the fertilization used. The harvesting phenophase and the applied fertilization had a marked influence on the quality of the fodder obtained from this type derived from meadows, materialized by changes in the chemical composition with implications on the value of use.
Key words: permanent grassland, harvesting phenophase, organic and mineral fertilization, forage quality, productivity

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Sunflower genotypes with high tolerance to drought and extreme temperatures, having good resistance to some specific diseases

Climate changes characterized by higher temperatures, extreme climatic hazards and low water for agriculture determine the extension of the areas affected by drought. Agriculture is most affected by the climate variability, the extreme meteorological phenomenom, diminishing the seed yield. Sunflower is considered to be moderately resistant to drought, but in hot conditions, the plants suffer reduction in fertility, yield performance and quality of products. In literature there are mentioned some adoptive mechanisms of plants to drought: escape, avoidance and tolerance, as well as their genetic variability. For sunflower it is very important to increase the cold resistance in early development stages, at stage of germination, emergence and the stage of 2-3 leaves, in order to facilitate an early sowing. Wild *Helianthus* species are a very valuable source of resistance in increasing drought resistance as well as resistance to low temperatures in sunflower. In our research work we have used different sources from our sunflower germplasm collection, some of them coming from the interspecific hybrids between wild *H. argopyllus* and cultivated sunflower. Some of our best elite lines have been introduced in a process of improvement of resistance to drought, using recurrent selection. Also it has been transfered some genes for controling the attack of some important pathogenes. In this process of selection, we obtained inbred lines (CMS and pollen fertility restorer lines) having very good tolerance to drought as well as resistance to low temperatures By crossing these lines there have been obtined hybrids having good tolerance to drought, some of them with good resistance to low temperatures in emergence time. The hybrids have been tested in comparative trials. The hybrids has shown good characteristics which determine the seed yield, as well as good resistance to drought and to lodging, also good resistance to diseases. The seed yield released by hybrids has shown a high level.

Key words: sunflower, drought resistance, cold resistance, diseases, breeding

VELICHI Eugen

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The influence of treatments with various phytosanitary products (fungicides) on the attack of some phytopathogenic fungi on wheat harvest - Airbus variety - in 2020 pedoclimatic conditions of the Eastern Baragan

This study aims at monitoring the dynamics of the occurrence and evolution of the attack of some pathogenic agents to the French wheat variety, Airbus. Among these, we mention: *Puccinia recondita* f. sp. *tritici* (sin. *Puccinia triticina*) which produces wheat's brown rust and *Septoria* sp. which produces wheat's brown leaf spotting (septoriosis). Also, the influence of applying these fungicides on the harvest, as compared to the untreated control variant, has been monitored.

One experiment with 7 variants (6 variants with phytosanitary treatment, plus one control variant not treated) was taken into consideration for this study, for which the following phytosanitary products were used, as follows: EVOLUS (prochloraz 320 g/l, tebuconazole 160 g/l, proquinazid 40g/l); AMISTAR (azoxystrobin 250

g/l); FALCON PRO (prothioconazole 53 g/l, spiroxamine 224 g/l, tebuconazole 148 g/l); TOPSIN 500 SC (thiophanate-methyl 500 g/l); ORIUS 25 EW (250 g/l tebuconazole); DITHANE M 45 (mancozeb 80%). The treatment variants were the following: V_1 - EVOLUS 0.75 l/ha 1 treatment applied at spike's releasing - 23.05.2020. V_2 - AMISTAR 0.75 l/ha 1 treatment applied at spike's releasing - 23.05.2020. V_3 - FALCON PRO 0.6 L/HA 1 treatment applied at spike's releasing - 23.05.2020. V_4 - ORIUS 25 EW 0.5 L/HA + TOPSIN 500 SC 1,0 l/ha 1 treatment applied at spike's releasing -23.05.2020. V_5 - ORIUS 25 EW 0.5 L/HA 1 + DITHANE M 45 2 kg/ha 1 treatment applied at spike's releasing -23.05.2020. V_6 - TOPSIN 500 SC 1.0 L/HA + DITHANE M 45 2 kg/ha 1 treatment applied at spike's releasing -23.05.2020. V_7 - Untreated control variant.
The experiment was placed in Latin square, the 7 variants being placed in 7 repetitions. The experiment was performed in irrigation conditions. The year 2020 was one of the driest years in the last 3 decades. Among the pathogenic agents under monitoring, *Puccinia recondita* f.sp. *tritici* fungus (producing the brown rust) had produced the greatest attacks. The attack of the fungi from *Blumeria* (*Erysiphe*) variety, producing wheat's mildew, was rare. No attacks of the fungi of *Septoria* variety (producing the disease called septoriosis) had been signaled. The first two leaves placed under the spike had been analyzed for the above. These observations had led to the conclusion that for all 6 treatment variants, the degree of attack (D.A. %) of *Puccinia recondita* f.sp. *tritici* fungus was more reduced than at the untreated control variant.
Keywords: *Puccinia, Septoria*, latin square

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Research on the influence of foliar fertilizers on physiological and biochemical properties in the species *Nepeta racemosa* Lam.

The species *Nepeta racemosa* Lam., recently introduced in our country, stands out due to the nepetalactone in the volatile oil, compounds with important medicinal properties, bio-pesticides and additives for the food industry. The present study makes an analysis of the biochemical and physiological properties, under the influence of foliar fertilizers with diversified macro/microelements, in the conditions of the Moldavian Forest-Steppe. Thus, the chemical composition determined by GC/MS highlights the presence in the highest percentage of three compounds (4aS, 7S, 7aR) -cis, trans-Nepetalactone - 69.8%, (4aS, 7S, 7aS) -trans, cis -Nepetalactone - 12.6% and β-Caryophyllene - 9.3%. The quantitative analysis of chlorophyll pigments performed by the spectrophotometric method had the following results: 1.57 mg/gr chlorophyll a, 0.6 mg/gr chlorophyll b and 0.39 mg/gr carotenoid pigments. The content in polyphenols is between 10-40 mg GA/g, flavonoids between 25-33 mg QE/g, and the antioxidant action is maximum 38%.
Key words: *Nepeta racemose*, foliar fertilizers

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Efficiency of microsatellite markers in genotyping of *Orobanche cumana* populations

Microsatellites or simple sequence repeats (SSRs) markers are widely dispersed across the genome, have a codominant and multiallelic nature, high variability and informativeness, and a specific chromosomal location. For this reason, they are playing a significant role in different fundamental and applicable fields, including genetic studies at the individual, population, species levels, and molecular breeding programs. In this study, the utility of 15 microsatellite markers in discrimination of 33 *Orobanche cumana* (broomrape) populations from different geographical locations was assessed: Republic of Moldova (11 populations), Romania (1), Bulgaria (4), Serbia (7), Turkey (7) and China (3). The PCR amplification products obtained showed differences by number and size depending on the markers used (3 and 16 alleles). A total of 110 alleles with fragment sizes ranged from 76-343 bp were determined. The evaluation of the genetic polymorphism of SSR markers was performed by the *effective number of alleles per locus* (Ne) with an average of 5.31, *Polymorphic Information Content* index (PIC) – 0.75, *Nei's genetic diversity* index (H) – 0.78 and, *Resolving Power* index (Rp) – 5.79. High values of all indices revealed the significant informative capacity and effectiveness of markers studied. At the same time, most markers showed PIC values higher than 0.5, indicating a high polymorphism in *O. cumana* populations. Seven microsatellite markers (Ocum-052, Ocum-059, Ocum-074, Ocum-081, Ocum-087, Ocum-196, Ocum-197) were selected based on the analyzed statistical parameters, suggesting that these markers can efficiently measure genetic diversity in broomrape. Based on the Rp index and PIC values of these 15 SSR markers, genetic diversity of Turkish (Rp: 4.774; PIC: 0,722) and Moldavian (Rp: 4.394; PIC: 0,716) *Orobanche cumana* populations was higher than in other populations. However, the studied microsatellite (SSR) markers system characterized very well the genetic structure of all *O. cumana* populations included in this study. Selected markers could eventually be useful for breeders and sunflower seed producers to improve their control strategies for this parasitic plant.

Key words: SSR markers, genetic polymorphism, genotyping, population, *Orobanche cumana*

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Biostimulants effects on photosynthesis process to basil plants

The use of natural preparations that are not harmful to the environment become increasingly important as soil degradation processes and air pollution began to increase progressively, thus providing an overview of the importance and influence of various natural biostimulants of plants on both yield and crop quality. Biostimulants are natural or synthetic substances that can be applied to seeds,

plants, and soil. These substances cause changes in vital and structural processes in order to influence plant growth through the improvement of tolerance to abiotic stresses and increase seed and/or grain yield and quality. In addition, biostimulants reduce the need for fertilizers. Sweet basil is one of the most widespread spices in the world. Its dried leaves are used commonly as a flavoring in many food products. A number of different types of basil oil have found and achieved economic importance. Biostimulants have the capacity to improving quality and quantity of essential oils from basil plants by stimulating physiological processes such as photosynthesis. This research was conducted to determine the effects of two biostimulants on photosynthesis processes of two basil cultivars, in greenhouse conditions. This study was carried in 2021 at the Research Institute for Agriculture and Environment Iasi under greenhouse conditions, and the laboratory analyzes were performed in the plant physiology laboratory within IULS Iasi Romania. The biological material was represented by two basil cultivars (*Ocimum citriodorum* and *Ocimum basilicum var. gigante napoletano*). The bifactorial experience was conducted in a pots experiment in randomized blocks with three repetitions. The application of biostimulants (*Bactamin* and *Terra-Sorb*) was done every seven days by foliar spraying throughout the vegetation period. Research was focused on the influence of biostimulants on the photosynthesis process. This physiological process was monitored by the total chlorophyll content of the leaves measured with the SPAD device, we also determined the content of chlorophyll pigments and leaf flavonoids by the spectrophotometric method and also during the vegetation period we also monitored the fluorescence of the chlorophyll using the fluorimeter. It has been shown that the chlorophyll content of the leaves is closely related to the mineral nutrition of the plant. The value of chlorophyll content increases with the amount of nitrogen in the leaves, which is why the high values indicated by SPAD show a healthy growth from a nutritional point of view. Plants treated with biostimulants had higher values of the total chlorophyll content compared to the control group, which demonstrates an intensification of the photosynthesis process. The yield of the Bactamin stimulator gives better results in terms of the increase in chlorophyll content in the varieties studied and as a result, will also increase the production in essential oil. The higher values of chlorophyll fluorescence obtained in the treated variants, compared to the control variants, highlight a more intense photosynthetic yield but also an increased ability to adapt to abiotic stress. Treatments with Bactamin and Terra-Sorb biostimulants have a positive impact on the process of photosynthesis in the two varieties of basil studied in greenhouse conditions, which is why these biostimulants can be used successfully throughout the growing season, thus ensuring a high capacity of the leaves to increase the content of essential oils.
Key words: basil, biostimulants, photosynthesis

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The action of growth regulators on the photosynthesis process in tomato plants

Biostimulants can help make soils more fertile by restoring a level of organic matter needed for healthy plant growth, also reduce abiotic stress caused by drought or high soil salinity. Tomatoes crop is number one in greenhouses and solariums that is why it is increasingly desired to increase the productive potential, especially in winter. This goal can be achieved with the help of biostimulants. Biostimulants increase the colour of leaves, this is an important quality parameter in vegetable crops, by stimulating chlorophyll biosynthesis or reducing its degradation. One of the most important physiological processes involved in increasing the productive potential is photosynthesis. This study was carried in 2021 at the Research Institute for Agriculture and Environment under greenhouse condition, and the laboratory analyzes were performed in the plant physiology laboratory within IULS Iasi Romania. The biological material was represented by two tomato cultivars (*Drops* and *Chiquita*). The bifactorial experience was conducted in a pots experiment in randomized blocks with three repetitions. The application of biostimulants (*Bactamil* and *Agromax-Cap*) was done every seven days by foliar spraying throughout the vegetation period. Research was focused on the influence of biostimulants on the photosynthesis process. This physiological process was monitored by the total chlorophyll content of the leaves measured with the SPAD device, we also determined the content of chlorophyll pigments and leaf flavonoids by the spectrophotometric method and also during the vegetation period we also monitored the fluorescence of the chlorophyll using the fluorimeter. It has been shown that the chlorophyll content of the leaves is closely related to the mineral nutrition of the plant. The value of chlorophyll content increases with the amount of nitrogen in the leaves, which is why the high values indicated by SPAD show a healthy growth from a nutritional point of view. Plants treated with biostimulants had higher values of the total chlorophyll content compared to the control group, which demonstrates an intensification of the photosynthesis process. The yield of the *Agomax–Cap* stimulator gives better results in terms of the increase in chlorophyll content in the varieties studied and as a result, will also increase the production efficiency. The analysis of 413 nm and 453 nm chlorophyll content performed by the spectrophotometric method shows higher values in the plants treated with *Agromax-Cap*. These results show that biostimulants intensify the transport of assimilating substances to fruits. The determinations performed showed that the treatments with biostimulants intensify the photosynthesis, this means a high productive potential of these two varieties of tomatoes grown in greenhouse conditions.

Key words: tomato, growth regulators, photosynthesis

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Effect of climatic conditions on some physiological indicators of winter wheat cultivated in organic farming system

Leaf area index, normalized index of vegetation and yield are important traits affected by environmental factors. The objective of this study was to evaluate the effect of three different years on leaf area index, normalized index of vegetation

and its implication on the winter wheat yield cultivated in organic farming system. Twenty-five wheat cultivars were planted during 2016-2018 under rainfed conditions at National Agricultural Research and Development Institute Fundulea, Romania, on a cambic chernozem soil. Climatic conditions and cultivars strongly influenced all studied traits in this study. The highest leaf area index and NDVI were reached in 2016, while the lowest ones were recorded in organic farming system for all cultivars in 2018. In conditions of 2018 year LAI ranged from 1.6 (Bezostaia) to 3.1 (Glosa), reflecting less favorable conditions of water and nutrients supply than in 2016 when in the same genotypes the LAI values were 0.35 and 0.54, respectively. The correlations between leaf area index, normalized index of vegetation and yield obtained in experimental years, were very significantly positive, suggesting that a higher yield in organic farming system can be associated with capacity of cultivar for a higher leaf area to achieve a good ground cover.
Key words: wheat, organic farming system, leaf area index, NDVI, chlorophyll content, yield

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Screening winter wheat germplasm for detection of *1-FEH-w3* variants for improvement of drought tolerance using KASP assay

Wheat yield levels and stability are endangered by drought, which is one of the main effects of current climate changes. A possible way of increasing wheat yield under water stress could be the remobilization of stem assimilates for grain filling. *1-FEH w3* (*1-FEH-6B*) is a key enzyme involved in stem water-soluble carbohydrates (WSC) remobilization, playing an important role during grain filling under drought stress. The objective of this study was the screening of a winter wheat collection from NARDI Fundulea regarding the *1-FEH-w3* haplotypes using Kompetitive Allele Specific PCR (KASP) SNP marker. KASP genotyping assay on 64 wheat genotypes (cultivars, breeding and pre-breeding lines) showed that 25 genotypes carried the "Kauz" type susceptible haplotype (K) and 39 genotypes carried the "Westonia" type haplotype (W), considered the favorable haplotype in drought conditions. The favorable haplotype (W) was found in several cultivars known for their good performance under water stress (such as Fundulea 133, or A15), but also in some cultivars with poor performance under drought (such as Apache, Ariesan or Bezostaya 1), which suggests that *1-FEH-w3* is not the only factor determining drought response. On the other hand, the haplotype associated with water stress susceptibility was found in cultivars known as drought resistant (such as Izvor or Dropia), suggesting that the performance of these cultivars under drought might be further improved by incorporating by breeding the favorable variant of the *1-FEH w3* enzyme. These results open perspectives of breeding for improved drought resistance by pyramiding several favorable alleles for response to water stress.
Key words: 1-FEH, wheat, drought tolerant, WSC, KASP markers

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DNA markers-assisted selection to pyramid rust resistance genes in wheat breeding lines

Rust diseases (leaf, stripe and stem rust) of wheat constitute a major threat to wheat production worldwide including Romania. Durable rusts resistance is a significant component for food security and combining/pyramiding of rusts resistance genes into new wheat cultivars is the main strategy to increase durability of resistance. This work reports a gene pyramiding wheat breeding approach assisted by DNA markers used to develop new breeding rust resistant lines. In this study 60 breeding lines were analyzed for the presence of resistant haplotypes *Lr34/Yr18//Sr57/Ltn1*, *Lr37/Yr17/Sr38*, *Lr46/ Yr29//Sr58/Ltn2* and *Lr68/Ltn4* using DNA markers. The results showed that 18 wheat breeding lines carried the *Lr* genes pyramided in homozygous or heterozygous state, other 12 lines carried only one *Lr* gene, while 30 breeding lines had no resistant alleles *Lr*, from the *Lr* genes analyzed. In homozygous state were found the following combinations: *Lr34+Lr37* (one line); *Lr37+Lr46* (six lines), *Lr37+Lr68* (one line) and only one line, GCO2-12, with three resistant alleles in homozygous state *Lr34+Lr37+Lr46*. Also, this line carried heterozygous alleles for *Lr68* gene, so, this result suggest that it is possible to obtain a line with four resistant *Lr* alleles (*Lr34+Lr37+Lr46+Lr68*) using markers-assisted selection (MAS). The wheat breeding lines with two, three or four resistant alleles were identified in the F5 generation and will be used to accelerate the rust resistance breeding program at NARDI Fundulea. Furthermore, this study proves the value of MAS breeding strategy, for the acceleration of wheat rusts resistance cultivars development.

Key words: rust resistance, markers assisted selection, wheat breeding, *Lr* genes pyramiding

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Research on the incidence of micromycetes on wheat seeds during storage in view damage control

Wheat is the main cereal crop in the EU- world production is about 582.7 million tons from 213.8 million ha. (FAOSTAT, 2020). Romania is a traditional grower and producer of wheat; therefore, it is necessary to obtain a high quality of seed material. Storage fungi are among the major factors causing post-harvest deterioration of crop produce worldwide. FAO estimates that annually, through conditioning and storage, the percentage of losses reaches 6-10%. Three varieties of wheat seeds from crops in south-eastern Romania were analysed, in storage conditions. Measurements were aimed at determining the associated fungal load of wheat seeds and establishing their influence on quality indicators. The paper presents a study on the appearance and development of storage-specific

micromycetes. The research was carried out on common wheat seeds from the warehouses of the National Administration of State Reserves and Special Issues. Wheat is stored during the cold season at an optimal level of temperature and humidity, to preserve quality. Seed testing for germination and incidence of was performed in the laboratory by the classic method of filter paper and PDA medium.
Key words: wheat, isolation, storage, micromycetes

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Research on the influence of slag from the steel industry on maize cultivation

The recovery of by-products from the steel industry, such as steel slag, in agricultural activities, has become increasingly important, as it contributes to reducing the accumulation of this waste in the surrounding environment, to increasing the production of agricultural crops, and it also contributes, due to its chemical properties, by increasing the pH values and the concentration of macroelements and microelements found in soil and in crop plants. The main chemical components contained in this waste, that are important for their use in agriculture, are CaO, MgO, SiO_2, FeO and MnO. The quantity of these components, in each type of slag, varies greatly depending on the raw materials used, the type of steel manufactured, the processing unit and other aspects. The research followed up on the effects resulted from the use of two types of steel slag that were applied in different doses (1 t/ha, 3 t/ha and 5 t/ha) and of two calcareous amendments and their influence on the quality and quantity of maize cultivated in the experimental field at Moara Domnească. The results showed an increase in maize production, an increase in biomass and also an increase in the concentration of macroelements and microelements found in maize grains.
Key words: by-products, steel industry, maize cultivation

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Contribution to the knowledge of the micromycetes from the spontaneous flora specify to Iasl County, Romania

Permanent knowledge of distribution, diversity and interactions between organisms, plants and the environment in which they live is extremely important for the conservation of biodiversity. Interest for biodiversity conservation is intensified by concern about the conservation of genetic resources, destruction of forest, extinction of species and the effects of global warming. This paper presents some parasitic micromycetes identified on plant species from different areas of Iasi County. In our fieldwork made in the spring of 2021 were indentified some parasitic micromycetes on spontaneous flora species as: fumewort (*Corydalis solida* L. Clairv.), alpine squill (*Scilla bifolia* L.), buttercup anemone (*Anemone ranunculoides*), lesser celandine (*Ranunculus ficaria* L.) and snake's head fritillary (*Fritillaria meleagrioides* Patrin ex Schult. & Schult. f.). Identified micromycetes cause some plant diseases as downy mildew or rust and this fungi species belong

to some different taxonomy: those who cause downy mildew are from *Oomycetes* class, and rusts species are from *Teliomycetes* class as *Tranzschelia*, *Puccinia* and *Uromyces* genera.

Key words: mycoflora, spontaneous flora, biodiversity, environment

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Reaction of potato genotypes to the action of *Phytophtora infestans* (Mont) de Bary in different conditions of culture

In this study we find a series of observations of the behavior of four potato genotypes in the attack of the fungus *Phytophtora infestans* (Mont) de Bary, in conditions of natural infection. The fungus produces potato's late blight, a disease that most growers face permanently due to the frequency and aggressiveness with which it manifests itself on all organs of potato plants. From a meteorological point of view, the year 2021 presents some more special characteristics. At the beginning of the potato crop vegetation, the conditions were very good for the emergence and growth of plants. Starting with July, the month corresponding to the flowering-fructification period, climatic conditions have negatively influenced the development of plants both above ground and underground. In the case of the experience located at SCDA Suceava, the Temerar variety achieved a production increase of 14.4 t/ha compared to the control variant, while in Pojorâta, the Claudiu genotype was highlighted with a higher production than the control by 10.2 percent.

Key words: genotype, potato, late blight, production

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Aspects regarding the operation of some pulsators for milking equipments

Mechanical milking can only be done using specific milking systems. The pulsators are components of the milking machines. These components make it possible to obtain a certain working frequency of the milking cup and also make it possible to obtain a certain ratio between the milk extraction phase and the massage phase during operation. The two mentioned parameters influence the milking time. Given the importance of pulsators for mechanical milking, this paper analyzes the operation of two types of pulsators: a BRK pneumatic pulsator and a prototype electromagnetic pulsator, design by author. Both types of pulsators are equipped with drawer type working elements. The electromagnetic pulsator was set for the operating mode in which the extraction time is longer than the massage time (3:1 ratio). For both types of pulsators, the operating frequencies and the ratio between the extraction time and the massage time were determined on the basis of a number of vacuum-time diagrams. The value of the vacuum at the level of the milking cup was -42kPa. Following the tests, it was observed that both the pneumatic pulsator and the electromagnetic pulsator fall within the normal operating limits in terms of pulsation frequency. Regarding the work phases ratio at the prototype pulsator there is a bigger difference between its theoretical value and the real one than at the

pneumatic pulsator. This difference can be corrected from the electronic control device of this pulsator.
Key words: milking system, pneumatic pulsator, electronic control

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The behavior of some Romanian winter wheat varieties in A.R.D.S. Secuieni pedoclimatic conditions, during 2019-2021

This paper includes the results obtained after testing in multiannual comparative crops of a twelve national varieties of winter wheat, thus aiming to introduce into the crop genotypes that have high adaptability to pedo-climatic conditions specific to Central Moldova and thus a stability of production. The studied genotypes showed the following variation of the average production: 4109 kg/ha (2019) - 3522 kg/ha (2020) - 8711 kg/ha (2021). The low productivity in the first two years of experimentation is the result of unfavorable climatic conditions for winter wheat cultivation characterized in the first agricultural year (2018-2019) by a dry autumn and in the second agricultural year (2019-2020) by a dry spring. The Semnal variety presented the highest average productivity (6501 kg/ha) and a notable adaptability to unfavorable environmental conditions, which is why we recommend it to be introduced in the zonal culture.
Key words: winter wheat, productivity

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Behavior of white and blue lupine varieties in pedoclimatic conditions of the A.R.D.S. Secuieni

Lupine is a source of protein as well as dietary fiber. Lupine seeds are an excellent meat substitute for people who adopt a vegetarian lifestyle and have significant cholesterol-lowering properties, contributing greatly to cardiovascular health. Taking into account the growing interest, in recent years, for this crop, within A.R.D.S. Secuieni followed the behavior of six varieties of lupine (3 varieties of white lupine and 3 varieties of blue lupine) in the pedoclimatic conditions in Central of Moldavia. In the first year of testing lupine crop, compared to the yield recorded by the control (average experience - 2736 kg/ha), very significant yield increases were recorded for the varieties Wars (3063 kg/ha) and Dieta (4050 kg/ha). In the second year of testing, only one variety obtained a control higher yield of 2519 kg/ha (Medi). On average, in the two years of testing, lupine yield varied from 2138 kg/ha obtained by the Menhit variety (blue lupine) to 3205 kg/ha at the Dieta variety (white lupine).
Key words: white and blue lupine, pedoclimatic conditions, yield

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The influence of treatments with various phytosanitary products (fungicides) on the attack of some phytopathogenic fungi on barley harvest, Donau variety, in 2020 pedoclimatic conditions of the Eastern Baragan

This study aims at monitoring the dynamics of the occurrence and evolution of the attack of some pathogenic agents to barley, among which we mention: mildew (*Blummeria graminis* f.sp. *hordei*), leaf stripe (*Pyrenophora graminea*) and barley's rust (*Puccinia hordei*). Also, the influence of applying these fungicides on the harvest, as compared to the untreated control variant, has been monitored.
For this study, an experiment with 6 treatment variants was created, in which the following phytosanitary products were used, as follows: AMISTAR (azoxystrobin 250 g/l); EVOLUS (prochloraz 320 g/l, tebuconazole 160 g/l, proquinazid 40g/l); FALCON PRO (prothioconazole 53 g/l, spiroxamine 224 g/l, tebuconazole 148 g/l); TOPSIN 500 SC (thiophanate-methyl 500 g/l); ORIUS 25 EW (250 g/l tebuconazole); DITHANE M 45 (mancozeb 80%).The treatment variants were the following: V_1 - AMISTAR 0.75 l/ha 1 treatment applied at spike's releasing - 13.05.2020. V_2 - EVOLUS 0.75 l/ha 1 treatment applied at spike's releasing - 13.05.2020. V_3 - FALCON PRO 0.6 l/ha 1 treatment applied at spike's releasing - 13.05.2020. V_4 - TOPSIN 500 SC 1.0 l/ha + DITHANE M 45 2 KG/HA 1 treatment applied at spike's releasing - 13.05.2020. V_5 - ORIUS 25 EW 0.5 l/ha 1 + DITHANE M 45 2 KG/HA 1 treatment applied at spike's releasing - 13.05.2020. V_6 - ORIUS 25 EW 0.5 l/ha + TOPSIN 500 SC 1,0 L/HA 1 treatment applied at spike's releasing 13.05.2020. V_7 - Untreated control variant. The experiment was placed in Latin square method, the 7 variants being placed in 7 repetitions. The experiment was performed in non-irrigation conditions. The year 2020 was one of the driest years in the last 3 decades, this fact leading to a lower attack of the pathogenic agents specific to barley. The first two leaves placed under the spike had been analyzed. Among the pathogenic agents under monitoring, low attacks produced by *Pyrenophora graminea* fungus (which produces barley leaf stripe disease) had been observed. No attacks of *Blumeria* and *Puccinia* fungi had been noticed
Keywords: *Pyrenphora,* azoxystrobin, Latin square

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Sunflower downy mildew observation in year 2021, in the east part of the Romanian Plain

Seed yield decrease at sunflower genotypes infected with pathogen *Plasmopara halstedii* because the plants remain small and the seeds are dry. In the last years, sunflower downy mildew has developed new races and it is important to identifying which races are present. In year 2021, in Fundulea location we tested a differential set for sunflower downy mildew and identified 12 races of pathogen *Plasmopara halstedii*.
Key words: sunflower, downy mildew, races, differential set

THIRD SECTION

ECONOMIC SCIENCE AND HUMANITIES

AGROTOURISM
AGRICULTURAL CONSULTANCY
BOOK-KEEPING
RURAL DEVELOPMENT
AGRICULTURAL ECONOMICS
AGRICULTURAL LEGISLATION
MODERN LANGUAGES
MANAGEMENT
MARKETING
PEDAGOGY AND METHODOLOGY
AGRICULTURAL POLITICS
RURAL SOCIOLOGY

PLENARY SESSION

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Research of the involvement of the members of the project teams in accessing the financing of the projects of the higher education institutions from Romania

This paper refers to the research of the acces needs of funds for university projects and involvement of project team members. The research aimed at: evaluating and analyzing from a quantitative point of view the links that characterize the relationship between the needs of accessing project finance and the involvement of project team members, who are also employees of the university. The study consisted in applying an investigation method based on the questionnaire instrument that was designed in the original way regarding aspects such as: identification of human resources – general characteristics of the project team members as respondents; types of projects accessed in higher education institutions; motivation and ways of accessing projects by universities; expected results. The results of the researchers are concretized in establishing the premises of the role of human resources of the university projects in accessing the funds for their financing. The essence of the analyzes performed consists in conceptualizing the problem of obtaining the financial resources necessary to carry out the projects and awareness of training and development of the human resource involved.

Key words: HRM Human resources management, PM Project management, HRMP Human resources management projects

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Money laundering within the illegal wildlife trade: How can financial institutions play a role in combatting this negative phenomenon?

Each year wild animals are killed cruelly for their teeth, horn, furs and other body parts which are used for art, medicine, jewellery, antiques style furniture, etc. The criminal profits gained from the illegal wild life trade (IWT) being estimated between $7 billion and $23 billion. More and more, the IWT is considered a transnational organized crime, generating high profits for criminals involved in this activity. The "dirty" money obtained from IWT is introduced in financial institutions, moved from one jurisdiction to another, hiding their origin and laundering them using the vulnerabilities of financial institutions. This scientific research has the purpose to highlight the risks associated with IWT, to describe the IWT supply chain – the flow of illicit products from the source to the end customer, to present the IWT red flags and reporting suspicious activities, to highlight the role of financial institutions in combatting the phenomenon of IWT and to propose measures how to prevent money laundering connected to illegal wildlife trade.
Key words: illegal wildlife trade, anti money laundering, illicit products, suspicious activity reports

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The development of resilience in the general context of well-being in the academic environment

The communication addresses a current issue in the context of the pandemic caused by COVID-19, the one of developing the transversal competence of psychological resilience in close correlation with the achievement of well-being by students and professors. The objectives of the communication are: conceptual clarifications on psychological resilience and well-being; the presentation of the main theoretical contributions related to psychological resilience; directions of educational action in order to develop resilience in the university environment. The pandemic determined by COVID-19 it has made all the people of the planet to face problems they have never known. We insist on the negative implications from a psychological point of view. The word "resilience" was little used before 1984. In the 1980s, the vulnerability concept dominated (Cyrulnik et al., 2001). Researchers first analysed the study of vulnerability, fragility factors or vulnerability in order to study suffering (Anaut, 2003). The word "resilience" comes from Latin: *resilire*, *resalire* or *resilio*. It means taking a step back, jumping, restarting, having a rebound (Therrien, 2010; Michallet, 2010). In the Middle Ages, the word "resilience" meant to free oneself, to release oneself (Michallet, 2010).
Key words: psychological resilience, well-being, concept of resilience, resilience development program, students and professors

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Aspects regarding system optimization of cross-compliance in single payments for farmers

The aims of the paper is to analyse cross-compliance as a component of the CAP (Common Agricultural Policy) which conditions the provision of financial support from European and national funds to farmers, so that they comply with basic rules related to the environment, climate change, good agricultural conditions, public health, animal and plant health, animal welfare.The paper also examines the rules on cross-compliance as well as the application of administrative sanctions to reduce payments or exclusion from payment, for one or more years, in case of non-compliance with the rules of cross-compliance. Cross-compliance rules aimed at cultivating the farmer and the land he manages and applies to the entire agricultural area of the farm, including land ineligible for payment or not used for production purposes. An analysis of the evolution of the common agricultural policy (CAP) highlights the continuity and evolving nature of European agricultural and rural development policy based on specific objectives, implementation mechanisms and defined financial instruments. Any farmer applying direct payments on agricultural land, agri-environment payments, LFA support payments for the first afforestation of agricultural areas, wine support and other schemes and support measures from EU funds and the national budget must comply with cross-compliance rules. Failure results in the exclusion of payment or payments in relation to the extent, severity, persistence, repetition and deliberate nature of the failure. Moreover, the allocation of all payments in the European financial package for direct payments to farmers in 2014-2020 will continue to be linked to compliance with cross-compliance rules in accordance with regulations.
Key words: cross-compliance, support, CAP, agriculture, funds

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Reconsidering the marketing mix from the perspective of circular economy

Circular economy, a modern and current concept, represents a concrete solution to practically support sustainable development. Moreover, circular economy is considered as one of the most representative answers to the need to efficiently and sustainably manage the problem of resources and waste generated by the production and consumption processes. The current paper which is prevalently theoretical and empirical, aims to identify the existence and meaning of the relationship between marketing mix and circular economy, starting from the hypothesis that the traditional marketing mix needs an adjustment to the requirements of circular economy. In fact, we propose to reconsider the traditional marketing mix by adding a 5^{th} component to the established 4Ps: product, price, promotion, placement. By means of the analysis and synthesis of the literature, correlated with the authors' proposal, the new component added to the marketing mix is the "return" and refers to the new sustainable and responsible way to use the

waste resulted from consumption. Thus, the main outcome of the paper, the 5th component that is "R", is analysed and developed based on the specialty literature and of the studies that support circular economy.
Key words: marketing, circular economy

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The entrecomp certificate project - a bridge between school education and the world of work

The article is based on the EntreComp Certificate project (Erasmus+ Programme - 2019-UK01-KA201-062076) as it is being developed within a partnership of educational (universities and schools) and IT institutions and organisations from the United Kingdom, Romania, France, Italy and Cyprus. The EntreComp Certificate project focuses on the importance of entrepreneurship in social and economic development and individual growth nowadays. The project relies on the EntreComp Framework established by the European Union; it aims to enhance Europe's entrepreneurial potential by supporting individuals to acquire and develop the skills and the key competencies detailed in the EntreComp Framework. The article presents the project's objectives, methodology and main outputs. The study gives insights into how the partnership adapted the EntreComp Framework to meet teachers' needs and enable them to use the EntreComp Framework in their school contexts. To this end, an e-learning platform was created. Its suggested activities and guidance curriculum are meant to enable educators to develop and then assess the fifteen competences of the EntreComp Framework that their students acquire in their activities at Intermediate and Advanced Levels.
Key words: entrepreneurship education, the EntreComp Framework, e-learning platform

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The modification of food consumption behaviour under the influence of promotional actions

The consumption behaviour represents one of the main attractions of the marketing study area which sparks a lot of interest. Within the enterprise marketing mission, the food consumption behaviour is a particular sub-category, given the significant realignments of production and food consumption. The statistics from the last 10 years indicate a strongly ascending trend for all product categories. The hypothesis of the current research is that this increase is due mostly to the simultaneous increase in the number and intensity of promotional campaigns and actions, to which consumers respond with pro-comsumption favourable reactions. The analysis from this paper is performed for Romania with data from the period 2010-2020 by means of the following methods: observation, data analysis, processing and interpretation. The research results confirm the increase in food consumption under the influence of promotional actions, which does not always favourably support a stable, socio-economically healthy and sustainable market.

Key words: consumption behaviour, promotional actions, research

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Today's Romanian village: a paradox of the smart village concept

Rural development has become a concern for decision-making structures in the European Union. Thus, in the current Multiannual Financial Framework 2021-2027, in each development plan there are distinct measures to improve the conditions in the rural area. Also, a series of measures are aimed at implementing the SMART VILLAGE concept. Concerns about the SMART VILLAGE concept have spread to all EU member states. The aim of the paper is to find an answer to the question: Is there a correlation between the real needs of the rural population in Romania and the proposed measures? To find an answer to this question, we analyzed the satisfaction of the population of 10 communes in the North-East Development Region with respect to: transport, postal and courier services, technical and municipal infrastructure (drinking water networks, sewerage, sanitation and public lighting), state of communal roads, state of county roads, educational infrastructure and health infrastructure. In all the analyzed cases, the results of the research highlighted a high degree of dissatisfaction of the population with the technical and municipal infrastructure of the commune, which highlights the need to take measures in this regard. The analyzed communes were grouped in 5 classes (according to the number of inhabitants) thus analyzing the correlation between the size of the population and the current level of development of the commune. Based on the results obtained, a set of 5 development priorities of the Romanian village was outlined, analyzing the correlation between these priorities and the financing opportunities for investment projects for local authorities.
Key words: rural development, financing, investments, infrastructure

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The impact of english language learning on the acquisition of soft skills such as critical thinking and emotional literacy skills

The present day desideratum for the educational systems is to develop students' life-long learning skills and to support them in the acquisition of soft skills as well. There are various fields concerned with the development of these skills and a closer look at the overlapping areas may be beneficial. Gardner's theory of multiple intelligences highlights the characteristics of the interpersonally and intra-personally minded people. The proponents of the theory of emotional intelligence incorporate these two types of intelligences as core domains in which emotional literacy skills are rooted and where they may bloom effectively. Finally, the theory of speech acts includes these skills as accompaniment in people's verbal interactions. As part of the present study, three textbooks from the series *CAREER PATHS: Agriculture, Hotels & Catering* and *Tourism* issued by Express Publishing UK have been analyzed with respect to their potential of developing students' critical thinking and emotional literacy skills by means of the speaking activities

they suggest. The conclusion that can be drawn is that the dialogues have the potential of enhancing students' interpersonal abilities while encouraging polite communication – especially through the use of modal verbs (*can, could, may*) – and critical thinking by the extensive use of questions. However, in terms of emotional vocabulary, there is a scarcity of emotional words being employed, with a frequent occurrence of concepts such as: *happy, angry, sorry, worried*, which may seem a bit restrictive with regard to the complexity of emotions people feel and the lexical items that express them. Consequently, the mission of the English courses and educators is to extend the area of the communicative situations that rely on the diversification of this specific vocabulary, which may contribute to a broader understanding of people's interactions in the long run and to a genuine embracing of a relevant linguistic material.

Key words: soft skills, speech acts, emotional intelligence, emotional literacy, emotional lexis

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A view of online teaching and learning during the pandemic

The pandemic caused by SARS-CoV-2 impacted the way in which all the activities of our lives were developed, and the educational system was one of the most affected aspects. The report of the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2020) warns that the pandemic has caused the most serious disorder recorded in education systems in all history, and that higher education would be the sector that could experience the highest dropout rates, as well as a reduction in enrollment of the order of 3.5%, which means a global loss of 7.9 million students. To alleviate this crisis, it recommends formulating comprehensive plans for the reopening of schools, protecting education funding and collaborating to moderate negative impacts, increase the resilience of education systems with a view to fair and sustainable development, rethink education and energize positive change in teaching and learning (UNESCO, 2020). After the declaration of a health emergency, all education levels had to quickly reorganize itself, migrating teaching and learning processes to virtual environment. Although this is increasingly used, there are still a lot of elements that prevent it from working successfully in all contexts.

Key words: online education, technology, pandemic, social and pedagogical transformations

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Issues related to educational management – a factor of economic growth in the business environment

Long restricted to the economic sphere, in recent decades the term management has expanded its applicability to other areas, including that of education, where it can be found with all elements, dimensions and functions which it performs in any other domain, but with a number of features determined by the specificity of didactic activities. Therefore, educational management refers to the theory and practice of

general management applied to the educational system and process, to school organizations and classes of students. However, given the purposes of the educational system, the scope and variety of employed resources and the specific traits of the end product, which is neither concrete nor tangible, school management is extremely specific and can be described by what theorists call 'the human component' of the process and view it in the center of the educational company. School management is the science and art of training human resources, shaping personalities in relation to purposes that are accepted by individuals, society and a certain group of people. School management comprises a set of functions and principles, rules and leadership patterns which ensure that the objectives of the school system are met (as a whole or in its components) in relation to high efficiency and quality standards. Among the measures that have the potential to bring positive changes we can mention training activities, reintegrating adults by 'Second chance' educational and vocational programs and in-house training. In education and training, national strategic plans to provide counselling services for all secondary school students, to consolidate key competences, and to promote and reward proficiency in education and initial training have turned technical and vocational education into a first option. We can conclude that education enriches knowledge and improves individual skills. For this reason, these individuals are able to find a job that will suit their competence and provide a reasonable income. Inasmuch as they can find such job opportunities in their environment, they will be active in that place and contribute to the economic growth of that particular area. If they cannot find such opportunities, they will migrate to other areas (usually from rural to urban areas) and thus generate the aforementioned negative effects.

Key words: educational management/school management, training programs, economic environment, employability.

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Diagnostic analysis on the perspectives of sustainable development of the rural environment in the context of the implementation of the regional development strategy

The paper aims at a diagnostic study on the prospects of sustainable rural development in the context of implementing the regional development strategy and sustainable rural development in the context of implementing the regional development strategy 2014-2020, by using a system of specific, quantifiable and representative indicators to allow, through econometric analyses, the evaluation of the results and the projection of the evolution of the sustainable development phenomenon. The approach of sustainable development and rural development in a strategic context had, mainly, a theoretical character, the analysis being oriented towards: the delimitation of the different conceptual aspects regarding: sustainable development strategies; addressing rural development through sustainable development; regulations on sustainable development at global, European and national level, etc. In this context, the paper aimed to identify how to approach sustainable development in regional development strategies with a case study, and socio-economic assessment of the development of the Northeast Region, the

development of strategies to promote sustainable agriculture at the producer level. and the individual peasant household to the level of agricultural societies. The information used in the analysis corresponds to the database of the European Commission's Farm Accounting Information Network (RICA) and the methodology includes the min-max approach and multivariate methods, in particular the analysis of the main component and the analysis of clusters. The analyses focus on highlighting the logic of strategic intervention by capturing priorities, strategic objectives, results and impact. The analysis allowed the identification of the interconnection of strategic objectives with the sustainable development objectives established at national level and the identification of result indicators related to the strategic objectives necessary to monitor the implementation of strategies, all against the different methodologies for achieving the two evaluated strategies.

Key words: diagnostic study, indicators, agriculture, sustainable, rural

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Elements of the economic educational management system

There is a new trend in the educational management system, which is active within a school at the interface of the educational process. This new trend is related to the design of ICT, technical, technological, economic and managerial educational products that will meet the proficiency needs created by the present-day social and economic progress. Designing high-performance educational products implies the need to perfect presentation strategies, methodical and organization procedures and also a complex approach to economic and managerial issues which will ensure the effectiveness of the educational process.

In the present-day context, the increasing complexity of problems that teaching is faced with, as regards institutional reform, financial and economic deficit, means that a management strategy is required which will match the dynamics of the national social and economic system. In this particular context, an adaptive managerial process is needed to answer the issues that are specific to the educational sector. Such managerial strategies are meant to solve the array of problems posed by designing competitive educational products within the framework of difficulties generated by resource allocation as well as conditions generated by the internal and external environments of a specific school organization. Designing an educational product is not the result of spontaneous transformation of young students, but rather the result of a huge number of heterogeneous actions, intercorrelated from a methodological and organizational viewpoint, which involves human, material, mechanical and financial resources. These need to be organized, planned, coordinated, controlled and evaluated within the framework of an operational, therefore high-performance managerial system.

At present, schools of economics are more and more highly-regarded and perceived as systems and organizations, their main function being to transform the ‘input’, namely students, teachers, knowledge and cultural values, financial resources and so on, into desirable ‘output’, by which we mean the results of school education: educated young people, with thorough knowledge of the economic sector, with

social authority, new information and knowledge, new values, new representations and cultural values.

Key words: educational management system, educational products, school of economics, educated students

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Criminal prosecution activity and investigations on economic crimes assigned to the state fiscal service

The economic activity of the state, regardless of the social and political order of the state, is one of the main links of existence and functioning of the state. It is in the conduct of external economic relations that the main financial sources of the state are rotated. Article 126 of the Constitution, characterizing the economy of the Republic of Moldova as a market economy, considers the national economy, in the same regulatory context, it is stated that the state must ensure, among others: freedom of trade and entrepreneurship; protection of fair competition; creating a favorable framework for capitalizing on all factors of production; protection of national interests in economic, financial and foreign exchange activity, etc. For these reasons, it is absolutely necessary to create in this field the legal mechanism for regulating these relations, which does not affect external economic relations, does not affect the economic potential of the state, does not tarnish the image of the state in the world arena, etc. This article is the evidence of particularities, specific features in the field of economic crimes, assigned to the State Tax Service, given that in this criminal sector, the administration of evidence involves certain specific coordinates that are not found in the investigation of other crimes. The evolution of the criminal legislation that provides for criminal liability for economic crimes is inextricably linked and conditioned by the history of our state.

Key words: fiscal administration, State Fiscal Service, anti-fraud, criminal investigation, investigations, finding, crimes

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Change management: A case study in the Republic of Moldova through the prism of business efficiency

Organizational culture in the current conditions has become a well-known and deeply developed phenomenon by international companies, including those in the Republic of Moldova. Despite the fact that our country has been independent for 29 years and in conditions of developing the market economy, we managed to have good practices in the managerial field, including in terms of organization. Organizational culture in terms of organizational change is a current topic, with a precedent in companies, international corporations, which led the researcher to an analysis of national experience in the efficient management of a local enterprise. The fact that in recent years the Republic of Moldova has known good performances in the theoretical substantiation of management has left a rather convincing and applicable imprint in the practice of national companies. Among

the entities with developed organizational culture are identified primarily those in the banking field. In this context, the author managed to present in this article a practical study on the analysis of organizational culture in the context of change management with effects of managerial and administrative efficiency. This entity continues to be one of the largest and most representative commercial banks in the Republic of Moldova, including highlighted by the particular and efficient organizational culture.

Key words: organizational culture, change management, efficiency, managerial performance, banking

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Business development in agriculture: Between myth and reality for moldovan migrants

Currently, entrepreneurship and migration go hand in hand. On the one hand, migration causes the population to adapt to the new social, economic and geopolitical conditions. On the other hand, the development of entrepreneurship requires the creation of new products and services that society requires over a period of time. The symbiosis between returned migrants and the development of business in the field of agriculture can become the key to success for the economy of the Republic of Moldova. The phenomenon of migration in the Republic of Moldova has been going on for several decades, and in the last period of time, as a result of the triggering of the COVID pandemic situation, it is attenuating. In this sense, one of the basic prerogatives of public authorities is reintegration and return of Moldovan migrants and their support through various programs and tools. The most popular of the support programs, intended for migrants and their relatives who want to start a business in the Republic of Moldova, is the Program for Attracting Remittances in Economy "PARE 1 + 1". This program, over 10 years has contributed to the financing of 2020 small and medium enterprises, including 1022 entrepreneurs in the field of agriculture. The total amount of grants granted to agricultural entrepreneurs is about 215.3 million lei. Thanks to the experience gained from the work performed in over 35 countries of the world, the returned migrants in the country contributed to the creation of new enterprises, developed new business areas, such as raising snails, chinchillas, ostriches, vipers; cultivation of energy willow, paulownia. asparagus, sea buckthorn, poppy seeds and blueberries; channeled the means obtained from abroad to the construction of greenhouses, refrigerators, dryers, mills, sorting lines and processing of agricultural products; they opened agritourism pensions and eco-villas, etc. Businesses created by migrants, tangentially, were also supported with the support of other state programs and foreign donors through technical assistance, training, workshops, participation in conferences and exhibitions, preferential lending, funding through grants before and after investment, compensation, direct payments per animal, various tax mechanisms, etc. In conclusion, we mention that although, through various support instruments, it contributes to the development of business in the agricultural field, this branch in the Republic of Moldova is not sufficiently

developed and requires primarily involvement and support in developing the managerial and professional skills of local entrepreneurs abroad.
Key words: business, migrants, Moldova

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Analysis of the Romanian rural agri-food potential

In Romania, agriculture is the most vulnerable part of the economy, so about 30% of the country's population works in this sector. What minimizes the overall performance of the agricultural sector are subsistence farms, so that labor and land are used below their economic capacity. The lack of competitiveness is generated by the excess of the agricultural labor force, to which is added the lack of capital and the inadequate training of the farmers. This results in an imbalance in the ratio between very low incomes and activities. The paper is based on statistical research on the degree of rural development of the commune under analysis, the diagnosis of the mentioned rural area, the SWOT analysis of the commune and the 2030 vision from the point of view of rural development. Regarding rural development, the policy focuses on three key points: environment, agri-food economy, extended rural economy. For this reason, the seven criteria of rural development representative for the diagnosis of the rural area were taken into account, according to which the Banca commune was included in a specific category from the point of view of rural development. The SWOT analysis of the rural area complements the highlighted characteristics and makes possible an overview, summary, of the agri-food potential, development opportunities and combating the existing problems. Finally, the 2030 vision captures the need to implement an agri-food strategy in order to develop economically, ecologically, territorially, socially in order to ensure agri-food safety and security.
Key words: performance, vulnerability, competitiveness, agri-food safety

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Economic depreciation of mechanized assets in vegetable farms

In most cases, the depreciation of mechanized assets is overlooked in the current economic activity of vegetable farms. The calculation of the economic depreciation of mechanized assets can provide information on the real value of an agricultural machine / equipment, depending on the operating hours, technical wear, moral wear, etc. From an economic point of view, the use of equipment and machinery in an agricultural farm is regarded as an operating cost, because the time and the manner of their operation have an impact on the value of assets. The correct calculation regarding the economic depreciation of the mechanized means within the agricultural exploitations will allow the correct determination of the exploitation costs and subsequently the determination of the profitability of the economic activity as a whole. Farm managers should be aware that the purpose of calculating depreciation is to accurately reflect the decrease in the value of a

mechanized assets over time. At the same time, the residual value of the mechanized assets can finally be determined. The article addresses methods for calculating the economic depreciation of mechanized means in farms. The aim of the paper is to identify and analyze through specific indicators, the economic depreciation of agricultural machines in vegetable farms. Most of the time the calculations are based on the operating times of the machine/equipment. For example, some methods of calculating depreciation allocate part of the cost of mechanized means to the time they have been used in production. An alternative to the calculation of depreciation can be the calculation of operating costs depending on the time of use or the area worked and the type of agricultural work performed, knowing that agricultural work causes different degrees of wear on mechanized means depending on their complexity. This alternative should provide farm managers with more accurate information on operating costs and the profit generated by the business in each production period.

Key words: mechanized assets, economic depreciation, vegetable farms

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The influence of management activities regarding agricultural machines maintenance and repair on the overall farm economic efficiency

A particularly important role in the activity of farms is represented by the agricultural machinery and equipment used in production. In addition to a thorough selection and procurement process in accordance with existing needs, there is also a need for efficient management of maintenance and repair activities correlated with the technological specifications and the required work schedule. Although, on the whole, little attention is paid to this sector of the general business, possible malfunctions may lead to the impossibility of carrying out certain technological works and, consequently, to the deregulation of production plans and, subsequently, a possible negative impact on economic results. Management can be a decisive factor of production, in addition to the other factors that are given a higher importance, this field requiring more attention in terms of training the managers and implementing the principles of this science.

The paper aims to highlight the importance and impact of efficient management of maintenance and repair of machinery on the economic results of agricultural farms starting from a general analysis and continuing with an analysis at the farm level, making a correlation between these activities and the economic results recorded. Maintenance and repairs within a company can be carried out, depending on the strategy approached, both by the farm employees, by an authorized service in partnership with the farm or can be carried out in a combined system. The effectiveness of the technological system is determined by the way of adapting to the characteristics of each farm. If the maintenance of agricultural equipment used in the production process is not carried out in time, regardless of the field, the activity cannot be realised in optimal conditions or there may be delays in accomplishing the task which may influence the process of organizing and

coordinating activities and therefore optimal operation process is affected.
Key words: farm management, agricultural machinery maintenance, repair system, production plan, economic efficiency

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Stylistic and syntactic study of Romanian and Moldavian advertising slogans for wine

As a general rule, the advertisements use persuasion to make the consumers buy products, regardless of their necessities. As expected, the advertisements for wine are no exception. This paper follows the advertising tendencies on the wine market in Romania and Moldavia. Thus, we focused on a comparative study of a corpus of approximately twenty slogans, half Romanian, half Moldavian, both stylistically and syntactically. After a thorough examination, we could identify the common traits used in drawing the target group of consumers, such as the presentation of century-old tradition of wine making, the prestige of the wine gained through awards or the inherent connection between wine and leisure time. There were especially pointed out the features that make some slogans unique and which define the two nations, such the signs that show the rank, status and lifestyle of the subjects. From a syntactic point of view, both in Romanian and Moldavian ads, the short, concise sentences, made up of no more than six words prevail.
Key words: slogan, wine, Romanian, Moldavian, contrastive study

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Risk management and insurance premiums for crops, animals and plants: Framework, Influence, Financial impact, Forecasts

This study aims to analyze European risk management measures for producers in the plant and livestock sector and their influence on farmers. In recent years, the National Rural Development Program NRDP has included Measure 17.1 - Insurance premiums for crops, animals and plants. This allows agricultural producers to claim a partial incentive of the value of the insurance premium paid to the insurance company. As is well known, agricultural production is deeply dependent on climate change, which requires farmers to have easier access to insurance through which to partially offset losses from natural disasters or other adverse events. Such risk management schemes must be able to cover, in addition to losses caused by adverse climatic events (floods, droughts, soil erosion, etc.) also those caused by animal and plant diseases, pest infestations and incidents of environment (toxic waste discharges, etc.), providing overall protection to farmers who face interruptions of activity and / or loss of production due to such incidents. Among the new risk management tools provided by Measure 17, Romania has chosen to promote the stimulation of farmers' involvement in risk prevention and management schemes through support for the insurance premium. In 2020, the Funding Agency for Rural Investments allocated 15 million Euros, of which farmers attracted 10,807,760.84 Euros. In 2021, the institution made available the

amount of 31.2 million Euros. At the end of September 2021, the session is open and reveals a wide popularity. A number of 3,622 applications are submitted with a total value of 7,991,285.94 Euro. The paper aims to analyze the concrete situation of some farmers benefiting from this scheme in 2020 which are examples to follow. The dimensions of the areas allocated to the crops are analyzed in correlation with the insurance premiums paid, partially reimbursed and with the insured values in case of damage.

Key words: crops insurance, risk management, European incentives

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A synthetic profile of the rural tourism consumer

Rural tourism and, in particular, agritourism have become increasingly popular activities as a result of the multiple benefits it generates. Rural tourism is attractive for visitors with different motivations and different market profiles. This paper aims to find the most common profile of tourists visiting rural areas. In order to segment the rural tourism market, a series of customer indicators can be used, such as: reasons, preferences, needs and expected benefits: geographical origin; economic and demographic status; psychographic characteristics and consumer behavior etc. As the needs and expectations of consumers of rural tourism products are very varied, there are several types of tourists, the differences being determined mainly by geographical origin, but also by different perceptions on the quality of tourism products and services. In general, it can be said that these tourists come mainly from urban areas, are middle-aged or above middle-aged, have a high level of education and training, have above-average incomes and travel in small groups, usually with family and friends.

Key words: rural tourism, tourist profile, customer indicators

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Research on the decision to purchase and consumption for agri-food products on the Iasi municipality market

The paper aims to analyze the purchasing and food consumption behavior of the population of Iasi, as well as the decision-making act made at individual or group level, in connection with the purchase and consumption of agri-food products, designed to meet food needs, present and future, including both the decision-making processes that precede and those that determine the purchase/consumption of these product categories. Food satisfies the physiological needs of every human being, which cannot be delayed and, therefore, for this satisfaction the needs of the consumer affect a part of their income. The way in which food needs can be met differently, through food of animal or vegetable origin, rationalization of the number of calories, dietary principles, vitamins, minerals, etc., ultimately determines the level of expenditure depending on these options. They differ according to age, social condition, preference for the structure of consumption, degree of civilization, geographical condition, even fashion and imitation, etc. At first glance, defining consumer behavior seems to be a relatively easy process. In

reality, however, the definition of this concept involves taking into account a variety of elements, resulting in a series of definitions presented by the literature over the past decades. Given the complexity of this concept, for its definition, specialists have resorted to various sciences starting with anthropology, sociology and psychology, and ending with economics and marketing. In this paper, the emphasis is on treating the concept of consumer behavior from a marketing perspective.

Key words: tools, financing, agriculture, objectives, st
rategies

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Analysis of community implications on agriculture in the North-East region

The aim of the research was the diagnostic analysis of the results obtained by agricultural farms and the impact of European funds in the context of integration into the European Union. It is found that, after Romania's accession to the European Union, the possibilities for the development of agricultural farms have increased, as a result of their advantage of accessing European funds, with a fairly large share of their non-reimbursement. In this context, the research started from the economic-financial analysis of the situation of agriculture in the North-East Development Region, according to which to proceed to adopt measures that will lead, first of all, to the increase of agricultural production and, in secondly, to make it more efficient by attracting European funds. This paper aims to provide viable tools for assessing the implications of Community support mechanisms at regional and farm level by delimiting the set of indicators needed and the methods needed to quantify this influence. The results obtained will be the basis for understanding how the Community financial support influences the development of agricultural holdings and will allow the identification of how the support needs to be oriented so as to lead to the long-term development of Romanian agriculture. In order to meet the purpose mentioned in this paper, we aimed to: evaluate the evolution of agriculture and community allocations in the macro and micro economic context; evaluation of income sources for estimating the influence of subsidy through Pillar I; evaluation at the level of case studies of the activity of agricultural holdings that have accessed funds through Pillar II by highlighting the evolution of their activity and evaluation of the technical and scale efficiency of agricultural holdings taken as a case study in the context of accessed funds.

Key words: community, funds, agriculture, objectives, financial

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Aspects regarding the relation between economic freedom, democracy and development

Liberalism is an ideology centered around the entire social life of the individual as opposed to democracy, which comprises only the social aspects related to the functioning of the political system. Democracy has liberalism as its basis, being

thus an expression of the spiritual and civic engaging of a set of values which are attributed to the individual in order to have the power to act rationally and freely. A democratic political system allows for the active but voluntary participation of citizens creating at the same time favourable conditions for the economic growth and development. Thus, the individuals may enjoy the economic freedom of operating within a market economy. Most studies regarding the impact of economic development on political changes suggest a strong relationship between the increasing levels of economic development and the opening of the political success, as well as between the changing social structures and the emergence of political competition. Lipset's theory remarkably states that all developed states are democratic states with the exception of Singapore and that democracy is never influenced in a relatively rich country. Economic freedom is a complex concept able to manifest itself in various aspects relating to the individual's economic behaviour and designating his fundamental right to have access and to act economically by performing economic activities. The research is based on secondary data (indicators reflecting the level of economic freedom, of democracy and of development) existing in the international databases (Political Stability, Index of Economic Freedom, Governance Indicators, World Development Indicators etc.). The main direction of the qualitative analysis of the paper is based on the concept of economic freedom, an overview of its history and chronological presence in the economic theory and practice, as well as on the ways of quantifying it using various indices that measure the economic freedom of the countries in Europe. The empirical part of the research comprises the analysis of the relationship between economic freedom and economic growth with the help of Heritage Foundation's Index of Economic Freedom. The methodology for creating the index focused mainly on theoretical input as well as on a theoretical extension of the interpretation of each segment.

Key words: liberalism, economy, democracy, economic development

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Models of optimization and simulation of agricultural crop plans in agricultural holdings in Romania

The purpose of this paper is to promote the setting up of farms whose size will allow the practice of a viable, sustainable agriculture, capable to apply the newest technologies and lead to profit and efficiency, to the economical and organizational consolidation. The essential criterion in optimizing the crop structure is the economic efficiency, respectively the realized profit. Economic efficiency is constantly changing due to changes in raw material prices and commodity production. Hence the need to optimize the structure of crops in each cycle of agricultural production. The main indicators used in optimizing the structure of crops are: yield per hectare, production costs per unit area, profit per hectare, unit cost and rate of return.

As a consequence, the resizing of the agricultural holdings, the partnership between the producers, the integration of the agricultural production, the rural development, the consumers' constant request for agricultural and food products, the decrease of the deficit of the commercial balance for the agricultural products, the increase of the population's life standard, the safety of the food, all these are goals that have to be under the continuous attention of the authorities at central and local level. The elaboration of mathematical models was oriented on the design of several structural alternatives and the elaboration of a large number of variants, because analysing the problem of establishing an optimal structure through the prism of several variants creates the possibility of highlighting the development and manifestation of different phenomena, some conclusions, not by subjective assessments or by antithesis, but on the basis of several concrete structures that each variant covers.
Key words: models of planning, optimization, economic, agricultural holdings, production, simulation, decision

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Digital economy and digital education

The concept of the "new economy" (digital economy) focuses mainly on the current transformations of economic activities as a result of the use of digital technologies that provide access, processing and storage of information in a less expensive and accessible digital economy. The new economy is characterized by the intensification of the incorporation of knowledge of new products and services, the increase of the importance of learning and innovation, globalization and sustainable development. The main components of the digital economy are digital products, consumers, sellers, business infrastructure, intermediaries, maintenance and support services, website creators. The promotion of digital technologies would stimulate the European economy from two perspectives, namely one of support for citizens and another of support for European Union companies. the level of quality of education is decisive for the prospects and chances of success in the lives of young people. Education also plays a key role in social rights. The digital economy requires a high consumption of design work, a high qualification, which creates a higher added value, new jobs, unlimited virtual segments of business opportunities and creativity.
Key words: digital economy, digital education, economic development

FOURTH SECTION

FOOD ENGINEERING

TECHNOLOGY AND CONTROL IN WINE INDUSTRY
PRINCIPLES AND METHODS FOR CONSERVATION OF FOODSTUFFS
MILK TECHNOLOGY
TECHNOLOGY OF MEAT AND MEAT PRODUCTS
TECHNOLOGY AND CONTROL IN THE BREWING INDUSTRY AND DISTILLATES
QUALITY FOOD OF ANIMAL ORIGIN
QUALITY FOOD OF PLANT ORIGIN
MANAGEMENT OF FOOD QUALITY

PLENARY SESSION

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UV-VIS spectrophotometry for the malondialdehyde estimation as a quality marker in the pork traceability

The aim of the paper is to define a biochemical approach in assessing the quality of pork traceability through the UV-VIS spectrophotometric method by determining the concentration of malondialdehyde. The mechanism of the proposed chemical reaction consists in the formation of the chromogen read at $\lambda = 532$ nm, between thiobarbituric acid and malondialdehyde in the glacial acetic acid medium. The proposed concept in food safety, for evaluating the activity of peroxidase in the agri-food products by using the biochemical method, may be the fundamental task of the food and animal sciences approach to the accuracy and precision evaluation of the substances that results in the process of pork meat alteration. Near-infrared spectroscopy and pH measurement are techniques used as the quality assessment tool. The result of the experimental evaluation confirms that the concentration of red chromogen is an genuine marker of the pork meat quality.
Key words: pork meat, peroxidase, thiobarbituric acid, malondialdehyde, near infrared spectroscopy

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Comparison of two microwave drying techniques of cereal seeds and determination of physical parameters

In this paper, the microwave drying of corn and wheat seeds by two technologies and at different working powers was studied. The main objective of this study is to evaluate the effect of microwaves on variations in moisture, color and size of seeds after microwave drying. The tests were performed in a microwave oven without inverter technology at three drying powers (260, 440 and 620 W) and a microwave oven with inverter technology at the same drying powers. It has been observed that an increase in drying power causes a simultaneous decrease in drying time by about 50% and seed moisture below 14%. The color variation of seeds was insignificant between microwave drying by technology with inverter and without inverter. However, there is also an unacceptable decrease in size for both types of seeds with increasing drying power which can lead to increased shrinkage of the seeds and the appearance of cracks, especially in corn seeds.

Key words: microwave drying, corn seeds, wheat seeds, drying time, physical parameters

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Coffee caffeine expertise and its effects on nutrition and consumers health

The experimental research looked at the side effects of coffee alkaloids on consumer nutrition. Most coffee drinkers do not know the side effects of alkaloids in that, especially caffeine. On the other hand, from a nutritional point of view, the higher the caffeine content, the higher the mineral content. So, the permissible dose limit of caffeine, an exciting nerve cell alkaloid, LD50 of 200 mg caffeine / 100 g of coffee, induces a better state of comfort, concentration and better energy level, because when the amount of coffee used to prepare a coffee, increases the level of minerals, although the benefits of coffee consumption disappear. The experimental results obtained show that at caffeine concentrations of 200 mg / 100 g coffee the permissible limit level, the concentration in mineral substances is 692.1 mg for *Arabica* coffee and 391.5 mg for *Robusta* coffee. The LD50 limit of 200 mg / 100 g of caffeine means 3 and a half doses for *Arabica* coffee and 2 doses for *Robusta* coffee. In conclusion, what exceeds this number of doses, i.e. between 225-300 mg / 100 g caffeine, 4-5 doses, a concentrated coffee, means a consumption of coffee with harmful effects on the body, even if the human metabolism requires it due to a significant intake of mineral salts of 7.94% for *Robusta* coffee and 13.88% for *Arabica* coffee compared to the recommended daily dose DZR.

Key words: caffeine effects vs. mineral salts

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Product design in food industry. Application of QFD methodology for improvement of chocolate quality

Quality Function Development (QFD) is a systematic approach specific to quality management that facilitates product development by ensuring consumer requirements meeting ”customer voice”, these being taken into account from the design phase, then during the entire technological process, being reflected in the

quality characteristics of the finished product. The purpose of this study was to apply the QFD methodology (House of Quality, HoQ) to improve the quality of products in the food industry, taking into account the technological process of chocolate (designing a new product that meets the requirements of consumers- the Q product), thus providing a synthetic model. The working method consisted in the participation of a number of 200 chocolate consumers, aged between 20-24 years, who provided the list of consumer requirements, prioritizing and weighting them based on a standardized score from 1 to 5 points. The following stages were represented by the transposition of consumers' voice in quantifiable technical requirements, their correlation using predefined standardized symbols, establishing the direction of improving the quality of the new product, assessing current competition and determination of target values. Following the analysis, the most important consumer requirements for chocolate were the taste of cocoa (25%), the flavor (25%), the fine texture (20%), the small amount of sugar (15%) and an affordable price (15%). Thus, in order to meet consumer requirements, the replacement of sugar with coconut nectar sugar or dates powder as alternative sweetener led to a healthy product, but which will have a higher price compared to the products currently available on the market.

Key words: House of Quality, chocolate, improvement, sugar

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Improving food safety culture in Romania: A review of practical issues

Romania faces significant hurdles in terms of food safety culture as a developing country. Consumers and food businesses must adhere to a set of shared principles known as food safety culture in order to create and provide safe, secure, and nutritious food. Few people in Romania are aware of food safety risks as the country gets increasingly urbanized and wages continue to change at high rates. Furthermore, government authorities' control of food safety needs to be improved. In recent years, public participation in food safety problems has not been encouraging. This page provides an overview of Romania's food safety culture, as well as its role and impact on numerous food safety issues. Studies on consumer and food handler attitudes and behavior about food safety are of particular importance to this study. Furthermore, special focus is paid to areas where more study is needed to solve practical and on-the-ground issues linked with Romania's food safety practices. According to this article, developing Romania's food safety culture necessitates using the best management and communication tactics in different regions, as well as recognizing local food safety practices.

Key words: food safety; consumer demand; producer behavior; organizational culture

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Determinants for conducting food safety culture research

Despite scientific discoveries, continual improvement in food safety management systems, and increased academic discussion on food safety, food safety remains an

issue around the world. Organizational and administrative characteristics (i.e. food safety vision, communication, commitment, leadership, training), technical facilities/resources (i.e. food hygiene/safety tools, equipment, facilities), employee characteristics (i.e. attitudes, knowledge, perceptions, and risk awareness), group characteristics, and crucible characteristics are all important factors to consider in food safety culture research. The use of a systems approach, quantitative indicators, categorization systems for differentiated assessment, and the use of numerous techniques to improve study validity are among the methodological needs for food safety culture research. The identified food safety culture research determinants provide a solid and transparent foundation for a common understanding and research of the topic. The purpose of this study is to identify determinants for undertaking food safety culture research, with the systems approach serving as the underpinning philosophy to lead an organized rethinking of national, organizational, and safety culture literature in the context of food safety.

Key words: safety culture, food safety culture, food safety management system, food safety performance

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Research on the quality of milk production zootechnical holdings for cattle breeding in Neamț County

In this paper, the quality of milk production in dairy herds from 7 farms in Neamț County was analysed. For this, the date of accredited associations for performing the control of their own performances (CPP), respectively the Association of Animal Breeders "Operator I.A" Neamț, the Association of Cattle Breeders from Mureș County, as well as the date from the Genealogical Register were used. The quality of the milk was assessed in terms of the seven specific indicators, namely: somatic cell number (NCS), fat percentage (GR%), protein percentage (PB%), lactose proportion (L%), urea proportion (U%), the proportion of casein (C%) and the pH of the milk. The average daily milk production produced by the cows on these farms was also calculated. The breeds raised in these farms are: Black Spotted Romanian (BNR), Holstein, Brown of Maramureș and Spotted Romanian (BR). The best results regarding the milk quality are Brown of Maramureș revealed in farm 5, respectively the Secuieni Neamț Agricultural Research and Development Station where the breed is bred, the average values of the specific indicators that were registered are the following: NCS thousand / ml-157.64 , Fat% -4.13, Protein% -3.59, Lactose% -4.81, Urea% - Casein% -28.08, PH%, Milk kg per day-20.03.

Key words: dairy cows, CPP, milk quality, specific indicators

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Technology and quality conditions of an assortment of cheese obtained exclusively from whey (URDĂ) manufacturing in Milk and Milk Products Micro production Workshop within IULS

Whey, a byproduct of cheese and whey manufacturing was considered as waste of dairy industry. Today food industries are on the lookout for ingredients with functional and nutritional features that may be used in the creation of a variety of value-added food items. Milk proteins in general, and whey proteins in particular, have been recognized by the food industry as having the potential to improve the quality of food items. Whey is one of the most important and abundant byproducts of the dairy industry, accounting for half of all milk solids. As a result, draining this whey not only results in the loss of vital nutrients, but it also contributes to environmental contamination due to the high organic matter content and high biological oxygen requirement (30,000–60,000 ppm). For these reasons, during the milk and dairy processing workshop within IULS, we set out to make an exclusive whey cheese (Urda) assortment that is processed more in the traditional system. In countries like Italy, it is a tradition to obtain Ricotta, a cheese exclusively from whey to which citric acid or acetic acid is added to promote the clotting process of albumin. For the product obtained by us, the whey obtained from the manufacture of Telemea cheese was left at a temperature of 21°C for 24 hours so that the pH value decreased from 6.2 as the fresh product recorded to 5.1. The cheese was obtained by boiling whey at a temperature of 91°C. To establish the qualitative parameters, cheese was analyzed for fat, moisture, protein, ash, and acidity using the methods of Association of Official Analytical Chemists. Fat was determined by the Gerber method and the Gerber-Van Gulik method in milk and cheese, respectively. The protein was determined by the Kjeldahl method. The acidity of cheese was determined by the Thorner method and expressed as percentage of lactic acid. All analyses were carried out in triplicate. The results obtained by us highlighted average values of 33.15±0,02% for the dry matter content, the difference up to 100% being occupied by the water level (66,85±0,02%). Also, in terms of urda fat content, the average value obtained was 13±0,01%. Due to its good nutritional value and the fact that it is obtained with minimal costs, urda is a product obtained exclusively from whey which can be an alternative to the management of whey in milk processing units.

Key words: whey, food, cheese, urdă

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Sensory and physico-chemical characteristics of a new assortment of cheese obtained in the Milk and Milk Products Micro production Workshop within IULS

As more and more people place a high value on their health and well-being, taking into consideration all of the variables that contribute to it, the food business sector has been forced to enhance its goods, as the food diet plays an extremely significant part. By examining the chemical makeup of the food they consume, today's

customers are paying more attention to product ethics. Additionally, sectoral considerations play a major part in the procurement of food, with the food being purchased only after doing a much more thorough study. Cheeses play a significant part in the diets of consumers, since they are a commodity that is extensively consumed both internationally and in our own country. For many years, producers have defined cheese quality as cheese that is made consistently and inexpensively. Consumers had fewer options in the past, and as a result of this limited experience, their palates were less discriminating. Today's cheese markets are global, and cheesemakers compete openly for customers, providing them with a growing variety of options. Cheese consumers are more affluent, and many have sampled or consumed a variety of cheeses regularly, making them more discriminating. These customers are now defining the cheese quality standard, which is ultimately established by eating quality. In our country, over time, many different types of cheese have appeared, but telemeau stands out among them due to a variety of characteristics, and because it is considered a traditional product. Even while the vast majority of telemea variants now available on the market are produced using a standard technology (SR 1981/2008), the primary goal of this study was to create a new assortment of cheese, which was called "A type of Telemea cheese". To emphasize the qualitative parameters, sensory analyzes were performed (appearance, consistency, color, odor, and taste), and physicochemical determinations were also performed (water content %, dry matter %, fat relative to dry matter %, protein substances %, sodium chloride % and acidity ° T), values that were compared with those specific to Telemea made of fresh cow's milk (quality I).
Key words: milk, tehnology, telemea

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Research regarding the obtaining bakery clean label products with natural yeast in the bakery section of Iași University of Life Sciences

Within the University of Life Sciences in 2018, an advanced technological line for bakery products production was established. One of the aims of the research carried out within it was to find alternative solutions for the development of the technology for obtaining Clean Label bakery products within natural yeast. The present study aims to describe the technology of obtaining both natural yeast and bakery products with this type of yeast. Natural yeast is represented by a dough obtained from wheat flour, water, sugar, salt dehydrated fruits (plums and apricots) that has been subjected to an acidifying fermentation in a controlled environment. The obtaining of this product was a priority in March - June 2020, in the context of the crisis due to the current pandemic generated by the SARS COV 2 virus, when Romania's population faced limited of yeast resources in the commercial network. Referring to the fact that the entire population worldwide according to the restrictions had to stayed at home to prevent contamination with SARS COV 2, research was conducted to find alternative options available to the population to obtain a quality bread with natural yeast. The obtained products consisted of 4 experimental variants, respectively: V_1 – white bread with natural yeast, V_2 – intermediate bread with natural yeast and seeds, V_3 – white bread with natural yeast, apricots and plums and V_4 – white bread with natural yeast, cranberries and walnuts. These products were evaluated from qualitative point of view (physical-chemical and sensorial) and the results showed that this category of Clean Label products can represent a sustainable alternative, with an extended shelf life, with a constant quality, criteria that meet the requirements of rigorous consumers.

Key words: natural yeast, bead, bakery, Clean Label

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Correlations between the adaptability in Bucovina of Limousine cows and the nutritional quality of the milk obtained

The Limousine breed is spread on all continents in 64 countries, and Romania will be the 65th country in which it is trying to adapt this breed of cattle. The Limousine race is currently ranked 1st in England and is highly regarded in other countries, such as France 1st, Canada 2nd, Italy and the USA 3rd place. The main objective of this project is to observe the adaptability of the Limousine breed to the geo-meteorological conditions recorded in northern Romania, Bucovina region. The aim of the paper is to evaluate from a nutritional qualitative point of view the raw milk obtained from this breed. The investigations were carried out to establish the degree of freshness, integrity and we monitored some physical and chemical

parameters of the raw material milk. The samples were taken directly from the collection vessels after milking and filtration mainly in the hot season, and their processing was done in the Food Control Laboratory of the Faculty of Veterinary Medicine Iasi, where a number of 38 milk samples were processed. Following the analysis of the samples, a number of 8 samples were inadequate in terms of organoleptic examination and integrity. Deviations from the organoleptic characteristics of the parameters of appearance, color, smell and taste represented a percentage of 21.05%. The determinations of the Physical and chemical parameters were classified as inappropriate a number of 10 samples, which represents a percentage of 26.31% of the total samples collected.

Key words: cow's milk, Limousine cattle breed, physical and chemical parameters

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Pork sausages fortified with various concentrations of lavender essential oil: Microbiological and sensorial properties

Several essential oils (EOs) can be used as natural alternatives to synthetic food additives in meat and meat products, especially as effective antibacterial agents. This study investigated how different levels of lavender essential oil (LEO) affected the microbiological and sensory properties of smoked pork sausages. Bacterial growth was followed for 9 days, including tests on days 3, 6, and 9. The smoked pork sausages were divided into two groups: the control group (C) without lavender essential oil and the test group (T) fortified with (0.2%, 0.5%, 1%, 1.5%, 2%, 2.5%, and 3%). The APC and coliform counts indicated that lavender essential oil (LEO) enrichment of smoked sausages has high inhibition of APC and coliform. The lowest minimum inhibitory concentrations (MIC) were obtained with *L. Angustifolia* (0.2%) against both microorganisms. Both EOs caused a significant decrease in bacterial growth in smoked pork sausage stored for 6 and 9 days. Moreover, the results showed that the addition of EO significantly prolonged the odor of smoked pork sausage even at abusive temperature. However, the use of lavender essential oil (LEO) is partially limited due to its intense aroma, which may have negative organoleptic impact. Further studies are needed to enhance the sensory impact of samples enriched with lavender essential oil (LEO).

Key words: spoilage bacteria, quality, meat products, smoked sausages

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The influence of technological parameters on the sensory quality of pork paté

To obtain high-quality food appreciated by consumers, several principles and rules are applied in all stages involved in obtaining the product, including design, production, testing, and marketing that must be observed. This paper presents a

diversification of the technology of producing canned paté, manufactured within the Meat Processing Workshop of the University of Life Sciences, and the consequences of technological changes examined in terms of sensory parameters. For the study, three batches of products were prepared. The technological flow was differentiated by the proportion of raw materials introduced in the recipe (pork/pork liver/fat) and by the time and temperature parameters at which the sterilization was performed. Following the performance of sensory tests on the obtained batches, significant differences in texture were found, the batch with the highest average for unctuosity and spreadability being L1, which contained the highest quantity of fat. The most pronounced flavor for the three samples was the metallic one, the next score being for the butter flavor, also perceived more intensely for L1. Regarding the averages obtained for the rancid aroma, they had the lowest values, which reveals the fact that a correct balance of the amount of fat was achieved with the heat treatment applied for the three batches.

Key words: pork paté, technology, sensory evaluation

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The importance of technological parameters on the sensory quality of smoked mackerel

Fish meat, through its biological and chemical characteristics, is, for humans, nutritious food with many benefits on the body and is suitable for industrialization in various forms. This study aimed to make assortments of smoked mackerel, applying a differentiated technology, ending with a sensory evaluation of the product obtained to examine the effect of processes and recipes applied to sensory characteristics such as appearance, texture, color, and aroma and palatability of products. The study material was purchased from a fish warehouse and transported in specific conditions (0-4 °C) the next stage consisting of staining and differentiated maturation according to the established technological file and smoking in the meat processing micro-section within USV Iași. Thus, the assortments were marinated for 12 and relatively 24 hours in a vacuum. Sensory evaluation is a vital operation in the development of new products and for this evaluation, 45 evaluators were part of the study, answering a questionnaire to identify the differences perceived after different maturation presented in the datasheet. The samples matured for 24 hours were the most appreciated by the evaluators obtaining the highest averages for the sensory characteristics of appearance, texture, color, and aroma. According to the sensory evaluation, the samples from experimental group 2 obtained higher values than the sample from experimental group 1.

Key words: sensory evaluation, fish, technological processes, development of new product

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The influence of air temperature and speed on corn dehydration

For the proper progression of the work process for cereal drying it is necessary that the distribution of the termic agent to be uniform and steady through the product layer, so that the variation of the product's humidity and temperature can be similar in all the layer's spots. The purpose of this paper is to obtain a uniform distribution of heat in the product along with a close variation of it's humidity along the layer's thickness. In order to achieve those proposed, there was subjected successively to be dried, corn seed with humidity between 16-25% in three adjoining cells with a total thickness of 150 mm. To fulfil the objectives, in the context of investigations, there was an installation designed and built for dehydration of cereal seeds in laboratory conditions, which consists of a fan, electric resistance heating system, provided with three drying tunnel cells for cereals, command and data acquisition system using sensors for temperature and humidity for both the product and the drying agent. By varying the drying agent's speed and temperature between 1 and 2.5 m/s and between 40 and 80 °C, there were studied a total of 80 experimental variations. During the research, there was monitored the influence of the structural and functional parameters of the installation for dehydration on the variation of humidity in the three layers of corn seeds, down to the moisture of 14%. Experimental research results highlight the inverse variation of moisture in the three layers with increasing of the drying agent's speed and temperature. Values of layers humidity have varied evenly for temperatures under 60°C. In the present research work, we demonstrated that with decreasing humidity the porosity increases in the product layer, the drying agent speed increases, the drying agent temperature decreases, and the drying agent humidity increases.

Key words: corn, drying, parameters

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Incorporated with green synthesized silver nanoparticles

Finding a feasible alternative to reduce the use of conventional polymers in the plastic sector has become a top priority, since industrially generated plastic waste, mostly traditional food packaging, has turned into a global environmental disaster. The aim of the study was the preparation and characterization of biodegradable films based on whey protein isolate, functionalized with green synthesized nanoparticles. Green silver nanoparticles (AgNPs) were synthesized using cinnamon extract as both capping and reducing agent. Biodegradable nanocomposite blend films based on silver nanoparticles and whey protein isolate (WPI) were made by casting denatured WPI film solutions incorporated with green synthesized silver nanoparticles. The film thickness and water vapor permeability (WVP) of both control and AgNPs were determined. The biodegradable films based on whey and (1%) green synthesized nanoparticles have potential application as active food packaging in the cheese industry.

Key words: whey, green synthesis, silver nanoparticles, biodegradable film, active packing

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The effects of alkaline water versus flat and mineral water on human health

Nowadays, alkaline water is the healthiest drinking water because is an essential element of life. Today, the recommendations related the consumption of water so necessary for human life, as well as for the optimization of human metabolism, refer to the consumption of alkaline water. Drinking water is neutral with pH=7. Flat water has a pH between 7.02-7.23, and natural mineral waters have a pH =7.5-7.88. When mineral waters have carbonated with carbonic acid, an acidification of carbonated mineral waters occurs. The higher amount of carbonic acid used at the impregnation will make to increase the acidity of the finished product, resulting in acidic mineral waters. The mineral waters have a variable content of salts, gases, minerals, radioactive elements, which give them therapeutic properties. Mineral waters are the basic natural factors in the treatment of indicated diseases. The mineral waters are salty-iodinated-brominated, sulphurous and internal healing springs with weak mineralized sulphurous, bicarbonate, sulphated, calcined sodium, magnesium water. Iodinated, sodium waters brominated with gas emissions (light hydrocarbons, among which methane predominates) are deep waters with a high concentration, exploited by wells. The experiment aimed to identify the pH of drinking water vs. flat and mineral water, obtaining values in the range of 5.9-7.88, to expose beneficial recommendations for the population. The concentration in calcium and magnesium ions indicates the quality of mineral water with therapeutic effects, registering values between 18.02-59.20 mg/l Ca^{2+}, 11.05-29.18 mg/l Mg. The amount of oxygen determined in the experimental study ranged from 8.13 mg/l to 11.78 mg/l.

Key words: alkaline, flat, mineral water quality

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Compositional characteristics of low-alcohol wines obtained by staggered grape harvesting technology

Excessive alcohol consumption has many negative effects on human health and society itself. Climate change and the improvement of viticultural technologies have gradually led to an increase in the alcoholic concentration of wines, a trend that has become contrary to the current requirements of consumers inclined to a healthy diet. The aim of the study was to obtain wines with low alcohol concentration through a simple and accessible technology, by staggered grape harvesting, at 100 and 150 g/L sugars (”in green”) and at full grape maturity (Muscat Ottonel and Pinot gris varieties), in the ecopedoclimatic conditions of Copou-Iasi wine center, NE of Romania. By blending the experimental wines were obtained improved beverages in terms of physico-chemical characteristics, phenolic composition and chromatic parameters, with alcohol concentrations between 6.5 and 8.5% vol. Sensory properties changed significantly, being

produced more acid wines, with less full bodied perception and reduced persistence, as detracting characteristics.

Key words: blending wines, grapes, ”green” harvest, low-alcohol wines, sensory properties

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The application of the Failure Modes and Effects Analysis (FMEA) methodology to improve meat products quality

Failure Modes and Effects Analysis (FMEA) it is a predictive and preventive methodology specific to non-compliance and risk management. The FMEA is a modern tool used in the purpose of identifying potential failure modes, the causes and effects of each nonconformity (on a system, subsystem, or component part) for keeping under control the technological processes and to improve the quality of finished products. The aim of this study was the application of the FMEA to improve meat products quality. Among the steps and activities required to apply the FMEA methodology is distinguished as specificity the calculation Action Priority (AP) depending on the severity (S) of consequences of manifestation of nonconformities to the consumer, on the probability of occurrence (O) of a potential hazard for food safety and on the probability of its detection (D). The AP was determined for each category of identified potential hazards: physical (P), chemical (C) and biological (B) for all ingredients and for all stages of the technological flow for meat products. Through AP, a quantitative assessment can be made of the potential food safety problems in a system, and respectively a prioritization of implementation of preventive actions and the lowering of potential nonconformities. Based on AP, the identified potential nonconformities can be classified in the Low priority category even if the old considered Risk Priority Number (RPN) value is higher than 100 (125, for the row material storage, at the level of P hazards). On the other hand, at values lower than 100 of the RPN, the AP can be in the Medium priority category (96, for preparation of raw materials, at the level of C hazards), the value of S being the decisive element.

Key words: failure modes and effects analysis, quality, hazards, meat

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Efficiency of some screening methods used in monitoring the quality of vegetable substrates and the presence of mycotoxins

The purpose of this study was to evaluate the effectiveness of screening methods applied in the analysis of plant products (cereal seeds, feed, hay, etc.) used in agriculture and animal husbandry. Their screening can be done both during the harvesting season aswell as during their storage for the cold season. Information regarding the physico-chemical parameters and mycotoxicological load may be obtained by applying this rapid screening techniques. Near-infrared spectroscopy (NIRS) screening techniques can provide a quick result regarding the quality of plant products. In this study, the efficiency of using the Perten FT-NIR Analyzer in determining the physico-chemical

parameters was tested. The sample were scanned and the values were provided shortly after. The analyzed products were also tested from a mycotoxicological point of view by identifying the presence of different types of mycotoxins in plant products by applying thin layer chromatography (TLC). The use of fast screening methods leads to lower costs, elimination of toxicity and shortening of the time to results.

Key words: screening, plant products, mycotoxins, NIRS, TLC

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Study of milk production indices in the Spotted Romanian race exploited in farms in Neamț County

In this paper, we have proceeded to analyze milk production indexes, on standard lactation (305 days) in maturity equivalent (MS), at the first two lactations, on normal lactation (305 days) in the Spotted Romanian Cattle, exploited in farms in Neamț County. For this process, we utilized data from associations accredited to carry out the official own performance control (CPP), the Association of Cattle Breeders from Mureș County, as well as data from the Genealogical Register. For the analysis of productive performances, a statistical processing of the primary data was performed following the average value and variability for 6 characters, respectively normal lactation duration (days), amount of normal lactation milk (kg), normal lactation fat (%), fat normal lactation (kg), normal lactation protein (%), normal lactation protein (kg). At the first lactation the average milk production per normal lactation was 5967.80 kg, Fat-4.08%, Fat- 244.30 kg, Protein -3.26%, Protein-194.50 kg. At the second lactation, an average value of milk production of 5012.89 kg, Fat-4.05%, Fat-202.44 kg, Protein-3.31%, Protein-165.78. kg. It is found that at the first lactation there was an average milk production per good normal lactation of 5967.80 kg, but which decreases at the second lactation to 5012.89, which indicates that in these farms the management is deficient in these farms and especially food management.

Key words: cows, milk production, farms, CPP