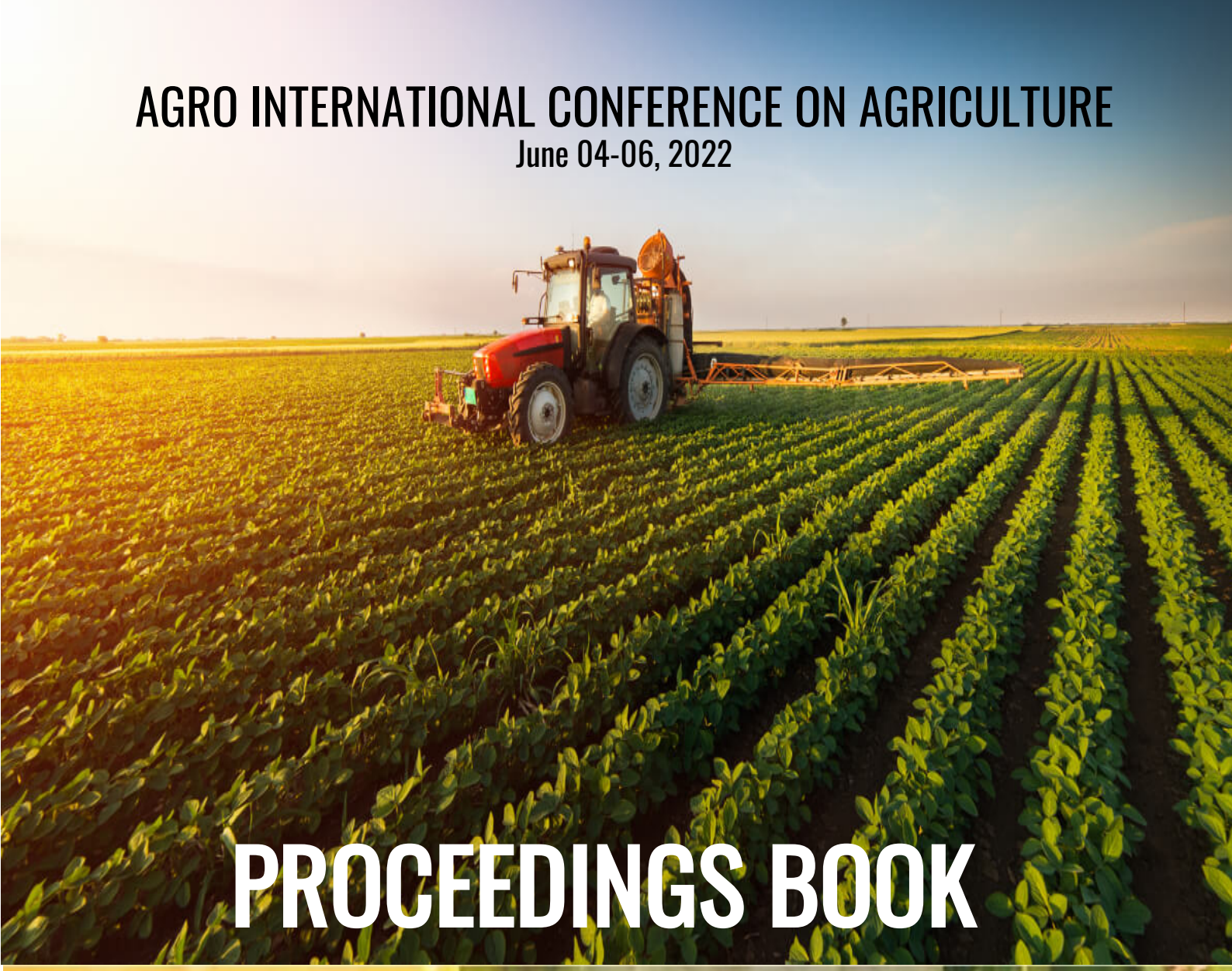
AGRO INTERNATIONAL CONFERENCE ON AGRICULTURE

June 04-06, 2022



PROCEEDINGS BOOK



EDITOR: Assoc. Prof. Elnur ALLAHVERDIYEV

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AGRO

INTERNATIONAL CONFERENCE ON AGRICULTURE

June 04-06, 2022

Azerbaijan State Agrar University
ANAS Department of Biology and Medicine
Ege University, Faculty of Agriculture
Institute of Economic Development and Social Research - İKSAD

PROCEEDINGS BOOK

Edited by

Assoc. Prof. Elnur ALLAHVERDIYEV

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CONGRESS ID

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DATE-PLACE

04-06 JUNE 2022

Baku /AZERBAIJAN

EDITOR

Assoc. Prof. Elnur ALLAHVERDIYEV

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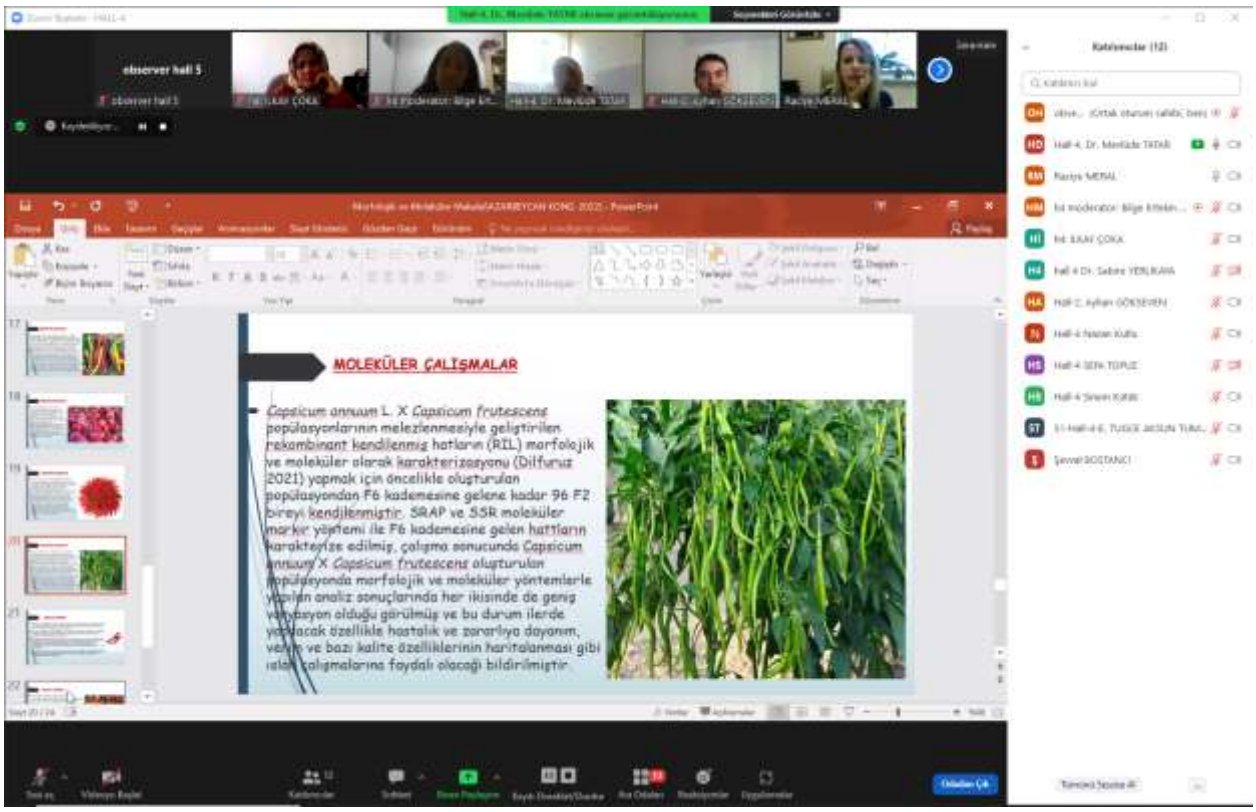


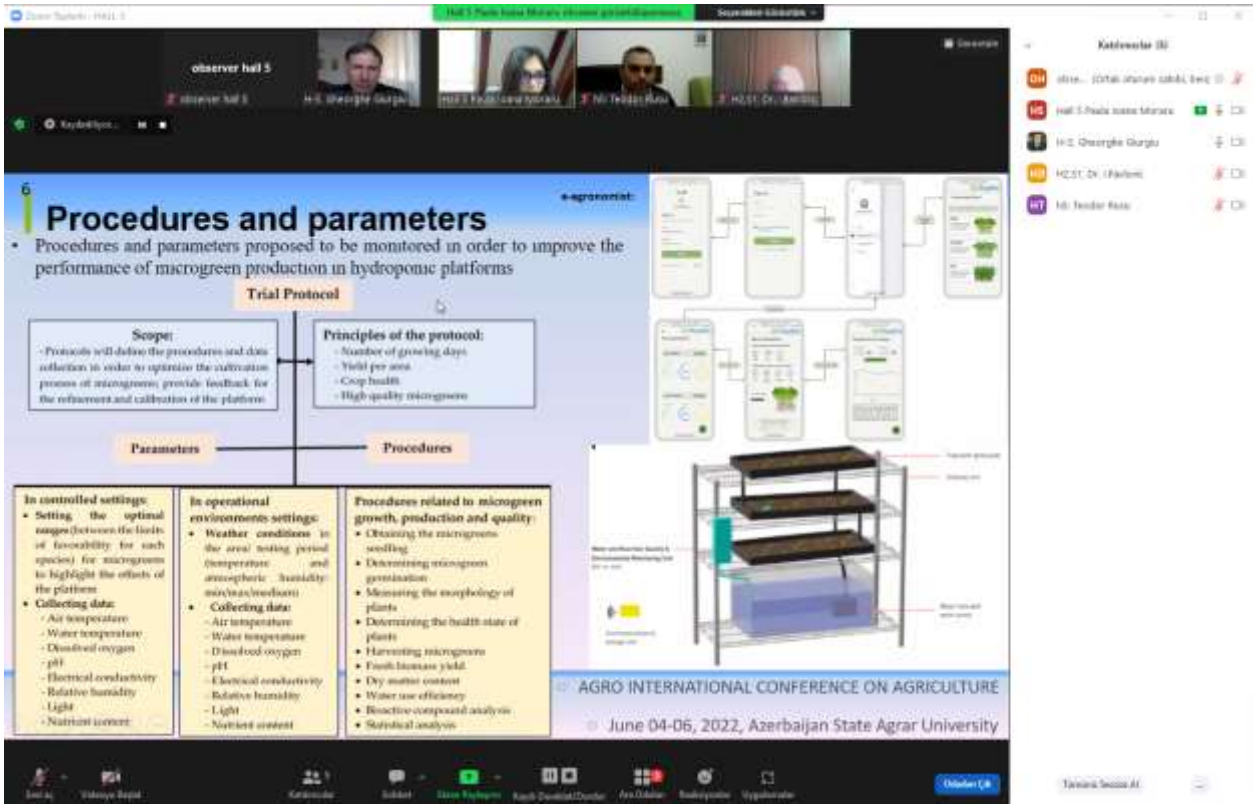



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observer hall 5
6
Procedures and parameters
e-agronomist
Procedures and parameters proposed to be monitored in order to improve the performance of microgreen production in hydroponic platforms
Trial Protocol
Scope:
Principles of the protocol:
Parameters
Procedures
In controlled settings:
In operational environments settings:
Procedures related to microgreen growth, production and quality:
AGRO INTERNATIONAL CONFERENCE ON AGRICULTURE
June 04-06, 2022, Azerbaijan State Agrar University

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Azerbaycan Devlet Agrar Üniversitesi
4-6 Haziran 2022

AGRO INTERNATIONAL CONFERENCE ON AGRICULTURE

Azerbaijan State Agrar University
June 04-06, 2022

-Opening Ceremony-

06.06.2022
Time (Baku): 10:00-11:00

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FACE TO FACE PRESENTATIONS

06.06.2022

BAKU LOCAL TIME

11:00-13:30 | Hall-1

Azerbaijan State Agrar University

HEAD OF SESSION: Dosent Allahverdiyev Elxan Rəcəf oğlu

AUTHORS	AFFILIATION	TOPIC TITLE
Dosent Allahverdiyev Elxan Rəcəf oğlu	Azərbaycan Dövlət Aqrar Universiteti	BITKI QALIQLARI TORPAQ MÜNBTLIYININ BƏRPAEDICISIDIR
Allahverdiyev Ömər	Azərbaycan Dövlət Aqrar Universiteti	"VERGİ GÜZƏŞTLƏRİNİN HÜQUQİ FUNKSİYALARININ VƏ XÜSUSİ NÖVLƏRİNİN VERGİ ÖDƏYİCİLƏRİNƏ TƏTBİQİNİN HÜQUQİ ƏSASLARININ VERGİ QANUNVERİCİLİYİNDƏ TƏHLİLİ İMKANLARI"
Gambarova P.I Nabiyeva G.R	Azerbaijan State Agrarian University	IN VITRO MICROCLONAL PROPAGATION OF STONE ROOTSTOCKS
A.A.Mekhtiev N.J.Mustafayev T.N.Askerova	Academician Abdulla Qarayev Institute of Physiology Azerbaijan State Agrarian University	BIOCHEMICAL MARKERS OF ADAPTATION OF ANIMALS TO TOXIC ANTHROPOGENIC FACTORS
H.M.Nəzərova V.Q.Verdiyeva	Azərbaycan Dövlət Aqrar Universiteti	ABŞERON YARIMADASININ NEFTLƏ MÜXTƏLİF DƏRƏCƏDƏ ÇİRKLƏNMİŞ TORPAQLARIN MÜNBİTLİK GÖSTƏRİCİLƏRİ
Hüseynova Dilkəş Bəxtiyar qızı	Azərbaycan Dövlət Aqrar Universiteti	KƏND TƏSƏRRÜFATINDA SÜNİ İNTELLEKT TEXNOLOGİYALARININ TƏTBİQİ MƏSƏLƏLƏRİNİN TƏDQİQİ
Abdiyeva Narmin Fuad gizi	Azerbaijan State Agricultural University	ADVANTAGES AND DISADVANTAGES OF BIOGAS DEVICES FOR GAS SUPPLY SYSTEMS
Əmiri Günel Sərdar Nəcəfova Gülbəniz Kamil	Azərbaycan Dövlət Aqrar Universiteti, Azərbaycan	RESPUBLİKAMIZIN QƏRB ZONASINDA YETİŞDİRİLƏN QOYUNLARIN ƏT MƏHSULDARLIĞINA MÜXTƏLİF AMİLLƏRİN TƏSİRİ
Prof. Abdıyev V.B. Cəfərzadə B.Ə. Allahverdiyev R.Z. Xanıyeva S.Z.	Bakı Dövlət Universiteti	EKSTREMAL DUZLULUQ ŞƏRAİTİNDƏ ARPA VƏ BUĞDA CÜCƏRTİLƏRİNDƏ BƏZİ FİZİOLOJİ-BİOKİMYƏVİ PROSESLƏRİN TƏDQİQİ
Osmanova Günel Rəhim qızı	ADAU, Maliyyə və iqtisadi nəzəriyyə kafedrası, baş müəllim	AQRAR SAHƏ SUBYEKTLƏRİNİN RƏQABƏT POTENSİALININ YAXŞILAŞDIRLMASI İSTİQAMƏTLƏRİ
Nigar Bayramova Ferruh Rahimov	Azerbaycan Devlet Tarım University, Gence, Azerbaycan	IMPORTANCE OF AGRICULTURE SECTOR IN AZERBAIJAN AND TURKISH ECONOMY

ONLINE PRESENTATIONS

06.06.2022

BAKU LOCAL TIME

11:00-13:30 | Session-1, Hall-6

Meeting ID: 848 7318 1316
Passcode: 060606

HEAD OF SESSION: FROILAN D. MOBO, DPA, Ph.D.

AUTHORS	AFFILIATION	TOPIC TITLE
Dr. Ehsan Rasoulinezhad	Faculty of World Studies, University of Tehran, Iran	SANCTIONS AND SOCIAL WELFARE EVOLUTION: EVIDENCE FROM THE RUSSIAN INTENSION
P. Jenifer R. Vijay K. Srinivasan A. Arunkumar N. Baskaran S. Vignesh*	National Institute of Food Technology, Entrepreneurship and Management – Thanjavur (NIFTEM-T) (An Institute of National Importance; Formerly Indian Institute of Food Processing Technology - IIFPT) Ministry of Food Processing Industries (MoFPI), Govt. of India, Thanjavur, Tamil Nadu State – 613005	ISOLATION AND SELECTION OF BIOFILM-FORMING BACTERIA FROM MEAT WASTE AND ITS BIOCONTROL STRATEGIES
Carmen Liliana BADARAU Andreea Tican Mihaela Cioloca	TransylvaniaUniversity, Brasov, Romania	THE INCIDENCE OF AUCUBA POTATO VIRUSES IN SEVERAL ROMANIAN AREAS (PRELIMINARY STUDIES)
Dr. Naseem Akhter	Shaheed Benazir Bhutto Women University, Peshawar, Pakistan	MATRIMONIAL CEREMONIES IN PESHAWAR: TRENDS AND PERCEPTIONS (FROM ISLAMIC PERSPECTIVE)
Dr. Naseem Akhter	Shaheed Benazir Bhutto Women University, Peshawar, Pakistan	HONESTY'S IMPORTANCE IN BUILDING A PEACEFUL SOCIETY (IN THE LIGHT OF ISLAMIC TRADITION)
Anjuri Srivastava Akhouri Nishant Bhanu	Dr. APJ Abdul Kalam Technical University, Lucknow, Uttar Pradesh	COLOUR DIVERSITY BETWEEN THE NUTRACEUTICAL-COLOURED WHEAT AND ANALYSED WHEAT LINE WITH HIGH ANTHOCYANIN CONTENT: A REVIEW
Clement Okechukwu Attamah Sandra Ogechi Anyanwu	Department of Agricultural Extension, University of Nigeria, Nsukka, Enugu, Nigeria	PRODUCTION PRACTICES OF SMALL-SCALE BROILER FARMERS IN ENUGU EAST SENATORIAL ZONE, OF ENUGU STATE, NIGERIA
Füsun Gülser Siyami KARACA Bulut SARĞIN	Van Yüzüncü Yıl Üniversitesi Ziraat Fakültesi Toprak Bilimi ve Bitki Besleme Bölümü, Van, TÜRKİYE	SOIL QUALITY AND SOIL QUALITY INDICES
Sharifah Norkhadijah Syed Ismail Lee Yi Jia Nor Eliani Ezani	University Putra Malaysia, Serdang, Malaysia	PLASTIC USAGE AND MANAGEMENT DURING COVID-19 PANDEMIC OF VARIOUS TYPES OF PLASTICS AMONG YOUTHS IN MALAYSIA AND ITS ASSOCIATION WITH THE LEVEL OF KNOWLEDGE AND ATTITUDE

CONTENT

CONGRESS ID	1
SCIENTIFIC COMMITTEE	2
PHOTO GALLERY	3
PROGRAM	4
CONTENT	5

PROCEEDINGS BOOK

Nilgün DOĞAN & Hakan ADANACIOĞLU ***GEOGRAPHICAL INDICATION (GI) LABELING FROM PRODUCERS' PERSPECTIVE: THE CASE OF GUMUSHANE PESTIL***	1
Nilgün DOĞAN & Hakan ADANACIOĞLU ***OPPORTUNITIES AND BARRIERS TO EXPANDING THE PRODUCTION OF ALTERNATIVE CROPS: THE CASE OF BUCKWHEAT PRODUCTION***	8
Allahverdiyev Elxan Rəcəf oğlu ***ITKI QALIQLARI TORPAQ MÜNBTLIYININ BƏRPAEDICISIDIR***	14
Mahmut Tepecik & Bihter Çolak Esetlili, Bilal Bilge ***EFFECT OF FOLIAR MAGNESIUM FERTILİZER APPLICATION ON PLANT NUTRIENT AND CHLOROPHYLL OLIVE (Olea europaea L.) PLANT S***	20
Asaf Omarov, Aygun Azizova, Siala Rustamova, Kubra Yusifova & Shalala Zeynalova, Saida Aliyeva, Kamran Karimov ***INCIDENCE RATE OF PARASITIC DISEASES AMONG KARABAKH AND DILBAZ HORSES IN AZERBAIJAN***	27
Sancar BULUT & Özcan ÇAĞLAR ***DROUGHT and STUBBLE BURNING***	33
Sait Engindeniz & Bahar Aydın Can ***EVALUATION OF FACTORS AFFECTING RURAL MIGRATION IN TURKEY IN TERMS OF AGRICULTURAL SUSTAINABILITY***	43
Şevin GÜLTEKİN & Emrah KAYA ***WHEY POWDER AS A SILAGE ADDITIVE IN GRASS SILAGE: EFFECTS ON GAS PRODUCTION, METABOLISABLE ENERGY AND ORGANIC MATTER DIGESTBILITY***	54
Aliyeva Bayli Baha & Hasanova Turkan Allahverdi ***HUMUS AS AN ECOLOGICAL EDIFICATOR OF SOILS IN LANKARAN REGION OF AZERBAIJAN***	60
Neslihan AY & Kaan HÜRKAN ***A NOVEL TECHNIQUE FOR DETECTION OF FOOD ADULTERATION IN PISTACHIO (Pistacia vera L.): HIGH RESOLUTION MELTING***	63
Elnur ALLAHVERDIYEV ***IMPACTS OF THE KARABAKH ECONOMIC REGION ON THE DEVELOPMENT OF THE NON-OIL SECTOR OF AZERBAIJAN***	69
Manafova Y.K. ***GRANULOMETRIC COMPOSITION OF GREY-BROWN SOILS IN THE SHABRAN DISTRICT***	82
Orucova N.H. & İsaqova V.Q. ***INFLUENCE OF BIOHUMUS AND SEOLITE ON THE ACTIVITY OF ENZYMES IN IRRIGATED MEADOW-GREY SOILS***	89

Oğuzhan KAYGUSUZ ***NEW LOCALITY RECORD OF MYCENA PURPUREOFUSCA (MYCENACEAE: AGARICOMYCETES) FROM RELICT ENDEMIC FOREST OF TURKEY***	**222**
Hatice AVCI & Necmettin TENİZ, Emre DEMİRER DURAK ***THE EFFECTS OF Trichoderma harzianum ON SOME FUNGI IN WHEAT GRAINS AND ON SEED GERMINATION***	**229**
Esma Nur GECER ***DETERMINATION OF VOLATILE COMPOUNDS IN ECHIUM VULGARE BY HEADSPACE-TRAP GC/MS***	**234**
Arzu UÇAR, Gonca ALAK & Muhammed ATAMANALP, Veysel PARLAK ***HEMATOLOGICAL INDEX OF Cyprinus carpio POPULATION IN KARASU (ERZURUM)***	**237**
Kübra DERİCİ, Gonca ALAK & Arzu UÇAR, Muhammed ATAMANALP ***EFFECT OF BIOFILM COATINGS ON SHELF LIFE OF FISHERY PRODUCTS***	**245**
Funda BAŞLIKAYA & Nevin DEMİRBAŞ, M Metin ARTUKOĞLU ***THE IMPORTANCE OF MICRO CREDIT FOR FOOD SECURITY: STUDIES IN THE WORLD AND IN TURKEY***	**257**
Seydi YIKMIŞ & Melikenur TÜRKOL ***ANTHOCYANINS IN NUTRITION: EFFECT ON HEALTH***	**269**
Seydi YIKMIŞ & Melikenur TÜRKOL ***FUNCTIONAL PROPERTIES OF BIOACTIVE PEPTITES***	**275**
Musayeva M.R. & Musayeva S.R. ***AZƏRBAYCANDA TUT İPƏKQURDU GENOFONDUNUN ÖYRƏNİLMƏSİ***	**280**
Elif Tuğçe AKSUN TÜMERKAN ***ALLERGEN STABILITY AND MECHANISMS OF ACTION IN THE PROCESSED SEAFOOD***	**285**
Abbas İSMAYİLOV ***AZƏRBAYCAN DÖVLƏT AQRAR UNİVERSİTETİNİN BİOTEXNOLOGİYA MƏRKƏZİNDƏ BAĞ VƏ TƏRƏVƏZ BİTKİLƏRİNİN İN VİTRO ŞƏRAİTDƏ MİKROKLONAL ÇOXALDILMASI***	**289**
Yalçın Mete COŞKUN & Bengi BAYOĞULLARI, Mustafa Tolga TOLON ***INNOVATIVE APPROACHES TO THE USE OF MICROALG EXTRACTS AS FEED ADDITIVES IN AQUACULTURE***	**295**
Mahtem MENGSTU & Alper TANER, Hüseyin DURAN ***CONVOLUTIONAL NEURAL NETWORKS IN THE PRODUCTION AND PROCESSING OF WHEAT: A SURVEY***	**299**
Abdiyeva Narmin Fuad gizi ***ADVANTAGES AND DISADVANTAGES OF BIOGAS DEVICES FOR GAS SUPPLY SYSTEMS***	**308**
İrfan ÖZGÜNLÜK ***SOLVE-FOCUSED APPROACH TO SOME VIRAL INFECTIONS DETECTED İN SANLIURFA REGION***	**311**
Ferruh RAHİMOV & Mizgin KARAHAN, Canan ABAY ***TÜRKİYE VE AZERBAYCAN'IN FINDIK PİYASASINDA ULUSLARARASI REKABET GÜCÜ: SABİT PAZAR PAYI VE AÇIKLANMIŞ KARŞILAŞTIRMALI ÜSTÜNLÜK ANALİZİ***	**316**
Füsun GÜLSER, Siyami KARACA, Bulut SARĞIN ***SOIL QUALITY AND SOIL QUALITY INDICES***	**323**

TOPRAK KALİTESİ VE TOPRAK KALİTESİ İNDEKSLERİ

SOIL QUALITY AND SOIL QUALITY INDICES

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ÖZET

Toprak, canlıların temel ihtiyaçları olan barınma ve beslenme için en önemli kaynaktır. Aynı zamanda karasal ekosistemin vazgeçilmez unsuru ve insan zaman ölçeğinde yenilenemeyen bir kaynaktır. Toprak kalitesi, toprağın hayvansal ve bitkisel üretimin sürdürülebilirliği, su ve hava kalitesinin artırılması ve insan sağlığına uygun canlı ekosistemi oluşturması için gerekli tüm eylemleri gerçekleştirme kapasitesi olarak tanımlanmaktadır. Topraklar genellikle arazi kullanımındaki ve yönetimindeki değişikliklere yavaş tepki verdiğinden, toprak kalitesindeki değişiklikleri geri dönüşü olmayan hasar oluşmadan tespit etmek su ve hava kalitesinden daha zor olabilir. Hızlandırılmış erozyon, toprak organik karbon havuzunun tükenmesi ve biyolojik çeşitliliğin kaybı, toprak verimliliğinin kaybı ve besin dengesizliği, asitlenme ve tuzlanma başlıca toprak bozunma süreçleri arasındadır. Toprak bozulma eğilimleri, onarıcı bir arazi kullanımı ve önerilen yönetim uygulamalarının benimsenmesiyle iyileştirilebilir. Tarımsal uygulamaların sürdürülebilirliğini değerlendirmek için, toprak kalitesinin çeşitli indekslerini kullanarak toprak sağlığının değerlendirilmesine ihtiyaç vardır. Toprağın kimyasal ve mikrobiyal özellikleri, tarımsal ekosistemlerde sürdürülebilir arazi yönetimini değerlendirmek için toprak kalite indeksleri yaygın olarak kullanılmaktadır. Fiziksel toprak kalitesi indeksleri genellikle havalandırma, su depolama ve hareket ile ilgiliyken, kimyasal toprak kalitesi indeksleri besin mevcudiyeti, eser metallerin fitotoksisitesi ve topraktaki pestisit hareketliliği ile ilgilidir. Toprak kalitesinin birçok biyolojik indeksi nitrojen mineralizasyonu, mikrobiyal biyokütle, mikrobiyal biyokütlenin toplam karbon oranını, toprak solunumu ve atığın ayrışma oranlarını içerir.

Anahtar Kelimeler: Toprak kalitesi, verimlilik, indeks, topraközellikleri.

ABSTRACT

Soil is the most important resource for shelter and nutrition, which is the basis of the needs of living things. It is also indispensable element of the terrestrial ecosystem and a non-renewable resource on human time scales. Soil quality is defined as the capacity of the soil to perform all necessary actions for the sustainability of animal and plant production, increasing water and air quality, and creating living ecosystem favourable to human health. Since soils generally react slowly to changes in land use and management, detecting changes in soil quality before irreversible damage can occur can be more difficult than in water and air quality. Accelerated erosion, depletion of the soil organic carbon pool and

loss of biodiversity, loss of soil fertility and nutrient instability, acidification and salinization are among the major soil degradation processes. Soil degradation trends can be ameliorated by a restorative land use and adoption of recommended management practices. To evaluate sustainability of agricultural practices, assessment of soil health using various indices of soil quality is needed. Soil chemical and microbial properties are commonly used as soil quality indices to evaluate sustainable land management in agroecosystems. Physical soil quality indices are generally related to aeration, water storage and movement, while chemical soil quality indices are related to nutrient availability, phytotoxicity of trace metals, and pesticide mobility in soils. Many biological indices of soil quality include nitrogen mineralization, microbial biomass, microbial biomass to total carbon ratios, soil respiration and rates of waste decomposition.

Keywords: Soil quality, fertility, indices, soil properties

DEFINITION OF SOIL QUALITY

Soil quality is one of the three components of environmental quality, along with water and air quality (Andrews et al., 2002). Since soils generally react slowly to changes in land use and management, detecting changes in soil quality before irreversible damage can occur can be more difficult than in water and air quality. Water and air quality are defined by the degree of pollution that has a direct impact on human and animal health or natural ecosystems (Carter et. al, 1997; Davidson, 2000) while soil quality is not limited to the degree of soil pollution (Doran and Parkin, 1994; Doran and Parkin, 1996). Soil quality is defined as the capacity of the soil to perform all necessary actions for the sustainability of animal and plant production, increasing water and air quality, and creating living ecosystem favourable to human health (Karlen et al., 1997). The term soil health originates from the observation that soil quality affects the health of humans and animals through the quality of crops (Warkentin, 1995). The website of the Natural Resources Conservation Service was declared that soil health, also named to as soil quality, is defined as the continued capacity of soil to function as an essential living ecosystem that sustains plants, animals, and humans (Moebius-Clune et al., 2016) also reported that conceptual difference between the two terms may be that soil quality comprises both inherent and dynamic properties, whereas soil health is focused on the dynamic properties. Unlike these terms, the concept of soil fertility is generally only chemically and partially functionalized in terms of providing nutrients and water to plants (FAO.,1976) (Figure 1).



Figure 1. Soil quality: assessment, indicators & management (www.isqaper-is.eu)

SOIL QUALITY INDICES

The capacity of a soil to perform its functions can be assessed by indicators of its chemical, physical or biological properties. (Bastida et al., 2006). Soil quality depends on chemical, physical or biological parameters and can be evaluated by measuring a combination of these parameters called soil quality indicators (Bongiorno, 2020). Soil quality indexes have been defined as the minimum set of parameters

that, when interrelated, provide numerical data on the capacity of a soil to carry out one or more functions (Bastida, 2008). Soil physical quality indicators include amount and stability of aggregates, susceptibility to crusting and compaction, porosity comprising of pore geometry and continuity, water infiltration rate, plant-available water capacity, aeration and gaseous exchange, effective rooting depth, soil heat capacity and the temperature regime. Relevant indicators of soil chemical quality include pH, cation exchange capacity of soil, nutrient availability; and favorable elemental balance and lack of any toxicity or deficiency. Similarly, appropriate indicators of soil biological quality are microbial biomass activity, diversity of soil fauna and flora, soil respiration, nitrogen mineralization, microbial biomass to total carbon ratios, the activity of several enzymes, absence of pathogens and pests as indicated by a soil's disease-suppressive attributes. An optimal combination of these properties affects agronomic productivity, efficient using of water, nutrients and other inputs and sustainability of management systems. Soil quality indicators show differences among soil types, climates and land uses (Ferreiro and Fu ,2016, Doğan and Gülser, 2019) (Figure 2).

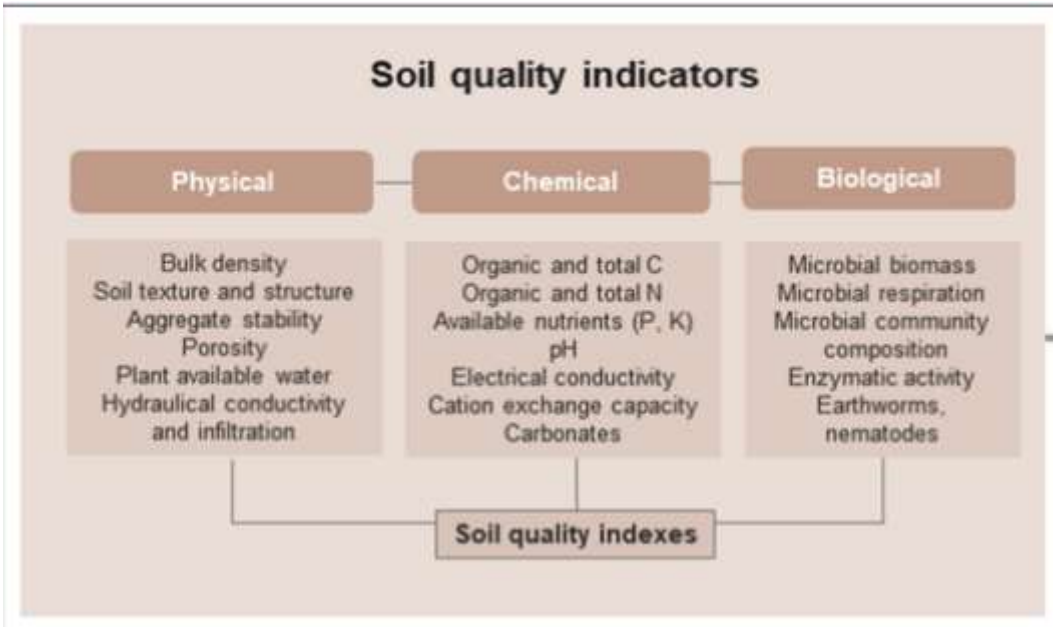


Figure 2. Soil quality indicators (Rojas 2018)

RELATIONS BETWEEN SOIL QUALITY AND SUSTAINABLE AGRICULTURE

Since many agricultural sustainability issues are related to soil quality, its assessment is very important. Thus, its assessment and the direction of change with time is a primary indice of whether agriculture is sustainable (Karlen et al., 1997; Mastro et al., 2007). Land use type and agricultural management practices affect soil quality by causing alterations in soil's physical, chemical and biological properties. As a result, a change in land productivity may occur (Islam et al, 2000; Sanchez-Maranon, et al 2002). Sustainable intensification (SI), producing more from less by reducing losses and increasing the use efficiency, is attainable only through improvement of soil quality including chemical quality or soil fertility. It was reported that soils are under threat worldwide (FAO and ITPS, 2015; Stolte et al.,2015). Erosion, decline in organic matter, contamination, sealing, compaction, decline in biodiversity, salinization, and floods and landslides are the main threats that may lead to soil degradation (European Commission, 2002; Montanarella, 2002). Ultimately, soil degradation means a disturbance of soil quality (Bone et al., 2010), which can be reversible or not. Therefore, it is important to establish conceptual linkages between soil quality indicators and soil threats. Hüttl and Frielinghaus (1994) reported that nutrient depletion and loss of soil fertility are major causes of low productivity in many developing countries. The soil organic carbon pool is a key indicator of soil quality, and an important driver of agricultural sustainability (Figure 3).

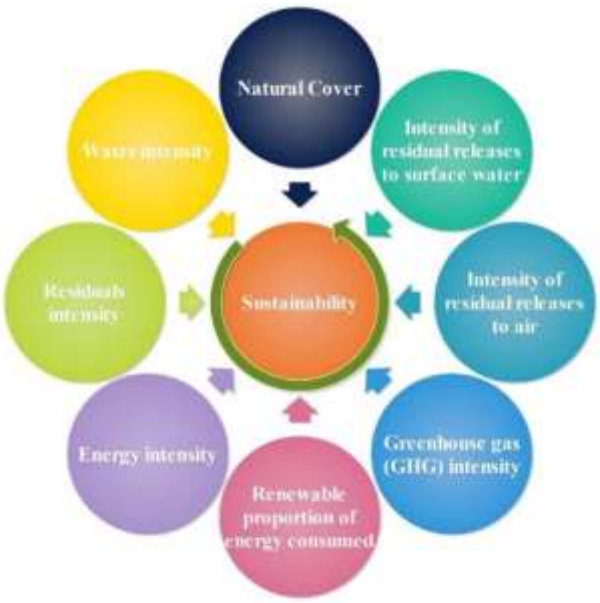


Figure 3. Considerable factors in manufacturing sustainability (Yazdi et al, 2018)

SUGGESTIONS ON PROTECTION OF SOIL QUALITY

The general decline in soil quality, caused by both natural and anthropogenic factors, leads to a decline in ecosystem services and threatens the protection of nature. Soil degradation ocur often by land misuse and soil mismanagement along with the extractive farming. Important strategies for soil quality amelioration and reducing environmental degradation risks are reducing soil erosion, creating a positive soil/ecosystem C budget, improving availability of macro (N, P, S) and micro-nutrients (Zn, Fe, Cu, Mo, Se), increasing soil biodiversity especially the microbial process; and enhancing rhizospheric processes. Additionaly retention of crop residue mulch, incorporation of a cover crop in the rotation cycle, use of fertilizer involving combination of chemical and bio-fertilizers, and elimination of soil mechanical disturbances have positive effect on protecting of soil quality (Lal, 2015).

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