

AGRIBALKAN 2021

III. BALKAN AGRICULTURAL CONGRESS



**29 AUGUST – 01 SEPTEMBER 2021,
EDIRNE, TURKEY**

III. Balkan Agriculture Congress, Edirne, Turkey, 29 August - 1 September, 2021

III. BALKAN AGRICULTURAL CONGRESS

<http://agribalkan.net/>

**29 AUGUST – 01 SEPTEMBER 2021,
EDİRNE, TURKEY**



In Trakya University Balkan Congress Center, Edirne, Turkey

Organized by Trakya University

with

Trakya Universities' Union, Balkan Universities' Union, Namık Kemal University, Onsekizmart University - Turkey, Uludag University, Turkey, Agriculture University of Plovdiv, Trakia University-Stara Zagora - Bulgaria, Democritus University of Thrace – Greece and with contribution of other Balkan Institutions...

III. Balkan Agriculture Congress, Edirne, Turkey, 29 August - 1 September, 2021



Dear Colleagues,

You are welcome to our congress will be organized by Trakya University supporting with Trakya Universities Union, Balkan Universities Association and together with other Balkan Universities and Institutions.

The aim of our international congress is to present the newest research results and research goals, analyze current conditions and perspectives in agriculture.

Conference activities;

Plenary sessions with oral and poster presentations are on 29 August – 01 September 2021.

You are welcome to our congress and Edirne, TURKEY,

Yours sincerely,

Prof. Dr. Erhan TABAKOĞLU

Rector of Trakya University
Honorary Chair of Congress

Prof Dr Yalcin KAYA

Head of Organizing Committee

FOREWORD

Agriculture is so important sector feeding all humankind, but it needs new developments and technologies to supply enough food for increasing world population year by year. Turkey is one leading agricultural economy in the world. Balkan region is one the important agricultural areas of the world having rich soils producing different crops vastly and keeping enormous biodiversity for our future.

As there have been many different scientific meetings around the world, we intended to bring three communities together, namely science, research and private investment, in a friendly environment of Edirne / Turkey to share what they have and get benefit from each other. Trakya University intended to aim that agricultural community in Balkan areas should come together in that important event. Our congress goal is the agricultural subjects should be kept broad in order to provide opportunity to the science community to present their work that can be off value for agriculture.

First Balkan Congress was organized by Trakya University in 2014 as the biggest agricultural congress in Turkey and Balkan region. In the first congress, over 700 participants were presented total 830 papers (650 poster and 180 oral presentations) and invited speakers presented country reports from all Balkan countries. 2nd Balkan Agriculture Congress was organized by Tekirdağ Namık Kemal University in 2017.

As third one, Trakya University hosted again in Edirne, Turkey in 2021. We would like to thank all participants for great interest to our AGRIBALKAN 2021 congress even in Covid 19 pandemy. There is a worldwide participation from 41 countries with 406 papers contributed by 988 authors. Our AGRIBALKAN Congress will be organized with 288 oral, 118 e-poster presentations.

We hope that this congress will help to solve our problems with establishing good network collaborations, joint projects and better relationships among countries with sharing our knowledge and experiences together. We wish success for this meeting and hope a great scientific achievement with your contributions.

Edirne is very nice, lovely and historical city at just the edge of Europe, but just right at the heart of Balkan region and history endowed with monuments reminding imperial past. We are much pleased to host you all in Edirne and in Turkey.

We would like to thank you to join this congress and we would like to give also special thanks our sponsors and collaborators for giving us big supports to organize this event.

We wish you nice stay in Edirne for truly rewarding days.

Prof. Dr. Erhan TABAKOGLU
Rector of Trakya University
Honorary Chair of Congress

Prof Dr Yalcin KAYA
Director of TU Plant Breed. Res. Center
Head of Organizing Committee

ORGANIZING COMMITTEE

NAME	INSTITUTION	DUTY
Prof Dr Erhan TABAKOĞLU	Rector of Trakya University	Honorary Chair
Prof Dr Yalçın KAYA	Trakya University	Head of Committee
Assoc Prof Dr Necmi BEŞER	Trakya University	Vice Chair
Emrah AKPINAR	Trakya Univesity	Congress Secretary
Selcuk KAYA	Trakya Univesity	Congress Secretary
Prof Dr Mustafa TAN	Trakya University	Member
Assoc Prof Dr Semra HASANCEBI	Trakya University	Member
Assoc Prof Dr Süleyman KÖK	Trakya University	Member
Assoc Prof Dr Ali Ihsan MESE	Trakya University	Member
Prof Dr Mevlüt AKÇURA	Onsekizmart Unviersity	Member
Prof Dr Metin TUNA	Namık Kemal University	Member
Prof Dr Nazan DAĞÜSTÜ	Uludağ University	Member
Prof Dr Viliana VASSILEVA	Forage Crops Institute – Pleven	Member
Prof Dr Nurettin TAHSIN	Plovdiv Agricultural University	Member
Prof Dr Ioannis TOKATLIDIS	Democritus University of Thrace	Member
Assoc Prof Neli GROZEVA	Trakia University- Stara Zagora	Member
Asst Prof Dr Orhan O. AŞKIN	Kirklareli University	Member
Dr Fatih BAKANOGULLARI	Soil Agric. Met. Res. Inst.	Member
Dr Cengiz ÖZER	Tekirdağ Viticulture Res. Inst.	Member
Dr İrfan ÖZTÜRK	Trakya Agricultural Res Inst.	Member
Dr Veli PEKCAN	Trakya Agricultural Res Inst.	Member
M. İbrahim YILMAZ	Trakya Agricultural Res Inst.	Member
Dr Göksel EVCİ	Trakya Birlik	Member

SCIENTIFIC COMMITTEE

NAME	DUTY	COUNTRY	INSTITUTION
Prof Dr Sezen ARAT	Head of SC	TURKEY	Namik Kemal University
Prof Dr İlhan TURGUT	Deputy Head of SC	TURKEY	Uludağ University
Prof Dr Harun BAYTEKİN	Deputy Head of SC	TURKEY	Onsekizmart University
NAME	INSTITUTION	COUNTRY	FIELD OF INTEREST
Prof Dr Rigerta SADIKAJ	University of Tirana	ALBANIA	Agricultural Biotechnology
Prof Dr Vesna MILIC	University of East Sarejova	BOSNIA AND HERZEGOVINA	Agricultural Economy
Prof Dr Hristina YANCHEVA	Plovdiv Agricultural Univ.	BULGARIA	Forage Crops
Prof Dr Elena TODORSKA	Agricultural Academy of Bulgaria	BULGARIA	Molecular Genetics
Prof Dr Violeta BOZONOVA	Agricultural Academy of Bulgaria	BULGARIA	Cereal Breeding
Prof Dr Dragomir VULCHEV	Karnobat Research Institute	BULGARIA	Barley Breeding
Prof. Dr Ivan SIMUNIC	University of Zagreb	CROATIA	Land Management
Prof Dr Zizis VRYPAS	Democritus University of Thrace	GREECE	Plant Protection
Prof Dr Fa (Phil) ARAVANOPOULOS	Aristotle University of Thessaloniki	GREECE	Forest Science
Prof Dr Desimir KNEZEVIC	University of Prishtina	KOSOVO	Plant Breeding
Prof Dr Julijana TOMOVSKA	St. Clement Ohrid Univ. Bitola	MACEDONIA	Agricultural Biotechnology
Prof Dr Velibor SPALEVIC	University of Montenegro	MONTENEGRO	Soil & Water Science
Dr Maria PACUREANU JOITA	NARD Institute of Fundulea	ROMANIA	Sunflower
Prof Dr Dan-Marius VOICILAS	Institute of Agricultural Economics	ROMANIA	Agriculture Economy
Prof Dr Dejana PANKOVIC	University of Novi Sad	SERBIA	Molecular Genetics
Prof Dr Andrej SIMONCIC	Agricultural Inst of Slovenia	SLOVENIA	Weed Science
Prof Dr Ismet BASER	Tekirdağ Namık Kemal Un.	TURKEY	Cereal Science
Prof Dr Fadul ONEMLI	Tekirdağ Namık Kemal Un.	TURKEY	Oilseeds
Prof Dr A. Halim ORTA	Tekirdağ Namık Kemal Un.	TURKEY	Irrigation Science
Prof Dr Ahmet ULUDAG	Çanakkale Onsekizmart Un	TURKEY	Weed Science
Prof Dr Iskender TIRYAKI	Çanakkale Onsekizmart Un	TURKEY	Plant Biotechnology
Assist Prof Dr Buket AŞKIN	Kirklareli University	TURKEY	Food Science
Prof Dr Haci Ali GULEC	Trakya University	TURKEY	Food Science
Dr Yılmaz BOZ	Yalova Horticult. Res. Ins	TURKEY	Fruits / Viticulture
Dr Vehbi ESER	BISAB	TURKEY	Plant Breeding
Dr Ahmet YILMAZ	TSUAB	TURKEY	Cereal Science
Kamil YILMAZ	TUBID	TURKEY	Seed Legislative
Dr Mete KOMEAGAC	TURKTED	TURKEY	Hybrid Seed Production
Yildiray GENCER	TURKTOB	TURKEY	Seed Marketing

INVITED SPEAKERS

NAME	INSTITUTION	COUNTRY
Dr. Yunus BAYRAM	Ministry of Agriculture and Forestry	TURKEY
Prof. Dr. Sezen ARAT	Tekirdağ Namık Kemal University	TURKEY
Prof. Dr Rigerta SADIKAJ	University of Tirana	ALBANIA
Prof. Dr. Viliana VASSILEVA	Forage Crops Institute, Pleven	BULGARIA
Prof. Dr. Ioannis TOKATLIDIS	Democritus University of Thrace	GREECE
Prof. Dr. Hazir POLLOZHANI	State University of Tetovo,	MACEDONIA
Dr Maria JOITA PACUREANU	Academy of Sciences of Moldova	MOLDOVA
Prof Dr Emine DACI-ZEJNULLAHI	State University "Haxhi Zeka"	KOSOVO

THE EDITORS OF PROCEEDING BOOK OF ABSTRACTS

Prof Dr Yalcin KAYA, Assoc Prof Dr Necmi BEŞER

ISBN #: 978-975-374-299-3
Trakya University Publisher #: 254

MAIN ORGANIZING INSTITUTIONS

Trakya University, Edirne TURKEY
Trakya Universities Union, TURKEY
Balkan Universities Association, TURKEY
Namık Kemal University, Tekirdağ, TURKEY
Onsekizmart University, Çanakkale, TURKEY Agriculture University of Plovdiv, BULGARIA
Trakia University, Stara Zagora, BULGARIA
Democritus Univ of Thrace, Orestiada, GREECE

OTHER ORGANIZING INSTITUTIONS

Kırklareli University, Kırklareli, TURKEY
Uludağ University, Bursa, TURKEY
University of Agriculture of Tirana, ALBANIA
University “Fan S. Noli”, Korce, ALBANIA
University of Sarajevo, BOSNIA & HERZEGOVINA
Univ. of East Sarajevo, BOSNIA & HERZEGOVINA
University of Zagreb, CROATIA
Agricultural Academy of Bulgaria, BULGARIA
University of Forestry, Sofia, BULGARIA
Sofia University, Sofia, BULGARIA
University of Ruse, Ruse, BULGARIA
Aristotle University of Thessaloniki, GREECE
Agriculture University of Athens, GREECE
University of Prishtina, KOSOVO
State University “Haxhi Zeka”, KOSOVO
State University of Tetovo, MACEDONIA
Ss. Cyril & Methodius Univ. Skopje, MACEDONIA
St. Clement Ohrid Univ. of *Bitola* MACEDONIA
Academy of Agricultural Sciences, MOLDOVA
University of Montenegro, MONTENEGRO
USAMV University, Bucharest, ROMANIA
University of Novi Sad, SERBIA
University of Belgrade, SERBIA
Balkan Agrarian Institute, Sofia, BULGARIA
Joint Genomic Center, Sofia, BULGARIA
AGBIO Institute, Sofia, BULGARIA
Institute of Genetics, Sofia, BULGARIA
Karnobat Agricultural Research Inst., BULGARIA
Dobroudja Agric. Res Ins, Gen.Toshevo, BULGARIA
Inst. of Physiology & Genetics, Sofia, BULGARIA
Ins. Mount. Stockbreed. Agric, Troyan, BULGARIA
Agricultural Research Institute, Osijek, CROATIA
Scientific Tobacco Institute, Prilep, MACEDONIA
Fundulea Agric. Res. Inst, Bucharest, ROMANIA
Agricultural Institute of Slovenia, SLOVENIA
Inst. Field and Vegetable Crops, Novi Sad, SERBIA
Maize Research Institute, Zemun Polje SERBIA

Trakya Agricultural Res. Institute, Edirne, TURKEY
Tekirdağ Viticulture Research Station, TURKEY
Atatürk Soil Water and Agricultural Meteorology
Research Station, Kırklareli, TURKEY
Ministry of Food, Agriculture & Livestock of Turkey

SUPPORTING INSTITUTIONS

Bulgarian Seed Association, BULGARIA
The Hellenic Scientific Society for Plant Genetics and
Breeding, GREECE
Serbia Seed Trade and Plant Breeders Assoc, SERBIA
Turkish Seed Union (TURKTOB)
Plant Breeders Union of Turkey (BISAB), TURKEY
Turkish Seed Industry and Producers Union (TSUAB)
Turkish Plant Breeders Assoc. (TUBID), TURKEY
Turkish Seed Industry Assoc. (TURKTED), TURKEY
Governorship of Edirne, TURKEY
Trakya Birlik, Edirne, TURKEY
Edirne Commodity Exchange, Edirne, TURKEY
Edirne Farmer Union, TURKEY
Province Offices of Ministry of Food, Agriculture and
Livestock of Turkey

CONTENTS

FOREWORD.....	1
VARIATION OF PM ₁₀ AND SO ₂ CONCENTRATIONS IN HEATING DEGREE DAYS AND COOLING DEGREE DAYS IN KIRKLARELI, TURKEY.....	12
DEPENDENCY ANALYSIS OF QUANTITATIVE TRAITS AND GRAIN PRODUCTIVITY IN GARDEN PEA (<i>PISUM SATIVUM</i> L.)	18
RELATIONSHIP BETWEEN REPRODUCTION PERFORMANCES AND COAT CHARACTERISTICS OF MONTBELIARDE COWS DURING HOT SEASON IN ALGERIA	23
DETERMINATION OF PHYTOCHEMICALS AND ANTIOXIDANT CAPACITY OF EDIBLE DANDELION PLANT (<i>TARAXACUM OFFICINALE</i>) COLLECTED FROM KIRŞEHİR REGION.....	1
MINERAL, CRUDE ASH, AND CRUDE FAT CONTENTS OF SECOND CROP FORAGE PEA AND CEREALS MIXED CROPPING	1
CURRENT POSSIBILITIES OF MACROMINERAL USE IN LAYING HEN DIETS: A REVIEW	1
THE EFFICACY OF BENTONITE FEED ADDITIVES IN IMPROVING LAYING HENS PERFORMANCE AND EGG QUALITY: A REVIEW.....	1
RESULTS OF APPLICATION OF DIFFERENT COLORS OF SHADING NETS OF QUALITY TOMATOES	1
MONITORING THE NUMBER OF PRINTS OF INJECTION MACHINES WITH WIRELESS CONNECTION.....	2
PLASTICS USED IN INJECTION MACHINES	4
HONEY PLANTS ECOLOGICAL ASSESSMENT IN TREBESHINA-DHEMBEL-NEMERCKE MOUNTAIN RANGE	11
ASSESSMENT OF THE EFFECTS OF WATER STRESS AND SUBSTRATE ON FLOWERING, PODDING AND MYCORRHIZAE PRESENCE IN FABA BEAN LEGUME (<i>Vicia faba</i> L.).....	21
THE EFFECTS OF BEE FLIGHT AND POLLINATING DISTANCE ON SEED PRODUCTION AND QUALITY IN SEED SUNFLOWER PRODUCTION.....	32
INVESTIGATION OF THE EFFECT OF DIFFERENT HARVEST TIMES ON SOME YIELD CHARACTERISTICS OF TURKISH OREGANO (<i>Origanum onites</i> L.).....	38
ORGANIC MATTER AS AN EXTERNAL FACTOR IN RESISTANCE TO WATER STRESS IN REINA MORA VARIETY OF BEAN (<i>Vicia faba</i> L.).....	44
RHIZOBIA INOCULATION AND DMPP NITRIFICATION INHIBITOR HAD EFFECT PHENOLOGICAL AND MORPHOLOGICAL CHARACTERS OF BEAN (<i>Phaseolus vulgaris</i> L.).....	55
SECTORAL USE OF WATER AND ECONOMICAL POLITICS OF WATER	67

INVESTIGATION OF THE SUSTAINABILITY OF SOIL PROPERTIES OF OLIVE ORCHARDS IN DIFFERENT LAND CONDITIONS OF THE SEMIARID MEDITERRANEAN AGROECOSYSTEM.....	74
FORTIFIED CAKE WITH POMEGRANATE AND ORANGE PEELS POWDER AS A FUNCTIONAL PRODUCT	89
EVALUATION OF SOILWAT MODEL FOR SOIL PHYSICAL PROPERTIES IN THE DIFFERENT LAND USE.....	98
EVALUATION OF THE CONTENT OF PHENOLIC COMPOUNDS AND ANTIOXIDANT POTENTIAL OF WHITE MULBERRY FRUITS AND PEKMEZ	112
HYDROLOGICAL DROUGHT ANALYSIS AND DROUGHT HYDROLOGY	121
CONSIDERATION OF BEEF CATTLE BARN PROJECTS WITH MANURE MANAGEMENT PLANNING: ÇANAKKALE/AYVACIK CASE STUDY	134
THE QUALITY CHARACTERISTICS OF DRIED RED CAPIA PEPPER	148
CONTACT INSECTICIDAL EFFECTS OF SOME ESSENTIAL OILS (CITRUS LIMON AND CITRUS SINENSIS) ON APHIS FABAE SCOPOLI (HEMIPTERA: APHIDIDAE). 154	
A STUDY ON THE DETERMINATION OF THE YIELD AND PLANT CHARACTERISTICS OF SOME DRY BEAN (<i>Phaseolus vulgaris</i> L.) GENOTYPES UNDER CANKIRI CONDITIONS	167
THE EFFECT OF STORAGE ON THE TEXTURE QUALITY OF HAZELNUT CHIPS PRODUCED IN DIFFERENT FORMULATIONS.....	174
DISTRIBUTION OF NOSEMA SP (CAUSATIVE AGENT OF NOSEMOSIS IN HONEY BEES) IN ALGERIA	181
EVALUATION OF THE CONTENT OF PHENOLIC COMPOUNDS AND ANTIOXIDANT POTENTIAL OF WHITE MULBERRY FRUITS AND PEKMEZ	190
THE INFLUENCE OF THE COMPOUND FEED SUPPLEMENTATION WITH FISHMEAL ON RAISING PERFORMANCE DURING THE AGE 1 - 42 DAYS OF BROWN JUMBO QUAILS	198
ADDITION OF NATURAL TANNINS DURING FERMENTATION TO STABILIZE THE COLOR OF RED WINE FROM VAR. "SHESH I ZI".	210
EVALUATION OF THE PHYSICAL-CHEMICAL CHARACTERISTICS OF THE APPLE VARIETIES FOR THE PRODUCTION OF APPLE - CIDERS.....	218
THE QUALITY CHARACTERISTICS OF DRIED RED CAPIA PEPPER	228
NUTRITIONAL ENRICHMENT OF SESAME SEED BY <i>Aspergillus niger</i> SOLID-STATE FERMENTATION.....	234
SOLID-STATE FERMENTATION USING <i>Aspergillus niger</i> IMPROVES THE NUTRITIONAL QUALITY OF OLIVE CAKE.....	237
A SIMULATION STUDY ON THE EFFECT OF LINKAGE DISEQUILIBRIUM ON GENOTYPIC VARIANCE AND ITS COMPONENTS: II- EFFECT OF LINKAGE DISEQUILIBRIUM ON POPULATION PARAMETERS IN A MODEL THAT DOMINANCE AT ONE LOCUS AND ADDITIVE GENE EFFECT AT THE SECOND ...	240

PERFORMANCE EVALUATION OF AUTOMATICALLY EXTRACTED CITRUS TREES FROM LIDAR POINT CLOUD DATA: REVISITING A TRADITIONAL STRATEGY BASED ON LOCAL MAXIMA AND WATERSHED SEGMENTATION	252
CHANGES IN CHLOROPHYLL CONTENT AND FRUIT QUALITY IN ALPHONSE LAVALLÉE GRAPE VARIETIES FROM VERAISON TO RIPE.....	261
POLYPHENOL CONTENT AND ANTIOXIDANT CAPACITY OF MEDICINAL AND AROMATIC PLANTS.....	276
THE EFFECT OF COWPEA (<i>Vigna unguiculata</i>) ON HUMAN HEALTH.....	290
SALINITY AND DROUGHT STRESS IN WALNUT	298
GENOME ANNOTATION IN PLANTS USING ENSEMBL	302
HYDROPRIMING AFFECTS SEED GERMINATION AND SEEDLING PERFORMANCE IN SWEET CORN CULTIVARS	310
THE STRUCTURAL EVALUATION REGARDING TO AGRICULTURAL TOURISM OF VITICULTURE FARMS IN TEKİRDAĞ PROVINCE	319
EVALUATION OF SOME ANNUAL RYEGRASS CULTIVARS IN GERMINATION AND EARLY SEEDLING STAGE UNDER DIFFERENT SALINITY LEVELS.....	329
IMPROVING POSTHARVEST STORABILITY OF “CYPRUS LEMONS” BY THE APPLICATION OF OZONE, ROSEMARY OIL, STRAW COVERAGE AND/OR/WITH MODIFIED ATMOSPHERE PACKAGING	336
EFFECTS OF SODIUM BI-CARBONATE AND MODIFIED ATMOSPHERE PACKAGING ON THE POSTHARVEST STORAGE QUALITY OF SNAP BEAN PODS	348
BIOACCUMULATION OF HEAVY METALS BY SELECTED SOME PLANTS CULTIVATED IN CENTRAL AND EASTERN BLACK SEA REGION.....	360
EVALUATION OF THE CONTENT OF PHENOLIC COMPOUNDS AND ANTIOXIDANT POTENTIAL OF WHITE MULBERRY FRUITS AND PEKMEZ	372
EVALUATING COMMERCIAL BERRY JAMS FOR THE PRESENCE OF	380
POLYPHENOLS IN SAMSUN AREA	380
EFFECTS OF LIVING AND NON-LIVING MULCH APPLICATIONS ON FRUIT YIELD AND QUALITY IN ORGANIC KIWIFRUIT PRODUCTION.....	387
DETERMINATION OF PESTS (DIPTERA: TEPHRITIDAE) IN FRUIT GROWING ON TURKISH REPUBLIC OF NORTHERN CYPRUS	394
EFFECT OF SEED PRIMING ON GERMINATION AND SEEDLING GROWTH OF CICER ARIETINUM UNDER DROUGHT STRESS.....	400
ADULT FLIGHT PERIOD AND HOSTS OF <i>Tropinota hirta</i> (PODA, 1761) (COLEOPTERA; CETONIIDAE) IN ÇANAKKALE PROVINCE.....	404
DEVELOPMENT OF QUALITY OIL SUNFLOWER (<i>HELIANTHUS ANNUUS</i> L.) HYBRIDS.....	414
ENHANCEMENT OF SOYBEAN (<i>GLYCINE MAX</i> L.) ADAPTABILITY AND PRODUCTIVITY THROUGH MOLECULAR METHODS	433

SESAME AN UNDERUTILIZED OIL SEED CROPS: BREEDING ACHIEVEMENTS AND FUTURE CHALLENGES.....	455
EFFECT OF ORGALIFE FERTILIZER ON SOME QUALITY PROPERTIES OF THE SEED AND GROWTH POTENTIAL OF TWO RICE VARIETIES (ORYZA SATIVA L.) CULTIVATED IN NORTH MACEDONIA.....	474
COMPARISON OF PYROXASULFONE'S BIOREMEDIATION WITH SOME SOIL BACTERIA BASED ON CHEMICAL OXYGEN DEMAND AND ITS EFFECT ON MORTALITY ON DAPHNIA MAGNA.....	486
THE ROLE OF TUMOR MARKERS FOR EVALUATION THE COURSE OF CHEMOTHERAPY.....	495
NUTRITIONAL ENRICHMENT OF SESAME SEED BY <i>Aspergillus niger</i> SOLID-STATE FERMENTATION.....	508
SOLID-STATE FERMENTATION USING <i>Aspergillus niger</i> IMPROVES THE NUTRITIONAL QUALITY OF OLIVE CAKE.....	511
PERFORMANCE EVALUATION OF AUTOMATICALLY EXTRACTED CITRUS TREES FROM LIDAR POINT CLOUD DATA: REVISITING A TRADITIONAL STRATEGY BASED ON LOCAL MAXIMA AND WATERSHED SEGMENTATION.....	514
CURRENT POSSIBILITIES OF MICRO MINERAL USE IN LAYING HEN DIETS: A REVIEW.....	523
DETERMINATION OF THE CHANGE IN THE PROTEIN AND CELLULOSE CONTENT OF COTTON SEED MEAL FERMENTED WITH RUMEN LIQUID IN DIFFERENT ENVIRONMENTAL CONDITIONS.....	530
USE OF VITAMINS IN LAYING HEN DIETS WITH CURRENT APPROACHES: A REVIEW.....	538
EFFECTS OF POSTHARVEST UV-C TREATMENTS ON POSTHARVEST QUALITY DURING COLD STORAGE IN APRICOT CV. ROXANA.....	544
EFFECTIVE ORGANO-MINERAL FERTILIZERS OF PROLONGED ACTION FROM THE PROCESSED ORGANO-CONTAINING WASTES OF VARIOUS ORIGIN.....	555
EFFECT OF HUMIC ACID APPLICATIONS ON TUBER QUALITY IN POTATO (<i>Solanum tuberosum</i> L.).....	566
USE OF THIDIAZURON IN TISSUE CULTURE STUDIES IN VEGETABLES.....	572
FATTY ACID COMPOSITION AND DIVERSITY OF GRAPE SEEDS.....	584
CHARACTERISTICS OF LIVESTOCK FARMERS AND TRADERS PARTICIPATING IN LIVESTOCK MARKETS: A CASE STUDY FROM THE REPUBLIC OF BENIN.....	590
THE DEVELOPMENT OF AQUACULTURE PRODUCTION AND SOME ARGUMENTS IN FISH GENETICS AND BIOTECHNOLOGY STUDIES IN ALBANIA.....	598
SWELLING AND EROSION OF NATURAL MATRIX TABLETS.....	611
OPTIMISATION OF THE COAGULATION-FLOCCULATION PROCESS BY BENTONITE AND ALUMINUM SULPHATE.....	622

ASSESSMENT OF IRRIGATION WATER QUALITY OF THE DAM LAKES LOCATED IN THE NORTH – WEST PART OF MARMARA REGION (TURKEY).....	629
ASSESSMENT OF ERGENE RIVER BASIN IN TERMS OF IRRIGATION WATER SUPPLY: APPLICATION OF TRACE ELEMENTS BASED INDICES.....	636
SEASONAL CARBON EMISSIONS AND SEQUESTRATION IN ORGANIC AGROECOSYSTEMS IN CENTRAL LITHUANIA.....	643
PHOSPHOMOLYBDATE TEST METHOD FOR ANTIOXIDANT ACTIVITY IN EXTRACTS OF ANIMAL FEED	651
COMPARISONS OF HIGH YIELDING GENETICALLY DIVERSE WHEAT LINES IN CROATIA	661
ASSOCIATION OF YIELD AND YIELD COMPONENT IN DURUM WHEAT (<i>Triticum durum</i> Desf.) GENOTYPES UNDER RAINFED CONDITIONS.....	672
STUDY OF NEW DRUG CANDIDATES DERIVED FROM PLECONARILE INHIBITING COXSACKIEVIRUS B3 (CVB3) BY MOLECULAR DOCKING, ADMET, AND RETROSYNTHESIS	683
ACCESSION DEPENDENT MORPHOLOGICAL AND BIOCHEMICAL DIVERSITY IN APRICOT CV. TEBERZE.....	693
FATTY ACID COMPOSITION AND DIVERSITY OF GRAPE SEEDS	701
HORMONAL AND BIOCHEMICAL PARAMETERS ANALYSIS OF THE YELD COWS BLOOD	708
BREEDING OF SAFFLOWER SUITABLE FOR TEA PRODUCTION.....	716
COMPARATIVE ANALYSIS OF RICE PERFORMANCE AND PROFITABILITY WITH THE SYSTEM OF RICE INTENSIFICATION (SRI) AND TRADITIONAL PRACTICES (TP) IN ZIGUINCHOR DISTRICT, SENEGAL.....	724
EFFECTS OF ULTRASONICATION ON ANTHOCYANIN CONTENTS OF FRUIT JUICES.....	741
REMOVAL OF CONGO RED (CR) FROM AQUEOUS SOLUTIONS BY ADSORPTION ONTO APRICOT STONE ACTIVATED CARBON (ASAC)- THERMODYNAMIC AND KINETIC MODELING	746
BANANA BUNCHY TOP DISEASE (BBTD) SITUATION IN CAGAYAN, PHILIPPINES	754
EFFECTS OF GENOTYPE BY ENVIRONMENT INTERACTION ON THE YIELD AND QUALITY TRAITS OF POTATO BREEDING LINES IN THE CENTRAL ANATOLIA REGION OF TURKEY	765
DETERMINATION OF SOME AMPELOGRAPHIC CHARACTERS OF AMERICAN GRAPE CULTIVARS HAVE <i>Vitis labrusca</i> TRAITS INTRODUCED FROM NORTH AMERICA TO TURKEY.....	787
HISTORICAL DEVELOPMENT OF HORSE BREEDS.....	804
EFFECT OF DIFERENT FATTENING SISTEMS ON FATTENING PERFORMANCE, AND CLINICAL INDICATIONS IN SHARRI LAMBS	816

III. Balkan Agriculture Congress, Edirne, Turkey, 29 August - 1 September, 2021

FACTOR IN RESISTANCE TO WATER STRESS IN REINA MORA VARIETY OF	848
BEAN (<i>Vicia faba</i> L.)	848
INVESTIGATION OF LEAF NUTRIENT CONTENT OF SOME APRICOT VARIETIES GRAFTED ON PRUNUS MICROCARPA ROOTSTOCK	858
PARTICIPANT LIST	866
AGRIBALKAN 2021 CONFERENCE STUDENT ORGANIZING TEAM	873
OUR SPONSORS	874

USE OF THIDIAZURON IN TISSUE CULTURE STUDIES IN VEGETABLES

Burcu TUNCER

Van Yüzüncü Yıl University, Agricultural Faculty, Horticulture Department, Van, Turkey

Corresponding author e-mail: brctuncer@gmail.com,
ORCID ID: <https://orcid.org/0000-0002-4402-4536>

ABSTRACT

Thidiazuron (TDZ; N-phenyl-1, 2, 3-thiadiazole-5ylurea) is a plant growth regulator with both auxin and cytokinin-like behavior with the chemical formula $C_9H_8N_4OS$. The plant growth regulator N-phenyl-N'-1,2,3-thiadiazol-5-ylurea (thidiazuron, TDZ) originally registered as a cotton defoliant in 1967 by Schering AG (Berlin, Germany) was first described to have cytokinin activity in 1982. In recent years, the use of TDZ in plant tissue culture propagation has been increasing. The optimum concentration of TDZ in nutrient media; varies depending on vegetable species, explant type, and explant exposure time to TDZ. In this study, the studies conducted between 2000 and 2020 on the use of thidiazuron (TDZ) *in vitro* plant tissue culture studies in vegetable species and the results obtained are summarized. As a result of the researches, it has been determined that TDZ is mostly used for *in vitro* shoot regeneration and proliferation in plant tissue culture, as well as for callus production, stimulation of somatic embryogenesis, androgenesis, and gynogenesis.

Keywords: Callus, Shoot regeneration, Somatic embryogenesis, Thidiazuron, Vegetable species

INTRODUCTION

Thidiazuron (TDZ; N-phenyl-1, 2, 3-thiadiazole-5ylurea) is a plant growth regulator with both auxin and cytokinin-like behavior with the chemical formula $C_9H_8N_4OS$. The plant growth regulator N-phenyl-N'-1,2,3-thiadiazol-5-ylurea (thidiazuron, TDZ) originally registered as a cotton defoliant (Arndt et al., 1976) in 1967 by Schering AG (Berlin, Germany) was first described to have cytokinin activity in 1982.

Thidiazuron (TDZ), in plant tissue culture studies in vegetable species; It is used in many areas such as shoot regeneration, callus formation, stimulation of gynogenesis, and androgenesis, somatic embryogenesis, extension of shoot length, and adventitious bud formation (Dinani et al., 2018). The optimum concentration of TDZ in nutrient media; varies depending on vegetable species, explant type, and explant exposure time to TDZ (Deepa et al., 2018).

In this review, the studies conducted between 2000 and 2020 on the use of TDZ *in vitro* micropropagation of vegetable species and the results obtained from these studies are summarized.

SHOOT REGENERATION AND ELONGATION

TDZ's CK-like activity has also shown to be useful for the development of shoot buds and shoot proliferation/multiplication in plants. Studies on the use of TDZ *in vitro* shoot regeneration and shoot elongation in different vegetable species between 2000 and 2020 are summarized in Table 1. The doses indicated in Table 1 are the optimum TDZ doses for shoot regeneration. For this purpose, a total of 21 studies were conducted in the Solanaceae family, 6 studies in the Cucurbitaceae family, 5 studies in the Leguminosae family, 13 studies in the Cruciferae family, 1 study in the Amaryllidaceae family, 2 studies in the Malvaceae family, and 1 study in the Apiaceae family (Table 1). MS (Murashige and Skoog, 1962) nutrient medium was

used in all *in vitro* shoot regeneration studies. It has been determined that the most used explant type is hypocotyl and cotyledon explants derived from sterile plantlets derived *in vitro* conditions, as well as leaf, petiole, shoot tip, meristem, node, internode, callus and root parts. In the studies, the optimum dose of TDZ differed according to the species and the type of explant used (Table 1). In studies conducted on different vegetable species, TDZ can be added alone to the MS (Murashige and Skoog, 1962) nutrient medium to ensure shoot regeneration (Khan et al., 2006; Peddaboina et al., 2006; Sharma et al., 2006; Pal et al., 2007; You et al., 2007; Ranjan et al., 2010; Ashakiran et al., 2011; Badr-Elden et al., 2012; Sujatha et al., 2013; Ugandhar et al., 2018; Farouk Omar, 2019), TDZ' used together with auxin group hormones such as Indole-3-butyric acid (IBA), Indole-3-acetic acid (IAA), and 1-Naphthaleneacetic acid (NAA) (Thiruvengadam et al., 2010; Ugandhar et al., 2011; Zhang et al., 2011; Vinoth et al., 2012; Salim and Rashid, 2014; Gambhir and Srivastava, 2015; Jamous and Abu-Qaoud, 2015; Kumar et al., 2018) or with cytokinin group hormones such as Benzyl adenine (BA), and Benzyl adenine purine (BAP) (Khan et al., 2011; Mookkan, 2015). (Table 1).

SOMATIC EMBRYOGENESIS

TDZ is a substitute for the auxin/CK requirement that is needed during somatic embryogenesis, thereby increasing the number of formed somatic embryos (Visser et al., 1992). It has been determined that there are 2 studies in pepper (Khan et al., 2006; Ugandhar et al., 2011) and 1 in melon (Stipp et al., 2001) on the use of TDZ in vegetable species to stimulate somatic embryogenesis between 2000 and 2020 (Table 1). In a study using shoot tip and stem explants in pepper to stimulate somatic embryogenesis, 0.5 µM TDZ dose in MS medium (Khan et al., 2006) and in another study using leaf explants MS + TDZ (0.5 mg/l) + 2,4- D (3 mg/l) combination was the most successful PGR combination (Ugandhar et al., 2011). In the study performed on melon, it was determined that the combination of MS + 5 mg/l 2,4-D + 1 mg/l TDZ was effective (Stipp et al., 2001). In order to stimulate somatic embryogenesis, TDZ can be added to the MS nutrient medium alone (Khan et al., 2006), or it can be used together with 2,4-D, an auxin group hormone. (Stipp et al., 2001)

STIMULATION OF CALLUS FORMATION

TDZ is also added to nutrient media in order to induce *in vitro* callus formation from different explant types in vegetable species. In tomato (*L. esculentum* Mill), from anther explants MS + 0.022 mg/l TDZ + 1 mg/l IAA medium (Abate et al., 2004), *S. lycopersicum* L. var. *cerasiforme*, callus formation was reported from hypocotyl explants with the combination of MS + 1-2 mg/l TDZ (Farouk Omar, 2019). In bitter melon (*Momordica charantia* L.), callus was obtain from leaf explants on MS + B5 vitamins + 7.7 µM NAA + 2.2 µM TDZ (Thiruvengadam et al., 2010), from internode explants MS salts + B5 vitamins + 5 µM 2,4- D + 2 µM TDZ (Thiruvengadam et al., 2012) combination. In *Vigna unguiculata* L., both shoot and callus were obtained from shoot tip explants in MS + 0.25 mg/l TDZ + 3 g/l activated charcoal + 2 mg/l yeast extract medium (Aasim et al., 2009). In non-heading Chinese cabbage from hypocotyl explants, MS + 2 mg/l TDZ + 0.1 mg/l NAA + 9 mg/l AgNO₃ (Kamal et al., 2020), in okra (*Abelmoschus esculentus* L.), it was stated that callus was obtained from the combination of MS salts + B5 vitamins + 2 mg / 1 NAA + 0.5 mg / 1 TDZ (Anisuzzaman et al., 2008).

Table 1. Use of TDZ *in vitro* micropropagation of vegetable species

Species	Explant type	Protocol (Optimum TDZ dose)	Result	Reference
Solanaceae				
Tomato				

III. Balkan Agriculture Congress, Edirne, Turkey, 29 August - 1 September, 2021

<i>L. esculentum</i> Mill	Anter	MS + 0.022 mg/l TDZ + 1 mg/l IAA	C	Abate et al., 2004
<i>L. esculentum</i> Mill.	Cotyledon	MS + 0.5 mg/l TDZ + 0.5 mg/l BAP MS + 3 mg/l TDZ	SR SR	Osman et al. 2010
<i>L. esculentum</i>	Cotyledon	MS + 3.40 µM TDZ	SR	Ashakiran et al, 2011
<i>L. esculentum</i> L.	Cotyledon	MS+1.5 mg/l TDZ+1.5 mg/l IBA	SR	Vinoth et al., 2012
<i>S. lycopersicum</i> L.	Cotyledon Hypocotyl	MS + 2 mg/l TDZ MS+1.5 mg/l TDZ+0.5 µM IAA	SR SR	Sharma and Srivastava, 2014
<i>L. esculentum</i> Mill.	Leaf	MS + 4 µM TDZ +2.7 µM NAA	SR	Jamous and Abu-Qaoud, 2015
<i>S. lycopersicum</i> Mill	Shoot tip	MS + 2 mg/l TDZ MS + 2.5 mg/l TDZ	SR ShE	Ugandhar et al., 2018
<i>S. lycopersicum</i> L. var. <i>cerasiforme</i>	Hypocotyl Leaf	MS + 1-2 mg/l TDZ MS + 2 mg/l TDZ	C SR	Farouk Omar, 2019
<i>L. esculentum</i> L.	Leaf	MS+1.5 mg/l picloram+1.0 mg/l TDZ+80 mg/l casein hydrolysate	SR	Vinoth et al., 2019
Pepper				
<i>C. annuum</i> L.	Cotyledon	MS + 1-3 mg/l TDZ	SR	Venkataiah et al., 2003
<i>C. annuum</i> <i>C. baccatum</i> <i>C. frutescens</i> <i>C. praetermissum</i>	Meristem	MS + 4.54 µM/l TDZ MS + 9.18 µM/l TDZ MS + 4.54 µM/l TDZ MS + 4.54 µM/l TDZ	SR	Peddaboina et al., 2006
<i>C. annuum</i> L.	Hypocotyl	MS + 0.75 mg/l TDZ	SR	Sharma et al., 2006
<i>C. annuum</i> L.	Stem Shoot tip	MS + 0.5 µM TDZ	SE	Khan et al., 2006
<i>C. annuum</i> L.	Nodal	MS + 1 µM TDZ	SR	Ahmad et al., 2006
<i>C. annuum</i> L.	Cotyledon	MS + 1.5 mg/l TDZ MS + 1 mg/l TDZ	SR	Ranjan et al., 2010
<i>C. annuum</i> L.	Leaf	MS + 3 mg/l 2,4-D + 0.5 mg/l TDZ MS + 3 mg/l TDZ +0.5 mg/l IAA	SE SR	Ugandhar et al., 2011
<i>C. annuum</i> L.	Internode derived callus	MS + 5 µM BA + 2.5 µM TDZ	SR	Khan et al., 2011

C: Callogenesis, SR: Shoot regeneration, ShE: Shoot elongation, SE: Somatic embryogenesis

Table 1. (Continued)

Species	Explant type	Protocol (Optimum TDZ dose)	Result	Reference
---------	--------------	-----------------------------	--------	-----------

Pepper				
<i>C. annuum</i> L.	Cotyledon	MS + 44.38 μ M BAP or 9 μ M TDZ + 5.77 μ M GA ₃ + 14.7 μ M PAA MS + 8.87 μ M BA or 0.45 μ M TDZ + 5.77 μ M GA ₃ + 14.7 μ M PAA	SR ShE	Mythili et al., 2017
<i>C. annuum</i> L.	Hypocotyl driven callus	MS + 1.5 mg/l TDZ	SR	Ranjan et al., 2018
Eggplant				
<i>S. melongena</i> L.	15 d-old root	MS + 0.45 μ M TDZ + 13.3 μ M BA	SR	Franklin et al., 2004
<i>S. melongena</i> L.	Hypocotyl	MS + 0.5 mg/l TDZ	SR	Mallaya and Ravishankar, 2013
<i>S. melongena</i> x <i>S. aethiopicum</i>	Leaf	MS + 0.05 mg/l TDZ	SR	Calvo-Asensio et al., 2014
<i>S. melongena</i> L.	Cotyledon Leaf	MS + 2 mg/l TDZ + 0.5 mg/l BAP + 0.5 mg/l NAA	SR	Taghipour et al., 2015
Cucurbitaceae				
<i>Luffa</i> spp.				
<i>Luffa cylindrica</i> L.	Leaf and nodal	MS + 0.5 mg/l TDZ	SR	Sujatha et al., 2013
Squash				
<i>Cucurbita pepo</i> L.	Hypocotyl	MS + 0.5 mg/l TDZ	SR	Pal et al., 2007
<i>Cucurbita pepo</i> L.	Cotyledon	MS + B5 vitamins + 1 mg/l BAP + 0.05 mg/l TDZ	SR	Mookkan, 2015
Cucumber				
<i>Cucumis sativus</i> L.	Unpollinate d ovules	CBM + 0.02 mg/l TDZ	G	Gemes-Juhasz et al., 2002
<i>Cucumis sativus</i> L.	Unpollinate d ovules	CBM + 0.03-0.07 mg dm ⁻³ TDZ	G	Li et al., 2013
<i>Cucumis sativus</i> L.	Unpollinate d ovules	IMC + 30 g/l sucrose + 200 mg/l ampicillin + 0.2 mg/l TDZ	ELS	Domblides et al., 2019
Watermelon				
<i>Citrulus lanatus</i> L.	Axillary shoot-tip	MS + 0.5 mg/l TDZ	SR	Badr-Elden et al., 2012
Melon				
<i>Cucumis melo</i> var. <i>inodorus</i>	Cotyledon segments and leaf discs	MS + 5 mg/l 2,4-D + 1 mg/l TDZ	SE	Stipp et al., 2001

SR: Shoot regeneration, ShE: Shoot elongation, SE: Somatic embryogenesis, ELS: embryo-like structures, G: Gynogenesis

Table 1. (Continued)

III. Balkan Agriculture Congress, Edirne, Turkey, 29 August - 1 September, 2021

Species	Explant type	Protocol (Optimum TDZ dose)	Result	Reference
Melon				
<i>Cucumis melo</i> L.	Unpollinated ovaries	MS + 0.02-0.04 mg/l TDZ	G	Malik et al., 2011
Bitter melon				
<i>Momordica charantia</i> L.	Mature and immature leaf	MS + B5 vitamins + 7.7 µM NAA + 2.2 µM TDZ	C	Thiruvengadam et al., 2010
		MS + 5.5 µM TDZ + 2.2 µM NAA + 3.3 µM AgNO ₃	SR	
<i>Momordica charantia</i> L.	Stem derived callus	MS + 0.2 mg/l IBA + 0.1 mg/l TDZ	ABF	Tang et al., 2011
<i>Momordica charantia</i> L.	Internodal explants	MS salts + B5 vitamins + 5 µM 2,4-D + 2 µM TDZ	C	Thiruvengadam et al., 2012
		MS + 4 µM TDZ + 1.5 µM 2,4-D + 0.07 mM L-glutamine	SR	
Leguminosae				
Cowpea				
<i>Vigna unguiculata</i> L.	Shoot tip	MS + 0.25 mg/l TDZ + 3 g/l activated charcoal + 2 mg/l yeast extract	C, SR	Aasim et al., 2009
Pea				
<i>Pisum sativum</i> L.	Root	MS + 2 mg/l TDZ	SR	Sharma et al., 2017
Bean				
<i>Phaseolus vulgaris</i> L.	Stem	MS + 2 mg/l TDZ + 0.1 mg/l 24-Epi	SR	Taha et al., 2014

Mung Bean				
<i>Vigna radiata</i> L.	Cotyledon hypocotyl	MS + 0.9/0.09 μ M TDZ	SR	Amutha et al., 2006
Soybean				
<i>Glycine max</i> L.	Cotyledon petiole	B5 + 0.5 mg/l TDZ + 0.05 mg/l NAA + 5.0 mg/l AgNO ₃	SR	Zhang et al., 2011
Cruciferae				
Cabbage				
<i>B. oleracea</i> L. var. <i>capitata</i>	Leaf	MS + 0.22 mg/l TDZ + 0.02 mg/l NAA	SR	Gambhir and Srivastava, 2015
	Petiole	MS + 0.33 mg/l TDZ + 0.02 mg/l NAA		
<i>B. oleracea</i> cv. Pride	Cotyledon	MS + 0.330 mg/l TDZ + 79.70 mg/l Adenine	SR	Gambhir et al., 2017
	Hypocotyl	MS + 0.220 mg/l TDZ + 0.088 mg/l IAA		

C: Callogenesis, SR: Shoot regeneration, G: Gynogenesis ABF: Adventitious buds formation

Table 1. (Continued)

Species	Explant type	Protocol (Optimum TDZ dose)	Result	Reference
<i>B. oleracea</i> L. var. <i>capitata</i>	Hypocotyl	MS + 2.27 μ M TDZ	SR	Ravanfar et al., 2014
<i>B. oleracea</i>	Cotyledon	MS + 1 μ M TDZ	SR	Cheng et al., 2001
<i>B. oleracea</i> L. var. <i>capitata</i>	Cotyledon	MS + 0.5 mg/l TDZ + 0.1 mg/l NAA	SR	Salim and Rashid, 2014
Broccoli				
<i>B. oleracea</i> L. var. <i>italica</i>	Cotyledon	MS + 0.1 mg/l TDZ + 0.1 mg/l NAA		Salim and Rashid, 2014

III. Balkan Agriculture Congress, Edirne, Turkey, 29 August - 1 September, 2021

		MS + 0.5 mg/l TDZ + 0.1 mg/l NAA	SR	
<i>B. oleracea</i> L. var. <i>italica</i>	Cotyledon	MS + 0.1 mg/l TDZ + 0.1mg/l NAA	SR	Ravanfar et al., 2014
<i>B. oleracea</i> L. var. <i>italica</i>	Hypocotyl Cotyledon	MS + 2 µM TDZ + 0.5 µM IAA MS + 2 µM TDZ + 0.59 mM adenine	SR	Kumar and Srivastava, 2015
<i>B. oleracea</i> L. var. <i>italica</i>	Hypocotyl Petiole Leaf Cotyledon	MS + 2 µM TDZ + 0.5 µM IAA MS + 2 µM TDZ + 0.107 µM NAA MS + 1 µM TDZ + 0.107 µM NAA MS + 2 µM TDZ + 0.59 adenine	SR	Kumar et al., 2018
Turnip				
<i>B. rapa.</i> var. <i>turnip</i>	Seed derived calli	MS + 1 mg/l TDZ + 1 mg/l BA	SR	Kakar et al., 2014
Chinese cabbage				
Chinese cabbage	Cotyledon	MS + 1 mg/l TDZ + 0.5 mg/l NAA + 5 mg/l AgNO ₃	SR	Fan et al., 2005
<i>B. rapa.</i> var. <i>parachinensis</i>	Microspore suspension	NLN-13 + 0.10/0.50 mg/l TDZ	MDE	Jia et al., 2019
Non-heading Chinese cabbage	Hypocotyl Embryo	MS + 2 mg/l TDZ + 0.1 mg/l NAA + 9 mg/l AgNO ₃ MS + 3 mg/l TDZ + 1 mg/l NAA + 9 mg/l AgNO ₃	C R	Kamal et al., 2020
Cauliflower				

III. Balkan Agriculture Congress, Edirne, Turkey, 29 August - 1 September, 2021

<i>B. oleracea</i> var. <i>botrysis</i>	Hypocotyl Cotyledon	MS salts + B5 vitamins + 0.2 mg/l TDZ + 0.01 mg/l NAA	SR	Yu et al., 2010
<i>B. oleracea</i> var. <i>botrysis</i>	Hypocotyl Cotyledon	MS + 0.44 mg/l TDZ + 0.08 mg/l IAA MS + 0.77 mg/l TDZ + 79.7 mg/l adenine	SR	Gaur and Srivastava, 2017

C: Callogenesis, SR: Shoot regeneration, MDE: microspore derived embryo, , R: Root regeneration

Table 1. (Continued)

Amaryllidaceae				
Shallot, Garlic				
<i>Allium ascalonicum</i> L.	Shoot tip	BDS + 0.1 mg/l picloram + 1 mg/l TDZ	SR	Hidayat, 2004
Malvaceae				
Okra				
<i>Abelmoschus esculentus</i> L.	Hypocotyl	MS salts + B5 vitamins + 2 mg/l NAA + 0.5 mg/l TDZ	C	Anisuzzaman et al., 2008
<i>Abelmoschus esculentus</i> L.	Cotyledonary node meristem Hypocotyl Cotyledon	MS salts + B5 vitamins + 1mg/l BAP + 1 mg/l NAA + 0.04 mg/l TDZ	SR R C	Mallela et al., 2009
<i>Abelmoschus esculentus</i> L.	Cotyledonary node	MS + 0.044 µM TDZ	SR	Kabir et. al., 2016
Apiaceae				
Celery				
<i>Apium graveolens</i> L.	Seed	MS + 1 mg/l TDZ	SR	You et al., 2007

C: Callogenesis, SR: Shoot regeneration, R: Root regeneration, BR: Bulb regeneration

STIMULATION OF GYNOGENESIS AND ANDROGENESIS

TDZ added to nutrient media at different rates can stimulate *in vitro* gynogenesis and androgenesis. In cucumber (*Cucumis sativus* L.), gynogenesis formation was stimulated from unpolinated ovules explants at doses of 0.02 mg/l TDZ (Gemes-Juhasz et al., 2002) and 0.03-0.07 mg/l TDZ (Li et al., 2013) added to CBM nutrient medium. In another study, gynogenesis was induced from a dose of 0.2 mg/l TDZ added to IMC nutrient medium (Domblides et al., 2019) (Table 1). In a study on melon; positive results were obtained from the 0.02-0.04 mg/l TDZ dose added to the MS medium (Malik et al., 2011). In *B. rapa* var. *parachinensis*, when the microspore suspension was cultured in NLN-13 medium supplemented with 0.10/0.50 mg/l TDZ, it was reported that androgenesis was stimulated and microspore-derived embryos (MDE) were obtained (Jia et al., 2019).

CONCLUSIONS

In conclusion, in this review, the uses of TDZ in *in vitro* plant tissue cultures in different vegetable species are summarized. As a result of the researches, it has been determined that TDZ is mostly used for *in vitro* shoot regeneration in plant tissue culture studies, as well as for stimulation of callus formation, stimulation of somatic embryogenesis, androgenesis and gynogenesis.

REFERENCES

- Aasim, M., Khawar, K. M., Özcan, S. 2009. Comparison of shoot regeneration on different concentrations of thidiazuron from shoot tip explant of cowpea on gelrite and agar containing medium. *Notulae Botanicae Horti Agrobotanici Cluj-Napoca*, 37(1): 89-93.
- Abate, E., Kasrawi, M. A., Sawwan, J. S. 2004. Effect of thidiazuron and IAA concentration on anther culture response of fertile tomato (*Lycopersicon esculentum* Mill) genotypes. In Proc 11th Conf. crop Sci. Soc. Ethiop (pp. 1-10).
- Ahmad, N., Siddique, I., Anis, M. 2006. Improved plant regeneration in *Capsicum annum* L. from nodal segments. *Biologia Plantarum*, 50(4): 701-704.
- Amutha, S., Muruganantham, M., Ganapathi, A. 2006. Thidiazuron-induced high-frequency axillary and adventitious shoot regeneration in *Vigna radiata* (L.) Wilczek. *In Vitro Cellular & Developmental Biology-Plant*, 42(1): 26-30.
- Anisuzzaman, M., Jarin, S., Naher, K., Akhtar, M. M., Alam, M. J., Khalekuzzaman, M., Alam, M. F. 2008. Callus induced organogenesis in okra (*Abelmoschus esculents* L. Moench.). *Asian Journal of Plant Sciences*.
- Arndt, F.J., Rusch, R., Stilfried, H.V. 1976. SN 49537, a new cotton defoliant. *Plant Physiology*, 57: 99
- Ashakiran, K., Sivankalyani, V., Jayanthi, M., Govindasamy, V., Girija, S. 2011. Genotype specific shoots regeneration from different explants of tomato (*Solanum lycopersicum* L.) using TDZ. *Asian Journal of Plant Science and Research*, 1(2): 107-113.
- Badr-Elden, A. M., Nower, A. A., Ibrahim, I. A., Ebrahim, M. K., Abd Elaziem, T. M. 2012. Minimizing the hyperhydricity associated with *in vitro* growth and development of watermelon by modifying the culture conditions. *African Journal of Biotechnology*, 11(35): 8705-8717.
- Calvo-Asensio, I., Prohens, J., Gisbert, C. 2014. Vigor for *in vitro* culture traits in *S. melongena* × *S. aethiopicum* hybrids with potential as rootstocks for eggplant. *The Scientific World Journal*, 2014.
- Cheng, P. K., Lakshmanan, P., Swarup, S. 2001. High-frequency direct shoot regeneration and continuous production of rapid-cycling *Brassica oleracea in vitro*. *In Vitro Cellular & Developmental Biology-Plant*, 37(5): 592-598.

- Deepa, A. V., Anju, M., Thomas, T. D. 2018. The applications of TDZ in medicinal plant tissue culture. Thidiazuron: from urea derivative to plant growth regulator, 297-316.
- Dinani, E. T., Shukla, M. R., Turi, C. E., Sullivan, J. A., Saxena, P. K. 2018. Thidiazuron: modulator of morphogenesis *in vitro*. Thidiazuron: from urea derivative to plant growth regulator, 1-36.
- Domblides E.A., Shmykova N.A., Belov S.N., Korottseva I.B., Soldatenko A.V. 2019. DHplant production in culture of unpollinated ovules of cucumber (*Cucumis sativus* L.). Vegetable crops of Russia, (6):3-9. (In Russ.)
- Fan, M. Q., Zhu, Y. L., & Zhu, L. H. 2005. Studies on high efficient *in vitro* shoot regeneration from cotyledon of Chinese cabbage. Journal of Nanjing Agricultural University, 1.
- Farouk Omar, G. 2019. Thidiazuron and explant type effects on high-frequency *in vitro* mass propagation of cherry tomato. Hortscience Journal of Suez Canal University. 8(1): 23-33.
- Franklin, G., Sheeba, C. J., Sita, G. L. 2004. Regeneration of eggplant (*Solanum melongena* L.) from root explants. In Vitro Cellular & Developmental Biology-Plant, 40(2): 188-191.
- Gambhir, G., Srivastava, D.K. 2015. Thidiazuron induces high frequency shoot regeneration in leaf and petiole explants of cabbage (*Brassica oleracea* L. var. *capitata*). J Biotechnol Biomater, 5:172.
- Gambhir, G., Kumar, P., Srivastava, D. K. 2017. High frequency regeneration of plants from cotyledon and hypocotyl cultures in *Brassica oleracea* cv. Pride of India. Biotechnology reports, 15: 107-113.
- Gaur, A., Srivastava, D. K. 2017. Effect of thidiazuron on *in vitro* regeneration potential of cotyledon and hypocotyl explants of cauliflower (*Brassica oleracea* L. var. *botrytis*). Indian Journal of Biotechnology, 16: 126-132.
- Gemes-Juhasz, A., Balogh, P., Ferenczy, A., Kristóf, Z. 2002. Effect of optimal stage of female gametophyte and heat treatment on *in vitro* gynogenesis induction in cucumber (*Cucumis sativus* L.). Plant Cell Reports, 21(2): 105-111.
- Hidayat, I. M. 2004. *In vitro* plant regeneration and bulblet formation of shallots (*Allium ascalonicum* L.) Sumenep'. In IV International Symposium on Edible Alliaceae 688: 251-258.
- Jamous, F. E. D. A. A., Abu-Qaoud, H. A. S. S. A. N. 2015. *In vitro* regeneration of tomato (*Lycopersicon esculentum* Mill). Plant Cell Biotechnology and Molecular Biology, 16(3&4): 181-190.
- Khan, H., Siddique, I., Anis, M. 2006. Thidiazuron induced somatic embryogenesis and plant regeneration in *Capsicum annuum*. Biologia Plantarum, 50(4): 789-792.
- Jia, J., Zhang, Y., Cui, L., Feng, H. 2019. Effect of thidiazuron on microspore embryogenesis and plantlet regeneration in Chinese flowering cabbage (*Brassica rapa* var. *parachinensis*). Plant Breeding, 138(6): 916-924.
- Kabir, M. R., Ahmed, S., Akhond, M. A. Y. 2016. Organogenesis in okra (*Abelmoschus esculentus* L. Moench.): A plant recalcitrant to tissue culture. Bangladesh Journal of Agricultural Research, 41(3): 521-528.
- Kakar, K. U., Nawaz, Z., Abbasi, B. H., Ali, M. 2014. Thidiazuron induced plant regeneration in *Brassica rapa* var. turnip via seed derived calli induction and radical scavenging activity. Sarhad Journal of Agriculture, 30(2): 233-240.
- Kamal, O. M., Shah, S. H. A., Li, Y., Hou, X., Li, Y. 2020. Production of ascorbic acid, total protein, callus and root *in vitro* of non-heading Chinese cabbage by tissue culture. Molecular Biology Reports, 47(9): 6887-6897.
- Khan, H., Siddique, I., Anis, M., Khan, P. R. 2011. *In vitro* organogenesis from internode derived callus cultures of *Capsicum annuum* L. Journal of Plant Biochemistry and Biotechnology, 20(1): 84-89.
- Kumar, P., Srivastava, D. K. 2015. Effect of potent cytokinin thidiazuron on *in vitro* morphogenic potential of broccoli (*Brassica oleracea* L. var. *italica*), an important vegetable crop. Indian Journal of Plant Physiology, 20(4): 317-323.

- Kumar, P., Dhiman, K., Srivastava, D. K. 2018. Morphogenic potential of different explants of broccoli (*Brassica oleracea* L. var. *italica*): Important “nutrient-rich” vegetable, using thidiazuron. In *Thidiazuron: From Urea Derivative to Plant Growth Regulator*: 377-392. Springer, Singapore.
- Li, J. W., Si, S. W., Cheng, J. Y., Li, J. X., Liu, J. Q. 2013. Thidiazuron and silver nitrate enhanced gynogenesis of unfertilized ovule cultures of *Cucumis sativus*. *Biologia Plantarum*, 57(1): 164-168.
- Malik, A. A., Li, C., Shuxia, Z., Jin-feng, C. 2011. Efficiency of SSR markers for determining the origin of melon plantlets derived through unfertilized ovary culture. *Horticultural Science*, 38(1), 27-34.
- Mallaya, N. P., Ravishankar, G. A. 2013. In vitro propagation and genetic fidelity study of plant regenerated from inverted hypocotyl explants of eggplant (*Solanum melongena* L.) cv. Arka Shirish. *3 Biotech*, 3(1), 45-52.
- Mallela, R. R., Vutukuri, P. R., Kanuri, M. 2009. *In vitro* plant regeneration and genetic transformation of okra (*Abelmoscus esculentus* [L.] Moench). *Fruit Veg. Cereal Sci. Biotechnol*, 3: 1-6.
- Mookkan, M. 2015. Direct organogenesis from cotyledonary node explants of *Cucurbita pepo* (L.)—an important zucchini type vegetable crop. *American Journal of Plant Sciences*, 6(01): 157.
- Murashige, T., Skoog, F., 1962. A revised medium for rapid growth and bioassays with tobacco tissue cultures. *Physiology Plantarum*. 15: 473-497.
- Mythili, J. B., Rajeev, P. R., Vinay, G., Nayeem, A. 2017. Synergistic effect of silver nitrate and coconut water on shoot differentiation and plant regeneration from cultured cotyledons of *Capsicum annuum* L. *Indian Journal of Experimental Biology*, 55: 184-190.
- Osman, M. G., Elhadi, E. A., Khalafalla, M. M. 2010. Callus formation and organogenesis of tomato (*Lycopersicon esculentum* Mill, cv Omdurman) induced by thidiazuron. *African Journal of Biotechnology*, 9(28): 4407-4413.
- Pal, S. P., Alam, I., Anisuzzaman, M., Sarker, K. K., Sharmin, S. A., Alam, M. F. 2007. Indirect organogenesis in summer squash (*Cucurbita pepo* L.). *Turkish Journal of Agriculture and Forestry*, 31(1): 63-70.
- Peddaboina, V., Thamidala, C., Karampuri, S. 2006. *In vitro* shoot multiplication and plant regeneration in four *Capsicum* species using thidiazuron. *Scientia horticultrae*, 107(2): 117-122.
- Ravanfar, S.A., Aziz, M.A., Rashid, A.A., Shahida, S. 2014. *In vitro* adventitious shoot regeneration from cotyledon explant of *Brassica oleracea* subsp. *italica* and *Brassica oleracea* subsp. *capitata* using TDZ and NAA. *Pak J Bot*. 46:329–335.
- Ravanfar, S.A., Salim, S., Aziz, M.A., Abdullah, S.N.A., Rashid, A.A. 2014. Influence of phenyl-urea and adenine-type cytokinins on direct adventitious shoot regeneration of cabbage (*Brassica oleracea* subsp. *capitata*) “KCross”. *Biotechnology*. 31:1–6.
- Prohens, E. J., & Rodríguez-Burruezo, A. In vitro regeneration in chilli (*Capsicum annuum* L.) and bio-hardening of plantlets using arbuscular mycorrhizal fungi (AMF). *Advances in Genetics and Breeding of Capsicum and Eggplant*, 417.
- Rodríguez-Burruezo, A. (Eds). *Advances in Genetics and Breeding of Capsicum and Eggplant* Editorial de la Universitat Politècnica de València, Valencia, Spain, pp 417-426.
- Ranjan, J. K., Chakrabarti, A. K., Pragya, S. K. 2018. Callus mediated regeneration through cotyledonary and hypocotyl explants in chilli (*Capsicum annuum* L.). *Vegetable Science*, 45(1): 73-78.
- Salim, S., Rashid, A. 2014. *In vitro* adventitious shoot regeneration from cotyledon explant of *Brassica oleracea* subsp. *italica* and *Brassica oleracea* subsp. *capitata* using TDZ and NAA. *Pakistan Journal of Botany*, 46(1): 329-335.
- Sharma, S. A. R. I. T. A., Thakur, A. K., Srivastava, D. K. 2006. Plant regeneration and Agrobacterium-mediated gene transfer in bell pepper (*Capsicum annuum* L.). *Crop Improvement-India*, 33(1): 1.
- Sharma, P., Srivastava, D. K. 2014. *In vitro* plant regeneration from cotyledon and hypocotyls tissues of tomato (*Solanum lycopersicum* L. cv. Solan Vajr). *Vegetos*, 27(3): 151-160.

- Sharma, S., Gambhir, G., Srivastava, D. K. 2017. *In vitro* differentiation and plant regeneration from root and other explants of juvenile origin in pea (*Pisum sativum* L.). *Legume Res*, 40(6): 1020-1027.
- Stipp, L. C. L., Mendes, B. M. J., Piedade, S. M. S., Rodriguez, A. P. M. 2001. *In vitro* morphogenesis of *Cucumis melo* var. *inodorus*. *Plant Cell, Tissue and Organ Culture*, 65(1), 81-89.
- Sujatha, D., Chithakari, R., Raghuvardhan, L., Prasad, B., Khan, G. 2013. *In vitro* plantlet regeneration and genetic transformation of sponge gourd (*Luffa cylindrica* L.). *African Journal of Plant Science*, 7(6): 244-252.
- Taghipour, F., Jamshidi, S., Huyop, F. 2015. High performant eggplant *in vitro* regeneration and organogenesis. *Agroecology Journal*, 11(2): 24-29.
- Taha, H. S., Nafie, E. M., El-Bahr, M. K., Mansur, R. M. 2014. Influence of 24-epibrassinolide on *in vitro* shootlets regeneration via direct organogenesis of *Phaseolus vulgaris* L. *African Journal of Biotechnology*, 13(28).
- Tang, Y., Liu, J., Liu, B., Li, X., Li, J., Li, H. 2011. Additives promote adventitious buds induction from stem segments of bitter melon (*Momordica charantia* L.). *Journal of Agricultural Science*, 3(2): 13.
- Thiruvengadam, M., Rekha, K. T., Yang, C. H., Jayabalan, N., Chung, I. M. 2010. High-frequency shoot regeneration from leaf explants through organogenesis in bitter melon (*Momordica charantia* L.). *Plant Biotechnology Reports*, 4(4): 321-328.
- Thiruvengadam, M., Praveen, N., Chung, I. M. 2012. *In vitro* regeneration from internodal explants of bitter melon (*Momordica charantia* L.) via indirect organogenesis. *African journal of Biotechnology*, 11(32): 8218-8224.
- Ugandhar, T., Venkateshwarlu, M., Shekar, G. P. V., Reddy, K. J. M. 2011. Somatic embryogenesis and plantlet regeneration from leaf explants of *Capsicum annuum* using thidiazuron. *Bioscience Discovery Journal*, 2(2): 243-248.
- Ugandhar, T., Venkateshwarlu, M., Odelu, G., Prasad, B. R., Devi, U. A. 2018. *In vitro* plantlet regeneration of tomato (*Solanum lycopersican* Mill. cv. Pusa ruby) from shoot tip explants using five cytokinins. *The Journal of Indian Botanical Society*, 97(3 and 4): 138-145.
- Venkataiah, P., Christopher, T., Subhash, K. 2003. Thidiazuron induced high frequency adventitious shoot formation and plant regeneration in *Capsicum annuum* L. *Journal of Plant Biotechnology*, 5(4): 245-250.
- Vinoth, S., Gurusaravanan, P., Jayabalan, N. 2012. Effect of seaweed extracts and plant growth regulators on high-frequency *in vitro* mass propagation of *Lycopersicon esculentum* L (tomato) through double cotyledonary nodal explant. *Journal of Applied Phycology*, 24(5): 1329-1337.
- Vinoth, S., Gurusaravanan, P., Sivakumar, S., Jayabalan, N. 2019. Influence of seaweed extracts and plant growth regulators on *in vitro* regeneration of *Lycopersicon esculentum* from leaf explant. *Journal of Applied Phycology*, 31(3): 2039-2052.
- Visser, C., Qureshi, J. A., Gill, R., Saxena, P. K. 1992. Morphoregulatory role of thidiazuron: substitution of auxin and cytokinin requirement for the induction of somatic embryogenesis in geranium hypocotyl cultures. *Plant physiology*, 99(4): 1704-1707.
- You, Y. W., Wang, Y. Z., Li, X. 2007. The effect of gibberellins (GA₃) on the dormancy of celery (*Apium graveolens* L.) and the effect of TDZ on the proliferation of celery. *Acta Agric Boreali Sin*, 22: 61-63.
- Yu, Y., Liu, L. S., Zhao, Y. Q., Zhao, B., Guo, Y. D. 2010. A highly efficient *in vitro* plant regeneration and Agrobacterium-mediated transformation of *Brassica oleracea* var. *botrytis*. *New Zealand Journal of Crop and Horticultural Science*, 38(4): 235-245.
- Zhang, G., Ding, J., Xu, S., Lu, X., Hu, Q., Gong, Y. 2011. Optimization of high efficient *in vitro* regeneration system of vegetable soybean. *Acta Agriculturae Zhejiangensis*, 23(1): 79-83.



III. BALKAN AGRICULTURAL CONGRESS

<http://agribalkan.org/>

29 August - 1 September 2021, Edirne, Turkey



CERTIFICATE OF ATTENDANCE

Burcu Tuncer

Use Of Thidiazuron In Tissue Culture Studies In Vegetables

Burcu Tuncer

ORAL PRESENTATION

Organizing Committee of our conference acknowledges
with gratitude participation and contribution.

Prof Dr Yalcin KAYA
Chair of Organizing Committee



**III. BALKAN AGRICULTURAL CONGRESS
AGRIBALKAN 2021**
29 August - 1 September, 2021, Edirne, Turkey
www.agribalkan.net



: 01

09.09.2021

Konu: Yabancı Katılımcı Oranı

İLGİLİ MAKAMA;

29 Ağustos - 1 Eylül 2021 tarihlerinde COVID_19 pandemi süreci nedeniyle online ve sınırlı katılımlı olarak, Trakya Üniversitesi'nce düzenlenen III. Balkan Tarım (AGRIBALKAN 2021) Kongresi sunum programında yer alan 406 bildirinin, 205 adedi, 41 farklı ülkeden katılan yabancı katılımcılar tarafından sunulmuş olup, yabancı katılımcı oranı % 51'dir. Tüm sunumlar <https://agconference.konfium.com> web sitesinde kongre online programı yardımıyla canlı olarak sunulmuştur.

Gereğini arz ederim.

Prof Dr Yalcin KAYA

**Kongre Organizasyon Komitesi Başkanı
Trakya Üniversitesi Bitki Islahı
Uygulama ve Araştırma Merkezi Müdürü**

PARTICIPANT LIST

#	NAME	SURNAME	E MAIL	COUNTRY
1	Albana	Hasimi	albahasimi@gmail.com	Albania
2	Dhimiter	Peci	dhimiter.peci@fshn.edu.al	Albania
3	Elvin	Çomo	elvincomo1@gmail.com	Albania
4	Enkelejda	Kucaj	enkilusha@gmail.com	Albania
5	Fatbardha	Lamçe	fmeta@ubt.edu.al	Albania
6	Luziana	Hoxha	lhoxha@ubt.edu.al	Albania
7	Raimonda	Lilo	rtotoni@gmail.com	Albania
8	Rigerta	Sadikaj	rsadikaj@hotmail.com	Albania
9	Amna	Bijedic	bijedic.amna@gmail.com	Bosnia & Herzigova
10	Selma	Vejzagic	zastitasuma.bih@gmail.com	Bosnia & Herzigova
11	Boryana	Dyulgerova	bdyulgerova@abv.bg	Bulgaria
12	Darina	Valcheva	darinadv@abv.bg	Bulgaria
13	Dimitrinka	Krusheva	kasidi4@abv.bg	Bulgaria
14	Dragomir	Valchev	vulchevd@abv.bg	Bulgaria
15	Gergana	Mihailova	mihailova.gergana.k@gmail.com	Bulgaria
16	Grozi	Delchev	delchevgd@dir.bg	Bulgaria
17	Stoilko	Apostolov	s.apostolov@bioselena.com	Bulgaria
18	Tsvetana	Licheva	cvlicheva@uni-sofia.bg	Bulgaria
19	Veselina	Dobrev	veselina270@abv.bg	Bulgaria
20	Viliana	Vasileva	viliana.vasileva@gmail.com	Bulgaria
21	Aibibula	Paizila	aibibulapaizila@gmail.com	China
22	Zhao	Jun	Zhaojun@imau.edu.cn	China
23	Abaidia	Meriem	abaidiamr@yahoo.fr	Algeria
24	Abbas	Moussa	moussaiap@gmail.com	Algeria
25	Adjlane	Noureddine	adjlanenoureddine@hotmail.com	Algeria
26	Ahmed	Nouasri	a_nouasridz2001@yahoo.fr	Algeria
27	Aksıl	Tounsia	tounsiaiap@gmail.com	Algeria
28	Amel	Milla	a.milla@ensv.dz	Algeria
29	Amina	Kadiri	amkad71@gmail.com	Algeria
30	Amirouche	Morsli	vetovet2007@gmail.com	Algeria
31	Belkhodja	Moulay	moulay2009@yahoo.fr	Algeria
32	Benahmed	Fatiha	fatbenahmed@hotmail.com	Algeria
33	Benaissa	Kheira Nawel	apeiron.knowledge2020@gmail.com	Algeria
34	Benatallah	Amel	a.benatallah@ensv.dz	Algeria
35	Benselama	Amel	amel1987amel@hotmail.fr	Algeria
36	Boumaraf	Warda	wardaboumaraf1@gmail.com	Algeria
37	Chahrazad	Guernah	chahragr@hotmail.fr	Algeria
38	Chahrazad	Guernah	chahragr@hotmail.fr	Algeria
39	Chorfi-Chikhi	Nassima	nachorfi2000@yahoo.fr	Algeria
40	Difallah	Aicha	difallahaicha2021@gmail.com	Algeria
41	D. Eddine	Gherissi	biotech.zootech@gmail.com	Algeria
42	Djouher	Gaad	gaaddjouher@gmail.com	Algeria
43	Fizazi	Anissa	anissa.fizazi@gmail.com	Algeria
44	Hacib	Hinda	h.hacib12@gmail.com	Algeria

45	Haddadj	Fairouz	fairouz.haddadj@gmail.com	Algeria
46	Haider	Yamina	y.haider@univ-boumerdes.dz	Algeria
47	Hiouani	Fatima	fatima.hiouani@univ-biskra.dz	Algeria
48	Ikram	Mkedder	ikram13mk@gmail.com	Algeria
49	Kaouche	Soumeya	kaouchesoumeya@yahoo.fr	Algeria
50	Khelladi	Malika	khelladi_m@hotmail.com	Algeria
51	Labbaci	Fatima Zohra	labbaci.fatimazohra@yahoo.fr	Algeria
52	Lahouel	Zakia	Doc.lahouelzakia@hotmail.com	Algeria
53	Lakache	Zineb	lakache.zineb@yahoo.fr	Algeria
54	Maghchiche	Abdelhak	amaghchiche@yahoo.fr	Algeria
55	Mediouni	M. Rida	redamediouni191@gmail.com	Algeria
56	Merrouche	Rabia	rabiaa.merrouche@g.ens-kouba.dz	Algeria
57	Mohamed A.	Ferhat	ferhatamine100@yahoo.fr	Algeria
58	Nesrine	Marhoune	nesrine.marhoune@gmail.com	Algeria
59	Rached	Wahiba	rachedwahiba@yahoo.fr	Algeria
60	Rached	Wahiba	rachedwahiba@yahoo.fr	Algeria
61	Saadi	Habiba	habiba.saadi@gmail.com	Algeria
62	Smai	Amina	amina.smai@gmail.com	Algeria
63	Soumia	Krimat	krimatsoumia2012@gmail.com	Algeria
64	Thoraya	Dahmane	thoraya.dahmane@univ-dbkm.dz	Algeria
65	Tigrine	Chafia	tigrinechaf@yahoo.fr	Algeria
66	Yasmina	Bıdai	ybidai@yahoo.fr	Algeria
67	Zenia	Safia	safia_zenia@yahoo.fr	Algeria
68	Zineb	Hamani	zakia_zinab@yahoo.fr	Algeria
69	Ioannis	Tokatlidis	itokatl@agro.duth.gr	Greece
70	Iordanis	Vrochidis	ivrochid@agro.duth.gr	Greece
71	Louloudia	Koulympoudi	k_loula@yahoo.gr	Greece
72	Zisis	Vryzas	zvryzas@agro.duth.gr	Greece
73	Valentina	Spanic	valentina.spanic@poljinos.hr	Croatia
74	Ganajaxi	Math	ganajaxi@uasd.in	India
75	Sunandana	Mandal	sunandanamandal@gmail.com	India
76	Abdulbasit	Aljanabi	abd_lbasit@yahoo.com	Iraq
77	Atefeh	Majidi	atefeh.majidi72@ut.ac.ir	Iran
78	Mehdi	Ghaffari	mghaffari69@gmail.com	Iran
79	Mousa	Torabi Giglou	mtorabi@uma.ac.ir	Iran
80	Sana	Janakat	jana@just.edu.jo	Jordan
81	Tareq W. M.	Amen	t-amen@kitakyu-u.ac.jp	Japan
82	Murat	Helvacı	mhelvacı@eul.edu.tr	North Cyprus
83	Emine	Daci Zejnullahi	emine.daci@ubt-uni.net	Kosovo
84	Xhelal	Luma	xhluma@yahoo.com	Kosovo
85	Anuar	Zhubanyshev	darkanuarx@gmail.com	Kazakhstan
86	Ligita	Baležentienė	ligitaba@gmail.com	Lithuania
87	Shankar	Bhandari	shankar.bhandari@vdu.lt	Lithuania
88	Alfeddy	Mohamed Najib	alfeddynajib@yahoo.fr	Maroc
89	Charri	Hassan	hassan.charri@usms.ma	Maroc
90	Hajri	Zakariae	zakariae.hajri@gmail.com	Maroc
91	Hamass	Zerrad	hamass.zerrad@gmail.com	Maroc
92	Ikhlas	Laasri	laasri.ikhlas@gmail.com	Maroc

93	Iman	Janah	iman123janah@gmail.com	Maroc
94	Kaoutar	El Achouri	al.kaoutar@gmail.com	Maroc
95	Maria	El-Harram	elharrammaria@gmail.com	Maroc
96	Naim	Nadia	nadia_naim2@yahoo.fr	Maroc
97	Ouissale	Chaghouaoui	chaghouaouiouissale@gmail.com	Maroc
98	Oumaima	Harkousse	harkousse.oumaima@hotmail.fr	Maroc
99	Sammama	Hasnaa	Hasna.sammama@edu.uca.ac.ma	Maroc
100	Yassine	Zine-Eddine	zineeddine.yassine95@gmail.com	Maroc
101	Youness	Moukhliiss	y.moukhliiss@edu.umi.ac.ma	Maroc
102	Zaaroua	Meriem	zaaraoua.m@gmail.com	Maroc
103	Ina	Bivol	bivolinga@yahoo.com	Moldova
104	Brankica	Spaseva	vasileva.brankica@gmail.com	North Macedonia
105	Julijana	Tomovska	dzulitomovska@yahoo.com	North Macedonia
106	Nevena	Gruevska	nevena.gruevska@msu.edu.mk	North Macedonia
107	Nora	Limani Bektashi	nora.limani@unt.edu.mk	North Macedonia
108	C. Samuel	Chikwendu	chimobichikwendu@gmail.com	Nigeria
109	I Muhammad	Haruna	ibrahimmharuna@nsuk.edu.ng	Nigeria
110	Angelina	Gonzales	angelinatadurangonzales@yahoo.com	Philippines
111	Diosa	Alasaas	diosaalasaas@gmail.com	Philippines
112	Aijaz	Soomro	asoomrosau15@gmail.com	Pakistan
113	Farid Asif	Shaheen	shaheen@uair.edu.pk	Pakistan
114	Iram	Afzal	iramafzal4921@gmail.com	Pakistan
115	Muhammad	Awais	awaisbhuttah@gmail.com	Pakistan
116	Muhammad	Sabir	cmsuaf@gmail.com	Pakistan
117	Naheed	Bano	naheed.bano@mnsuam.edu.pk	Pakistan
118	Nazia	Nahid	nazianahid@gmail.com	Pakistan
119	Saddia	Galani	sadia.galani@kibge.edu.pk	Pakistan
120	Saeed	Rauf	saeedbreeder@hotmail.com	Pakistan
121	Uzma Ayaz	Ms.	uzma_ayaz89@hotmail.com	Pakistan
122	Ioniță	Lucian	ionita_luc@yahoo.com	Romania
123	Laura	Urdes	urdeslaura@gmail.com	Romania
124	Maria-Joita	Pacureanu	mariapacureanu2@yahoo.com	Romania
125	Nina	Bărăscu	nina.barascu@gmail.com	Romania
126	Sirbu	Cristiana	cris_sirbu@yahoo.com	Romania
127	Danijela	Žunić	danijeladorotic@gmail.com	Serbia
128	Natasa	Ljubičić	ljubicic.natasa@gmail.com	Serbia
129	Vladimir	Safonov	vsafonov2020@mail.ru	Russia
130	Antoine	Sambou Ben Haj	tonysambouegos@yahoo.fr	Senegal
131	Hayet	Koubaier	h.kbaier@gmail.com	Tunisia
132	Krouma	Abdelmajid	abdelmajid.krouma@gmail.com	Tunisia
133	Mohamed	Aroua	arouamohamed2310@gmail.com	Tunisia
134	Abdullah	Yazıcı	abdullahyazici11@gmail.com	Turkey
135	Ahmet	Uludag	ahuludag@yahoo.com	Turkey
136	Ajlan	Yılmaz	ajlnylmz@gmail.com	Turkey
137	Ali	Kayahan	aalikayahan@gmail.com	Turkey
138	Ali Kürşat	Şahin	akursah@gmail.com	Turkey
139	Arif	Darmawan	arifdarmawan@apps.ipb.ac.id	Turkey

140	Atilla	Ata	atilla.ata@gmail.com	Turkey
141	Aygün	Şanlı	aygunnsanli@gmail.com	Turkey
142	Aysin	Guzel Deger	agozel@mersin.edu.tr	Turkey
143	Ayşe	Özdem	ayse.ozdem@tarimorman.gov.tr	Turkey
144	Ayşen	Akay	aakay@selcuk.edu.tr	Turkey
145	Ayşenur	Güzel	aysenurrugzell@gmail.com	Turkey
146	Banu	Kadioğlu	banu250@hotmail.com	Turkey
147	Barış	Gülcü	barisgulcu@duzce.edu.tr	Turkey
148	Bayram	Atasagun	byrmatsgn@gmail.com	Turkey
149	Behiye Banu	Bilgen	bbilgen@nku.edu.tr	Turkey
150	Berceste	Babaeker	babaekerberceste@gmail.com	Turkey
151	Betül	Bayraklı	bbetul25@gmail.com	Turkey
152	Betül	Tınaz	tnzbetul54@gmail.com	Turkey
153	Burcu	Timur	burcu.timur@tefen.com.tr	Turkey
154	Burcu	Tuncer	brctuncer@gmail.com	Turkey
155	Cem	Tokatlı	cemtokatli@trakya.edu.tr	Turkey
156	Cemal	Budağ	cbudag@yyu.edu.tr	Turkey
157	Ceren	İlğaz	crnilgazz@gmail.com	Turkey
158	Cuma	Karaoğlu	cuma.karaoglu@tarimorman.gov.tr	Turkey
159	Çiğdem	Gürler	hidrojeolog@gmail.com	Turkey
160	Çiğdem	Şeremet Tuğalay	cigdemseremet@gmail.com	Turkey
161	Damla	Çil	damla.celik@tarimorman.gov.tr	Turkey
162	Demet	Apaydın	demetapaydin22@gmail.com	Turkey
163	Derya	Erbas	deryaerbas@isparta.edu.tr	Turkey
164	Derya Ilkay	Abdikoglu	deryailkay@nku.edu.tr	Turkey
165	Dilek	Cemal	cemaldilek.92@gmail.com	Turkey
166	Dilek	Soysal	dilek.soysal@omu.edu.tr	Turkey
167	Dursun	Kısa	drsn57@hotmail.com	Turkey
168	Duygu	Aydın	duyguuaydinn@outlook.com	Turkey
169	Duygu	Tekiin	duygu.duztas@gmail.com	Turkey
170	Eda	Asci	eedasc@gmail.com	Turkey
171	Eda	Günay	gunayeg@gmail.com	Turkey
172	Efe	Bakla	efebakla@hotmail.com	Turkey
173	Emrah	Güngör	emrah.gungor@omu.edu.tr	Turkey
174	Emre	İnak	emreinak1@gmail.com	Turkey
175	Emrullah	Culpan	eculpan@nku.edu.tr	Turkey
176	Enes	Çetin	enesetin96carsi@gmail.com	Turkey
177	Engin	Takıl	etakil@ogu.edu.tr	Turkey
178	Erdem	Karadag	karadagerdem@hotmail.com	Turkey
179	Erdoğan	Bal	ebal@nku.edu.tr	Turkey
180	Ergin	Öztürk	eozturk@omu.edu.tr	Turkey
181	E. Kuopuobe	Naawe	eric.naawe@gmail.com	Turkey
182	Erol	Aydın Eryılmaz	aydin.erol@tarimorman.gov.tr	Turkey Turkey
183	Fadime	Pehlivan	eryilmazfadime@gmail.com	Turkey
184	Fatih	Yıldırım	yildirimfatih@tarimorman.gov.tr	Turkey
185	Fatma	Ergün	fatma.ergun@ahievran.edu.tr	Turkey
186	Fatma	Türk	ftmtrk5555@hotmail.com	Turkey

187	Fatma Zehra	Çetin	zehcett@gmail.com	Turkey
188	Fikretcan	Ozdener	fikretcanozdener@gmail.com	Turkey
189	Filiz	Akın	filiz.kara@tarimorman.gov.tr	Turkey
190	Filiz	Ünal	fucar06@yahoo.com	Turkey
191	Filiz	Yangılar	f_yangilar@hotmail.com	Turkey
192	Gizem	Aksu	gizemaksu@comu.edu.tr	Turkey
193	Gökhan	Unakıtan	unakitan@nku.edu.tr	Turkey
194	Güldan	Vapur	gldnvpr@hotmail.com	Turkey
195	Gülden	Aynacı	guldenaynaci@hotmail.com	Turkey
196	Gülsüm	Palacıoğlu	gulsumpalacioglu@gmail.com	Turkey
197	G. Funda	Gökçe	dr_gumusfunda@hotmail.com	Turkey
198	H. Nilüfer	Yıldız	yildiz_hn@hotmail.com	Turkey
199	Hakan	Bozdoğan	hakan.bozdogan@ahievran.edu.tr	Turkey
200	H. İbrahim	Avcı	avciibrahim07@gmail.com	Turkey
201	Hamza	Negiş	hnegis@selcuk.edu.tr	Turkey
202	Hande Işıl	Akbağ	hiulku@comu.edu.tr	Turkey
203	Harun	Baytekin	hbaytekin@hotmail.com	Turkey
204	Harun	Karcı	karciharun42@gmail.com	Turkey
205	Hasan Berk	Özyurt	berkozyurt@nku.edu.tr	Turkey
206	Havva	İlbağ	hilbagi@nku.edu.tr	Turkey
207	Hayat	Topcu	hayattopcu@nku.edu.tr	Turkey
208	Hilal	Arslan	hilalarслан2@trakya.edu.tr	Turkey
209	Hüseyin	Arslan	huarslan@harran.edu.tr	Turkey
210	Hüseyin	Çelik	huscelik@omu.edu.tr	Turkey
211	İbrahim	Ertekin	ibrahim.ertkn@hotmail.com	Turkey
212	İlker	Oruc	ilkeroruc@klu.edu.tr	Turkey
213	İşıl	Lavkor	lavkor@gmail.com	Turkey
214	İbrahim	Kahramanoğlu	ibrahimcy84@yahoo.com	Turkey
215	İbrahim	Köken	ibrahimkoken1@gmail.com	Turkey
216	İbrahim	Uz	ibrahimuz@nku.edu.tr	Turkey
217	İnci	Şahin Negiş	incisahin@selcuk.edu.tr	Turkey
218	İrfan	Öztürk	ozturkirfan62@yahoo.com	Turkey
219	K. Gürbüz	Güner	kguner@nku.edu.tr	Turkey
220	Kıymet	Yavuzaslan	kiymet.yavuzaslan@adu.edu.tr	Turkey
221	Leyla	İdikut	leylaidikut@gmail.com	Turkey
222	Mehmet	Serin	mserin349@gmail.com	Turkey
223	Mehmet	Sutyemez	sutyemezmeahmet@gmail.com	Turkey
224	Mehmet	Yalvaçlı	mehmet_240@hotmail.com	Turkey
225	Mehmet Ali	Saridas	masaridas@gmail.com	Turkey
226	Melekber	Sülüsoğlu Durul	melekber_s@yahoo.com	Turkey
227	Melis	İnalpulat	melisinalpulat@gmail.com	Turkey
228	Merve	Etöz	etoz.merve@gmail.com	Turkey
229	Mesut	Ada	mesutada88@gmail.com	Turkey
230	Metin	Badem	mbadem@nku.edu.tr	Turkey
231	Miray	Kalaycı	miraykalayci@akdeniz.edu.tr	Turkey
232	M. Çağrı	Oğuz	m.cagrioguz@gmail.com	Turkey
233	Muhsin	Yıldız	muhsinyildiz@yyu.edu.tr	Turkey
234	Murat	Güney	murat.guney@yobu.edu.tr	Turkey

235	Mustafa	Can	mustafican@gmail.com	Turkey
236	Mustafa	Kaplan	mustafakaplan44@hotmail.com	Turkey
237	Mustafa	Ünlü	munlu1975@gmail.com	Turkey
238	Müge	Teker Yıldız	mugeteker.mt@gmail.com	Turkey
239	Mürşide	Yağcı	myagci0645@gmail.com	Turkey
240	Nazlıcan	Sönmezışık	ncsonmezisik@gmail.com	Turkey
241	Nazlı	Turkten	nazli.turkten@yahoo.com	Turkey
242	Neşe	Adanacıoğlu	neseerkip@yahoo.com	Turkey
243	Neval	Topcu Altıncı	neval.topcu@gop.edu.tr	Turkey
244	Nihal	Denli	nihaldenli@gmail.com	Turkey
245	Nihat	Ağan	nihatagan@gmail.com	Turkey
246	Nilüfer	Akci	niluferakci@hotmail.com	Turkey
247	Nur	Koc Koyun	nurkoc@selcuk.edu.tr	Turkey
248	Nurcan	Yavuz	ncivicioglu@selcuk.edu.tr	Turkey
249	Nurdan	Kıraç	nurdan.krc58@gmail.com	Turkey
250	Oğuzhan	Akça	oguzhanakca@windowslive.com	Turkey
251	Onur	Hocaoğlu	onurhocaoglu@gmail.com	Turkey
252	Onur	İleri	oileri@ogu.edu.tr	Turkey
253	Onur	Özdikicierler	onurozdi@gmail.com	Turkey
254	Onur Harun	Kamış	onurharunkamis.mtb@gmail.com	Turkey
255	Oral	Düzdemir	oralduzdemir@yahoo.com	Turkey
256	Oscar	Akouegnonhou	oscarak1989@gmail.com	Turkey
257	Önder	Baytekin	onder.baytekin@tarimorman.gov.tr	Turkey
258	Özgür	Karadaş	ozgurkaradas1@gmail.com	Turkey
259	Özlem	Erinç	ozlem_erinc@hotmail.com	Turkey
260	Özlem	Pala	ozlem_pala55@hotmail.com	Turkey
261	Pelin	Alaboz	pelinalaboz@isparta.edu.tr	Turkey
262	Perihan	Tarı Akap	perihantari@gmail.com	Turkey
263	Pervin	Erdogan	pervinerdogan@sivas.edu.tr	Turkey
264	Pervin	Vural	pervinvural@comu.edu.tr	Turkey
265	Rahime	Cengiz	rahimecengiz@subu.edu.tr	Turkey
266	Rahşan	Ivgin Tunca	rivgin@gmail.com	Turkey
267	R. İlhan	Aytekin	ramazanilhanaytekin@gmail.com	Turkey
268	Remzi	Uğur	remzibey@hotmail.com	Turkey
269	Reyyan	Gündoğdu	Reyyan.gundogdu@gmail.com	Turkey
270	Ruziye	Karaman	ruziyekaraman@isparta.edu.tr	Turkey
271	Saadet	Koç Güler	saadet.koc@gmail.com	Turkey
272	Sakine	Özpinar	sozpinar@comu.edu.tr	Turkey
273	Seda	Pamay	sedapamay@gmail.com	Turkey
274	Seda	Sucu	seda.sucu@gop.edu.tr	Turkey
275	Sefa	Aksu	aksusefa@comu.edu.tr	Turkey
276	S. Seçkin	Tuncer	selcukseckintuncer@gmail.com	Turkey
277	Selin	Laçinkaya	lacinkas@gmail.com	Turkey
278	Sema	Karakaş	skarakas@harran.edu.tr	Turkey
279	Semih	Bekil	bekilsemih@gmail.com	Turkey
280	Semih	Kale	semihkale@comu.edu.tr	Turkey
281	Serhat	Usanmaz	susanmaz@eul.edu.tr	Turkey
282	Serkan	Pehlivan	spehlivan@cu.edu.tr	Turkey

283	Sermet	Ayman	sermetayman@hotmail.com	Turkey
284	Sevgi	Uyar	sevgiuyar991@gmail.com	Turkey
285	Sevil	Unal	sozcelik@selcuk.edu.tr	Turkey
286	Sezai	Ercişli	sercisli@gmail.com	Turkey
287	Sıtkı	Ermiş	seedman37@gmail.com	Turkey
288	Sila Sadiye	Yenice	silayenice@hacettepe.edu.tr	Turkey
289	Sirel	Canpolat	sirelozan_18@hotmail.com	Turkey
290	Sümeyra	Kır	ismailozer55@hotmail.com	Turkey
291	Şahin	Kök	sahinkok@comu.edu.tr	Turkey
292	Şeküre	Çulha Erdal	sekureculha85@gmail.com	Turkey
293	Şevket	Özlu	sevket.ozlu@omu.edu.tr	Turkey
294	Tuğba	Er	tugba.er@tarimorman.gov.tr	Turkey
295	Tuğba	Kılıç	tubakilic84@gmail.com	Turkey
296	Tuncay	Yardım	yardimtuncay7@gmail.com	Turkey
297	Turgay	Çetinkaya	turgay.cetinkaya@yaloiva.edu.tr	Turkey
298	Turkan	Keceli	turkankecelimutlu@gmail.com	Turkey
299	Uğur	Temiz	ugur_temiz05@hotmail.com	Turkey
300	Utku	Güner	uguner@trakya.edu.tr	Turkey
301	Veysel	Aras	varas2001@yahoo.com	Turkey
302	Yahya	Uray	yahya.uray@omu.edu.tr	Turkey
303	Yalcin	Kaya	yalcinkaya22@gmail.com	Turkey
304	Yasemin	Güler	yaseminguler@gmail.com	Turkey
305	Yasemin	Oraman	yoraman@nku.edu.tr	Turkey
306	Yasemin	Yıldız	muh.yasemin86@gmail.com	Turkey
307	Yekta	Gezginç	yekgan@ksu.edu.tr	Turkey
308	Yücel	Kılıç	yucel.kilic@limagrain.com	Turkey
309	Yunus	Bayram	ybayram@hotmail.com	Turkey
310	Zafer	Binbir	zaferbinbir@gmail.com	Turkey
311	Maryna	Aksylenko	maryakxil@gmail.com	Ukraine
312	Oleksandr	Ronsevyeh	o.ronsevyeh@btu-center.com	Ukraine
313	Dmytro	Chernenko	chernenko@btu-center.com	Ukraine
314	Volodymyr	Krut	v.krout@btu-center.com	Ukraine
315	Batuhan	Osmanoglu	batuhan.osmanoglu@nasa.gov	United States
316				
317				



AGRIBALKAN 2021
III. BALKAN AGRICULTURAL CONGRESS
August 29-September 1, 2021, Edirne, Turkey
www.agribalkan.net



ACCEPTING LETTER

Dear **Burcu Tuncer**,

Thank you for submitting your paper to our congress. Your abstract "**USE OF THIDIAZURON IN TISSUE CULTURE STUDIES IN VEGETABLES**" has been accepted as "**Oral Presentation**" after per-reviewing by our Scientific Committee then it will exist in our conference program and will direct to printings for our congress book of abstracts.

We will be so happy to see you in our event.

Best Regards.

Prof Dr Yalcin KAYA

Chair of Organizing Committee

The Director of TU Plant Breeding Research Center

Address: Trakya University Plant Breeding Research Center, Edirne, Turkey

E-mail: yalcinkaya@trakya.edu.tr, **Cell Phone:** +90 542 2828184



III. BALKAN AGRICULTURE CONGRESS

29 August - 1 September, 2021, Edirne, Turkey



AGRIBALKAN 2021 CONGRESS PROGRAM

PLENARY SESSION

MONDAY, AUGUST 30TH, 2021

	Opening Ceremony	
09 30 - 10 30	OPENING SESSION I: Session Chair: PROF DR IOANNIS TOKATLIDIS , <i>Democritus University of Thrace, Greece</i>	
09 30 - 10 00	PROF DR SEZEN ARAT , <i>Tekirdag Namik Kemal University, Turkey</i> - "Recent developments in animal cloning"	
10 00 - 10 30	DR YUNUS BAYRAM , <i>Ministry of Agriculture and Forestry, Turkey</i> "Negative effects of global warming and climate change on plant health"	
10 30 - 10 45	COFFEE BREAK	
10 45 - 12 15	OPENING SESSION II: Session Chair: PROF. DR. MUSTAFA TAN , Trakya University, Edirne, Turkey	OPENING SESSION III: Session Chair: PROF DR AHMET ULUDAG , <i>Canakkale Onsekizmart University, Turkey</i>
10 45 - 11 15	PROF DR RIGERTA SADIKAJ - <i>University of Tirana, Albania</i> - "The development of aquaculture production and some arguments in fish genetics and biotechnology studies in Albania"	PROF DR IOANNIS TOKATLIDIS , <i>Democritus University of Thrace, Greece</i> - "Defining the ideal genotype component of a modern crop variety"
11 15 - 11 45	PROF DR EMINA DACI ZEJNULLAHI - <i>University of Business & Technology, Kosovo</i> "The impact of international trade on food security during the pandemic time Covid 19 in Kosovo"	DR MARIA JOITA-PACUREANU - <i>National Agricultural Research and Development Institute - Fundulea, Romania</i> - "New approach in sunflower breeding, coming from the seed market request"
11 45 - 12 15	PROF DR HAZIR POLLOZHANI , <i>State University of Tetovo, Northern Macedonia</i> - "The Current Situation of Agriculture in Macedonia"	PROF DR VILIANA VASSILEVA , <i>Institute of Forage Crops, Bulgaria</i> - "Developing legume forage crops-based agroecosystem"
12 15 - 13 00	LUNCH	LUNCH

1 st Ses	AGRIBALKAN-I	AGRIBALKAN-II	AGRIBALKAN-III	AGRIBALKAN-IV TURKISH	AGRIBALKAN-V TURKISH	AGRIBALKAN-VI Poster	AGRIBALKAN-VII Poster
13 ⁰⁰ -13 ¹⁵ 1	3957 Significance of Zinc fertilization on Nutrient content and Uptake by Rice crop grown in lateritic soil of West Bengal, India - Sunandana Mandal, Goutam Kumar Ghosh	635 Contribution to the study of antimicrobial resistance profiles of E. Coli in poultry in Algeria - Amirouche Morsli, Bilal Ghanam, Abderrahmane Badache, Mohamed Amrane	4092 Protein oxidation in ultraviolet light-treated dairy products - Aygün Şanlı, Müge Urgu-Öztürk, Nurcan Koca	3814 DETERMINATION OF TRACTOR USAGE PREFERENCES IN AGRICULTURAL ENTERPRISES - Derya İlkay Abdikoglu, Gökhan Unakitan	3992 Effects of different priming applications on seed germination and some physiological changes of wheat (<i>Triticum aestivum</i> L.) Seedlings under osmotic stress - Eda Günay, Müge Teker Yıldız, Okan Acar	4663 Alternative Boom Design For Field Sprayers - Hasan Berk Özyurt, İlker Hüseyin Çelen	3606 Effect of Seed Priming on Germination and Seedling Growth of the Chickpea (<i>Cicer arietinum</i>) Under Drought Stress - Amina Kadiri, Achour Asma, Belkhdja Moulay, Ighilhariz Zohra
13 ¹⁵ -13 ³⁰ 2	3690 Determination of phenological stages and the change of yield potential according to harvest in blueberries grown outdoors in pots and raised beds - Hüseyin Çelik, Ebru Acar	3701 Current possibilities of macromineral use in laying hen diets: A review - Arif Darmawan, Şevket Özlü, Ergin Öztürk	4777 EVALUATING COMMERCIAL BERRY JAMS FOR THE PRESENCE OF POLYPHENOLS IN SAMSUN AREA - Amna Bijedic	4728 An Overview of Support Policies in Wheat Production - Metin Badem, Harun Hurma	4497 Effects of Different Sowing Times on Yield And Quality Traits of Safflower under the Tekirdağ Conditions - Burhan Arslan , Emrullah Culpan	962 - Valorization of Fig Tree (<i>Ficus Carica</i>) - Ikram Mkedder	3687 BREEDING OF SAFFLOWER SUITABLE FOR TEA PRODUCTION - Aybatsha Zhubanysheva, Anuar Zhubanyshev, Kanagat Baymagambetova
13 ³⁰ -13 ⁴⁵ 3	3764 Study of the chemical composition, anticandida and antioxidant activities of wild and cultivated <i>Origanum compactum</i> essential oil from the municipality of chaoun in Morocco - Alfeddy Mohamed Najib, Jeldi Lamy, Ouled Taarabt Kamal, Mazri Mouaad Amine, Ouahmane Lahcen	3700 The Efficacy of bentonite feed additives in improving laying hens performance and egg quality: A review - Arif Darmawan, Ergin Öztürk	4555 Optimization of ultrasound assisted extraction regarding total phenolic content and antioxidant capacity of olive leaves - Ceren İlğaz, Pınar Kadiroğlu Kelebek	4727 The Structural Evaluation Regarding to Agricultural Tourism of Viticulture Farms in Tekirdağ Province - Onur Harun Kamış, Harun Hurma		3481 Effective organo-mineral fertilizers of prolonged action from the processed organo-containing wastes of various origin - Maryna Aksylenko, Vitaliy Yevdokymenko, Tatiana Tkachenko, Dmytro Kamenskyh, Volodymyr Kashkovsky	3836 Effect of Orgalife Fertilizer on some Quality Properties of the Seed and Growth Potential of Two Rice Varieties (<i>Oryza sativa</i> L.) Cultivated in North Macedonia - Brankica Spaseva, Ivo Mitrushev, Danica Andreevska, Dobro Andov, Marija Gjosheva-Kovachevikj, Emilija Simeonovska
13 ⁴⁵ -14 ⁰⁰ 4	3680 The Importance of Turkey in Hazelnut Industry: The Past and the Present - Kıymet Yavuzaslan, Semanur Soyuyiğit	4528 Intraperitoneal acute toxicity of the ethanolic extract of leaves plant of <i>Olea europea</i> var. <i>Oleastre</i> - Difallah Aicha, Samira Fetni	4557 PLANT SECONDARY METABOLITES AS ANTIBIOTIC RESISTANCE MODIFYING AGENTS IN FOOD CHAIN - Ceren İlğaz, Pınar Kadiroğlu Kelebek	3990 The sustainability and the credit use in apple production in isparta province in Turkey - Handan Akçaöz, Aslihan Akıncı, Miray Kalaycı, Ayşenur Güzel	4562 The effects of bee flight and pollinating distance on seed production and quality in seed sunflower production - Fatih Yıldırım, Harun Baytekin	921 The effects of thym oil (thymol) on honey bee colonies and evaluation of the efficacy on the parasite of the <i>Varroa destructor</i> Bee - Adjlane Nouredine	4060 YIELD AND YIELD RELATED TRAITS OF ADVANCED LINES OF WINTER BARLEY- Boryana Dzulgerova, Darina Valcheva
14 ⁰⁰ -14 ¹⁵ 5	3945 characteristics of livestock farmers and traders participating in livestock markets: a case study from the Republic of Benin - Oscar Akouegnonhou, Nevin Demirbaş	614 Survey on female camel reproductive traits among pastoral herds at the south eastern of Algeria - Djalel Eddine Gherissi, Zoubir Bouzebda, Farida Abuzebda Afri, Abd Latif Miloudi	2928 The Quality Characteristics of Dried Red Capia Pepper - Dilek Cemal, Gulcin Yildiz	4024 Risk and sustainability in ovine livestock activity: Antalya province case - Remziye Suna, Handan Akçaöz, Esra Ataş, Ayşenur Güzel	4097 Determination of the Effect of Different Irrigation Applications on Sesame Seed Color in Subsurface Drip Irrigation Method - Filiz Akın, Köksal Aydınşakir, Bilal Cemek, Fatih Alpay Vuran, Çetin Sayılğan, Mehmet Kocatürk, Orçun Çınar	598 Bioactivity of essential oils from <i>Laurus nobilis</i> by the evaluation of the acaricidal effect on varroasis - Hacib Hinda, Lakache Zineb , Berkani Zohra	4098 Variation of agronomic traits of two-rowed genotypes of winter barley - Darina Valcheva, Boryana Dzulgerova

14 ¹⁵ -14 ³⁰	3949 CONSTRAINTS OF LIVESTOCK MARKETS IN THE REPUBLIC OF BENIN AND SUGGESTIONS - Oscar Akouegnonhou, Nevin Demirbaş	3395 Determination of Nosema Spores in the Bee Cakes - Dilek Kabakçı, Gökhan Akdeniz, Raşan İvgin Tunca	3472 Biochemical evaluation of four lentil (<i>Lens culinaris</i>) Algerian accessions for nutritional value - Djouher Gaad, Salema Silabdi	3765 Digital marketing in SMEs operating in the agricultural food industry of Turkey: challenges, opportunities and strategies to follow - Yasemin Oraman, Deniz Çağla Bal	4424 Effect of Different Germination environment on Soybean Germination - Hüseyin Arslan	4631 CHANGES IN SHRUB QUALITY AND GOAT PREFERENCES IN THE CAFETERIA FEEDING SYSTEM - Harun Baytekin	3736 Study of the biodiversity and the of natural pastures in Strandzha mountain and opportunities for their use - Dimitrinka Krusheva
14 ³⁰ -14 ⁴⁵	423 The Irrigation of Tender Wheat (<i>Triticum aestivum</i>) by Wastewater from Seybouse's Valley in the Region of Guelma (North-East Algeria) - Boumaraf Warda	4600 NUTRITIONAL ENRICHMENT OF SESAME SEED BY <i>Aspergillus niger</i> SOLID-STATE FERMENTATION - Aydın Altop, Emrah Güngör, Güray Erener	3837 Alleviating Effects of Ascorbic Acid On Red Radish (<i>Raphanus sativus</i> L.) Leaves Treated With Excess Copper - Fadime Eryılmaz Pehlivan	4659 The Effects of Monochromatic Lighting on Hatch Window and Hatching Performance in Broiler Breeder Eggs Çiğdem Şeremet Tuğalay, Özer Hakan Bayraktar	3603 Effects of different sowing times on grain yield and yield features in Maize grown under Hatay ecological conditions - Merve Atasever, Saban Yılmaz, İbrahim Ertekin	4629 INVESTIGATION OF GOATS' DAILY BEHAVIOR UNDER CAFETERIA FEEDING SYSTEM - Harun Baytekin	4452 Effect of planting geometry and varieties on the yield of lentil in northern transition zone of karnataka, India- Ganajaxi Math, Gurupad Balol , Suma Mogali
14 ⁴⁵ -15 ⁰⁰	4197 Monitoring the Number of Prints of Injection Machines with Wireless Connection - Enes Çetin	4601 SOLID-STATE FERMENTATION USING <i>Aspergillus niger</i> IMPROVES THE NUTRITIONAL QUALITY OF OLIVE PULP - Emrah Güngör, Aydın Altop, Güray Erener	3838 Diet-Epigenome Interactions: Epi-drugs Modulating the Epigenetic Machinery During Cancer Prevention - Fadime Eryılmaz Pehlivan	4660 The Effects of Ovo Injection of Propolis Extract to Breeder Eggs on Hatchability and early Performance in Broilers - Berceste Babaeker, Çiğdem Şeremet Tuğalay, Özer Hakan Bayraktar	3602 Evaluation of some annual ryegrass cultivars in germination and early seedling stage under different salinity levels - İbrahim Ertekin	3414 The influence of the compound feed supplementation with fishmeal on raising performance during the 1-42 days of brown Jumbo quails - Ioniță Lucian, Popescu-Miclosanu Elena, Pană Cornel Octavian, Sonea Cosmin, Tudorcahe Minodora, Custura Ion	4095 Changes in the rate of growth and accumulation of dry matter and differences in the microclimate of wheat crops with a balanced mineral nutrition of plants- Dragomir Valchev, Darina Valcheva
15 ⁰⁰ -15 ³⁰	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
2nd Ses	AGRIBALKAN-I	AGRIBALKAN-II	AGRIBALKAN-III	AGRIBALKAN-IV TURKISH	AGRIBALKAN-V TURKISH	AGRIBALKAN-VI Poster	AGRIBALKAN-VII Poster
15 ³⁰ -15 ⁴⁵	4159 Investigation of the Sustainability of Soil properties of Olive Orchards in Different Land Conditions of the Semiarid Mediterranean Agroecosystem - Sakine Özpınar, Ali Özpınar	612 The ameliorative effects of <i>Rosmarinus officinalis</i> against Aluminium neurotoxicity in young rats brain: Histological and biochemical studies - Lahouel Zakia, Kharoubi Omar	3695 Effect of cooking methods on Sulfites content of dried fruits - Hajri Zakariae, Boutoia Khalid, Oussama Abdelkhalek, Mohammed Chıgr, Yassine Zine-Eddine	3604 Sectoral use of water and economical politics of water - Reyvan Gündoğdu, Alper Serdar Anlı	4684 Investigation of Same Agricultural Characters of Second Crop Hybrid Corn Varieties - Leyla İdikut, Mehmet Ekinci, Cafer Gençoğlan	922 Mastitis diagnosis in Algerian dairy cattle farms - Kaouche Soumeya	3997 Assessment of drought tolerance of three winter common wheat cultivars - Gergana Mihailova, Violeta Peeva, Maria Geneva, Elisaveta Kirova, Daniel Ilkov, Zlatina Uhr, Evgeniy Dimitrov, Radoslav Chipilski, Violeta Velikova, Katya Georgieva
15 ⁴⁵ -16 ⁰⁰	10	3601 Multiparasitism involving eustrongylides spp. In the wild fish populations inhabiting the danube delta biosphere reserve - Laura Urdes, Marius Hangan, Monica Marin,	3416 UV-C Treatment to Improve the Phenolic Compounds in Red Wines at Aging Period - Hande Tahmaz Karaman	3709 Comparison of pyrooxasulfone's bioremediation with some soil bacteria based on chemical oxygen demand and its effect on mortality on <i>Daphnia magna</i> - Duygu Tekin, Gokhan Onder	3903 Investigation of the Effect of Different Harvest Times on Some Yield Characteristics of Turkish oregano (<i>Origanum onites</i> L.) - Mustafa Can	4382 Relationship between reproduction performances and coat characteristics of montbeliarde cows during hot season in Algeria - Lamari Sara	4398 Honeycomb experimental design facilitates the differentiation of indigenous AMF spores in <i>Zea mays</i> plant rhizosphere - Louloudia Koulympoudi, G.

		Cristiana Diaconescu		Erguven, Volkan Korkmaz			Kontouris, Ioanna Fotou, Nikolaos Parissis, Pavlina Alexandridou, Ioannis Tokatlidis, Michail Orfanoudakis, Evangelia Sinapidou	
16 ⁰⁰ -16 ¹⁵	11	2869 Trend analysis for the global fishery and aquaculture production of the grooved carpet shell <i>Ruditapes decussatus</i> (Linnaeus, 1758) (Mollusca: Bivalvia) - Semih Kale, Sefa Acarlı, Pervin Vural, Deniz Acarlı	2341 Improving Postharvest Storability of "Cyprus Lemons" by the Application of Ozone, Rosemary Oil, Straw Coverage and/or/with Modified Atmosphere Packaging - Kenan Umar, İbrahim Kahramanoğlu	4391 HISTORICAL DEVELOPMENT OF HORSE BREEDS - Selçuk Seçkin Tuncer, Süleyman Kozat	4510 PHYSIOLOGICAL AND BIOCHEMICAL EFFECTS OF THERMO PRIMING ON WHEAT (<i>TRITICUM AESTIVUM</i> L.) UNDER DROUGHT AND HEAT STRESSES - Müge Teker Yıldız, Eda Günay, Okan Acar	3438 - Fish lice affecting aquarium fishes - Naheed Bano, Sadia Maalik, Sajida Mushtaq	4066 Seasonal variation recorded in mycorrhizal fungi collected from maize genotypes - İordanis Vrochidis, Louloudia Koulympoudi, Maria Fournomiti, Fokion Papatthanasiou, Michail Orfanoudakis, Evangelia Sinapidou, Ioannis Tokatlidis	
16 ¹⁵ -16 ³⁰	12	3386 Combine harvester bearings evaluation for preventive maintenance purposes - Shankar Bhandari, Eglé Jotautienė, Antanas Juostas	4438 Effects of Encapsulation on Bioavailability of Feed Additives - Uğur Temiz, Ergin Öztürk	4030 Assessment of samet (grape syrup) physico-chemistry and microbiological characteristics - Kaoutar El Achourı	3678 The BoLA-DRB3 gene HSP70.1 gene : an overview of its mechanisms of action and its relevance to livestock animals in terms of disease resistance and thermotolerans - Gülden Vapur, Süleyman Kök	3987 Rooting of black elderberry (<i>sambucus nigra</i> L.) by treated of indole 3-asetic acid - Nazlıcan Sönmezışık, Rumeysa Öztürk, Mehmet Han Baştürk, Şahane Funda Arslanoğlu	840 Effect of the age of breeding females on the egg biometry of the Partridge <i>gambra</i> Alectoris barbra (Phasianidae, Aves) in Algeria - Saadi Habiba, Akkache Sarah, Smai, Amina, Zenia Safia, Haddadj Fairouz, Salah Eddine Doumandji	4513 ASSOCIATION OF YIELD AND YIELD COMPONENT IN DURUM WHEAT (<i>Triticum durum</i> Desf.) GENOTYPES UNDER RAINFED CONDITIONS - İrfan Öztürk
16 ³⁰ -16 ⁴⁵	13	2569 Application of Climate Smart Agricultural Systems in Turkey - Tefide Kizildeniz, Betül Tınaz	4439 Effects of Bentonite on Performance, Aflatoxicosis, Immune System, Liver and Kidney Pathology, Intestinal Microorganisms and Histomorphology of Broilers -Uğur Temiz, Ergin Öztürk	4770 Evaluation of the content of phenolic compounds and antioxidant potential of white mulberry fruits and pekmez - Luziana Hoxha, Renata Kongoli, Joana Kuci	3806 The effects of addition of organic acids and sucrose to the drinking water of broilers in the pre-slaughter feed withdrawal period on performance and number of microorganisms - Zafer Binbir, Ergin Öztürk	4574 DETERMINATION OF THE FACTORS AFFECTING THE PRODUCTION AND QUALITY OF WHEAT GROWING IN SOUTH MARMARA - Nihat Ağan, Harun Baytekin	797 Overview of the impact of coccidiosis on some parameters in a domestic quail farm <i>Coturnix japonica</i> (Aves, Phasianidae) in Algeria - Smai Amina, Saadi Habiba, Zenia Safia, Haddadj Fairouz, Aissi Meriem, Milla Amel, Salah Eddine Doumandji	4521 GENOTYPES × ENVIRONMENT INTERACTION AND STABILITY OF BREAD WHEAT (<i>Triticum aestivum</i> L.) CULTIVAR UNDER RAINFED CONDITIONS- İrfan Öztürk
16 ⁴⁵ -17 ⁰⁰	14	2580 Vertical Farming Application in Turkey - Tefide Kizildeniz, Fatma Zehra Çetin	3919 Performance evaluation of automatically extracted citrus trees from lidar point cloud data: revisiting a traditional strategy based on local maxima and watershed segmentation - Asli	4764 Mitigation of drought stress effects by chitosan-coated iron oxide nanoparticles and natural growth stimulants in peppermint - Mousa Torabi Gıglou	3808 USE OF ORGANICACIDS AS FEED ADDITIVES IN POULTRY FEED - Zafer Binbir, Ergin Öztürk	3623 The Effect of Different Sowing Time and Plant Density Applications on Grain Yield and Components of Grain Corn Varieties with Different Maturation Periods - Nurdan Kırac, Murat Tiryakioğlu, Onur Yıldırımcan	3794 HORMONAL AND BIOCHEMICAL PARAMETERS ANALYSIS OF THE YELD COWS BLOOD - Vladimir Safonov	595 The physiological traits of N ₂ - fixing common bean in response to Iron deficiency - Krouma Abdelmajid

		Zehra Coskun, Sila Sadiye Yenice, Sevay Yilmaz, Ali Özgün Ok, Batuhan Osmanoglu						
17 ⁰⁰ -17 ¹⁵	15	3763 Potential effect of wheat and faba bean intercrop on the grain yield and competitive interactions - Sammama Hasnaa, El Kaoua Mimoun, Hsissou Driss, Alfeddy Mohamed Najib	4630 Effects of Green and Commercial Synthesis ZnO Nanoparticles on Growth Parameters and Water Status in Pepper Under Drought Stress - Aysin Guzel Deger, Sertan Çevik, Ersan Turunç, Oskay Kahraman, Ayşe Gül Yakın, Rıza Binzet	4661 The effect of cowpea (<i>Vigna unguiculata</i> L.) on human health - Murat Güney, Muhammet Ali Gündeşli, Harun Karçı, Hayat Topcu	3698 Current possibilities of micro mineral use in laying hen diets: A review - Şevket Özlü, Arif Darmawan, Ergin Öztürk	3958 MINERAL, CRUDE ASH, AND CRUDE FAT CONTENTS OF SECOND CROP FORAGE PEA AND CEREALS MIXED CROPPING - Onur İleri, Şule Erkovan	794 Retrospective study of the epidemiological situation of animal brucellosis in the wilaya of Béjaia - Zenia Safia, Tafath Yanar, Belaidi Chanez, Abizar Dihya, Smai Amina, Taibi Messaouda, Chorfi-Chikhi Nassima, Haddadj Fairouz, Saadi Habiba, Milla Amel, Cherifi Nadia, Aissi Meriem	785 Genetic Diversity Analysis in Chickpea (<i>Cicer arietinum</i> L) Genotypes Grown in Northwestern Algeria using Microsatellite Markers (SSR) - Bouri Amina, Mediouni M. Rida, Ameer Abdelkader, Gaouar Semir Bechir Suheil, Udupa Sripada
17 ¹⁵ -17 ³⁰	16	4447 Rhizobia inoculation and DMPP nitrification inhibitor had effect phenological and morphological characters of bean (<i>Phaseolus vulgaris</i> L.) - Engin Takil, Nihal Kayan	4086 Estimates on climate changes in Albania, based on factual data on the field of agriculture in the southeastern area - Elvin Çomo, Petrit Zorba	3895 Effect of γ -irradiation on piperine content and microbial quality of black pepper - Nora Limani Bektashi, Irina Mladenoska, Ivana Sandeva, Olga Popovska, Kiril Lisichkov, Slobodan Masic, Monika Stojanova, Hristina Spasevska	4028 Determination of the change in the protein and cellulose content of cotton seed meal fermented with rumen liquid in different environmental conditions - Abdülkadir Koç, Şevket Özlü, Aydın Altop	4654 Transfer of Cytoplasmic Male Sterility to Maize by the Paternal Haploid Method - Rahime Cengiz	4718 Modelling and optimization of coagulation-flocculation process of waste water by response surface methodology - Abaidia Meriem	4676 Impact of storage conditions on achene longevity and its yield in sunflower (<i>Helianthus annuus</i> L.)- Muhammad Awais, Humera Razzaq, Sania Zahid
17 ³⁰ -17 ⁴⁵	17	4103 Breeding and Agronomic Strategies to Improve Adaptability and Nutritional Components of Sweet Potato in Sub-Saharan Africa - Eric Kuopuobe Naawe, Mehmet Emin Caliskan	4520 The use of medical and aromatic plants in landscape architecture and agricultural landscape, the case of Düzce - Gümüş Funda Gökçe, Rashmi Gujrati, Mustafa Özbay, Hayri Uygun, Öner Demirel, Zeliha Bayındır	3711 The possible use of UV-VIS spectrophotometric data for classification of virgin olive oils - Onur Özdikicierler	3699 Use of vitamins in laying hen diets with current approaches: A review -Ergin Öztürk, Arif Darmawan, Şevket Özlü	4578 EFFECT OF HUMIC ACID APPLICATIONS ON TUBER QUALITY IN POTATO (<i>Solanum tuberosum</i> L.) - Ramazan İlhan Aytekin, Mustafa Akkamış, Mehmet Elli, Sevgi Çalışkan	4719 Optimisation of the coagulation-flocculation process by Bentonite and Aluminum sulphate - Abaidia Meriem, Khelladi Malika, Debab Abdekader	4681 Effect of Essential Oil on Abiotic Stress Tolerance in Wheat- Muhammet Çağrı Oğuz, Ezgi Oğuz, Mustafa Güler
17 ⁴⁵ -18 ⁰⁰	18	3668 Effects of Genotype by Environment Interaction on the Yield and Quality Traits of Potato Breeding Lines in the Central Anatolia Region of Turkey - Eric Kuopuobe Naawe, Mehmet Emin Caliskan	4416 Variation of PM10 and SO2 concentrations in Heating degree days and Cooling degree days in Kırklareli, Turkey - Ilker Oruc	4756 - A Sample Observation for Gastronomic Applications: Interaction of Lemon or Apple Vinegar added Olive Oil with Sea Bass Fillet and Beefsteak - Zafer Ceylan, Oktay Tomar, Abdullah Çağlar, Turgay Çetinkaya	3783 Ochratoxin A in Oil Seeds - Işıl Lavkor	4059 A NOVEL TECHNOLOGY FOR FOOD PROCESSING: COLD PLASMA - Efe Bakla, Şebnem Mutlu	4090 Climate Change in Albania and Some Considerations for Their Impact on the Various Sectors - Albana Hasimi, Elvin Çomo, Gazmir Çela, Petrit Zorba	749 Phytochemical Profiling, Antioxidant and Anti-inflammatory Bioactivities Demonstration of Algerian <i>Oxyris quadripartita</i> Salzm. ex Decne leaves extracts- Rached Wahiba

3 RD Ses	AGRIBALKAN-I	AGRIBALKAN-II	AGRIBALKAN-III	AGRIBALKAN-IV TURKISH	AGRIBALKAN-V TURKISH	AGRIBALKAN-VI Poster	AGRIBALKAN-VII Poster
09 ⁰⁰ -10 ³⁰	31.08.2021 TUESDAY	31.08.2021 TUESDAY	31.08.2021 TUESDAY	31.08.2021 TUESDAY	31.08.2021 TUESDAY	31.08.2021 TUESDAY	31.08.2021 TUESDAY
09 ⁰⁰ -09 ¹⁵	19 671 Salt stress effect on germination in four varieties of wheat hard (Triticum durum Desf) - Hiouani Fatima		4392 An Overview for new ways of use of non-wood forest products for Rural Development in Turkey - Yaşar Gultekin	4000 Morphometric Characteristics and Biochemical Composition of Flat Oyster (Ostrea edulis, Linnaeus 1758) in Çardak Lagoon (Çanakkale Strait) -Pervin Vural	4725 Investigation of Some Quality Parameters of Homemade Yogurt with Nettle Powder - Filiz Yangılar, Barış Gülhan	4084 A small-scale transportable biodigester using organic household wastes, wastewater and human excreta to biogas recovery - Benaissa Kheira Nawel	2505 Grain mass yield and plastid pigments content in winter forage pea lines - Viliiana Vasileva, Valentin Kosev, Yalcin Kaya
09 ¹⁵ -09 ³⁰	20 Food Waste Management in the tourist area ff Dajti, Tirana - Enkelejda Kucaj, Jonida Bitur, Besim Kucaj	4633 Simulating future status of agricultural lands in south part of marmara basin depending on historical trends - Melis İnalpulat, Levent Genc	4670 Salinity and drought stress in walnut - Aibibula Paızıla, Mesut Ada, Harun Karcı, Muhammet Ali Gündeşli	4087 Nutritive value of silage and hay made from Radishes (Raphanus sativus) by-products for animal - Hande Işıl Akbağ	4726 The use of maple syrup and Chlorella vulgaris in yoghurt production - Zeynep Tuba Erdaş, Filiz Yangılar	3797 The impact of urbanization on urban air quality: A case of PM10 mass concentration in urban area of "Liçeni i Thatë", Tirana -Raimonda Lilo, Edlira Baraj	3390 Results of application of different shading nets on tomato quality - Vladimir Sabadoš, Danijela Žunić
09 ³⁰ -09 ⁴⁵	21 4466 COMPARISON of DIFFERENT COTTON (Gossypium Hirsutum L.) CULTIVARS for QUALITY and YIELD CHARACTERISTICS - İbrahim Köken, Emre İlker, Aliye Yıldırım	4565 - Effect of Operational Parameters on Photocatalytic Degradation of Reactive Blue 19 Dye Using Cu2O - Nazli Turkten, Yunus Karatas	4624 Determination to Polen Viability and Germination of Diffrent Solanum molengena L. X S. torvum Sw Hybrids and Crosses on Fertile Hybrids - Atilla Ata, Nihal Denli, Hatira Taşkın	4339 EVALUATION OF UNIVERSITY FEMALE STUDENTS IN BREAST CANCER SCREENING WITH CHAMPION'S HEALTH BELIEF MODEL SCALES - Gülден Aynacı	3484 Nutritional values of plant residues of bean varieties grown as second crops - Leyla İdikut, Esra Odabaşoğlu, Duygu Uskutoğlu	4094 Industrial research and experimental development vehicles with brushesless electric motors powered by lithium-ion batteries for personal transportation-gentle electric – Cristiana Sirbu	750 Swelling and Erosion of Natural Matrix Tablets - Aksil Tounsia, Abbas Moussa, Trarı Mohamed, Benamara Salem
09 ⁴⁵ -10 ⁰⁰	22 4088 Micropropagation of Helichrysum italicum İbrahim Uz, Selen Yatkın, Sheida Daneshvar Royandazagh, Sefer Demirbaş, Hayat Topcu	4598 Multifunctional applications of wild halophytes species - Tareq W. M. Amen, Kristina Toderich, Mitsuharu Terashima, Hidenari Yasui	4697 Changes in some biochemical parameters of sweet red peppers at different storage temperature - Derya Erbas, Mehmet Ali Koyuncu	3824 A major links between Aphids species (Homoptera : Aphididae) and some green lacewings egg-laying locations (Neuroptera: Chrysopidae) in the Eastern Mediterranean Region - Hakan Bozdoğan	4109 CHEMICAL PROPERTIES AND BIOACTIVE COMPONENTS OF PEANUT OIL - Özgür Karadaş, İsmail Yılmaz, Ümit Geçgel	621 Removal of Congo Red (CR) from Aqueous Solutions by Adsorption onto Apricot Stone Activated Carbon (ASAC)- Thermodynamic and Kinetic Modeling - Abbas Moussa, Aksil Tounsia	3873 Screening of lactic bacteria based on its protease activity for collagen extraction from shrimp (Parapenaeus longirostris) byproducts - Ikhlas Laasri, Abdelhay Arakrak, Mohammed Bakkali, Laglaoui Amin
10 ⁰⁰ -10 ¹⁵	23 4522 Assessment of environment effect on agronomic and quality parameters of barley (Hordeum vulgare L) genotypes under rainfed condition - İrfan Öztürk, Turhan Kahraman, Remzi Avci , Adnan Tülek	4472 Authentication of Extra Virgin Olive Oil- Turkan Keceli, Apostolos Kiritsakis	3772 Influence of timing of heading cuts on flowering, vegetative growth, and fruit quality in some sweet cherry cultivars - Ersin Ürkmez, Dilek Soysal	3822 A Study on the Distribution of Chrysoperla carnea (Stephens) (Neuroptera: Chrysopidae) in Natural Areas of the Eastern Mediterranean Region - Hakan Bozdoğan	4705 NEW TRENDS IN VEGETABLE OIL CONSUMPTION Özgür Karadaş, Ümit Geçgel, İsmail Yılmaz	738 Effect of Extraction Mode on Phenolic Flavonoids Contents and Biological Activities of Thymus Capitatus Hoff, And Thymus Fontanesii Boiss & Reut Extracts from Algeria - Ahmed Nouasri, Dahmane Dahamane, Hafitha Metidji, Soumey Krimat, Mohamed Toumi, Yacine Badjah	3789 Phosphomolybdate test method for antioxidant activity in extracts of animal feed - Julijana Tomovska
10 ¹⁵ -10 ³⁰	1075 SEASONAL	4471 Commonly used	4572 Selection of Mulberry	4651 Identification of	4421 Change in water	747 Antioxidant Activity	2609 Cereal β-Glucans in

24	CARBON EMISSIONS AND SEQUESTRATION IN ORGANIC AGROECOSYSTEMS IN CENTRAL LITHUANIA - Ligita Baležentienė	Synthetic Antioxidants in Oils and Fats - Turkan Keceli	(Morus alba) in Samsun - Erol Aydın, Ercan Er, Nilüfer Aksu Uslu, Saim Zeki Bostan	residential development impacts on agricultural lands using landsat imageries: case study of Bursa, Nilufer (1990-2020) - Eda Asci, Melis İnalpulat, Levent Genc	activity of some Turkish hazelnut cultivars at different moistures and temperatures - Saadet Koç Güler	and Total Phenolic Content of Edible and No-Edible Parts of Cucumis metuliferus Fruit Extracts from Algeria -Chahrazad Guernah, Dahmane Dahamane, Fatiha Malki	Nutrition - Orhan Dağlıoğlu, Kadir Gürbüz Güner, Ümit Geçgel
10 ³⁰ -11 ⁰⁰	Coffee break	Coffee break	Coffee break	Coffee break	Coffee break	Coffee break	Coffee break
4TH Ses	AGRIBALKAN-I	AGRIBALKAN-II	AGRIBALKAN-III	AGRIBALKAN-IV TURKISH	AGRIBALKAN-V TURKISH	AGRIBALKAN-VI Poster	AGRIBALKAN-VII Poster
11 ⁰⁰ -11 ¹⁵	25 828 Effects of three plant extracts on the mycelia growth inhibition of cladosporium herberum, the fruit rot pathogen of Carica papaya (Paw-Paw) - Matthew Adebola Adebola, Chimobi Samuel Chikwendu	455 Thymus Capitatus Hoff, and Thymus Fontanesii Boiss & Reut Extracts from Algeria, Phenolic Flavonoids Contents and Biological Activities - Ahmed Nouasri, Soumeiy Krinat, Dahmane Dahamane, Aicha Ksouri , Hafitha Metidji, Soumeiya Merah, Mohamed Toumi		4061 Effects of Meteorological Variables on Stem Diameter Variation and Phenological Development in Olive Trees (Olea europeae L.) - Merve Etöz, Gülay Yılmaz, Oğuz Fehmi Şen, Ünal Akkemik	4044 Marker genes related to fatty acids composition of beef -Hilal Arslan, Süleyman Kök	630 Total Phenolic Content and Antioxidant Activity of Anagallis monelli L. from Algeria - Chahrazad Guernah, Dahmane Dahamane, Fatiha Malki	3693 Chemical Composition and Technological Quality of Einkorn Wheat (Triticum monococcum L.) - Kadir Gürbüz Güner, Orhan Dağlıoğlu
11 ¹⁵ -11 ³⁰	26 4338 Effect of water limitation on expression of sunflower fatty acids in different regions of Iran - Mehdi Ghaffari, Asadollah Zareei Siahbidi, Mohammadreza Shahsavari, Farnaz Shariati, Abbas Rezaeizad	975 Biochemical studies of At.TC rapeseed (Brassica napus L.) plants under drought stress - Atefeh Majidi	459 Growth and Yield of Watermelon (Citrillus lanatusL.) as influenced by Planting Spacing and Mulching in Lafia, Nasarawa State, Nigeria - Ibrahim Muhammad Haruna	3854 EXPANDING THE USE OF WASTE WATER IN AGRICULTURE Nurcan Yavuz	4667 Screening and Detection of Genetically Modified Organisms in Food Products -Tuğba Kılıç, Gulizar Aydogdu	880 Impact of varicocele on male fertility in the Western region of Algeria - Fizazi Anissa	4507 Addition of natural tannins during fermentation to stabilize the color of red wine from var. Sheshizi - Fatbardha Lamçe, Klaudja Serdari, Kevi Vrohoriti, Julian Karaulli, Mamica Ruci, Onejda Kyçyk
11 ³⁰ -11 ⁴⁵	27 4483 Tthe determination of botanical properties of forage kochia population grown in Konya conditions - Nur Koc Koyun, Ramazan Acar	3820 Effect of aromatic amino acid composition on phenolic compound content and the expression level of genes involved in the biosynthesis pathway - Dursun Kısa, Rizvan İmamoğlu	2444 Effects of sodium bicarbonate and modified atmosphere packaging on the postharvest storage quality of snap bean pods - Maryam Qayyum, Serhat Usanmaz, İbrahim Kahramanoğlu	4046 Temporal Distribution of Airborne Allergenic Poaceae Pollen in Different Regions of Turkey - Semih Bekil, Aycan Tosunoğlu , Adem Bıçakçı	3725 Trans Fatty Acid Formation in Vegetable Oil Production Technology: Affecting Factors and Minimizing Processes - Demet Apaydın, Ümit Geçgel	716 Phenolic content and activity antioxidant of methanolic and aqueous extracts of Aloea vera leaves - Hacib Hinda, Lakache Zineb, Laassami Affef	4506 Evaluation of the physical - chemical characteristics of the apple varieties for the production of apple - ciders - Fatbardha Lamçe, Klaudja Serdari, Mamica Ruci, Julian Karaulli, Kevi Vrohoriti, Onejda Kyçyk
11 ⁴⁵ -12 ⁰⁰	28 4616 Effects of nitrogen fertilizers, genotype and cutting stages on protein contents and fiber components of oat forage - Onur Hocaoğlu, Mevlüt Akçura	3752 The importance of choosing the appropriate isolation protocol for the purpose of the breeding studies - Burcu Timur, Mehmet Alper Gökçe, İbrahim Karahan	4666 Polyphenol content and antioxidant capacity of Medicinal and Aromatic Plants - Muhammet Ali Gündeşli, Ebru Kafkas, Murat Güney, Salih Kafkas	3803 - Ecophysiological approaches for protecting environment - Utku Güner, Berkay Duvar	4115 IDENTIFICATION OF YEASTS ISOLATED FROM NATURALLY FERMENTED GREEN OLIVES WITH MOLECULAR BASED METHODS - Sermet Ayman, Yekta Gezginç	4408 Discriminating ability of ISSR markers in the revealing of the genetic polymorphism in Turkish broomrape populations - Maria Duca, Ina Bivol	2610 Millet Grain: Nutritional Composition and Potential Health Benefits - Orhan Dağlıoğlu, Kadir Gürbüz Güner, Ümit Geçgel

12 ⁰⁰ -13 ⁰⁰	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH
5 th Ses	AGRIBALKAN-I	AGRIBALKAN-II	AGRIBALKAN-III	AGRIBALKAN-IV TURKISH	AGRIBALKAN-V TURKISH	AGRIBALKAN-VI Poster	AGRIBALKAN-VII Poster
13 ⁰⁰ -13 ¹⁵ 29	3991 Reduction in the application rates of mineral fertilizers due to increased efficiency of their use - Volodymyr Krut, Oleksandr Ronsevych	4091 First biological and serological characterization of zymv and its infuction of squash percent in mid of Iraq for twenty one years - Abdulbasit Aljanabi	3766 Assesment of mycorrhizal infectious potential of retama monosperma rhizospheric soils in Marrakech-Safi region of Morocco - Zaaroua Meriem, Alfeddy Mohamed Najib, Dounas Hanane, Ouahmane Lahcen	4683 Salt stress and its mechanism in almond - Mesut Ada, Aibibula Paızıla, Murat Güney, Hayat Topcu	4627 POSSIBLE EFFECTS OF GLOBAL WARMING ON INSECT POPULATION - Ayşe Özdem	594 Phytochemical screening, total phenolics, flavonoids contents, antioxidant and antimicrobial activities of the ethanol extracts of Fortunella margarita of leaves and peels - Lakache Zineb, Tigrine Chafia, Laassami Affef, Gadırı Nawel, Mahdid Mohamed, Hacib Hinda, Tounssi Hassina, Kamelı A. Karım	575 Total phenolics, flavonoids contents and antioxidant properties of different extracts of Cymbopogon citratus leaves from Algeria - Lakache Zineb, Tigrine Chafia, Hacib Hinda, Tounssi Hassina, Mahdid Mohamed, Gadırı Nawel, Kamelı A. Karım
13 ¹⁵ -13 ³⁰ 30	3989 Soil carbon management as a part of field fertility restoration - Volodymyr Krut, Oleksandr Ronsevych	4737 Use of garden radish in johnsongrass control in cotton - Ahmet Uludag, Doğan Gözcü, Ramazan Şadet Güvercin	4647 The Effects of Different Sulfur Forms and Biochar Applications on the Development of Radish (Raphanus sativus) in Calcareous Soils - Ayşen Akay	4353 Fruit Setting in Almond (Prunus dulcis) Ajan Yılmaz	3758 An innovative approach in biocontrolling wood-boring insects using, EPN-Gel - Barış Gülcü	4550 Dexamethasone as an efficient drug for COVID-19: Meta-analysis - Maghchiche Abdelhak	739 Effect of the aromatisation with summer savory (Satureja hortensis L.) essential oil on the oxidative and microbial stabilities of liquid whole eggs during storage - Mohamed Amine Ferhat
13 ³⁰ -13 ⁴⁵ 31	3816 Effect of Different Harvest Periods and Nitrogen Doses on the Yield and Quality Properties in Sweet Corn - Ruziye Karaman, İlnur Akgün, Cengiz Türkay	3946 The enhancement of water stress resistance in palm date by mycorrhizal fungi and PGPR bacteria - Alfeddy Mohamed Najib, Oumaima Harkousse O.h, Mazri Mouaad Amine, Ouahmane Lahcen	897 Halophytic plants, an alternative for the rehabilitation of saline soils to the development of agriculture in Algeria. - Belkhodja Moulay, Soualmi Nadia	3719 USE OF THIDIAZURON IN TISSUE CULTURE STUDIES IN VEGETABLES - Burcu Tuncer	3334 ASSESSMENT OF ERGENE RIVER BASIN IN TERMS OF IRRIGATION WATER SUPPLY: APPLICATION OF TRACE ELEMENTS BASED INDICES - Cem Tokatlı	929 Fruit and leaf viability of Tilia cordata (Mill.) in mixed linden forests in context of Climate Change with focus on Climate Zones in Bosnia and Herzegovina - Selma Vejzagic, Mirzeta Memisevic-Hodzic, Dalibor Ballian	711 Green Extraction and Chromatography of Carotenoid from Tomato - Mohamed Amine Ferhat, Leila Boutemtam
13 ⁴⁵ -14 ⁰⁰ 32	4765 Development of quality oil sunflower (Helianthus annuus L.) hybrids - Saeed Rauf	3915 Contact insecticidal effects of some essential oils (Citrus sinensis and Citrus limon) on Aphis fabae Scopoli (Hemiptera: Aphididae) - Ali Kayahan	4129 Assessment of soil pollution and process of distribution of heavy metal from salix alba plant - Enkelejda Kucaj	4581 Effects of living and non-living mulch applications on fruit yield and quality in organic kiwifruit production - Damla Çil, Tuğba Er, Özlem Boztepe	3333 ASSESSMENT OF IRRIGATION WATER QUALITY OF THE DAM LAKES LOCATED IN THE NORTH – WEST PART OF MARMARA REGION (TURKEY) - Cem Tokatlı	710 A convenient Solvent free Microwave Extraction of Natural Products - Mohamed Amine Ferhat, Leila Boutemtam	663 The Effect of Different Drying Methods on Antioxidant Activity of Malatya Çataloğlu Apricot Variety - Mustafa Kaplan, Sevgi Eskigün, Okan Levent
14 ⁰⁰ -14 ¹⁵ 33	4766 Enhancement of soybean (Glycine max L.) adaptability and productivity through molecular methods - Saeed Rauf	3689 Symptomatology & pathogenicity of cacao pod rot (caused by Phytophthora sp) infection in cacao (Theobroma cacao) in	608 Comparative effect of naturally synthesized biostimulants of pgpr on growth of maize crop (Zea mays) - Iram Afzal	3586 Effects of AVG and 1-MCP Treatments on Fruit Quality and Cold Storage of Apple cv. Fuji - Faruk Yavaş, Erdinç Bal	4609 A highly pathogenic Bacillus thuringiensis isolate from Tuta absoluta and its insecticidal effect on T. absoluta (Meyrick) (Lepidoptera: Gelechiidae) -	4579 Increasing number of partial resistance traits to zucchini yellow mosaic virus in one productive hybrid of squash increase resistance and stimulate	4110 ALGERIAN HERBAL MEDICINE IN THE TREATMENT OF GASTROINTESTINAL DISEASES - Nesrine Marhoune

		Cagayan Province, Philippines - Angelina Gonzales			Pervin Erdogan, Ardahan Eski, İsmail Demir, Zihni Demirbağ	theireffectiveness - Abdulbasit Aljanabi		
14 ¹⁵ -14 ³⁰	34	4767 Sesame an underutilized oil seed crops: Breeding Achievements and Future Challenges - Saeed Rauf, Yalçın Kaya	4069 Banana Bunch Top Disease (BBTD)Situation in Cagayan, Philippines - Diosa Alasaas	3788 Comparative Effect of Nitrogenous Fertilizers on Mobilization and Absorption of Phosphorus by Wheat in Saline-Sodic Soil - Muhmmad Sabir	4587 The Effects of Summer Pruning Applications of Vine Growth and Cluster Features - Fatma Türk, Bülent Köse	3422 First Report of Rhizoctonia oryzae-sativae Causing Aggregate Sheath Spot on Rice in Turkey - Filiz Ünal	770 Hepatoprotective effect of aqueous extract of Pistacia atlantica Desf on Rat's Mercury-Induced Acute Hepatotoxicity in Algeria - Benahmed Fatıha, Kerroum Fatıma, Belhouari Fatıma Zohra Hayet, Talhı Hanane, Kharoubı Omar	3636 Packaging and storage - factors that affect the quality of kulen as a fermented meat product - Nevena Gruevska
14 ³⁰ -14 ⁴⁵	35	4049 Revealing of flooding tolerance levels of soybean genotypes at the early seedling stage using morpho-physiological characters - Omar Khalid Nashat, Efe Dalli, Seda Yırmibeş, Şeküre Çulha Erdal, Nuran Çiçek, Yasemin Ekmekçi	3641 Pesticide selectivity: Comparative target-site analysis within Acari - Emre İnak	3922 Evaluation of Soilwat Model for Soil Physical Properties in the Different Land Use - Pelin Alaboz, Sinan Demir, Levent Başayığit	4687 Genic simple sequence repeats in wild Pistacia species - Hayat Topcu, Harun Karcı, Murat Güney, Salih Kafkas	3730 Adult Flight Period and Hosts of Tropinota hirta (Poda, 1761) (Cetoniidae; Coleoptera) in Çanakkale Province - Halil İbrahim Avcı, Ali Özpınar	843 Ethnobotanical survey on the use of insecticide plants in Algeria - Chorfi-Chikhi Nassima, Baya Djellout, Zenia Safia, Haddadj Fairouz, Milla Amel	748 Bioactive properties of the endemic Algerian Myrtus nivellii Batt & Trab.: Scientific approaches to the traditional uses - Rached Wahiba
14 ⁴⁵ -15 ⁰⁰	36	536 Genetic variability, association and diversity study among the sunflower genotypes at seedling stage based on different morpho-physiological parameters under polyethylene glycol induced stress - Uzma Ayaz	4108 Synergistic Aptness of Entomopathogenic Beauveria bassiana and Enhanced Diatomaceous Earth (DEBBM) to Manage Rice Weevil, Sitophilus oryzae L. (Curculionidae: Coleoptera) - Farid Asif Shaheen	657 Comparative analysis of rice performance and profitability with the System of Rice Intensification (SRI) and Traditional Practices (TP) in Ziguinchor district, Senegal -Antoine Sambou	4678 Use of SSR Markers in Strawberry Cultivars - Hayat Topcu, Harun Karcı, Muhammet Ali Gündeşli, Salih Kafkas	4614 Determination of Adult Longevity of Cotesia glomerata L. (Hymenoptera: Braconidae) on Different Diets - Ali Kürşat Şahin, Halil İbrahim Avcı, Ali Özpınar	802 Toxic activity of the entomopathogenic fungus M. anisopliae on the heartbeat of the desert locust Schistocerca gregaria (Forskål, 1775) - Haddadj Fairouz, Hamdi Sihem, Chorfi-Chikhi Nassima, Zenia Safia, Smaı Amina, Saadi Habiba, Milla Amel, Marniche Faiza, Doumandji-Mitiche Bahia	844 Assessment of Hepatoprotective Activity of Squalene Extracted from Olive Oil Lees (Amurca) on the Rat's Liver - Sana Janakat, Ghadeer Dannoun
15 ⁰⁰ -15 ³⁰	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break	
6th Ses	AGRIBALKAN-I	AGRIBALKAN-II	AGRIBALKAN-III TURKISH	AGRIBALKAN-IV TURKISH	AGRIBALKAN-V TURKISH	AGRIBALKAN-VI Poster	AGRIBALKAN-VII Poster	
15 ³⁰ -15 ⁴⁵	37	3755 COMPARISONS OF HIGH YIELDING GENETICALLY DIVERSE WHEAT LINES IN CROATIA - Valentina Spanic, Katarina Sunic, Zvonimir Zdunic, Georg Drezner	437 Productivity of chickpea (Cicer arietinum L.) by influence of some herbicides, herbicide combinations and an herbicide tank mixture - Grozi Delchev	4345 Rapid Development of Bread Wheat Lines Resistant to Warrior Yellow Rust Race (Puccinia striiformis f.sp. tritici) - Cuma Karaoğlu, Ayten Salantur, Fatih Ölmez, Emine Burcu Turgay, Gökhan Kılıç, Tansu Karadağ, Levent Genc, Melis İnalpulat	4643 Village-level change detection and future prediction of olive groves in ezine, canakkale using landsat imageries - Erdem Karadağ, Levent Genc, Melis İnalpulat	4031 Determination of Contact and Repellent Effect of Sığla Tree (Liquidambar orientalis Mill.) Storax on Tetranychus urticae Koch (Acari: Tetranychidae) -Mehmet Yalvaçlı, İsmail Kasap	4551 IN VITRO ANTIOXIDANT ACTIVITY OF THE ESSENTIAL OILS OF R. ANGUSTIFOLIA - Hamass Zerrad, Abdelhay Arakrak, Ouiam Elgaliou, Mohammed Bakkali, Laglaoui Amin	652 Phytochemical analysis, antioxidant and antimicrobial activities of Algerian Thymelaea hirsuta L. crude extract -Tigrine Chafia, Draoui Aicha, Fares Zakia, Lakache Zineb, Soumia Krımat, Mahdid Mohamed, Kameli

							A.karım	
15 ⁴⁵ -16 ⁰⁰	38	4686 Reducing the Toxic Effect of Kathon CG Using Liquid Vermicompost in <i>Pisum sativum</i> var. arvense - Duygu Aydın, Özlem Aksoy, Burcu Yuksel	438 Stability and selectivity of some herbicides and herbicide tank mixtures on durum wheat (<i>Triticum durum</i> Desf.) - Grozi Delchev	3983 Determination of phytochemicals and antioxidant capacity of edible dandelion plant (<i>taraxacum officinale</i>) collected from Kirşehir region - Fatma Ergün	3875 Comparison of Fertilizer Use Efficiency in Balkan Countries - Gökhan Unakıtan	4573 Survey of tomato bacterial diseases grown under greenhouses in mersin and new emerging bacterial disease agents - Mehmet Serin, Sümer Horuz	4033 First Report of Barley yellow dwarf virus-PAS (BYDV-PAS) in Geranium dissectum in Turkey - Havva İlbağı, W. Allen Miller	650 Phytochemical screening, phenolic content and antioxidant effects of <i>Cleome arabica</i> leaf crude extract and its different fractions -Tigrine Chafia, Tounssi Hassina, Lakache Zineb, Kameli A. Karım
16 ⁰⁰ -16 ¹⁵	39	4494 GENOME EDITING AS AN ATTRACTIVE TOOL TO ENGINEER RESISTANCE AGAINST PLANT VIRUSES - Nazia Nahid	3759 Evaluation of Phg-resistance genes in common bean cultivars in Turkey to <i>Pseudocercospora griseola</i> , the causal agent of ALS disease - Gülsüm Palacıoğlu	4692 GENOME ANNOTATION IN PLANTS USING ENSEMBL - Harun Karci, Murat Güney, Hayat Topçu, Salih Kafkas	4582 APRICOTS SAPLING PRODUCTION IN TURKEY - Mehmet Sutyemez	4479 Laboratory evaluation of entomopathogenic nematode <i>Heterorhabditis bacteriophora</i> (Rhabditida: Heterorhabditidae) on the Indian meal moth, (<i>Plodia interpunctella</i> (Hubner) (Lepidoptera: Pyralidae)) - Mürşide Yağcı, Tuğba Akdeniz Fırat, F. Dolunay Erdoğuş	4023 First Report of Plum Pox Virus on <i>Prunus serrulata</i> Kanzan in Turkey- Havva İlbağı, Buşra Baş	3726 Factors Influencing the Quality of Crude Oil Production - Demet Apaydın, Ümit Geçgel
16 ¹⁵ -16 ³⁰	40	3921 Enhanced production of secondary metabolites by <i>Rhizobium rhizogene</i> Mediated Hairy Root Induction in <i>Moringa oleifera</i> - Saddia Galani, Maleeha Soomro, Abid Azhar	3817 New Potent phytopathogenic bacteria on Banana plant: <i>Rhizobium radiobacter</i> - H.Nilüfer Yıldız	4375 Determination of different low doses gamma rays effect in fresh bean cultivars under water deficit condition - Muhsin Yıldız, Çeknas Erdiñ, Aytekin Ekincialp	3733 - Effect of Vermicompost Fertilizations on the Yield and Yield-Related Components at the Advance Selection Strawberry Lines -Mehmet Ali Saridas	3912 Reactions of some advance yield trials bread wheat genotypes to rusts and bunt - Nilüfer Akci, Kadir Akan, Selami Yazar , Ayten Salantur, Bayram Özdemir, Mehmet Emin Alyamaç, Gökhan Kılıç, Emin Dönmez, Adnan Tülek, İrfan Öztürk	803 INFLUENCE OF SACCHAROTHRIX ALGERIENSIS NRRL B-24137 ON THE EXPRESSION OF VASCULAR WILT OF CHICKPEA- Merrouche Rabiaa	3597 Effect of diferent fattening sistems on fattening performance, and clinical indications in sharri lambs -Xhelal Luma, Elena Josevska, Mitre Stojanovski
16 ³⁰ -16 ⁴⁵	41	928 Impact of climate change on apiculture in Bosnia and Herzegovina and the sub-Mediterranean climate zone with a focus on <i>Tilia tomentosa</i> (Moench.) - Selma Vejzagic, Mirzeta Memisevic-Hodzic, Dalibor Ballian	4547 Antibacterial activity of the essential oils of <i>r. Angustifolia</i> against multiresistant bacterial strains - Hamass Zerrad, Abdelhay Arakrak, Ouiam Elgaliou, Mohammed Bakkali, Laglaoui Amin	3768 In vitro propagation of a high value medicinal plant: <i>Origanum sipyleum</i> L. - Selay Doğan, Neşe Adanacıoğlu, Erdiñ Oğur	4701 Determination of cold storage performance of 'Klemantine' and 'Orlando tanjelo' hybrid CO210 mandarin genotype - Mustafa Ünlü	4724 Seeds of <i>Echinochloa</i> spp. in seedbank in rice fields in the Biga District of the Çanakkale Province, Turkey - Fikretcan Ozdener, Ahmet Uludag	4556 Abundance and dynamics of aphids collected from potato crop -Nina Bărăscu, Daniela Donescu, Victor Donescu	3598 EFFECT OF THE BREED AND DIET ON CARCASS AND MEAT QUALITY TRAITS OBTAINED FROM KOSOVO LAMBS - Xhelal Luma, Elena Josevska, Mitre Stojanovski
16 ⁴⁵ -17 ⁰⁰	42	4496 Cherry laurel (<i>P. laurocerasus</i> L.) flower characteristics, fertilization and fruit set - Melekber Sülüšoğlu Durul, Hülya Ünver	3392 Alleviation of adverse effects of salt stress on <i>Stevia rebaudiana</i> Bertoni by exogenous application of salicylic acid: morphological and physiological traits - lman Janah, Abdelhadi	4119 SOME PROPERTIES OF ACUR PICKLES PRODUCED USING SALT AND VINEGAR AT DIFFERENT CONCENTRATIONS - Yekta Gezginç, Özge İnanç	4644 Expansion of the Genetic Base by Interspecific Hybridization in <i>Capsicum annuum</i> and <i>Capsicum chinense</i> - Nihal Denli, Atilla Ata, Hatıra Taşkın	4508 SPECIES RICHNESS IN VINEYARDS DEPENDING ON AGRICULTURAL SYSTEMS - Selin Laçinkaya, Ahmet Uludag	733 Allelopathic Potential of Essential Oils from Algerian Citrus - Soumia Krımat	3876 Assessment of the effects of water stress and substrate on flowering, podding and mycorrhizae presence in faba bean legume (<i>Vicia faba</i> L.). - Yasmina Bıdai, Fatima Zohra Mendli, Amina Kadiri

		Elhasnaoui, Kamal Lamnai, Salama Aissam, Kenza Loutfi						
17 ⁰⁰ -17 ¹⁵	43	4495 Effects of Nitrogen Fertilization on lignotuber development and sprouting of <i>Arbutus unedo</i> L. - Melekber Sülüšoğlu Durul	3979 Molecular and Morphological Identification in several Thrips (Thysanoptera: Thripidae) Species in Artvin - İnci Şahin Negiş, Cengiz İkten, Levent Ünlü	3617 Hydrological Drought Analysis and Drought Hydrology - Çiğdem Gürler, Alper Serdar Anlı	3644 Investigation of Leaf Nutrient Content of Some Apricot Varieties Grafted on <i>P. microcarpa</i> Rootstock - Remzi Uğur, H. Osman Özatar, Özkan Altun, Mehmet Polat, Cafer Hakan Yılmaz	4734 PROFILE OF OLIVE GROWERS IN THE FOCUS ON WEEDS IN THE KÖPRÜBAŞI DISTRICT (MANISA, TURKEY) - Sevgi Uyar, Ahmet Uludag	4071 Promising results of field tests of 4 new alternatives for copper PPP's reduction / replacement in organic production of Oil bearing roses (<i>Rosa damascena</i>) - Stoilko Apostolov, Patar Kirov, Annegret Schmitt, Lucius Tamm, Hans-Jakob Schaerer	4525 HONEY PLANTS ECOLOGICAL ASSESSMENT IN TREBESHINA-DHEMBEL-NEMERCKE MOUNTAIN RANGE - Dhimiter Peci, Alfred Mullaj, Arsen Proko
17 ¹⁵ -17 ³⁰	44	3777 Changes in biochemical properties and postharvest quality of pomegranates (Silifke Aşısı) under modified atmosphere packaging - Ferhan Küçükbasmacı Sabır, Sevil Unal, Fatma Zehra Çil	3624 Determination of Pests (Diptera : Tephritidae) in Fruit Growing on Turkish Republic of Northern Cyprus - Murat Helvacı	3688 Anatomical, Palynological and Micromorphological Studies on <i>Cousinia aucheri</i> , an Endemic Species for Turkey - Bayram Atasagun	4443 Hydropriming affects seed germination and seedling performance in sweet corn cultivars - Sıtkı Ermiş, Güleda Öktem, Zeynep Gökdaş, İbrahim Demir		3419 PGP-activities of newly isolated rhizosphere strains for antifungal biocontrol - Tsvetana Licheva, Dilyana Nikolova, Yana Evstatieva	3670 Determination of some ampelographic characters of American grape cultivars have <i>Vitis Labrusca</i> traits Introduced from North America to Turkey - Hüseyin Çelik, Kübra Söyler Yılmaz
17 ³⁰ -17 ⁴⁵	45	3780 Effects of Postharvest UV-C Treatments on Postharvest Quality of Apricot cv. Roxana during Cold Storage - Sevil Unal, Ferhan Küçükbasmacı Sabır	4563 Assignment of Resistance Against Safflower Rust Disease (<i>Puccinia carthami</i>) in Some Oleic and Linoleic Type Safflower Genotypes Under Field Conditions - Önder Baytekin, M. İbrahim Yılmaz, Metin Babaoğlu	4519 Determination of forage quality of different cool season turf grass species and varieties - Abdullah Yazıcı, Mustafa Tan	3408 Detection of sunburn in watermelon and investigation of its insurability - Veysel Aras	4709 DETERMINATION OF REACTIONS OF SOME BEAN GENOTYPES TO BEAN CHARCOAL ROT (MACROPHOMINA PHASEOLINA) DISEASE - Sirel Canpolat	4080 Study on common winter wheat lines for resistance to <i>Puccinia triticina</i> - Vanya Ivanova	3950 Isolation and characterization of Arbuscular mycorrhizal (AM) fungi spores from date palm rhizosphere in an arid region - Oumaima Harkousse O.h, Aitboulahsen Mohamed Ait.M, Mazri Mouaad Amine, Ouahmane Lahcen, Tayeb Koussa Kt, Alfeddy Mohamed Najib
17 ⁴⁵ -18 ⁰⁰	46	4047 Accession dependent morphological and biochemical diversity in apricot cv. Teberze - Mehmet Ramazan Bozhuyuk, Sezai Ercişli	4607 The Toxicity Evaluation of Prepared Lantana camara Extract Formulation Against <i>Tuta absoluta</i> (Lepidoptera: Gelechiidae) - Pervin Erdogan, Gulay Buyukoroğlu, Betül Sever Yılmaz	4015 Consideration of Beef Cattle Barn Projects with Manure Management Planning: Çanakkale/Ayvacık Case Study - Oğuzhan Akça, Ünal Kızıl	3953 Research on Sources of Seedless and Methods of Breeding Seedless Grape Cultivars - Yahya Uray, Bülent Köse	4533 Ants (Hymenoptera: Formicidae) Associated With Aphids (Hemiptera: Aphididae) from Çardak Lagoon in the Çanakkale Province of Turkey - Şahin Kök	561 Germination Characteristics of argan Seeds - Zineb Hamani, Meriem Kaid-Harche	823 Characterization of Rhizobia from Root Nodule and Rhizosphere of <i>Vicia faba</i> in Algeria - Benselama Amel
18 ⁰⁰ -18 ¹⁵	57	4048 Fatty acid composition and diversity of grape seeds -	3994 Effects of some commonly used insecticides on Thrips		4459 Observations on the Foraging Behaviours of Bees in Two Different	4029 Determination of Contact and Repellent Effect of <i>Sığla</i> (<i>Liquidambar orientalis</i> Mill.)	4775 Effect of mycorrhizal fungus on Thiamethoxam uptake and translocation	4592 Assessment of activities promoting plant growth and tolerance to

	Muhammed Küpe, Sezai Ercişli	hawaiiensis Morgan (Thysanoptera: Thripidae) and recent status of this pest on lemons in Çukurova Region - Serkan Pehlivan		Zucchini Farming Systems - Yasemin Güler, F. Ecem Arslan, Selin Çorba, Nartjan Özden, Çiğdem Özenirler	Oil on Phytoseiulus persimilis Athias-Henriot (Acari: Phytoseiidae) -Tuncay Yardım, İsmail Kasap	on maize and respective residues on guttation - Zisis Vryzas	abiotic stress of rhizobacteria isolated from the rhizosphere of three varieties of peanut (Arachis hypogaea L.) in Morocco - Ouissale Chaghhouaoui, Driss Bouhraoua, El Galiou Ouam, Laglaoui Amin , Mohammed Bakkali, Abdelhay Arakrak
18 ¹⁵ -18 ³⁰						Insights into sunflower leaf morphogenesis: a cell cycle perspective - Nadya Agayn-Stoyanova, Grigor Zehirov, Roumiana Vassilevska-Ivanova, Yalcin Kaya, Valya Vassileva	Evaluation of antioxidant capacity and flavonoid content in annual and perennial wild Helianthus species - Nadya Agayn-Stoyanova, Roumiana Vassilevska-Ivanova, Grigor Zehirov, Valya Vassileva, Yalcin Kaya,

7 th Ses	AGRIBALKAN-I	AGRIBALKAN-II	AGRIBALKAN-III FRENCH	AGRIBALKAN-IV TURKISH	AGRIBALKAN-V TURKISH	AGRIBALKAN-VI Poster	AGRIBALKAN-VI Poster
09 ⁰⁰ -10 ³⁰	1.09.2021 WEDNESDAY	1.09.2021 WEDNESDAY	1.09.2021 WEDNESDAY	1.09.2021 WEDNESDAY	1.09.2021 WEDNESDAY	1.09.2021 WEDNESDAY	1.09.2021 WEDNESDAY
09 ⁰⁰ -09 ¹⁵		4440 Genetic characterization of some local and foreign bread wheat genotypes with molecular markers - Büşra Yürük, Behiye Banu Bilgen	3936 Chemical, biochemical and volatile profiles of saffron (Crocus sativus L.) from different growing areas of Morocco - Naim Nadia, Ennahli Said, Madani Ilham	4605 The effects of glycine betain applications on the production and quality of narince grape variety - Neval Topcu Altıncı, Seda Sucu, Rüstem Cangı, Adem Yağcı	4448 Temporal variations in the levels and quality of groundwater in the agricultural areas in menemen left bank irrigation system -Perihan Tarı Akap, Mehmet Gündüz, Ümit Alkan	3568 A research on production and problems in feed factories: The case of Diyarbakır - İpek Aslan, Cemal Budağ	607 Prospects for Engineering Cereals to fix Atmospheric Nitrogen - Iram Afzal
09 ¹⁵ -09 ³⁰		2647 Evaluating the genetic structure of some sainfoin accessions by simple sequence repeat (SSR) markers - Tuğba Sütçü, Behiye Banu Bilgen, Metin Tuna	3304 Study of the intestinal parasites of the cuff sheep ammotragus lervia at the level of the Djelfa hunting reserve - Amel Milla, Taibi Messaouda, Benatallah Amel, Safia Zenia, Smai Amina, Marniche Faiza, Haddadj Fairouz, Saadi-Idouhar Habiba, Harhoura Khaled, Aissi Miriem, Zebda Khaled, Ben Tourkia Aicha, Guerzou Ahlem, Ben Naiha Selma	4539 Changes in Chlorophyll Content and Fruit Quality in Alphonse Lavallée Grape Varieties from veraison to Ripe - Seda Sucu, Salih Bahadır Altınır	4089 SAFFRON CULTIVATION IN TURKEY - Seda Pamay, Sevinc Adiloglu, Aydin Adiloglu	4064 A study on determination of yield and plant characteristics of some dry bean (Phaseolus vulgaris L.) genotypes under Çankırı conditions - Oral Düzdemir, Mehmet Ali Şentürk	3646 Organic matter as an external factor in resistance to water stress in Reina Mora variety of bean (Vicia faba L.) - Yasmina Bidai, Fatima Zohra Mendli, Amina Kadiri, Achour Asma, Belkhdja Moulay

09 ³⁰ -09 ⁴⁵		818 Characterization of bacterial pathogens from commercially available ready to eat (RTE) salad sold at Hyderabad, Sindh Pakistan - Aijaz Soomro	4715 Contribution to the study of intestinal parasites of wild felids at Ben Aknoun and El Hamma Zoological Park, Algiers - Amel Benatallah, Taibi Messaouda, Amel Milla, Zenad Wahiba, Marniche Faiza, Lachouri Maya	4454 Determination of the growth physiology of coriander (<i>Coriandrum sativum</i> L.) In different growing environments - Banu Kadioğlu	4117 THYME CULTIVATION IN TURKEY - Seda Pamay, Sevinc Adiloglu, Aydin Adiloglu	4468 Optimization of Nanocellulose Esterification with Different Fatty Acids and Acetic Anhydride - Özlem Erinç, Hakan Erinç, Ayşe Özbey, Behiç Mert	4067 - Influence of growing conditions on growth activity in winter barley genotypes - Veselina Dobрева, Darina Valcheva
09 ⁴⁵ -10 ⁰⁰		2269 Seasonal carbon emissions and sequestration in organic rotation agroecosystems in central Lithuania - Ligita Baležentienė	4394 Distribution of <i>Nosema</i> sp (causative agent of noseosis in honey bees) in some apiaries in Algeria - Haider Yamina, Noureddine Adjlane	4536 Evaluation of macro and micro nutritional element content and soil properties of <i>Hypericum scabrum</i> and <i>Helichrysum plicatum</i> plants - Banu Kadioğlu	3621 Possible Use of Hyperaccumulator of Plants for the Remediation of Cadmium-Polluted Soils - Sema Karakaş, Rahime Altıntaş, Murat Dikilitaş	4334 Determination of yield and some plant characteristics in saffron (<i>Crocus sativus</i> L.) in Tekirdağ conditions - Yasemin Yıldız, Seviye Yaver	Drought-induced responses in roots and leaves of wheat cultivars with differential tolerance to dehydration - Anna Dimitrova, Mariyana Georgieva, Grigor Zechirov, Bianka Marinova, Valya Vassileva
10 ⁰⁰ -10 ¹⁵			3458 The prevalence of noseosis in honey bee colonies in some regions of central Algeria - Haider Yamina	4552 Bioaccumulation of Heavy Metals by Selected Some Plants Cultivated in Central and Eastern Black Sea Region Betül Bayraklı, Orhan Dengiz, Eilf Öztürk , Serkan İç		4101 The effect of storage on the texture quality of hazelnut chips produced in different formulations - Tuğba Er, Mehmet Akbulut, Hacer Çoklar	
10 ¹⁵ -10 ³⁰			4423 Milk yield composition and modeling of lactation curves of Arabian donkeys - Mohamed Aroua	4113 The effect of potassium on some physiological parameters under salt stress - Gizem Aksu, Hamit Altay	4642 Zinc Deficiency In Some Paddy Plants - Sümeyra Kir		
10 ³⁰ -11 ⁰⁰	Coffee break	Coffee break	Coffee break	Coffee break	Coffee break	Coffee break	Coffee break
8th Ses	AGRIBALKAN-I	AGRIBALKAN-II	AGRIBALKAN-III FRENCH	AGRIBALKAN-IV TURKISH	AGRIBALKAN-V FRENCH	AGRIBALKAN-VI Poster	AGRIBALKAN-VII Poster
11 ⁰⁰ -11 ¹⁵			4575 The impact of compost spreading on the quality of the lentil plant (<i>Lens culinaris</i>) on a conventional system - Maria El-Harram, Aicha Rochdi, Soufiane El-Mrini, Omar İdrissi, Mohamed El Baghdadi, Rachid Aboutayeb	3962 The effects of corn and sunflower straw added to a soil with high clay content on water holding and modulus of rupture value of soils - Hamza Negiş, Cevdet Şeker	4395 The Algerian green alga <i>Ulva lactuca</i> and its hydroethanolic extract protect against serum and erythrocyte oxidative stress induced by type 2 diabetes in rats - Labbaci Fatima Zohra, Boukourt Farida Ouda	3914 Reactions of some advance yield trials winter durum wheat genotypes to stem, leaf and yellow rusts - Kadir Akan, Nilüfer Akci, Selami Yazar, Ayten Salantur, Bayram Özdemir, Mehmet Emin Alyamaç, Gökhan Kılıç, Emin Dönmez, Adnan Tülek, İrfan Öztürk	4512 Biomaterials potential as coagulants in wastewater treatment - Khelladi Malika, Debab Abdelkader
11 ¹⁵ -11 ³⁰			3761 Effect of intercropping wheat and faba bean on biochemical parameters and mineral content of leaves in Morocco - Alfeddy Mohamed	4646 DETERMINATION OF RESISTANCE TO IRON DEFICIENCY OF SOME SUNFLOWER LINES - Güney Akinoğlu, Ahmet	3738 The effect of adding Chili on the sensory characteristics of cheese made by different coagulants Yassine Zine-Eddine, Boutoial	4449 Productivity status of agricultural lands in left bank irrigation of Menemen plain - Perihan Tarı Akap, Mehmet	4463 Antimicrobial Activity of Essential Oil of <i>Thymus numidicus</i> Poirlet - Thoraya Dahmane, Kacı Zakia, Behidj Nassima ,

			Najib, Sammama Hasnaa, Hsissou Driss, El Kaoua Mimoun	Korkmaz, Elif Boz, Ayhan Horuz, Özlem Pala	Khalid, Kzaiber Fouzia, Oussama Abdelkhalek	Gündüz, Sinan Aras, Şener Özçelik	Mebkhout Faiza
11 ³⁰ -11 ⁴⁵			4105 Fortified cake with pomegranate and orange peels powder as a functional product - Hayet Ben Haj Koubaier, Ahmed Snoussi, Moncef Chouaibi, Ameni Maayouf, Nabiha Bouzouita	4549 THE EFFECT OF ACTIVATED BENTONITE ON TOXIC IRON (Fe+2) UPTAKE IN RICE PLANT GROWN IN SAND CULTURE - Özlem Pala, Ayhan Horuz	4593 Inoculation effects of plant growth promoting rhizobacteria (pgpr) on the growth of the peanut kt-22 variety in Morocco -Ouissale Chaghouaoui, Driss Bouhraoua, El Galiou Ouiram, Laglaoui Amin, Mohammed Bakkali, Abdelhay Arakrak	4741 Effect of boron on the Berries Setting and Quality Character of Grape - Yahya Uray, Bülent Köse, Besim Karabulut	4456 Impact of alcoholic extracts of Thymus numidicus of the larval development of Tuta absoluta - Thoraya Dahmane, Kacı Zakia , Behidj Nassima, Boubkeur Sihem
11 ⁴⁵ -12 ⁰⁰			3818 Physico-Chemical and Rheological Study of Moroccan Raw Camel Milk's, Case of Beni Mellal-Khenifra Region - Chari Hassan, Otmene Bayousfi, Yassine Zine-Eddine, Abdelghani Boussetta, Meriem Kasbaji, Mehdi Mennan., Khalid Boutoal, Amine Moubarik	4368 Effects of irrigation with water from different sources on various chemical properties of the soil - Perihan Tarı Akap, Mehmet Gündüz, Şener Özçelik, Şuayip Yüzbaşı	4611 Study of new drug candidates derived from pleconarile inhibiting coxsackievirus b3 (cvb3) by molecular docking, admet, and retrosynthesis - Youness Moukhliiss, Yassine Coubi, Mohammed Bouachrine, Hamid Maghat, Abdelouahid Sbai, Tahar Lakhli		
12 ⁰⁰ -13 ⁰⁰	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH	LUNCH
13 ³⁰	CLOSING OF CONGRESS						