

ISSN 1300 - 6045  
e-ISSN 1309 - 2251

# KAFKAS ÜNİVERSİTESİ VETERİNER FAKÜLTESİ DERGİSİ

Journal of the Faculty of Veterinary Medicine, Kafkas University

Published Bi-monthly

<http://vetdergi.kafkas.edu.tr>  
Online Submission: <http://vetdergikafkas.org>

Volume: 25

Issue: 1 JANUARY- FEBRUARY

Year: 2019

ISSN: 1300-6045  
e-ISSN: 1309-2251

# KAFKAS ÜNİVERSİTESİ VETERİNER FAKÜLTESİ DERGİSİ

JOURNAL OF THE FACULTY OF VETERINARY MEDICINE, KAFKAS UNIVERSITY

(JANUARY - FEBRUARY)

Volume: 25

Number: 1

Year: 2019

**This journal is indexed and abstracted by Thomson Reuters Services beginning with Volume 13 (1) 2007 in the followings:**

- **Science Citation Index Expanded (also known as SciSearch®)**
- **Journal Citation Reports/Science Edition**

**This journal is also indexed and abstracted in:**

- **Academic Search Premier**
- **CAB Abstracts**
- **DOAJ**
- **EBSCO**
- **Elsevier - Scopus**
- **EMBASE**
- **Thomson Reuters - Zoological Record**
- **TÜBİTAK - ULAKBİM Yaşam Bilimleri Veri Tabanı**
- **Türkiye Atıf Dizini**
- **Veterinary Science Database**

**YAZIŞMA ADRESİ (ADDRESS FOR CORRESPONDENCE)**

Kafkas Üniversitesi Veteriner Fakültesi Dergisi Editörlüğü  
36040 - Kars / TÜRKİYE  
Phone: +90 474 2426807-2426836/5228  
Fax: +90 474 2426853  
E-mail: vetdergi@kafkas.edu.tr

**ELEKTRONİK BASKI (ELECTRONIC EDITION)**

<http://vetdergikafkas.org>

**ONLINE MAKALE GÖNDERME (ONLINE SUBMISSION)**

<http://submit.vetdergikafkas.org>

Bu dergi Kafkas Üniversitesi Veteriner Fakültesi tarafından iki ayda bir yayımlanır  
This journal is published bi-monthly, by the Faculty of Veterinary Medicine, University of Kafkas

**Kafkas Üniversitesi Veteriner Fakültesi Adına Sahibi (OWNER)**

Prof.Dr. Sami ÖZCAN  
Dekan (DEAN)

**EDİTÖR (EDITOR-IN-CHIEF)**

Prof.Dr. İsa ÖZAYDIN

**EDİTÖR YARDIMCILARI  
(ASSOCIATE EDITORS)**

Prof.Dr. Özgür AKSOY  
Doç.Dr. Duygu KAYA  
Doç.Dr. Erol AYDIN  
Doç.Dr. Ali YiğİT  
Dr.Öğr.Üyesi Ekin Emre ERKILIÇ

**YABANCI DİL EDİTÖRÜ  
(ENGLISH EDITOR)**

Prof.Dr. Hasan ÖZEN

**İSTATİSTİK EDİTÖRÜ  
(STATISTICS EDITOR)**

Prof.Dr. Gül ERGÜN

**BASKI (PRINT)**

ESER OFSET MATBAACILIK  
BOSNAHERSEK CAD. ALTUNALEM YAPI KOOP. ZEMİN KAT - ERZURUM  
Tel: +90 442 2334667 E-mail: eserofset25@hotmail.com

**EDİTÖRLER KURULU**  
**(Editorial Board)**

Prof. Dr. Harun AKSU, İstanbul University-Cerrahpaşa, TURKEY  
Prof. Dr. Feray ALKAN, Ankara University, TURKEY  
Prof. Dr. Kemal ALTUNATMAZ, İstanbul University-Cerrahpaşa, TURKEY  
Prof. Dr. Divakar AMBROSE, University of Alberta, CANADA  
Prof. Dr. Mustafa ARICAN, Selçuk University, TURKEY  
Prof. Dr. Selim ASLAN, Near East University, NORTHERN CYPRUS  
Prof. Dr. Sırrı AVKİ, Mehmet Akif Ersoy University, TURKEY  
Prof. Dr. Oya ÜSTÜNER AYDAL, İstanbul University-Cerrahpaşa, TURKEY  
Prof. Dr. Levent AYDIN, Uludağ University, TURKEY  
Prof. Dr. Les BAILLIE, Cardiff School of Pharmacy & Pharmaceutical Sciences, UK  
Prof. Dr. Metin BAYRAKTAR, Fırat University, TURKEY  
Prof. Dr. Alois BOOS, University of Zurich, Vetsuisse Faculty, SWITZERLAND  
Prof. Dr. K. Paige CARMICHAEL, The University of Georgia, USA  
Prof. Dr. Burhan ÇETİNKAYA, Fırat University, TURKEY  
Prof. Dr. Recep ÇİBIK, Uludağ University, TURKEY  
Prof. Dr. Ömer Orkun DEMİRAL, Erciyes University, TURKEY  
Prof. Dr. İbrahim DEMİRKAN, Afyon Kocatepe University, TURKEY  
Prof. Dr. Hasan Hüseyin DÖNMEZ, Selçuk University, TURKEY  
Prof. Dr. Nazir DUMANLI, Fırat University, TURKEY  
Prof. Dr. Emrullah EKEN, Selçuk University, TURKEY  
Prof. Dr. Marcia I. ENDRES, University of Minnesota, CFANS, USA  
Prof. Dr. Ayhan FİLAZİ, Ankara University, TURKEY  
Prof. Dr. Bahadır GÖNENÇ, Ankara University, TURKEY  
Prof. Dr. Aytekin GÜNLÜ, Selçuk University, TURKEY  
Prof. Dr. Ekrem GÜREL, Abant İzzet Baysal University, TURKEY  
Prof. Dr. Tolga GÜVENÇ, Ondokuz Mayıs University, TURKEY  
Prof. Dr. Johannes HANDLER, Freie Universität Berlin, GERMANY  
Prof. Dr. Armağan HAYIRLI, Atatürk University, TURKEY  
Prof. Dr. Ali İŞMEN, Çanakkale Onsekiz Mart University, TURKEY  
Prof. Dr. M. Müfit KAHRAMAN Uludağ University, TURKEY  
Prof. Dr. Mehmet Çağrı KARAKURUM, Mehmet Akif University, TURKEY  
Prof. Dr. Mehmet KAYA, Ondokuz Mayıs University, TURKEY  
Prof. Dr. Marycz KRZYSZTOF, European Institute of Technology, POLAND  
Prof. Dr. Arif KURTDEDE, Ankara University, TURKEY  
Prof. Dr. Hasan Rüştü KUTLU, Çukurova University, TURKEY  
Prof. Dr. Erdoğan KÜÇÜKÖNER, Süleyman Demirel University, TURKEY  
Prof. Dr. Levan MAKARADZE, Georgian State Agrarian University, GEORGIA  
Prof. Dr. Erdal MATUR, İstanbul University-Cerrahpaşa, TURKEY  
Prof. Dr. Mehmet NIZAMLIOĞLU, Selcuk University, TURKEY  
Prof. Dr. Vedat ONAR, İstanbul University-Cerrahpaşa, TURKEY  
Prof. Dr. Abdullah ÖZEN, Fırat University, TURKEY  
Prof. Dr. Michael RÖCKEN, Justus-Liebig University, GERMANY  
Prof. Dr. Berrin SALMANOĞLU, Ankara University, TURKEY  
Prof. Dr. Sabine SCHÄFER-SOMI, University of Veterinary Medicine Vienna, AUSTRIA  
Prof. Dr. Çiğdem TAKMA, Ege University, TURKEY  
Prof. Dr. Fotina TAYANA, Sumy National Agrarian University, UKRAINE  
Prof. Dr. Ayşe TOPAL, Uludağ University, TURKEY  
Prof. Dr. Cevdet UĞUZ, Afyon Kocatepe University, TURKEY  
Prof. Dr. Zafer ULUTAŞ, Ömer Halisdemir University, TURKEY  
Prof. Dr. Thomas WITTEK, Vetmeduni Vienna, AUSTRIA  
Prof. Dr. Rifat VURAL, Ankara University, TURKEY  
Prof. Dr. Hüseyin YILMAZ, İstanbul University-Cerrahpaşa, TURKEY