

JOURNAL OF AGRICULTURAL SCIENCES

TARIM BİLİMLERİ DERGİSİ

ANKARA UNIVERSITY FACULTY OF AGRICULTURE

e-ISSN 2148-9297



Year 23

Volume 29

Issue 03

Ankara University
Faculty of Agriculture

JOURNAL OF AGRICULTURAL SCIENCES

TARIM BİLİMLERİ
DERGİSİ

e-ISSN: 2148-9297

Ankara - TÜRKİYE



Product Information

| | |
|------------------------------|---|
| Publisher | Ankara University, Faculty of Agriculture |
| Owner (On Behalf of Faculty) | Prof. Dr. Hasan Huseyin ATAR |
| Editor-in-Chief | Prof. Dr. Halit APAYDIN |
| Journal Administrator | Salih OZAYDIN |
| Library Coordinator | Dr. Can BESIMOGLU |
| IT Coordinator | Lecturer Murat KOSECAVUS |
| Graphic Design | Ismet KARAASLAN & Ayda ALACA |
| Date of Online Publication | 19.09.2023 |
| Frequency | Published four times a year |
| Type of Publication | Double-blind peer-reviewed, widely distributed periodical |
| Aims and Scope | JAS publishes high quality original research articles that contain innovation or emerging technology in all fields of agricultural sciences for the development of agriculture. |
| Indexed and Abstracted in | Clarivate Science Citation Index Expanded (SCIE) Elsevier-Scopus TUBITAK-ULAKBIM-TRDizin CAB International EBSCO FAO-AGRIS SOBIAD OpenAire BASE IFIS CNKI |

Management Address

Journal of Agricultural Sciences - Tarım Bilimleri Dergisi
Ankara University Faculty of Agriculture Publication Department 06110
Diskapi/Ankara-Türkiye
Telephone : +90 312 596 14 24 | Fax : +90 312 317 67 24
E-mail: tbdeditor@ankara.edu.tr | <http://jas.ankara.edu.tr/>



Editor-in-Chief Halit APAYDIN, Ankara University, Ankara, TÜRKİYE

Managing Editor Muhittin Onur AKCA, Ankara University, Ankara, TÜRKİYE

Editorial Board

- **Abdul Shakoor CHAUDHRY**, Newcastle University, ENGLAND
- **Ahmet ULUDAG**, Canakkale Onsekiz Mart University, TÜRKİYE
- **Akasya TOPCU**, Ankara University, TÜRKİYE
- **Ali Adnan HAYALOĞLU**, Inonu University, TÜRKİYE
- **Ali UNLUKARA**, Erciyes University, TÜRKİYE
- **Anna Maria DE GIROLAMO**, Italian National Research Council, ITALY
- **Belgin COSGE ŞENKAL**, Yozgat Bozok University, TÜRKİYE
- **Burhan OZKAN**, Akdeniz University, TÜRKİYE
- **Claudia Di BENE**, Research Centre for Agriculture and Environment, ITALY
- **Donald SUAREZ**, USDA ARS Salinity Laboratory, USA
- **Duygu SEMİZ**, Ankara University, TÜRKİYE
- **Engin YENICE**, Ankara University, TÜRKİYE
- **Erhan MUTLU**, Akdeniz University, TÜRKİYE
- **Farhat JABEEN**, Government College University, PAKISTAN
- **Fazıl SEN**, Van Yuzuncu Yıl University, TÜRKİYE
- **Filiz ERTUNC**, Ankara University, TÜRKİYE
- **Giuseppe BADAGLIACCA**, Mediterranean University of Reggio Calabria, ITALY
- **Giuseppe GAVAZZI**, University of Milan, ITALY
- **Gniewko NIEDBALA**, Poznań University of Life Sciences, POLAND
- **Gunars LACIS**, Latvia University of Life Sciences and Techn., Dobele, LATVIA
- **Habib ALI**, Khwaja Fareed University of Eng. and Inf., Rahim Yar Khan, PAKISTAN
- **Hasan YETIM**, Istanbul Sebahattin Zaim University, TÜRKİYE
- **Huseyin GULER**, Ege University, TÜRKİYE
- **Ismail KARACA**, Isparta University of Applied Sciences, TÜRKİYE
- **Isil CAKCI**, Ankara University, TÜRKİYE
- **Julia MALYSH**, All-Russian Institute for Plant Protection, RUSSIA
- **Karina BATISTA**, Instituto de Zootecnia, BRAZIL
- **Kwok-wing CHAU**, The Hong Kong Polytechnic University, CHINA
- **Mahmut ELP**, Kastamonu University, TÜRKİYE
- **Mine TURKTAS**, Gazi University, TÜRKİYE
- **Mehmet Emin CALISKAN**, Nigde Omer Halisdemir University, TÜRKİYE
- **Muhammad SULTAN**, Bahauddin Zakariya University, Multan, PAKISTAN
- **Panagiotis SIMITZIS**, Agricultural University of Athens, GREECE
- **Peter SCHÄUSBERGER**, University of Vienna, AUSTRIA
- **Renata BAZOK**, University of Zagreb, CROATIA
- **Sefa TARHAN**, Tokat Gaziosmanpaşa University, TÜRKİYE
- **Selen SAYGIN**, Ankara University, TÜRKİYE
- **Semra DEMIR**, Van Yuzuncu Yıl University, TÜRKİYE
- **Serpil SAHIN**, Middle East Technical University, TÜRKİYE
- **Stanislav TRDAN**, University of Ljubljana, SLOVENIA
- **Tuba SANLI**, Ankara University, TÜRKİYE
- **Turkan AKTAS**, Namık Kemal University, TÜRKİYE
- **Umut TOPRAK**, Ankara University, TÜRKİYE
- **Yasemin KAVDIR**, Canakkale Onsekiz Mart University, TÜRKİYE
- **Yıldız AKA KACAR**, Cukurova University, TÜRKİYE
- **Yonca YUCEER**, Canakkale Onsekiz Mart University, TÜRKİYE

Advisory Board

- **Cengiz SAYIN**, Akdeniz University, Antalya, TÜRKİYE
- **Fahrettin GÖĞÜŞ**, Gaziantep University, Gaziantep, TÜRKİYE
- **Fazlı OZTÜRK**, Ankara University (Em.), Ankara, TÜRKİYE
- **Ensar BASPINAR**, Ankara University, Ankara, TÜRKİYE
- **Sultan COBANOGLU**, Ankara University (Em.), Ankara, TÜRKİYE



CONTENTS

2023, 29(3)

Research articles:

- 744-755 The Leaf Properties, Stomatal Index and Chlorophyll Content of Turkish Hazelnut (*Corylus avellana L.*) Cultivars
Yaşar AKÇİN
- 756-764 Bacterial Dynamics of Hardaliye, a Fermented Grape Beverage, Determined by High-throughput Sequencing
Banu METİN, Halime PEHLIVANOĞLU, Esra YILDIRIM SERVI, Muhammet ARICI
- 765-776 An Unmanned Aerial Vehicle Based Artificial Pollination in a Frost-affected Walnut (*Juglans regia L.*) Orchard
Dilan AHİ KOŞAR, Eküle SÖNMEZ, Adem ARGAÇ, Ümrان ERTÜRK
- 777-787 Impact of Bio-fertilizers under Supplementary Irrigation and Rain-fed Conditions on Some Physiological Responses and Forage Quality of Smooth Vetch (*Vicia dasycarpa L.*)
Saeid HEYDARZADEH, Jalal JALILIAN, Alireza PIRZAD, Rashid JAMEI
- 788-799 Investigation of Antibacterial and Antifungal Efficacy of Zinc and Silver Nanoparticles Synthesized from *Nasturtium officinale*
Leyla ERCAN
- 800-810 Preparation of Plant-derived Smoke for Stimulating Seed Germination and Quantification of Karrikins Using High Performance Liquid Chromatography
Yasemin KEMEÇ HÜRKAN, Cüneyt AKI
- 811-820 The Effect of the Addition of Fermented Natural Lactic Acid Bacterial Liquid and Some Lactic Acid Bacterial Inoculants on Alfalfa Silage Quality, *In Vitro* Digestibility and Gas Production
Sadık Serkan AYDIN
- 821-832 The Effects of Hazelnut Husk Supplementation on Silage Quality, Deterioration, and *In Vitro* Digestion Parameters in Second Crop Maize
Ahmet OKUMUŞ, Ekin SUCU
- 833-841 Fatty Acid Profiles of Fish Oil Derived by Different Techniques from By-products of Cultured Black Sea Salmon, *Oncorhynchus mykiss*
Hünkar Avni DUYAR, Barış BAYRAKLI
- 842-853 *In Vitro* Evaluation of Apricot Cultivars Response to *Pseudomonas syringae* Pathovars: Image Processing as an Alternative Method
Mustafa AKBABA, Kaan HÜRKAN, Ahmet Erhan KARAHAN
- 854-867 Removal of Zinc Pollution by Using Some Hyperaccumulator Plants in Sewage Sludge Treated and Untreated Soils
Betül BAYRAKLI, Rıdvan KIZILKAYA
- 868-880 Is the Nutritional Composition of Safflower Oilseed Meal Sufficient for Alternative or Complementary Aqua Feeds-raw Material?
Önder YILDIRIM, İsmail Berat ÇANTAŞ



CONTENTS

2023, 29(3)

881-894 Effect of Nitrogen and Boron Treatments on Harvest Index and Nitrogen Use Efficiency in Sugar Beet

Bedriye BILIR, Kadir SALTALI

895-905 Effects of Different Types of Irrigation Water Quality and Silicon Doses on Fruit Yield, Chlorophyll and Carotenoid Contents of Tomato (*Lycopersicon esculentum L.*) under Soilless Culture Technique

Yeter YILMAZ, Ahmet KORKMAZ