

MEETCON-WORK

3. INTERNATIONAL FOOD AGRICULTURE AND VETERINARY SCIENCES CONGRESS

Editors
Prof. Dr. Burak DİK
&
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CONGRESS ID

CONGRESS TITLE

MEETCON-WORK

III INTERNATIONAL FOOD, AGRICULTURE

and

VETERINARY SCIENCES CONGRESS

DATE AND PLACE

May 14-16, 2026

KONYA, TÜRKİYE

ORGANIZATION

MEETCON CONFERENCE

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PROF. DR. BURAK DİK



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MEETCON-WORK

III. INTERNATIONAL FOOD, AGRICULTURE and VETERINARY SCIENCES CONGRESS

May 14-17, 2026 / KONYA, TÜRKİYE

CONGRESS PROGRAM

Total Accepted Article:62

Total Rejected Papers:7

Accepted Articles (Türkiye):29

Accepted Articles (Other Countries): 33

PARTICIPANT COUNTRIES (19):

Azerbaijan, Bangladesh, Nigeria, Morocco, Algeria, Pakistan, Vietnam, India, Kosovo, Bangladesh, Indonesia, India, Uzbekistan, Portugal, Russia, Iraq, Algeria, Indonesia, Slovakia

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15.05.2026 / ONLINE / SESSION-1 / HALL-1

Konya/TÜRKİYE Ankara Local Time:14:00 - 16:00

Meeting ID: 325 629 5864 **Passcode: meetcon**

HEAD OF SESSION: Kamile BAYRAK AKAY

Authors	Affiliation	Presentation Title
Asist. Prof. Dr. Sezen HARMANKAYA Dietitian Hilal ŞAHİN GÜNEŞSU	Kafkas University Kafkas University	**THE EFFECTS OF CLIMATE CHANGE ON FOOD CONTAMINATION AND NUTRITION**
Asist. Prof. Dr. Sezen HARMANKAYA Dietitian Hilal ŞAHİN GÜNEŞSU	Kafkas University Kafkas University	**TRANSFER OF MICROPLASTICS IN THE FOOD CHAIN**
DVM Zeynep KARAKAYA Prof. Dr. Seval Sevgi KIRDAR	Burdur Mehmet Akif Ersoy University Burdur Mehmet Akif Ersoy University	**ARTIFICIAL INTELLIGENCE APPLICATIONS IN THE DAIRY INDUSTRY**
DVM Zeynep KARAKAYA Prof. Dr. Seval Sevgi KIRDAR	Burdur Mehmet Akif Ersoy University Burdur Mehmet Akif Ersoy University	**ARTIFICIAL INTELLIGENCE IN FOOD SAFETY AND QUALITY CONTROL**
Kamile BAYRAK AKAY	Harran University	**POTENTIAL APPLICATIONS OF CULTURED MEAT IN THE FOOD INDUSTRY**
Kamile BAYRAK AKAY	Harran University	**EFFECT OF MICROENCAPSULATED GRAPE, OLIVE, AND OLEASTER (ELAEAGNUS ANGUSTİFOLIA L.) SEED EXTRACTS ON THE OXIDATIVE STABILITY OF SUNFLOWER OIL**

(All speakers required to be connected to the session 10 min before the session starts)
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15.05.2026 / ONLINE / SESSION-1 / HALL-2

Konya/TÜRKİYE — Ankara Local Time:14:00 - 16:00

Meeting ID: 325 629 5864 **Passcode: meetcon**

HEAD OF SESSION: Prof. Dr. Rezzan KASIM

Authors	Affiliation	Presentation Title
Özgür Can SEZER Prof. Dr. Mehmet Ufuk KASIM Prof. Dr. Rezzan KASIM	Kocaeli University Kocaeli University, Kocaeli University	**POSTHARVEST POTENTIAL OF PROPOLIS-BASED SURFACE COATING MATERIALS**
Isse Muhudin GA AL Prof. Dr. Mehmet Ufuk KASIM Prof. Dr. Rezzan KASIM	Kocaeli University Kocaeli University Kocaeli University	**PRE-HARVEST ULTRAVIOLET-C (UV-C) APPLICATIONS IN HORTICULTURAL CROPS**
Prof. Dr. Mehmet Ufuk KASIM Prof. Dr. Rezzan KASIM	Kocaeli University Kocaeli University Kocaeli University	**THE IMPACT OF INTERRUPTED NIGHT LIGHTING ON THE YIELD, QUALITY, AND NUTRITIONAL COMPOSITION OF VEGETABLES**
Halil İbrahim ÇABAK Prof. Dr. Mehmet Ufuk KASIM Prof. Dr. Rezzan KASIM	Kocaeli University Kocaeli University Kocaeli University	**IMPACT OF PRE- AND POSTHARVEST ORGANIC ACID TREATMENTS ON THE POSTHARVEST QUALITY OF HORTICULTURAL PRODUCE**
Ph.D., Burak ÖZTORNACI Eylül YILDIZ	Cukurova University Cukurova University	**GLOBAL AND TURKISH PERSIMMON MARKETS AND ORCHARD ESTABLISHMENT COST ANALYSIS**
MSc Asena POLAT Assoc. Prof. Dr. Dilek DÜLGER ALTINER	Kocaeli University Kocaeli University	**SEED TO CUP COFFEE FLAVOUR: A LITERATURE REVIEW ON SENSORY PROPERTIES**

(All speakers required to be connected to the session 10 min before the session starts)
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15.05.2026 / ONLINE / SESSION-1 / HALL-3

Konya/TÜRKİYE Ankara Local Time:14:00 - 16:00

Meeting ID: 325 629 5864 Passcode: meetcon

HEAD OF SESSION: Asst. Prof. Dr. Ömer Faruk ŞAHİN

Authors	Affiliation	Presentation Title
Asst. Prof. Dr. Ömer Faruk ŞAHİN **Assoc. Prof. Dr. Ufuk EROL** **Prof. Dr. Kürşat ALTAY**	Sivas Cumhuriyet University Sivas Cumhuriyet University Sivas Cumhuriyet University	**MOLECULAR PREVALENCE OF ANAPLASMA OVIS IN SHEEP IN MALATYA PROVINCE**
Assoc. Prof. Dr. Başak BOZTOK ÖZGERMEN	Aksaray University	**EFFECTS OF OZONATED OLIVE OIL IN MURINE EXCISIONAL WOUND MODEL**
Assist. Prof. Dr. Nezihe GÖKHAN **PhD. Dr. Hacı Bayram GÖKHAN**	Malatya Turgut Özal University Malatya Turgut Özal University	**A LITERATURE-BASED REVIEW ON THE USE OF SEAWEED IN THE TREATMENT OF HORSE WOUNDS**
Ph.D. Oğuzhan AYAR **DVM. Yağmur Tuba ÖZKAN** **DVM. Murat KORKMAZ** **Ph.D. Çağatay NUHAY** **Ph.D. Özge Yılmaz ÇAĞIRGAN**	Bornova Veteirnary Control Institute Bornova Veteirnary Control Institute Bornova Veteirnary Control Institute Bornova Veteirnary Control Institute Bornova Veteirnary Control Institute	**TRIPLE CO-INFECTION OF AVIAN POXVIRUS, STAPHYLOCOCCUS AUREUS, AND CANDIDA SPP. IN CANARİES WITH PERIORBITAL LESIONS: EVALUATION OF CLINICAL, MICROBIOLOGICAL, AND MOLECULAR FINDINGS FROM A PATHOBIOME PERSPECTİVE**
Alperen ÖZKAN **Ayşe Gülçin ÇOBAN** **Asst. Prof. Dr. Seda YAKUT**	Burdur Mehmet Akif Ersoy University Burdur Mehmet Akif Ersoy University Burdur Mehmet Akif Ersoy University	**ROLE OF ACTIVINS AND INHIBINS IN SERTOLI CELL BIOLOGY**
Muhsin KAYHAN **Rüveyda Hilal AKI** **Assoc. Prof. Dr. Duygu MUTLUAY**	Burdur Mehmet Akif Ersoy University Burdur Mehmet Akif Ersoy University Burdur Mehmet Akif Ersoy University	**CRYPTORCHIDISM IN CATS: RELATIONSHIP BETWEEN TESTICULAR HISTOLOGICAL CHANGES AND INFERTILITY**

(All speakers required to be connected to the session 10 min before the session starts)
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15.05.2026 / ONLINE / SESSION-1 / HALL-4

Konya/TÜRKİYE Ankara Local Time:14:00 - 16:00

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HEAD OF SESSION: Assoc. Prof. Dr. Turgay KABAY

Authors	Affiliation	Presentation Title
MS. Ahmet Turan ÖZTÜRK **Prof. Dr. Burak DİK**	Selcuk University Selcuk University	**INTRACELLULAR DELIVERY SYSTEMS AND THE USE OF VIRAL VECTORS IN INTRACELLULAR DELİVERY**
MS. Ahmet Turan ÖZTÜRK **Prof. Dr. Burak DİK**	Selcuk University Selcuk University	**RNA-BASED ANTIVIRAL TREATMENT STRATEGIES IN VETERINARY VIROLOGY**
M. Sc. Student Nihal Ruveyda BATTAL **Asst. Prof. Dr. Muhammed Zekeriya GÜNDÜZ** **Asst. Prof. Dr. Onur POLAT**	Bingol University Bingol University Bingol University	**A REVIEW ON SCADA SYSTEMS AND NETWORK SECURITY IN SMART GRIDS**
Assoc. Prof. Dr. Turgay KABAY	Van Yüzüncü Yıl University	**SCANNING ELECTRONIC MICROSCOPE EXAMINATION OF THE EFFECT OF DROUGHT STRESS ON ROSE PETALS**
Sardarlı Vüsalə Vahid	Azerbaijan State Agrarian University	**PRACTICAL ASPECTS OF THE TREATMENT OF NECROBACTERIOSIS IN CATTLE**
Prof. Dr. Bayramova Aynur Akif **Bagirova Aygun Khaliq** **Huseynov Isa Vusal**	Ganja State University Azerbaijan State Agrarian University Azerbaijan Ministry of Science and Education Botanical Garden	**THE TREE AND SHRUB VEGETATION OF THE MOUNTAINOUS PART OF THE KARABAKH PLATEAU IN THE CITY OF SHUSHA**
Mammadov Ramil Telman	Azerbaijan State Agrarian University	**STUDY OF THE BIOLOGICAL MANAGEMENT CHARACTERİSTICS OF OLDER CHICKENS**

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15.05.2026 / ONLINE / SESSION-1/ HALL-5

Konya/TÜRKİYE | Ankara Local Time:14:00 - 16:00

Meeting ID: 325 629 5864 Passcode: meetcon

HEAD OF SESSION: Lect. Eda BALCI

Authors	Affiliation	Presentation Title
Ph.D., Melek AKBAŞ ÜRETEN **Assoc. Prof. Dr. Dilek ÜLGER ALTINER**	Kocaeli University Kocaeli University	**THE RELATIONSHIP BETWEEN SPICES AND FLAVOR IN TURKISH CUISINE**
Sinem ERDİN	Istanbul Beykent University	**EFFECTIVENESS OF HOUSEHOLD WASHING AND PROCESSING TECHNIQUES FOR THE REDUCTION OF PESTICIDE RESIDUES IN FRUITS AND VEGETABLES**
Sinem ERDİN	Istanbul Beykent University	**CONTAMINATION IN GLUTEN-FREE FOODS: SOURCES, DETECTION METHODS, AND PREVENTION STRATEGIES**
Kadir YAVUZ **Assoc. Prof. Dr. Dilek Dülger ALTINER**	Kocaeli University Kocaeli University	**USE OF CLEAN LABEL IN NEW PRODUCT DEVELOPMENT**
Lect. Eda BALCI	Istanbul Beykent University	**THE ROLE OF PLANT-BASED FUNCTIONAL FOODS IN VEGAN NUTRITION**
Lect. Eda BALCI	Istanbul Beykent University	**THE CONTRIBUTIONS OF FERMENTED FUNCTIONAL FOODS TO HUMAN HEALTH**
Burcu DÖNMEZ **Dr. Assist. Prof. Dr. Çiğdem AŞÇIOĞLU**	Afyon Kocatepe University, Afyon Kocatepe University,	**INNOVATIVE PACKAGING TECHNOLOGIES FOR MEAT AND MEAT PRODUCTS**

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15.05.2026 / ONLINE / SESSION-1 / HALL-6

Konya/TÜRKİYE Ankara Local Time:14:00 - 16:00

Meeting ID: 325 629 5864 Passcode: meetcon

HEAD OF SESSION: Munshi Mohammad Kutub Uddin

Authors	Affiliation	Presentation Title
Munshi Mohammad Kutub Uddin	Kapotakshma Degree College,	**SEASONAL INCIDENCE AND DAMAGE SEVERITY OF MAJOR INSECT PESTS ON BORO RICE IN KHULNA AND SATKHIRA DISTRICTS OF BANGLADESH**
MOHAMMED., T LAWAL, B.A MOHAMMED, Y.	Federal University of Technology Minna.	**CHARACTERIZATION, CLASSIFICATION AND MANAGEMENT OFSOILSFORMED UNDER DIFFERENT LAND SCAPE POSITIONS IN MOKWA SOUTHERN GUINEA SAVANNA ZONE, NIGERIA FOR AGRICULTURAL PRODUCTION.**
Abdullahi Bashiru Ogeh Bright Onoriode	Federal University of Technology,	**ADOPTION OF INTELLIGENT-BASED EXTENSION SERVICES AND ITS EFFECTS ON ARABLE FARMERS' INCOME: EVIDENCE FROM PRINCIPAL COMPONENT AND BAYESIAN REGRESSION ANALYSES IN NIGER STATE**
Abdelouahed HAJJAJI Malak ES-SAFI Leila BENNANI ZIATNI Rajae BELKHOU	Sultan Moulay Slimane University Sidi Mohamed Ben Abdellah University,	**IDENTIFICATION OF TOXIN-PRODUCING FUNGI IN ANIMAL FEED: AN INTEGRATED STRATEGY, A LITERATURE REVIEW**
Aya Bouteldja1 Ali Haimoud Safia	Hassiba Benbouali University of Chlef,	**THE PREVALENCE OF DENTAL CARİES AND ITS CORRELATION WITH DİETARY HABITS IN SCHOOLCHİLDREN İN ALGERİA (CHLEF REGİON)**
HARUNA ALIYU	Umaru Musa Yar'adua University,	**PHYTOCHEMICAL ANALYSIS AND ANTIMICROBIAL ACTIVITY OF GUAVA LEAVES (PSIDIUM GUAJAVA L)**
Meerab waseem Wafa Majeed Ayesha Muhammad Saad Tariq	University of Agriculture, Faisalabad, Pakistan.	**COMPARATIVE EFFICACY OF COMFREY & GINGER RICH EXTRACT OINTMENT VERSUS PIROXICAM GEL IN REDUCING LOW BACK PAIN: A RANDOMIZED CONTROLLED TRIAL**

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15.05.2026 / ONLINE / SESSION-2 / HALL-7

Konya/TÜRKİYE | Ankara Local Time:15:00 - 17:00

Meeting ID: 325 629 5864 Passcode: meetcon

HEAD OF SESSION: Dr. Rajesh KUMAR

Authors	Affiliation	Presentation Title
Vu Thi Hoa	Nha Trang University	**FACTORS INFLUENCING THE INTENTION TO USE FUNCTIONAL FOODS AMONG YOUNG CONSUMERS IN VIETNAM**
Ms. Khushbu SHARMA **Dr. Kanchal GUPTA**	School of Law, UPES, Dehradun, India	**FORENSIC SCIENCE AND CRIMINOLOGICAL INSIGHTS: TRANSFORMING CRIMINAL INVESTIGATION**
Dr. Rajesh KUMAR	School of Law, UPES, Dehradun, India	**PRIVACY AND PROTECTION OF BIG DATA VIS-À-VIS ARTIFICIAL INTELLIGENCE: A CRITICAL ANALYSIS**
Shqiprim JASHARİ	University “Kadri Zeka,”	**THE DIGITAL CONSUMER AND ITS IMPORTANCE ON SOCIAL MEDIA: A CASE STUDY OF THE RC COLA BRAND**
Mizanur RAHMAN	Science and Technology University Gopalganj	**GEOPOLITICAL AWARENESS AMONG YOUTH: IMPLICATIONS FOR NATIONAL SECURITY AND FOREIGN POLICY**
Nehayatul NAJWA **Hendri Hermawan ADİNUGRAHA**	UIN K.H. Abdurrahman Wahid Pekalongan	**ACCOUNTING AS AN INCLUSIVE FINANCIAL INSTRUMENT IN THE DIGITAL AGE**

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15.05.2026 / ONLINE / SESSION-2 / HALL-8

Konya/TÜRKİYE | Ankara Local Time:15:00 - 17:00

Meeting ID: 325 629 5864 Passcode: meetcon

HEAD OF SESSION: Meeta SAXENA

Authors	Affiliation	Presentation Title
Meeta SAXENA	Sophia College for Women	**STAIN REMOVAL EFFICIENCY OF TiO_2 NANOPARTICLES**
Dr. Ishwar MITTAL Dr. AARTI Dr. Rosy DHALL MIKUL	Maharshi Dayanand University	**HOW PRODUCT AND SERVICE QUALITY SHAPE BANK REPUTATION**
Gayupova Saodat XAMİDOVNA Raxmanova Dilfuza UCHKUNOVNA	Teacher of the Chirchik State Pedagogical University	**PSYCHOLOGICAL DEVELOPMENT OF PERSONAL CREATIVITY MECHANISMS**
Farheen AZAD Bibhu Prasad PANDA Humaira FAROOQİ	ool of Pharmaceutical Education and Research, Jamia Hamdard,	**PRODUCTION OF GAMMA POLYGLUTAMIC ACID (Γ-PGA) FROM GLYCINE MAX FERMENTATION USING BACILLUS SUBTILIS**
OJELERE, Sekinat Aina	Federal University Of Agriculture, Abeokuta Ogun State	**GROWTH PARAMETERS OF TWO TROPICAL GRASSES AS INFLUENCED BY MANURE TYPE**
Mohammed TIJJANI Makinde Joseph KOLAWOLE	Federal University of Technology Minna	**THE IMPACT OF PROJECT MANAGER'S SKILLS ON A SUCCESSFUL CONSTRUCTION PROJECT CASE STUDY NIGER STATE**
Mohammad A. Zuru A. A. Shuaibu I. M Hassan N. M. Garga M. A.	Usmanu Danfodiyo University	**ENERGY-EFFICIENT PRODUCTION AND VALIDATION OF COMMERCIAL GRADE COMPRESSED BIOGAS (CBG)**
Salami, Olufunmilayo O. Oyedokun, Esther O. Akanbi, I. O. Aluko, Olayemi I.	Crawford University	**PREVALENCE OF URINARY TRACT INFECTIONS IN SYMPTOMATIC AND ASYMPTOMATIC PREGNANT WOMEN: CLINICAL SYMPTOMS AND EXAMINATION FINDINGS**

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15.05.2026 / ONLINE / SESSION-2 / HALL-9

Konya/TÜRKİYE | Ankara Local Time:15:00 - 17:00

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HEAD OF SESSION: Abdelkader BOUAZZA

Authors	Affiliation	Presentation Title
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Sandra MATOS Beatriz GOMES	University of Minho	**INFLUENCE OF SHRINKING PARAMETERS USED ON VALIDATION OF CRITICAL CONFIGURATIONS OF THIN WALL CROSSLINKED POLYOLEFIN TUBES**
Anastasia ALEXANDROVA Kontareva E. Pustovalova M. Leonov S. Merkher Y.	Moscow Institute of Physics and Technology,	**NANOPARTICLE'S ENCAPSULATION AS A MARKER FOR LEADING CELLS IN COLLECTIVE MIGRATION OF BREAST CANCER CELLS**
Luma khairy H. Shaymaa Saady LAFTA	University of Baghdad,	**THE PHYSICOCHEMICAL AND ORGANOLEPTIC PROPERTIES OF PUMPKIN SEED OIL INCORPORATED WITH SOUR CREAM PRODUCT**
Abdelkader BOUAZZA	University of Tiaret	**ANALYZING THE IMPACT OF PLASMA DISCHARGE PARAMETERS FOR DEPOSITION OF THIN FILMS**
Rismen SINAMBELA	Magister Teknik Universitas Kristen	**ANALYSIS OF ONE OPERATOR'S 5G SIGNAL QUALITY DATA DRIVE TEST RESULTS IN PONDOK INDAH AND SCBD SENAYAN JAKARTA**
JÁN DUPLÁK Samuel MIKULÁŠKO Darina DUPLÁKOVÁ Maryna YEROMINA	Technical University of Kosice	**PRESENTATION OF THE GOALS AND PARTIAL RESULTS OF THE RESEARCH PROJECT ENTITLED RESEARCH AND IMPLEMENTATION OF A PROTOTYPE ROBOTIC WORKPLACE FOR THE CREATION OF BASAL DENTAL IMPLANTS BY METHODS OF ADVANCED MACHINING**

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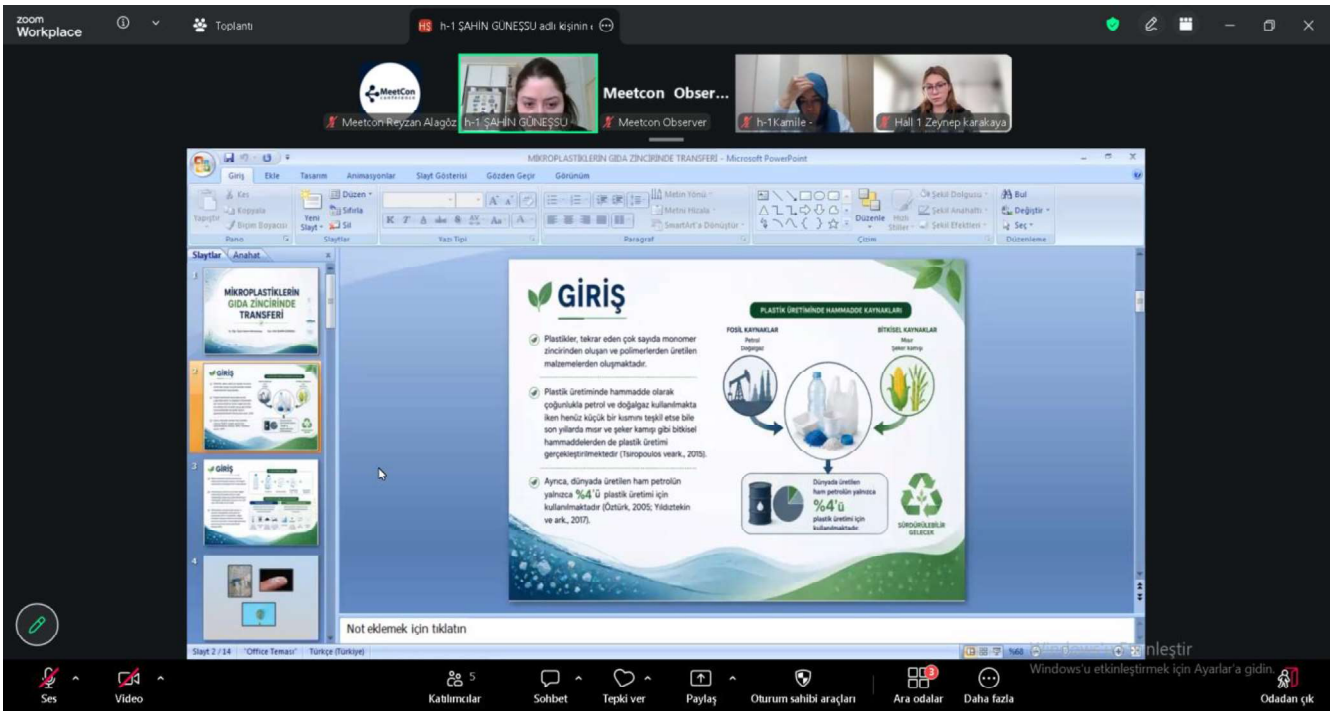




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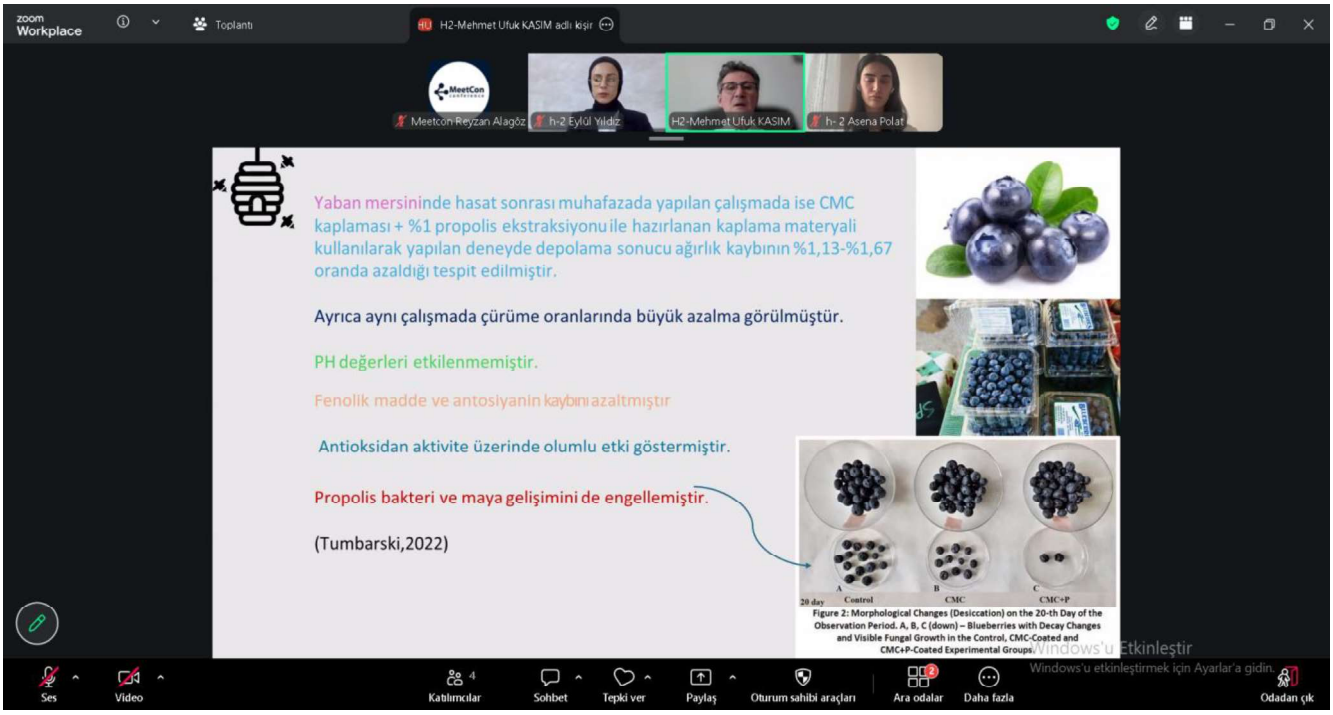




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Osmanbey Kampüsü Mardin Yolu Üzeri 20.Km. Şanlıurfa
Telefon No.:+414(318)3000 Faks No:+414(318)3000
e-posta:abiz@harran.edu.tr İnternet Adresi:https://harran.edu.tr/akademik/fakulteler/fen-
Kep Adresi:harranuniversitesi@hs01.kep.tr

Bilgi İçin: Ayşe BİZ
Şef
Telefon No.: 3551

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GLOBAL AND TURKISH PERSIMMON MARKETS AND ORCHARD ESTABLISHMENT COST ANALYSIS

Ph.D., Burak ÖZTORNACI
Cukurova University, Department of Agricultural Economics, Adana, Türkiye
ORCID ID: https://orcid.org/0000-0001-7675-419X

Eylül YILDIZ
Cukurova University, Department of Agricultural Economics, Adana, Türkiye
ORCID ID: https://orcid.org/0009-0001-7455-3279

ABSTRACT

Persimmon (*Diospyros kaki* L.) production has expanded rapidly in recent decades. Demand has increased due to changing consumption patterns and interest in healthy foods. This study examines the persimmon market at global and national levels. It also evaluates orchard establishment costs in Türkiye. The analysis is based on secondary data from FAO and TÜİK. The period covers 2000–2024 for global trends and 2004–2024 for Türkiye. Descriptive statistics are used to assess production, area, yield, prices, and trade. Real prices are calculated using the agricultural producer price index. Orchard establishment cost is estimated on a per decare basis using field-level data. Results show that global production increased from about 2.4 million tons to over 5.0 million tons. Growth is driven mainly by area expansion. Yield remains relatively stable. Production is concentrated in a few countries. China dominates global supply. Trade patterns are asymmetric. Spain leads exports, while Russia and Vietnam are major importers. Türkiye shows strong production growth. Output increased more than eightfold. Cultivated area and yield improved over time. However, export performance remains limited. Exports are concentrated in nearby markets. Product diversification is weak. Nominal prices increased sharply, but real price gains are modest. The estimated orchard establishment cost is 55,315 TL per decare. Initial investment is high. Fixed costs are significant. Profitability depends on long-term yield and price stability. The findings indicate a structural imbalance. Production capacity expands faster than market integration. Policy efforts should focus on export diversification, value-added processing, and productivity improvements. These measures can enhance competitiveness and long-term sustainability in the persimmon sector.

Keywords: Persimmon, agricultural markets, production dynamics, cost analysis, Türkiye.

INTRODUCTION

Persimmon (Diospyros kaki L.) is a globally important fruit crop. Its origin is East Asia, especially China. Production has expanded beyond its native region over time (FAO, 2026). Demand has increased due to changing dietary preferences. Consumers show growing interest in healthy and functional foods. Persimmon fits this trend because of its nutritional and bioactive properties (Özbucak, 2022).

Global persimmon production shows a clear upward trend. Total production exceeded 5 million tons in recent years. This reflects both area expansion and stable productivity patterns (FAO, 2026). Production is highly concentrated. China dominates global supply. Other major

producers include Korea, Japan, Brazil, and Türkiye (FAO, 2026). This concentration creates structural features in the market. Supply shocks in key regions can affect global availability.

Trade patterns are uneven. Some countries specialize in exports. Others depend on imports. Spain and Azerbaijan are leading exporters. Russia, Vietnam, and Germany are major importers (FAO, 2026). These flows indicate segmentation between production and consumption regions. Market access and product form play a role. Fresh and processed products follow different trade channels.

Türkiye has emerged as an important producer. Production increased significantly over the last two decades. Output rose from about 17 thousand tons in the early 2000s to over 140 thousand tons recently (TÜİK, 2026). Cultivation expanded rapidly. Orchard area and tree numbers increased at a high rate. Yield per tree also improved over time. This indicates both extensification and intensification. Similar findings suggest that agronomic practices such as cover crops can significantly improve yield and fruit quality (Macit et al., 2020).

Production is regionally concentrated. The Mediterranean region leads production. Provinces such as Adana, Mersin, and Denizli dominate output. Climatic suitability explains this pattern. Warm temperatures and long growing seasons support yield. However, regional concentration also creates vulnerability. Local shocks can affect national supply.

Despite strong production growth, export performance remains limited. Türkiye exports mainly to Middle Eastern markets. Penetration into European markets is weak. Product form is also important. Processed products such as dried persimmon have higher export value. However, their share remains limited. This indicates a gap between production potential and market integration.

Production economics is another key issue. Orchard establishment requires high initial investment. Costs include seedlings, irrigation systems, labor, and inputs. These are mostly fixed in the short run. Profitability depends on long-term returns. Yield performance and price dynamics determine economic viability. Therefore, cost analysis is essential for investment decisions.

Previous studies focus on technical aspects of production. Storage, drying, and quality characteristics have been widely examined (Koyuncu et al., 2005; Tülek & Demiray, 2013). Pest management and agronomic practices are also studied (Elekcioğlu, 2019; Demirel, 2023). Nutritional and biochemical properties receive attention as well (Özbucak, 2022). However, market structure and cost analysis are less studied together.

This study addresses this gap. It examines the persimmon market at global and national levels. It also evaluates orchard establishment costs in Türkiye. The analysis combines production, trade, and cost dimensions. This integrated approach provides a more complete perspective. It is relevant for producers, investors, and policy makers.

CONCEPTUAL FRAMEWORK

This study is built on a production–market–cost nexus. Persimmon markets are shaped by biological production processes, spatial concentration, and economic constraints. These elements interact. They determine supply dynamics, price formation, and investment decisions.

Agricultural production differs from industrial production. Adjustment is slow. Biological lags limit short-run response. Orchard crops require several years to reach full productivity. This creates rigidity in supply (FAO, 2026). Producers cannot respond immediately to price signals. As a result, short-run supply elasticity is low.

Production can be expressed as a function of key inputs:

$$Q=f(A,Y,T)$$

where Q is output, A is cultivated area, Y is yield, and T represents technology. Area expansion reflects long-term decisionsYield depends on agronomic conditions. Nutrient dynamics such as nitrogen and phosphorus availability also play a key role in plant growth and productivity (Erbay et al., 2022). Technology affects both efficiency and stability.

In perennial crops, yield variability plays a central role. Reproductive processes such as pollen viability are also sensitive to storage conditions and temperature, affecting fruit set and yield stability (Özcan & Bükücü, 2020). Climate, pests, and management practices affect output. Empirical studies show that quality and yield are sensitive to storage, temperature, and biological conditions (Koyuncu et al., 2005; Tülek & Demiray, 2013). This introduces uncertainty into supply. Yield shocks cannot be easily offset in the short run.

Market structure is another key dimension. Global persimmon production is concentrated in a few countries. This creates asymmetry. A limited number of producers control a large share of supply (FAO, 2026). In such systems, shocks in dominant regions propagate globally. Trade flows reflect this structure. Export-oriented countries differ from production-oriented ones.

Price formation follows basic supply–demand interaction. However, in agricultural markets, adjustment is incomplete. Prices respond faster than quantities. This leads to volatility. When supply contracts, prices increase. When supply expands, price declines may be limited. This asymmetry affects producer income and consumer access.

Investment decisions depend on cost structures. Orchard establishment involves high initial costs. These include fixed and variable components. Total cost can be expressed as:

$$TC=FC+VC$$

where TC is total cost, FC is fixed cost, and VC is variable cost. Fixed costs include land, irrigation systems, and infrastructure. Variable costs include labor, inputs, and maintenance. In perennial systems, fixed costs dominate in early stages.

Profitability depends on long-term returns:

$$\Pi=TR-TC$$

where Π is profit and TR is total revenue. Revenue depends on yield and price. Both are uncertain. Therefore, investment decisions involve risk. Producers evaluate expected returns over the economic life of the orchard.

At the national level, production growth does not guarantee export success. Market access, product form, and logistics matter. Türkiye shows strong production growth but limited export diversification. This reflects structural constraints beyond production.

The conceptual framework integrates three layers. First, biological production constraints limit short-run adjustment. Second, market concentration shapes global trade and price

dynamics. Third, cost structures determine investment feasibility. These layers interact. Together, they explain observed patterns in persimmon markets.

This framework guides the empirical analysis. It links production trends, trade structure, and cost calculations. It also provides a basis for interpreting results in terms of efficiency, risk, and market integration. The framework implies a partial equilibrium setting, where supply adjustment is constrained by biological lags and fixed capital structure.

METHODOLOGY

This study uses a quantitative and descriptive analytical approach. The objective is to evaluate the persimmon market at global and national levels and to estimate orchard establishment costs in Türkiye. The analysis is based on secondary data and cost calculations.

The dataset consists of official statistics and documented records. Global data are obtained from the Food and Agriculture Organization (FAO). National data are obtained from the Turkish Statistical Institute (TÜİK). These sources provide consistent time series on production, area, yield, prices, and trade.

The study covers the period 2000–2024 for global analysis and 2004–2024 for Türkiye. Variables include cultivated area, production quantity, yield, producer prices, export–import volumes, and tree numbers . Additional information is derived from previous scientific studies on persimmon production and post-harvest processes (Koyuncu et al., 2005; Tülek & Demiray, 2013; Özbucak, 2022).

The analysis is structured in three stages. First, global production and trade dynamics are examined. Second, national production patterns in Türkiye are analyzed. Third, orchard establishment costs are calculated.

Descriptive statistics are used to evaluate trends. Time series are analyzed to identify growth patterns. Percentage changes are computed to measure long-term dynamics. Comparative analysis is applied to assess Türkiye's position relative to other countries.

Production indicators are calculated using standard relationships. Yield is defined as:

$$\text{Yield}=\text{Production}/\text{Area}$$

This measure allows comparison across time and regions. Similarly, productivity per tree is calculated by dividing total production by the number of fruit-bearing trees.

Nominal producer prices are adjusted to obtain real prices. Real price is calculated using the agricultural producer price index (PPI, base year 2020=100). The formula is:

$$\text{Real Price}=(\text{Nominal Price}/\text{PPI})*100$$

This adjustment removes inflation effects. It allows consistent comparison over time. Real price trends are used to evaluate market incentives for producers

Export and import data are analyzed using country-level comparisons. Major exporting and importing countries are identified. Trade concentration is assessed descriptively. The analysis focuses on market structure rather than econometric estimation.

Türkiye’s trade performance is evaluated in terms of destination markets and product form. Export diversification is assessed based on the distribution of trade partners

Orchard establishment cost is calculated on a per decare basis. The cost structure includes both variable and fixed components. Variable costs consist of labor, machinery, seedlings, irrigation systems, and inputs. Fixed costs include land rent and administrative expenses.

Total establishment cost is calculated as:

$$TC=VC+FC$$

The cost data are based on field-level calculations from a representative orchard in Mersin (Tarsus region). All costs are expressed in Turkish Lira (TL) for the year 2026.

The analysis assumes that establishment costs are incurred once. These costs are treated as long-term investment. Economic evaluation is based on their contribution over the orchard’s productive life.

The study relies on aggregated annual data. Seasonal variations are not captured. Yield variability within regions is not fully reflected. Cost calculations are based on a representative case. Therefore, results should be interpreted as indicative rather than exact.

Despite these limitations, the dataset provides a consistent basis for analyzing production trends, market structure, and cost dynamics.

RESULTS

Global Persimmon Market

Global persimmon production shows a steady upward trend. Total output increased from about 2.4 million tons in 2000 to over 5.0 million tons in 2024. This represents more than a twofold increase. Expansion is driven mainly by area growth rather than yield improvements.

Cultivated area expanded significantly over time. Global area increased from approximately 552 thousand hectares to over 1.2 million hectares. In contrast, yield remained relatively stable. Average yield fluctuated around 4 tons per hectare. This indicates that production growth is largely extensive.

Production is highly concentrated. China dominates global supply by a large margin. Other countries such as Korea, Japan, Brazil, and Türkiye contribute smaller shares. This concentration implies structural dependence on a few producing regions.

Trade patterns reflect this structure. Spain is the leading exporter. Azerbaijan and China also play important roles. On the demand side, Russia, Vietnam, and Germany are major importers . Export-oriented production differs from domestic consumption-oriented systems. China, despite its dominance in production, exports relatively less. A large share is absorbed by domestic demand.

Producer prices vary widely across countries. High-income countries tend to have higher producer prices. Australia and Japan report the highest levels. Lower-cost producers such as Uzbekistan and Spain have lower prices. This variation reflects differences in quality, market positioning, and cost structures.

Persimmon Production in Türkiye

Türkiye shows strong growth in persimmon production. Output increased from about 17 thousand tons in 2004 to over 140 thousand tons in 2024. This represents a rapid expansion compared to the global average.

Cultivated area expanded sharply. Area increased from around 18 thousand decares to over 85 thousand decares. This indicates a strong investment trend in orchard establishment. Tree numbers also increased substantially. Both fruit-bearing and non-bearing trees grew over time.

Yield per decare improved. It increased from about 929 kg/da to 1,665 kg/da. Yield per tree also increased. This suggests improvements in management practices and orchard maturity.

Production is regionally concentrated. The Mediterranean region dominates. Adana is the leading province, followed by Denizli and Mersin. This spatial concentration reflects climatic advantages.

Price dynamics show strong nominal increases. Producer prices rose from about 1 TL/kg to over 23 TL/kg between 2010 and 2024. However, real price increases are more limited. After adjusting for inflation, the increase is modest. This suggests that part of the nominal increase is driven by inflation rather than market fundamentals.

Trade Performance of Türkiye

Türkiye's export structure is limited. Exports are concentrated in a few markets. The Middle East dominates as the main destination. The United States appears as a niche market, mainly for dried products.

Export volumes remain relatively small compared to production capacity. This indicates underutilization of export potential. Product form plays a role. Fresh exports dominate, while processed products remain limited.

Imports are minimal. Türkiye imports mainly from Azerbaijan. This suggests that domestic production largely satisfies internal demand.

Orchard Establishment Cost

The estimated orchard establishment cost is high. Total cost is calculated at 55,315 TL per decare . Variable costs account for the largest share. Seedlings and irrigation systems are the main cost components.

Fixed costs are also significant. Land rent and administrative expenses contribute to total cost. Establishment cost represents an initial investment. It is incurred once but affects long-term profitability.

The cost structure implies a barrier to entry. High initial investment may limit small-scale producers. However, long-term returns can compensate for initial costs. Profitability depends on yield stability and price levels.

Table 1. Orchard Establishment Cost for Persimmon (TL per decare, 2026)

Cost Components	Cost (TL/da)
Variable Costs	
Machinery Power	2,000
Labor Cost	3,000
Seedlings	13,000
Irrigation System	10,000
Fertilizer and Pesticides	5,000
Working Capital Interest	8,918
Total Variable Costs	41,918
Fixed Costs	
General Administrative Costs	1,397
Land Rent	12,000
Total Fixed Costs	13,397
Total Establishment Cost	55,315

Note: Cost values are based on field data from a representative orchard in Mersin (Tarsus), 2026.

Synthesis of Findings

Three main patterns emerge. First, global production growth is driven by area expansion. Yield remains stable. Second, Türkiye shows rapid growth in both area and production. Third, export performance lags behind production capacity.

These findings indicate a structural imbalance. Production capacity increases faster than market integration. Cost structures further shape investment decisions. Together, these factors define the current state of the persimmon market.

CONCLUSION AND DISCUSSION

This study examines the persimmon market at global and national levels and evaluates orchard establishment costs in Türkiye. The results reveal clear structural patterns.

Global production increased steadily over time. Growth is driven mainly by area expansion. Yield remains relatively stable. This indicates limited productivity gains. Production is concentrated in a few countries. China dominates supply. This creates structural dependence. Supply shocks in key regions can affect global markets (FAO, 2026).

Trade structure is asymmetric. Some countries specialize in exports. Others rely on imports. Spain and Azerbaijan lead exports. Russia and Vietnam lead imports. China produces the most but exports less. Domestic consumption absorbs a large share. This limits its role in global trade.

Türkiye shows strong production growth. Area, output, and yield increased rapidly. This reflects both expansion and improved management. Production is concentrated in the Mediterranean region. Climatic advantages explain this pattern. However, regional concentration increases exposure to local risks.

Export performance remains weak relative to production capacity. Türkiye exports mainly to nearby markets. Market diversification is limited. Processed products have higher value but remain underdeveloped. This creates a gap between production potential and export performance.

Price analysis shows nominal increases. However, real price gains are modest. Inflation explains a large part of the increase. This reduces real income gains for producers. Price incentives alone may not sustain long-term expansion.

Cost analysis highlights high initial investment. Orchard establishment requires significant capital. The estimated cost exceeds 55,000 TL per decare . Fixed costs are substantial. This creates entry barriers. Small producers may face constraints. However, long-term returns can offset initial costs if yield and prices remain stable.

These findings can be interpreted within a structural framework. Production expands, but market integration lags. Yield remains stable, but area increases. Costs are high, but returns depend on long-term performance. This creates a system with growth potential but structural limitations.

From a policy perspective, several implications emerge. First, export diversification is necessary. Access to high-value markets should be improved. Second, processing capacity should be expanded. Dried and value-added products can increase export revenue. Third, productivity improvements should be prioritized. Yield growth can reduce reliance on area expansion. Fourth, financial support mechanisms may be needed. High establishment costs require long-term financing options.

In conclusion, the persimmon sector shows strong growth potential. Türkiye has a competitive production base. However, structural constraints limit its full development. Addressing these constraints is essential for improving market performance and long-term sustainability.

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