

**KOMISIJA ZA PRIPREMU PRIJEDLOGA ZA IZBOR AKADEMSKOG OSOBLJA NA UNIVERZITETU  
U SARAJEVU – VETERINARSKOM FAKULTETU U NAUČNO-NASTAVNO ZVANJE DOCENT -  
OBLAST TEMELJNE NAUKE VETERINARSKJE MEDICINE**

Sarajevo, 19.11.2025. godine

**PREDMET: Izvještaj Komisije za pripremu prijedloga za izbor akademskog osoblja na  
Univerzitetu u Sarajevu – Veterinarskom fakultetu u naučno-nastavno zvanje DOCENT za  
oblast Temeljne nauke veterinarske medicine**

**VIJEĆE FAKULTETA**

**UNIVERZITET U SARAJEVU – VETERINARSKI FAKULTET**

**Podaci o objavljenom Konkursu i formiranju Komisije**

- a) Univerzitet u Sarajevu – Veterinarski fakultet je na osnovu usvojenog Dinamičkog plana potreba za raspisivanjem konkursa u zvanja u akademskoj 2025/2026. godini, odredaba Zakona o visokom obrazovanju ("Službene novine Kantona Sarajevo", br.: 36/22 i 28/25), prijedloga odluke Vijeća Fakulteta broj: 02-16-763-2/25 od 09.09.2025. godine, Odluke Senata Univerziteta u Sarajevu broj: 01-10-18/25 od 26.09.2025. godine i Odluke dekana Fakulteta o raspisivanju javnog konkursa broj: 02-16-763-4/25 od 08.10.2025. godine, raspisao Konkurs za izbor akademskog osoblja za Oblast Temeljne nauke veterinarske medicine - nastavnik u zvanju docent - 1 izvršilac, puno radno vrijeme.
- b) Na osnovu čl. 69. stav (1) tačka f), 111., 123. i 176. Zakona o visokom obrazovanju ("Službene novine Kantona Sarajevo", broj: 36/22 i 28/25), a u vezi sa članom 37. stav (1) tačka h) i čl. 236. i 256. Statuta Univerziteta u Sarajevu, a uz prethodno pribavljene pisane saglasnosti svakog predloženog člana, Vijeće Fakulteta na svojoj 9. redovnoj sjednici održanoj 11.11.2025. godine, donijelo je Odluku o imenovanju Komisije za pripremu prijedloga za izbor (broj: 02-16-763-9/25 od 11.11.2025.) akademskog osoblja u naučno-nastavno zvanje DOCENT za oblast Temeljne nauke veterinarske medicine na Univerzitetu u Sarajevu – Veterinarskom fakultetu u sastavu:
  - Dr. Aida Hodžić, redovni profesor, oblast Temeljne nauke veterinarske medicine, Univerzitet u Sarajevu - Veterinarski fakultet, predsjednik Komisije
  - Dr. Amina Hrković, redovni profesor, oblast Temeljne nauke veterinarske medicine, Univerzitet u Sarajevu - Veterinarski fakultet, član Komisije
  - Dr. Faruk Tandır, vanredni profesor, oblast Temeljne nauke veterinarske medicine, Univerzitet u Sarajevu – Veterinarski fakultet, član Komisije.

Na osnovu uvida u dostavljenu konkursnu dokumentaciju Komisija podnosi sljedeći:

## IZVJEŠTAJ

U tekstu Konkursa je navedeno da za izbor nastavnika u zvanju docent, 1 izvršilac, puno radno vrijeme, pored općih uslova propisanih Zakonom o radu FBiH, kandidati treba da ispunjavaju minimalne uslove iz člana 112. stav (2) tačka d) Zakona o visokom obrazovanju ("Službene novine Kantona Sarajevo", br.: 36/22 i 28/25) kako slijedi: naučni stepen doktora u naučnoj oblasti na koju se bira, minimalno tri naučna rada objavljena u priznatim publikacijama, od čega je jedan naučni rad objavljen u publikaciji u relevantnim naučnim bazama podataka.

Na Konkurs za izbor akademskog osoblja - nastavnik u zvanje DOCENT (1 izvršilac, puno radno vrijeme) oblast Temeljne nauke veterinarske medicine, objavljen na službenoj web stranici Veterinarskog fakulteta Univerziteta u Sarajevu, web stranici Univerziteta u Sarajevu i u dnevnim novinama „Dnevni avaz“ dana 09.10.2025. godine, pristigla je jedna prijava, odnosno na Konkurs se prijavio dr.sci. Husein Ohran, viši asistent Univerziteta u Sarajevu – Veterinarskog fakulteta, kao jedini kandidat.

Uz dokumentaciju, Komisiji je od strane Službe za pravne i personalne poslove Veterinarskog fakulteta dostavljena i Potvrda br: 02-16-763-6/25 izdata 28.10.2025. godine, da je prijava kandidata dr.sci. Huseina Ohrana, višeg asistenta, blagovremena (dostavljena 20.10.2025.godine). Nakon održavanja konstituirajuće sjednice Komisije dana 13.11.2025. (u skladu sa Poslovníkom o radu Komisije za izbor akademskog osoblja) i otvaranja pristiglih prijava za izbor u akademsko zvanje, članovi Komisije su u prisustvu uposlenika Službe za pravne i personalne poslove Fakulteta konstatovali (relevantni Zapisnik) da je dokumentacija kandidata dr.sci. Huseina Ohrana, višeg asistenta, potpuna te u skladu sa uslovima utvrđenim Konkursom. U skladu sa Poslovníkom o radu Komisije za izbor u akademska zvanja, Komisiji je od strane Službe za pravne i personalne poslove Veterinarskog fakulteta dostavljena i Potvrda br: 02-16-763-11/25 izdata 13.11.2025. godine, da je prijava dr.sci. Huseina Ohrana potpuna (uredna) sa uvjetima utvrđenim Konkursom te je kandidat uz prijavu dostavio sljedeću dokumentaciju:

1. Biografiju/CV i spisak objavljenih naučnih radova (bibliografija)
2. Ovjerenu kopiju diplome o završenom veterinarskom fakultetu
3. Ovjerenu kopiju diplome o naučnom stepenu zvanja doktora veterinarskih nauka
4. Listu naučnih radova objavljenih u priznatim publikacijama koje se nalaze u relevantnim naučnim bazama podataka kao i same naučne radove (ukupno 30 naučnih radova)
5. Podatke o nagradama i priznanjima (ovjerene kopije) i to:
  - Nagrade za najboljeg asistenta izabranog od strane studenata II godine akademske 2019/2020., 2020/2021., 2021/2022., 2022/2023. i 2023/2024. godine
  - Nagrada Univerziteta u Sarajevu za rezultate naučnog/umjetničkog rada u 2021. godini
  - Zahvalnica za doprinos organizaciji prvog studentskog naučno-istraživačkog kongresa medicinske grupacije fakulteta UNSA „One Health, One Future“
  - Zahvalnica za pomoć pri izradi studentskog časopisa „Veterinar“
  - Zahvalnica za doprinos radu ASVF 2023/2024.

6. Dokaze o nastavničkim sposobnostima (ovjerene kopije):
  - a) certifikat o završenom TRAIN programu
  - b) potvrda o provedenom izbornom periodu - asistent i viši asistent na oblasti „Temeljne nauke veterinarske medicine“ – original
  - c) certifikati o poznavanju engleskog i njemačkog jezika
7. Naslovnice i prve stranice objavljenih udžbenika:
  - a) Anatomija i fiziologija domaćih životinja za studente poljoprivrednih fakulteta (ISBN - 978-99976-816-9-0; COBISS.BH-ID – 141828609)
  - b) Bakterijske i virusne bolesti pasa i mačaka (ISBN - 978-9958-599-86-6; COBISS.BH-ID – 45948678)
  - c) Praktikum iz Fiziologije domaćih životinja 2 (ISBN - 978-9958-599-77-4; COBISS.BH-ID – 28377094)
8. Potvrdu o obavljenoj Erasmus+ Teaching mobilnosti na Institutu za veterinarsku fiziologiju, Fakultet veterinarske medicine, Freie Universität Berlin, Njemačka – ovjerena kopija
9. Potvrdu o obavljenoj Erasmus+ Training mobilnosti na Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania", Temišvar, Rumunija – ovjerena kopija
10. Uvjerenje o položenom stručnom ispitu za doktora veterinarske medicine – ovjerena kopija
11. Certificate o učešću na naučnim i stručnim konferencijama/skupovima – ovjerene kopije
12. Potvrdu o učešću u projektu "Oksidativni stres i proteini akutne faze kod pasa prekomjerne tjelesne mase" - original
13. Potvrdu o učešću u projektu "Ekspresija gena toplinskog stresa kod autohtone bosanskohercegovačke ovce pramenke" - original
14. Rješenje o imenovanju u Tim za promociju upisa na UNSA-Veterinarski fakultet - kopija
15. Odluku o formiranju Komisije za nastavu i studentska pitanja Univerziteta u Sarajevu - Veterinarskog fakulteta – kopija
16. Odluku o imenovanju u Radnu grupu Univerziteta u Sarajevu za pripremu komentara, prijedloga i sugestija na Prednacrt Zakona o izmjenama i dopunama Zakona o naučnoistraživačkoj djelatnosti Kantona Sarajevo, broj 0101-1239/25 od 03.02.2025. godine – kopija.

## 1. BIOGRAFSKI I OPĆI RADNI PODACI KANDIDATA

### 1.1. Lični i kontakt podaci

|                         |                                                                                                                                                                     |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ime i prezime           | Husein Ohran                                                                                                                                                        |
| Naučna i stručna zvanja | Doktor veterinarskih nauka, diplomirani veterinar                                                                                                                   |
| Datum i mjesto rođenja  |                                                                                                                                                                     |
| Adresa stanovanja       |                                                                                                                                                                     |
| Telefon                 | +387 33 729 142 (posao)                                                                                                                                             |
| E-mail                  | husein.ohran@vfs.unsa.ba                                                                                                                                            |
| Državljanstvo           |                                                                                                                                                                     |
| Google Scholar          | <a href="https://scholar.google.com/citations?user=36XpZNQAAAAJ&amp;hl=hr&amp;oi=ao">https://scholar.google.com/citations?user=36XpZNQAAAAJ&amp;hl=hr&amp;oi=ao</a> |

### 1.2. Radno i profesionalno iskustvo

|                         |                                                                                                                                                                                                                                                                               |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Datumi (od – do)</b> | <b>2014 - 2015</b>                                                                                                                                                                                                                                                            |
| Ustanova zaposlenja     | Univerzitet u Sarajevu - Veterinarski fakultet                                                                                                                                                                                                                                |
| Naziv radnog mjesta     | Stručno osposobljavanje (volontiranje);                                                                                                                                                                                                                                       |
| <b>Datumi (od – do)</b> | <b>2018 – 2021</b>                                                                                                                                                                                                                                                            |
| Ustanova zaposlenja     | Univerzitet u Sarajevu - Veterinarski fakultet                                                                                                                                                                                                                                |
| Naziv radnog mjesta     | Asistent za oblast Temeljne nauke veterinarske medicine                                                                                                                                                                                                                       |
| Područje rada           | Praktična nastava iz oblasti Temeljne nauke veterinarske medicine na predmetima Fiziologija domaćih životinja I, Fiziologija domaćih životinja II, Morfofiziologija domaće peradi i Dentalna morfologija                                                                      |
| <b>Datumi (od – do)</b> | <b>2021 – do danas</b>                                                                                                                                                                                                                                                        |
| Ustanova zaposlenja     | Univerzitet u Sarajevu – Veterinarski fakultet                                                                                                                                                                                                                                |
| Naziv radnog mjesta     | Viši asistent za oblast Temeljne nauke veterinarske medicine                                                                                                                                                                                                                  |
| Područje rada           | Praktična nastava iz oblasti Temeljne nauke veterinarske medicine na predmetima Fiziologija domaćih životinja I, Fiziologija domaćih životinja II, Uvod u naučno-istraživački rad, Morfofiziologija domaće peradi, Dentalna morfologija, Ekofiziologija proizvodnih životinja |

### 1.3. Akademsko obrazovanje

|               |                                                 |
|---------------|-------------------------------------------------|
| <b>Godina</b> | <b>2023</b>                                     |
| Mjesto        | Sarajevo                                        |
| Ustanova      | Univerzitet u Sarajevu – Veterinarski fakultet. |
| Zvanje        | Doktor veterinarskih nauka                      |
| <b>Godina</b> | <b>2013</b>                                     |

|          |                                                |
|----------|------------------------------------------------|
| Mjesto   | Sarajevo                                       |
| Ustanova | Univerzitet u Sarajevu - Veterinarski fakultet |
| Zvanje   | Diplomirani veterinar                          |

#### 1.4. Stručno usavršavanje

|               |                                                                                                                     |
|---------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Godina</b> | <b>2025</b>                                                                                                         |
| Mjesto        | Berlin, Njemačka                                                                                                    |
| Ustanova      | Institut za veterinarsku fiziologiju, Fakultet veterinarske medicine, Freie Universität Berlin, Njemačka            |
| Područje      | Erasmus+ Teaching Mobility, 11.05. – 17.05.2025.                                                                    |
| <b>Godina</b> | <b>2022</b>                                                                                                         |
| Mjesto        | Temišvar, Rumunija                                                                                                  |
| Ustanova      | Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania", Temišvar, Rumunija |
| Područje      | Erasmus+ Training Mobility, 23.05. – 27.05.2022.                                                                    |
| <b>Godina</b> | <b>2019</b>                                                                                                         |
| Mjesto        | Sarajevo, Bosna i Hercegovina                                                                                       |
| Ustanova      | UNSA - Centar za interdisciplinarne studije „prof.dr. Zdravko Grebo“                                                |
| Područje      | Train program Univerziteta u Sarajevu za akademsko osoblje                                                          |
| <b>Godina</b> | <b>2015</b>                                                                                                         |
| Mjesto        | Sarajevo, Bosna i Hercegovina                                                                                       |
| Ustanova      | Federalno ministarstvo poljoprivrede, vodoprivrede i šumarstva BiH                                                  |
| Područje      | Stručni ispit doktora veterinarske medicine                                                                         |
| <b>Godina</b> | <b>2015</b>                                                                                                         |
| Mjesto        | Milano, Italija                                                                                                     |
| Ustanova      | Università degli Studi di Milano, Faculty of Veterinary medicine                                                    |
| Područje      | Edukacija i Retrain (Tempus One Health Project), 15.02. – 14.03.2015.                                               |

#### 1.5. Poznavanje stranih jezika i rada na računaru

Aktivno poznavanje engleskog i njemačkog jezika (slušanje, čitanje, govorna produkcija i interakcija). Napredni korisnik Microsoft Office-a.

## 2. NASTAVNIČKE SPOSOBNOSTI I DOPRINOS

Dr.sci. Husein Obran je diplomirao na Univerzitet u Sarajevu - Veterinarskom fakultetu 2013. godine i stekao zvanje diplomirani veterinar. Svoj nastavno-pedagoški rad započinje 2018. godine u zvanju asistenta na oblasti Temeljne nauke veterinarske medicine kao najbolje rangirani kandidat. U januaru 2021. godine prelazi u zvanje višeg asistenta, te u decembru 2023. godine uspješno brani doktorsku disertaciju pod naslovom „Utjecaj temperature i geografskog područja na ekspresiju kandidat gena kod autohtone bh. ovce pramenke“. Od samog početka rada na Katedri za temeljne nauke veterinarske medicine Veterinarskog fakulteta Univerziteta u Sarajevu u zvanjima od asistenta do višeg asistenta, kandidat veoma odgovorno, savjesno i uspješno priprema i izvodi praktičnu nastavu iz obaveznih predmeta Fiziologija domaćih životinja I i Fiziologija domaćih životinja II, te izbornih predmeta Morfofiziologija domaće peradi, i Dentalna morfologija, a od akademske 2025/2026. godine i na predmetima Uvod u naučno-istraživački rad u veterinarskoj medicini (obavezni) i Ekofiziologija proizvodnih životinja (izborni). Tokom sedmogodišnjeg rada u nastavi stječe veliko pedagoško iskustvo i pokazuje svoj izuzetan interes za rad sa studentima. Tokom 2019. godine uspješno pohađa TRAIN program iz oblasti pedagoškog obrazovanja i kompetencija akademskog osoblja Univerziteta u Sarajevu te stječe osnove predagoškog obrazovanja, komunikacijskih i prezentacijskih vještina. Dobra komunikacija i saradnja sa studentima potvrđena je visokim ocjenama kroz provedene studentske ankete:

- akademska 2022/2023. – Fiziologija domaćih životinja I - 4,97; Fiziologija domaćih životinja II - 5,00; Morfofiziologija domaće peradi – 5,00; Dentalna morfologija – 5,00
- akademska 2023/2024. – Fiziologija domaćih životinja I - 5,00; Fiziologija domaćih životinja II - 4,99; Morfofiziologija domaće peradi – 5,00; Dentalna morfologija – 5,00
- akademska 2024/2025. – Fiziologija domaćih životinja I - 4,97; Fiziologija domaćih životinja II - 5,00; Morfofiziologija domaće peradi – 5,00; Dentalna morfologija – 5,00.

Nadalje, dr.sci. Husein Obran je od strane studenata druge godine studija Univerzite u Sarajevu – Veterinarskog fakulteta izabran za najboljeg asistenta svake godine od početka zaposlenja – akademske 2019/2020., 2020/2021., 2021/2022., 2022/2023. i 2023/2024. godine. Njegova uspješna saradnja sa studentima se ogleda i kroz rad u vannastavnim aktivnostima, čemu svjedoče nagrade dodijeljene od strane Asocijacije studenata Veterinarskog fakulteta (ASVF) za doprinos organizaciji prvog studentskog naučno-istraživačkog kongresa medicinske grupacije fakulteta Univerziteta u Sarajevu „One Health, One Future“, zatim za pomoć pri izradi studentskog časopisa „Veterinar“, i za doprinos radu ASVF 2023/2024. Osim toga, bio je član naučnog odbora IX studentskog kongresa sa međunarodnim učešćem „Hrana-ishrana-zdravlje“.

Dr.sci. Husein Obran je kroz ERASMUS+ Teaching mobilnost u maju 2025. godine boravio na Fakultetu veterinarske medicine, Freie Universität Berlin u Njemačkoj, stekavši vrijedne nastavne kompetencije te pri povratku sa ove renomirane Institucije ostvario doprinos u inoviranju nastavnog procesa na matičnoj ustanovi.

Osim toga, kandidat učestvuje u aktivnostima unapređenja nastave kroz ulogu sekretara Komisije za nastavu i studentska pitanja Univerzitet u Sarajevu – Veterinarskog fakulteta.

### 3. NAUČNA DOSTIGNUĆA I DOPRINOS

Dosadašnji naučno-istraživački publicistički opus dr.sci. Huseina Ohrana, višeg asistenta, obuhvata ukupno 30 naučnih radova u publikacijama koje prate relevantne baze podataka. Od toga, 17 radova se nalazi u časopisima koji prate relevantnu međunarodnu bazu podataka (Web of Science i Scopus), osam (8) radova u časopisima koji prate relevantnu bazu podataka, te pet (5) radova u zbornicima koji prate relevantnu bazu podataka (kongresi, simpozijumi, savjetovanje). Dr.sci. Husein Ohran je koautor i tri univerzitetska udžbenika.

Kandidat je aktivno učestvovao u više međunarodnih naučnih skupova kao i dva (2) naučno-istraživačka projekta.

#### 3.1. Lista naučnih radova objavljenih u priznatim publikacijama koje se nalaze u relevantnim naučnim bazama podataka

##### **Lista naučnih radova u časopisima koji prate relevantnu međunarodnu bazu podataka**

- 1) **Ohran, H.,** Pojskic, N., Ramic, J., Kusza, S., Lojo-Kadric, N., & Hodzic, A. (2025). Thermal Stress Response Profiling Reveals Adaptive Advantages of Indigenous Hercegovacka and Dubska Pramenka Sheep. *Animals*, 15(18), 2678

<https://doi.org/10.3390/ani15182678>

**Citatna baza: Web of Science (Q1, IF 2.7, Citescore 5.2)**

**Abstract:** Climate change poses an increasing challenge to livestock production, making the identification of thermally resilient breeds crucial. This study investigated the expression patterns of eight thermal stress-related genes (HSP90AA1, HSPA8, HSPA1A, IL-6, IL-10, TNF- $\alpha$ , NOS-3, and SOD-2) in two strains of indigenous Pramenka sheep (Hercegovacka and Dubska) under different climatic conditions. Blood samples were collected from 96 sheep across four locations during summer and winter seasons. Gene expression was analysed using RT-PCR and evaluated against comprehensive environmental data, including the temperature–humidity index (THI). Principal component analysis revealed distinct gene expression patterns between strains and seasons. The Hercegovacka strain showed consistently higher expression of HSP90AA1 compared to the Dubska strain in both seasons (summer: 5.81 vs. 2.47; winter: 4.38 vs. 1.19,  $p < 0.05$ ), with all individuals exhibiting upregulation during summer and 95.8% showing upregulation during winter. Both strains demonstrated reduced expression of pro-inflammatory cytokines (IL-6, TNF- $\alpha$ ) and increased expression of anti-inflammatory IL-10, suggesting maintained immunocompetence under thermal stress. The expression patterns of oxidative stress-related genes (SOD-2, NOS-3) indicated effective management of oxidative stress in both strains. These results suggest superior thermal adaptation in the Hercegovacka strain, particularly through HSP-mediated cellular protection mechanisms, while both strains show favorable immune and oxidative stress responses. These findings provide valuable insights for climate-resilient sheep breeding programs and the conservation of adaptive genetic resources.

**Keywords:** climate resilience; heat shock proteins; gene expression; indigenous sheep breeds; thermal adaptation

2) Wanjala, G., Bagi, Z., Gavojdian, D., Badaoui, B., Astuti, P. K., Mizeranschi, A., Elena Ilisiu, **Ohran, H.** ... & Kusza, S. (2025). Genetic diversity and adaptability of native sheep breeds from different climatic zones. *Scientific Reports*, 15(1), 14143.

<https://doi.org/10.1038/s41598-025-97931-2>

**Citatna baza: Web of Science (Q1, IF 4.99, CiteScore 6.9)**

**Abstract:** To better understand the genetic architecture and adaptability of native sheep, 22 breeds were genotyped using ovine50K SNP chips. Eleven additional populations from open-source repositories were included. Cross population Extended Haplotype Homozygosity (XP-EHH) and Relative Scaled Haplotype Homozygosity (Rsb) haplotype-based approaches were used to identify genetic variations influencing the adaptation of local sheep breeds to different climatic zones. The results indicate that all breeds exhibited high but declining genetic diversity levels, with a larger proportion of genetic variation explained by development history and refined by geographical origin, as shown by principal component analysis and Neighbor Net graphs. Admixture analysis revealed high admixture levels in European and North African breeds. Using XP-EHH and Rsb methods, 371 genes were putatively under selection, with only nine common among all population pairs, highlighting unique adaptability. Most identified genes, including Interleukin (IL) and cluster differentiation (CD) gene families underlie immune responses, emphasizing their role in resilience to climate change effects. These findings support that indigenous sheep breeds have retained significant genetic diversity, but improper genetic management may threaten it. Additionally, the research emphasizes that indigenous sheep breeds' unique adaptability to specific climatic zones makes them valuable genetic assets for developing climate-resilient breeds.

3) **Ohran, H.**, Pojskić, N., Pašić-Juhas, E., Hrković - Porobija, A., Hrelja, E., Sivac, A., Batinić, V., Hodžić, A. (2024). Hematological and blood biochemical variations in Pramenka sheep under thermal stress conditions. *Veterinarski Arhiv* 94 (6), 463-474

<https://doi.org/10.24099/vet.arhiv.2588>

**Citatna baza: Web of Science (Q4, IF 0.496, CiteScore 0.8)**

**Abstract:** Climate change is one of the greatest global concerns regarding livestock production. The indigenous Pramenka sheep is well known for its ability to survive in difficult environmental conditions, although there is insufficient scientific evidence. This study aimed to evaluate the seasonal variations in some hematological and blood biochemical parameters in two strains of Pramenka sheep – Hercegovačka and Dubska, under natural thermal stress conditions. The calculated Temperature-Humidity Index (THI) data indicated mild to severe heat stress in the localities where the Hercegovačka Pramenka strain was being held, while cold stress was found in all the examined localities. Numerous statistically significant differences in hematological parameters were found between seasons, and within and between the two Pramenka strains. The Dubska strain exhibited significantly higher levels of red blood cells (RBC) and packed cell volume (PCV) compared to Hercegovačka, whereas the

Hercegovačka strain displayed significantly higher white blood cells (WBC) and platelet (PLT) levels in comparison to Dubška. Similar patterns were noticed in the blood biochemical parameters - the Dubška strain had more seasonal variations compared to the Hercegovačka Pramenka. During the winter, the Hercegovačka strain demonstrated significantly higher levels of total protein (TP), albumin (ALB), urea (UREA), and creatine kinase (CK) compared to Dubška. Conversely, during the summer, the Hercegovačka strain exhibited significantly higher globulin (GLO) levels, whereas the Dubška strain showed higher levels of ALB and chlorine (Cl). On the basis of our results, both Pramenka strains showed a high adaptive capacity to harsh environmental conditions, the Hercegovačka Pramenka being more adapted to heat stress, and Dubška to cold stress conditions.

Keywords: sheep; thermal stress; blood parameters; seasonal variations

4) **Ohran, H.**, Hodžić, A., Semić, A., Ajanović, A., & Crnkić, Č. (2024). The relationship between the physical and lipid characteristics of eggs from hens that were fed a diet supplemented with fat. Bulletin of the Chemists & Technologists of Bosnia & Herzegovina/Glasnik Hemičara i Tehnologa Bosne i Hercegovine, 62

<https://doi.org/10.35666/2232-7266.2024.62.05>

Citatna baza: Web of Science Core Collection/ESCI

**Abstract:** The aim of this study was to investigate the potential correlations between certain physical and lipid characteristics of eggs from hens fed diets supplemented with three different types of fat. A six-week-long experiment was conducted on 45 Brown Lohman laying hens, 56 weeks of age. Animals were randomly divided into three groups of 15 and fed one of three experimental diets supplemented with either 3% of fish oil, palm olein, and lard. Samples of 10 eggs per group were collected at the start and at the end of the experiment to determine four physical and six lipid characteristics in boiled eggs. The supplementation of the hens' diet with fat significantly affected the physical characteristics of the eggs. The biggest impact on such finding for total sample of investigated eggs had palm olein as a supplement in hen diet. Among the three investigated fat supplements, the addition of 3% lard to the laying hen diet resulted in the smallest total number of significant correlations between investigated physical and lipid traits. Comparing the end to the start of our experiment, supplementation of hen diet with fat decreases the number of correlations among egg physical and lipid characteristics, what can be considered as a positive result from both egg producer and consumer interests.

Keywords: Dietary Fat, Egg Features, Egg Lipids

5) Alilovic, I., Rukavina, D., Ajanovic, A., Eterovic, T., Milosevic, H., **Ohran, H.**, & Zahirovic, A. (2023). Breed-specific evaluation of serum biochemical markers in canine hip dysplasia observed in a Tornjak dog population. American Journal of Veterinary Research, 84(11).

<https://doi.org/10.2460/ajvr.23.07.0170>

Citatna baza: Web of Science (Q2, IF: 1.4)

### Abstract:

**OBJECTIVE:** Canine hip dysplasia (CHD) is a global disease and an improved diagnostic approach to this orthopedic condition is needed, with an emphasis on inexpensive and minimally invasive techniques. This research aimed to determine the differentiating potential of selected biochemical markers in serum between healthy dogs and dogs with hip dysplasia in a breed-specific study that involved the Tornjak dog population.

**ANIMALS:** 99 Tornjak dogs radiographically categorized (Federation Cynologique Internationale procedure and scoring scheme) between December 2019 and April 2021, as having no sign of hip dysplasia or near normal hip joints (nondysplastic group; n = 51) vs mild, moderate, or severe hip dysplasia (dysplastic group; 48).

**METHODS:** Serum concentrations and enzyme activity of the biochemical markers hyaluronic acid (HA), procollagen II C-terminal propeptide (PIICP), and metalloproteinase 9 (MMP9) were compared among adult dogs with or without radiographic hip dysplasia. Statistical tests used to examine the differentiating potential of biochemical markers in Tornjak dog groups were assessed using the Mann–Whitney U test, logistic regression, and receiving operating characteristics (ROC) analysis.

**RESULTS:** Tornjak dogs with radiographic CHD had significantly lower serum concentrations of HA and higher concentrations of PIICP and MMP9 activity compared to dogs with radiographically normal hips ( $P < .05$ ). Selected biochemical markers could distinguish dogs with radiographic CHD from those without CHD with high sensitivity and specificity.

**CLINICAL RELEVANCE:** These data suggest that the diagnostic technique of measuring serum concentrations of HA, PIICP, and MMP9 activity has a selective ability to distinguish dogs with dysplastic from dogs with normal hips.

**Keywords:** canine hip dysplasia, biochemical marker, Tornjak, osteoarthritis, breed-specific

6) Hodžić, A., Ohran, H., Hamamdžić, M., Gagić, A., Hrković-Porobija, A., Pašić-Juhas, E., ... & Krnić, J. (2023). Effect of Modified-Hen-Egg-Yolk-Lipid-Composition Diet on Plasma Lipids in Rats. *Macedonian Veterinary Review*, 46(1)

<https://doi.org/10.2478/macvetrev-2023-0013>

**Citatna baza:** Web of Science (Q4, IF: 0.3)

**Abstract:** This study aimed to investigate the effects of dietary supplementation with modified-hen-egg-yolk on plasma lipids and lipoprotein profiles in rats. During the four-week-experiment, 64 Wistar rats were divided into four groups of 16 (eight of both sexes), and fed commercial rat food (group C); food containing 70% commercial rat mixture and 30% freshly cooked egg yolk originating from laying hen eggs fed with 3% fish oil (group F); 3% palm olein (group P), or 3% lard (group L). The cooked egg yolk in the rat diet affected the concentrations of plasma total and LDL-cholesterol in males of the P and L groups. Cholesterol and total fat in the diet did not have a hypercholesterolemic effect on their own, but when in combination with fatty acid composition, they could contribute to an increase in plasma total and LDL cholesterol concentrations in rats. HDL-cholesterol was the most resilient plasma lipoprotein of rats to dietary treatments in our experiment. Compared to the control group, the addition

of hen egg yolk to the rat diet regardless of its quality, adversely affected the values of HDL C/TC and HDL-C/LDL-C in both males and females.

Key words: egg yolk, plasma lipids, rat, dietary supplementation, hen

7) Astuti, P. K., Ilie, D. E., Gavojdian, D., Wanjala, G., Badaoui, B., **Ohran, H.**, ... & Kusza, S. (2022). Validation of SNP markers for thermotolerance adaptation in *Ovis aries* adapted to different climatic regions using KASP-PCR technique. *Scientific Reports*, 12(1), 1-9.

<https://doi.org/10.1038/s41598-022-26909-1>

**Citatna baza: Web of Science (Q1, IF 4.99, CiteScore 6.9)**

**Abstract:** A study on 51 SNPs belonging to 29 genes related to heat stress was carried out in 720 sheep from 17 different breeds adapted to different climates from Hungary, Bosnia and Herzegovina, Morocco and Romania, using Kompetitive Allele-Specific Polymerase Chain Reaction. Genotype frequency and the Hardy–Weinberg equilibrium were calculated, followed by a clustering using the Principal Component Analysis. We analyzed the polymorphisms in the following genes analyzed: HSPA12A, HSP90AA1, IL33, DIO2, BTNL2, CSN2, ABCG1, CSN1S1, GHR, HSPA8, STAT3, and HCRT. We emphasized on HSPA12A and HSPA8 genes as they were successfully genotyped in all studied flocks in which genotype frequency patterns were identified. Contrary to previous findings, the A allele for HSPA8 SNP was not observed in the heat tolerant breeds, being found exclusively in cold-tolerant breeds. The principal component analysis could not clearly differentiate the breeds, while plot concentration was slightly varied among the three groups, with HSP90AA1 and IL33 SNPs' loading values significantly contributing to PC1 and PC2. We confirmed previous works that the HSPA12A, HSPA8, HSP90AA1 and IL33 SNPs are potential candidate markers for thermotolerance adaptation in sheep. This research contributes to the genetic variability of SNPs for thermotolerance adaptability in sheep.

8) Alilovic, I., Rukavina, D., Ajanovic, A., Crnkic, C., **Ohran, H.**, & Zahirovic, A. (2022). Breed, age, and sex-related variations in hematological and some biochemical parameters in the Tornjak dog. *Turkish Journal of Veterinary & Animal Sciences*, 46(2), 192-200.

<https://doi.org/10.55730/1300-0128.4166>

**Citatna baza: Web of Science (Q3, IF: 0.6)**

**Abstract:** There is an increasing significance for the breed, age, and sex-related variations in hematological and biochemical parameters in veterinary medicine. The primary objective of this study was to identify possible breed-related differences and to determine the effect of age and sex on hematologic and serum biochemical parameters in the Bosnian and Herzegovinian-Croatian Shepherd dog Tornjak raised in Bosnia and Herzegovina (B&H). Data from 19 hematological and 17 serum biochemical parameters were analyzed in the group of 100 dogs (47 females and 53 males), sexually intact and aged between one month and twelve years. Breed affected TP (total protein) and ALB (albumin) value. The median TP value was slightly above the reference interval and the ALB median value was in the upper limit. Variations in hematological and serum biochemical parameters were 6 sex-related and 23 age-

related. This study adds valuable insight into the specifics of the interpretation of laboratory findings in a small population of the indigenous Tornjak dog breed. Keywords: Tornjak, Bosnia and Herzegovina, blood, biochemistry, hematology, value

9) Swelum, A. A., Abdelnour, S. A., Sheiha, A. M., Hashem, N. M., Taha, A. E., Khafaga, A. F., ..., **Ohran, H.** & Abd El-Hack, M. E. (2022). Enhancing oocyte maturation competence and embryo development in farm animals: roles of vitamin-based antioxidants—A review. *Annals of Animal Science*, 22(1), 3-19.

<https://doi.org/10.2478/aoas-2021-0054>

**Citatna baza: Web of Science (Q1, IF: 2.2)**

Abstract: Oocyte/embryo in vitro culture is one of the most important assisted reproductive technologies used as a tool for maintaining genetic resources biodiversity and the inheritance of valuable genetic resources through generations. The success of such processes affects the final goal of the in vitro culture, getting viable and healthy offspring. In common in vitro oocyte maturation and/or embryo development techniques, the development of oocytes/embryos is carried out at 5% carbon dioxide and roughly 20% atmosphere-borne oxygen ratios in cell culture incubators due to their reduced cost in comparison with low atmospheric oxygen-tension incubators. These conditions are usually accompanied by the emergence of reactive oxygen species (ROS), which can extremely damage cell membrane integrity and other vital cellular organelles, as well as genetic material. The present review mainly focuses on the antioxidant roles of different vitamins on in vitro oocyte maturation competence and embryo development in farm animals. The use of antioxidant agents may prevent the extreme augmentation of ROS generation and enhance in vitro matured oocyte competence and embryo development. Therefore, this review aimed to provide an updated outline of the impact of antioxidant vitamin (vit) supplementations during in vitro maturation (IVM) and in vitro fertilization (IVF) on oocyte maturation and consequent embryo development, in various domestic animal species. Thus, the enrichment of the culture media with antioxidant agents may prevent and neutralize the extreme augmentation of ROS generation and enhance the in vitro embryo production (IVEP) outcomes.

Key words: antioxidant, in vitro maturation, oocyte competence, embryo growth, animals

10) Swelum, A. A., Hashem, N. M., Abdelnour, S. A., Taha, A. E., **Ohran, H.**, Khafaga, A. F., ... & Abd El-Hack, M. E. (2021). Effects of phytogenic feed additives on the reproductive performance of animals. *Saudi Journal of Biological Sciences*, 28(10), 5816-5822.

<https://doi.org/10.1016/j.sjbs.2021.06.045>

**Citatna baza: Web of Science (Q1, IF: 4.27)**

Abstract: The reproductive performance of ruminants is economically significant, and its improvement is a primary goal of the livestock industry to ensure its sustainability. Several approaches have been developed to use phytogenics as feed additives for several purposes, such as reducing methane emissions, and as an alternative to antibiotics. Phytogenics have potent antioxidant, anti-inflammatory, immunomodulatory, and metabolism-regulatory

properties, and they are present at high levels in animal feeds. This current review considers the potential use of medicinal herbs on the reproductive performance of animals. The influence of diet on the fertility complications commonly noted in ruminants is of global interest. Although the effects of phytogenics on ruminant digestion and absorption are well-explored, their impact on reproductive performance remains poorly investigated. This review focuses on the influence of phytogenics on semen quality, hormonal profiles, and hematobiochemical indices in male ruminants. Based on available data, phytogenics are perceived to improve oocyte quality, reproductive performance, and pregnancy. However, further more comprehensive research on the benefits and potential hazards of the use of phytogenics is required to improve reproductive performance in ruminants. Keywords: Phytogenic feed additives, Medicinal herbs, Reproductive performance, Ruminants, Sperms

11) Alagawany, M., Attia, Y. A., Farag, M. R., Elnesr, S. S., Nagadi, S. A., Shafi, M. E., Khafaga, A.F., Ohran, H. ... & Mohamed, E. (2021). The strategy of boosting the immune system under the COVID-19 pandemic. *Frontiers in Veterinary Science*, 712.

<https://doi.org/10.3389/fvets.2020.570748>

**Citatna baza: Web of Science (Q1, IF: 2.9)**

**Abstract:** The novel coronavirus (SARS-CoV-2) infection (COVID-19) has raised considerable concern on the entire planet. On March 11, 2020, COVID-19 was categorized by the World Health Organization (WHO) as a pandemic infection, and by March 18, 2020, it has spread to 146 countries. The first internal defense line against numerous diseases is personalized immunity. Although it cannot be claimed that personalized nutrition will have an immediate impact on a global pandemic, as the nutritional interventions required a long time to induce beneficial outcomes on immunity development, nutritional strategies are still able to clarify and have a beneficial influence on the interplay between physiology and diet, which could make a positive contribution to the condition in the next period. As such, a specific goal for every practitioner is to evaluate different tests to perceive the status of the patient, such as markers of inflammation, insulin regulation, and nutrient status, and to detect possible imbalances or deficiencies. During the process of disease development, the supplementation and addition of different nutrients and nutraceuticals can influence not only the viral replication but also the cellular mechanisms. It is essential to understand that every patient has its individual needs. Even though many nutrients, nutraceuticals, and drugs have beneficial effects on the immune response and can prevent or ameliorate viral infections, it is essential to detect at what stage in COVID-19 progression the patient is at the moment and decide what kind of nutrition intervention is necessary. Furthermore, understanding the pathogenesis of coronavirus infection is critical to make proper recommendations. Keywords: COVID-19, SARS—CoV-2, vitamins, minerals, probiotics

12) Raza, S. H. A., Khan, S., Amjadi, M., Abdelnour, S. A., **Ohran, H.**, Alanazi, K. M., ... & Zan, L. (2020). Genome-wide association studies reveal novel loci associated with carcass and body measures in beef cattle. Archives of Biochemistry and Biophysics, 694, 108543.

<https://doi.org/10.1016/j.abb.2020.108543>

**Citatna baza: Web of Science (Q2, IF: 3.0)**

Abstract: Genomic selection has an essential role in the livestock economy by increasing selection productivity. Genomics provides a mechanism to increase the rate of genetic gain using marker-assisted selection. Various quantitative trait loci (QTL) associated with body, carcass and meat quality traits in beef cattle have been found. It is widely accepted that QTL traits in livestock species are regulated by several genes and factors from the environment. Genome-wide association studies (GWAS) are a powerful approach in identifying QTL and to establish genomic regions harboring the genes and polymorphisms associated with specific characteristics in beef cattle. Due to their impact on economic returns, growth, carcass and meat quality traits of cattle are frequently used as essential criteria in selection in breeding programs., GWAS has been used in beef cattle breeding and genetic program and some progress has been made. Furthermore, numerous genes and markers related to productivity traits in beef cattle have been found. This review summarizes the advances in the use of GWAS in beef cattle production and outlines the associations with growth, carcass, and meat quality. Keywords: Genome-wide association, Beef cattle, Meat quality, Growth, Carcass traits

13) Abdelnour, S. A., Abd El-Hack, M. E., Noreldin, A. E., Batiha, G. E., Beshbishy, A. M., **Ohran, H.**, ... & Swelum, A. A. (2020). High salt diet affects the reproductive health in animals: an overview. Animals, 10(4), 590.

<https://doi.org/10.3390/ani10040590>

**Citatna baza: Web of Science (Q1, IF 2.7, Citescore 5.2)**

Abstract: Salinity is a reliable issue of crop productivity loss in the world and in certain tropical and subtropical zones. However, tremendous progress in the genetic improvement of plants for salinity tolerance has been made over several decades. In light of this, halophytic plants can be used as animal feeds and have promising features because they are a good feed resource. However, the main constraint of saline pasture systems is the extreme concentration of NaCl salt in drinking water and forage plants for grazing animals. Ecological reports revealed that excess diet salt causes mortality and morbidity worldwide. Animal fed halophytic forages may have adverse effects on growth performance and reproductive function in males and females due to inducing reductions in hormone regulation, such as testosterone, FSH, LH, and leptin. It was indicated that high salt intake promotes circulating inflammatory factors in the placenta and is associated with adversative effects on pregnancy. This review focuses on the scientific evidence related to the effect of high salt intake on growth performance, spermatogenesis, sperm function, and testicular morphology changes in male animals. In addition, the review will also focus on its effect on some female reproductive

features (e.g., ovarian follicle developments, placental indices, and granulosa cell function).  
Keywords: high salt intake; reproductive health; animals; sperm function; ovarian follicles

14) Sayed Haidar Abbas Raza, Nurgulsim Kaster, Rajwali Khan, Sameh A. Abdelnour, Mohamed E. Abd El-Hack, Asmaa F. Khafaga, Ayman Taha, **Husein Ohran**, Ayman A. Swelum, Nicola M. Schreurs and Linsen Zan. (2020). The Role of MicroRNAs in Muscle Tissue Development in Beef Cattle. *Genes*, 11(3), 295.

<https://doi.org/10.3390/genes11030295>

**Citatna baza: Web of Science (Q2, IF: 2.8)**

**Abstract:** In this review, we highlight information on microRNA (miRNA) identification and functional characterization in the beef for muscle and carcass composition traits, with an emphasis on Qinchuan beef cattle, and discuss the current challenges and future directions for the use of miRNA as a biomarker in cattle for breeding programs to improve meat quality and carcass traits. MicroRNAs are endogenous and non-coding RNA that have the function of making post-transcriptional modifications during the process of preadipocyte differentiation in mammals. Many studies claim that diverse miRNAs have an impact on adipogenesis. Furthermore, their target genes are associated with every phase of adipocyte differentiation. It has been confirmed that, during adipogenesis, several miRNAs are differentially expressed, including miR-204, miR-224, and miR-33. The development of mammalian skeletal muscle is sequentially controlled by somite commitment into progenitor cells, followed by their fusion and migration, the proliferation of myoblasts, and final modification into fast- and slow-twitch muscle fibers. It has been reported that miRNA in the bovine MEG3-DIO3 locus has a regulatory function for myoblast differentiation. Likewise, miR-224 has been associated with controlling the differentiation of bovine adipocytes by targeting lipoprotein lipase. Through the posttranscriptional downregulation of KLF6, miR-148a-3p disrupts the proliferation of bovine myoblasts and stimulates apoptosis while the miR-23a~27a~24-2 cluster represses adipogenesis. Additional to influences on muscle and fat, bta-mir-182, bta-mir-183, and bta-mir-338 represent regulators of proteolysis in muscle, which influences meat tenderness.  
Keywords: microRNA; meat quality; carcass; development; cattle

15) Raza, S. H. A., Khan, R., Abdelnour, S. A., Abd El-Hack, M. E., Khafaga, A. F., Taha, A., **Ohran, H.**, Mei, C., Schreurs, N.M. & Zan, L. (2019). Advances of Molecular Markers and Their Application for Body Variables and Carcass Traits in Qinchuan Cattle. *Genes*, 10(9), 717

<https://doi.org/10.3390/genes10090717>

**Citatna baza: Web of Science (Q2, IF: 2.8)**

**Abstract:** This review considers the unique characteristics of Chinese cattle and intramuscular fat content (IMF) as factors influencing meat quality, including tenderness, flavor, and juiciness of meat. Due to its nutritional qualities, meat contributes to a healthy and balanced diet. The intramuscular fat content and eating quality of beef are influenced by many factors, which can generally be divided into on-farm and pre-slaughter factors (breed, sex of cattle, age at slaughter, housing system, diet, and pre-slaughter handling) and postmortem factors (post-

slaughter processing, chilling temperature, and packaging). Meat quality traits can also be influenced by the individual genetic background of the animal. Worldwide, the function of genes and genetic polymorphisms that have potential effects on fattening of cattle and beef quality have been investigated. The use of DNA markers is recognized as a powerful and efficient approach to achieve genetic gain for desirable phenotypic characteristics, which is helpful for economic growth. The polymorphisms of the SIRT4, SIRT6, SIRT7, CRT3, ABHD5, KLF6, H-FABP, and ELOVL6 genes for body and growth characteristics of cattle, and also for beef quality, are considered with the aim of highlighting the significance of beef intramuscular fat content, and that growth, body, and meat quality characteristics are polygenically regulated.

Keywords: gene; markers; body; carcass; Qinchuan; cattle

16) Karić, E., Hodžić, A., Zahirović, A., Hrković-Porobija, A., & Ohan, H. (2021). Biochemical and haematological parameters in dogs with Cushing's syndrome. *Veterinarska stanica*, 52(4), 413-419.

<https://doi.org/10.46419/vs.52.4.5>

**Citatna baza: Scopus**

**Abstract:** The exposure of the body to stress, regardless of whether it comes from physical, chemical or emotional stimuli from the environment, causes an inadequate adaptation of the organisms which can contribute to the development of various diseases. Abnormally high blood concentrations of cortisol, known as stress hormone, lead to the development of a hormonal disorder called hyperadrenocorticism or Cushing's syndrome. In the majority of cases, Cushing's syndrome is diagnosed when symptoms are apparent, and screening endocrinological test confirms the existence either of increased cortisol production or decreased sensitivity of the hypothalamic-pituitary-adrenal axis to negative glucocorticoid feedback. In our research, we examined a total of 23 male and 7 female dogs that were suspected to have Cushing's syndrome, based on history and clinical signs. A total of 15 male and 5 female dogs were positive for Cushing's syndrome (HAC group), whereas the remaining dogs were used to form non-HAC group. Using the apparatus IDEXX "Vet Test 8008", the following biochemical parameters were determined: glucose, urea, creatinine, phosphorus, calcium, total protein, albumin, globulin, alanine aminotransferase, alkaline phosphatase, bilirubin, cholesterol, and amylase. Regarding haematological parameters, the following parameters were investigated: erythrocytes, leukocytes, platelets, erythrocyte indices (MCV, MCH, MCHC, RDW), white blood cell count, haemoglobin and haematocrit, using "Laser cite vet lab Station"(IDEXX). No significant differences in haematological and biochemical blood parameters were noticed between the HAC and the non-HAC group of dogs. However, dogs suffering from Cushing's syndrome had a higher value in the number of erythrocytes compared to the control group. The finding that has to be paid attention to is the difference in platelet count between the control group of dogs and dogs suffering from Cushing's syndrome.

Keywords: dogs; Cushing's syndrome; blood parameters

17) Hrković-Porobija, A., Hodžić, A., **Ohran, H.**, Hadžimusić, N., Batinić, V., Tahirović, D., ... & Kustura, A. (2021). Mineral elements in sheep cheese. *Veterinarska stanica*, 52(2), 185-192. <https://doi.org/10.46419/vs.52.2.5>

**Citatna baza: Scopus**

**Abstract:** The indigenous Travnik (Vlasic) cheese is produced in central Bosnia in the area of Mt. Vlasic. This cheese belongs to the group of white soft cheeses, ripened in brine under anaerobic conditions, and made from raw, thermally untreated sheep's milk. The production technology is very simple and is adapted to mountainous conditions. Cheese is an important source of essential nutrients, in particular proteins, fat, vitamins and minerals. The aim of this study was to determine the concentration of macroelements (Ca, Na, K, Mg, P) and microelements (Zn, Fe, Cu) in 15 samples of Travnik sheep cheese using the atomic absorption spectrometry (AAS) and ultraviolet–visible spectrometry (UV-VIS) methods. A tendency of increasing Mg and K, Fe and Ca, Fe and Mg, and Fe and P was determined in the examined samples, but without statistical significance. The correlation coefficient values showed statistical validity at the level of high significance of differences ( $P < 0.01$ ).  
**Keywords:** sheep; cheese; mineral elements; AAS; UV-VIS

#### **Lista naučnih radova u časopisima koji prate relevantnu bazu podataka**

18) **Ohran, H.**, Softić, A., Baltić, K., Batinić, V., Alilović, I., Obhodaš, M., ... & Hodžić, A. (2025). Evaluating the impact of season and breeding area on blood parameters in Pramenka sheep exposed to thermal stress conditions. *Veterinaria*, 74(2), 143-158. <https://doi.org/10.51607/22331360.2025.74.2.143>

**Citatna baza: EBSCO, CABI**

**Abstract:** This study aimed to investigate seasonal variations in blood parameters of two Pramenka sheep strains, Dubska and Hercegovacka, across and within four areas in Bosnia and Herzegovina under thermal stress conditions. It included 48 sheep from Vlasic and Kupres (breeding areas of the Dubska strain), and Nevesinje and Podvezlje (breeding areas of the Hercegovacka strain). The investigation was conducted across both summer and winter seasons, encompassing a total of eight herds (two per area). Hematological parameters included erythrocyte, leukocyte, and platelet counts, mean platelet volume, the total count of granulocytic and agranulocytic leukocytes, hemoglobin concentration, red blood cell distribution width and erythrocyte parameters. Biochemical analyses covered total bilirubin, total cholesterol, glucose, urea, creatinine, creatine kinase, non-esterified fatty acids, beta-hydroxybutyrate, proteins, liver enzymes and electrolytes. Results revealed significantly higher values of red blood cell parameters during the summer period in the area of Nevesinje ( $P < 0.05$ ) compared to the Podvezlje area. Additionally, it's important to emphasize significantly increased levels of basophils during the summer season across all areas, except for Vlasic, when compared to the winter season. Furthermore, the amounts of total proteins, albumin and globulin were significantly increased in all areas during the summer compared to winter. The study findings underscore the substantial influence of the breeding area, encompassing its geological composition, spatial distribution, and land cover, on specific blood

parameters investigated in sheep during periods characterized by adverse temperature conditions.

**Keywords:** Blood parameters, sheep, Pramenka, thermal stress, season

19) Hrković-Porobija, A., Hodžić, A., Crnkić, Č., **Ohran, H.**, Varatanović, M., Softić, A., ... & Ćutuk, A. (2024). The effect of altitude on the fatty-acid profile of sheep milk from Bosnia and Herzegovina. *Journal of Hygienic Engineering & Design*, 47.

**Citatna baza:** EBSCO, CABI

**Abstract:** Sheep breeding on the mountain pastures of Bosnia and Herzegovina is a tradition inherited from the ancestors. Indigenous sheep breeds are widespread and well-adapted to harsh mountain farming conditions. Each year, after weaning, the sheep start grazing in the lowlands, then gradually moving to mountain pastures. Grazing positively affects the composition of fatty acids in sheep milk, with increased availability of polyunsaturated fatty acids in grass, and subsequently in milk. Consequently, this work aimed to study the profile of fatty acids in sheep milk during grazing in two geographical areas (Livanjsko polje and Vlašić Mountain). Milk was sampled from a total of 115 Pramenka sheep at two different pasture locations that differed in altitude: the location of pastures of Livanjsko Polje at an altitude of 700 - 750 m.a.s.l., mountain pastures of the Vlašić Mountain at an altitude of 1260 to 1280 m.a.s.l. Sheep milk samples were gathered during the grazing season from June to September and were analyzed by gas chromatography in the "As Vitas" laboratory of the Oslo Innovation Centre, Norway. The content of fatty acids in sheep's milk in this study showed a tendency to vary, with a relatively high content of saturated fatty acids. Milk samples from the Vlašić Mountain contained more polyunsaturated fatty acids than milk from the Livno area and a more favorable ratio of saturated to polyunsaturated fatty acids. Milk samples from both study areas contained an almost ideal ratio of n-6/n-3 fatty acids. The concentration of most bioactive fatty acids was higher in sheep's milk from the Vlašić Mountain area. Therefore, we can conclude that the altitude can influence the fatty acid profile of sheep milk.  
**Keywords:** Sheep, Milk, Fatty acid profile, Altitude.

20) Astuti, P.K., Fajardo, R., Wanjala, G., Kichamu, N., **Ohran, H.**, Badaoui, B., Bagi, Z. and Kusza, S., (2023). Heat Stress: Can Animals be Stressed but still be Healthy?. *Scientific Papers Animal Science And Biotechnologies*, 56(1), pp.194-194.

**Citatna baza:** EBSCO, CABI

**Abstract:** In this era of rapid climate change, heat stress has emerged as a major problem for sheep farming. The quantity and quality of sheep production, as well as the welfare, are all shown to be negatively impacted by heat stress. Reduced cellular immune function in sheep exposed to high temperatures increases susceptibility to various diseases, although the underlying mechanisms are unclear. The imbalance between oxidants and antioxidants, known as oxidative stress, negatively impacts animal health due to heat stress-induced impairments in immune responses, increased production of reactive oxygen species, and/or a

lack of antioxidants. Heat stress in livestock has negative effects on both the cell-mediated and humoral immune responses. However, the negative effects of heat stress on immune response in sheep can vary by breed. This review discusses how heat stress affects sheep's immunity. An overview of some molecular markers related to immunity, such as interleukin (ILs), Toll-like receptors (TLRs), and also the heat stress protein (HSPs) in sheep, is also discussed. Finally, recent research on the effects of antioxidant supplementation and other promising nutritional strategies for reducing heat stress and improving animal health is presented.

Keywords: animal health, antioxidant, heat stress, immunity, sheep

21) Amina Hrković-Porobija, Mensur Vegara, Aida Hodžić, Eva Pašić-Juhas, Almira Softić, Husein Ohran. (2019). The Influence of Geographic Area on Blood Parameters of Pramenka Sheep in the Area of Bosnia and Herzegovina. Turkish Journal of Veterinary Research. 3(1): 1-8.

Citatna baza: EBSCO, CABI

#### Abstract:

**Objectives:** The aim of this study was to determine the influence of geographical area (central and southwestern part of Bosnia and Herzegovina) on hematological and biochemical blood parameters of autochthonous Pramenka sheep.

**Materials and Methods:** The study included 104 sheep from the Vlasica mountain (central part) (n = 52) and Livno (southwestern part) (n = 52). Blood samples were taken from the jugular vein into Vacutainer tubes with EDTA anticoagulant for hematological, for glucose, analyses and BD Vacutainer® SST II gel for biochemical analyses. All hematological and biochemical analyses were performed within the next 24 hours, and until then the samples were kept at 4 °C. Hematological parameters included total Red Blood Cell (RBC), White Blood Cell (WBC), Hemoglobin concentration (Hb), Hematocrit (Hct), Mean Corpuscular Hemoglobin (MCH), Mean Corpuscular Hemoglobin Concentration (MCHC), Mean Corpuscular Volume (MCV), Mean Platelet Volume (MPV), Red Cell Distribution Width (RDW) and White Cell Differential Count (WCDC). Analyses are carried out using the automated veterinary hematological analyzer Advia 120 SIEMENS. Blood in the serum tubes was allowed to clot for at least 30 min prior to centrifugation. Serum samples were kept frozen at -20 °C until biochemical analyses were performed. Biochemical parameters were determined by analyzer Olympus AU400 with Beckman Coulter reagents according to the manufacturer's protocol. Parameters for biochemistry panel included: total protein (TP), albumin (ALB), globulin (GLO), urea (BUM), creatinine (CRE), glucose (GLU), aspartate aminotransferase (AST),  $\gamma$ -glutamyltransferase (GGT), creatine kinase (CK), cholesterol (CHO), bilirubin (BIL), calcium (Ca), phosphorus (P), sodium (Na), chloride (Cl), potassium (K) and magnesium (Mg). All analyses were tested to spectrophotometric method, except for Na, K, Cl, which were generated by ISE method, or by ion selective method. BHBA and NEFA were constructed with reagents from Randox.

**Results:** The values of WBC ( $p < 0.05$ ), RBC ( $p < 0.001$ ), Hb ( $p < 0.001$ ), PCV ( $p < 0.001$ ), MCV (0.05), NEU ( $p < 0.01$ ) from the Livno area, while the value of LYM ( $p < 0.05$ ) was determined for sheep

from the Vlasic area. The correlative values between RBC:Hb ( $P<0.001$ ), RBC:PCV ( $P<0.001$ ), WBC:NEU ( $P<0.001$ ), WBC:LYM ( $P<0.001$ ), WBC:BAS ( $P<0.001$ ) areas. The correlative correlation at  $P<0.01$  was established between RBC:MCH, RBC:PLT, RBC:MPV in sheep from Vlasica area, while correlative values at  $P<0.05$  were established between RBC:MPC, WBC:MON for sheep from the Livno area. The values of BHB ( $p<0.001$ ), total protein ( $p<0.001$ ), albumin ( $p<0.001$ ), urea ( $p<0.001$ ), AST ( $p<0.001$ ), cholesterol ( $p<0.001$ ), magnesium ( $p<0.001$ ) were determined for sheep in area Livno. The values of NEFA ( $p<0.001$ ), creatinine ( $p<0.01$ ), glucose ( $p<0.001$ ), bilirubin ( $p<0.001$ ), phosphate ( $p<0.001$ ) were established for sheep in the Vlasic area. Correlative correlation ( $P<0.001$ ) between total protein:chloride, calcium:phosphates, sodium:chlorides was found in animals from Vlasic area, while correlation was found ( $P<0.05$ ) between sodium:chloride in animals from the Livno area.

Conclusion: It was concluded that values showed significant differences for individual haematological and biochemical parameters in sheep for both investigated areas.

Keywords: Blood, Pramenka, Hematology, Biochemistry, Sheep

22) Hrković-Porobija, A., Hodžić, A., Vegara, M., Softić, A., Kavazović, A., Ohran, H., & Batinić, V. (2018). DUŠIČNE TVARI KAO PARAMETRI KVALITETE LIVANJSKOG I TRAVNIČKOG SIRA. Krmiva: Časopis o hranidbi životinja, proizvodnji i tehnologiji krme, 60(2), 55-61.

<https://doi.org/10.33128/k.60.2.1>

Citatna baza: EBSCO, CABI

**Abstract:** Istraživanje autohtone proizvodnje Livanjskog i Travničkog sira ima za cilj očuvanje tradicije, organizirane proizvodnje i plasmana na tržišta izvan domicilne regije. Autohtoni sirevi su raznovrsnijeg okusa, arome i konzistencije u odnosu na industrijski proizvedene sireve, gdje je tehnologija definirana, a uvjeti proizvodnje kontrolirani. Nadmorska visina, kvalitetna voda i hrana nisu dovoljni čimbenici za trajno održavanje kvalitete autohtonih sireva. Na osnovi standardizacije tehnoloških postupaka proizvodnje može se proizvesti sir specifičnog obilježja. Cilj istraživanja bio je odrediti i komparirati ukupni dušik i dušične frakcije u dva autohtona sira – Livanjskom i Travničkom, ovisno o terminu uzorkovanja (srpanj, kolovoz i rujan). Za analizu su uzorci sira uzeti nakon 90 dana zrenja u izvornim uvjetima okoline. U uzorcima sira određivan je ukupni dušik i dušične frakcije. Određivanje sadržaja ukupnog dušika (TN), kao i dušika topljivog u vodi pri pH 4,6 (SN-4,6) i 12% trikloroctenoj kiselini (TCA-SN) provedeno je metodom po Kjeldahlu. Vrijednosti TN, SN-4,6 i TCA-SN u uzorcima Travničkog sira bile su niže u odnosu na uzorke Livanjskog sira pri svakom terminu uzorkovanja. Najveće vrijednosti indeksa SN-4,6/TN i TCA-SN/TN kod oba ispitivana sira utvrđene su u sirevima proizvedenim od mlijeka prikupljenog tijekom rujna. Indeksi zrenja su bili viši u uzorcima Travničkog sira, što ukazuje na povećanu primarnu proteolizu u odnosu na Livanjski sir, to može biti rezultat specifičnosti biljnog pokrivača i ispaše ovaca na nižoj nadmorskoj visini. Ključne riječi: Livanjski sir; Travnički sir; dušične tvari; zrenje; kvaliteta; sir

23) Hrkovic-Porobija, A., Hodzic, A., Vegara, M., **Ohran, H.**, Softic, A., Kavazovic, A., & Varatanovic, M. (2019). The fatty acid composition of sheep's milk of an autochthonous breed. *Biotechnology in Animal Husbandry*, 35(1), 35-47.

<https://doi.org/10.2298/BAH1901035H>

**Citatne baze: DOAJ, EBSCO**

**Abstract:** The study included a total of 127 sheep milk samples from two different areas (Livno and Travnik) in summer feeding period (July, August and September). Fatty acids in milk were determined by gas chromatography (GC). The animals were marked with the appropriate number of ear tags on the basis of which we always took samples from the same animals through different periods. Fatty acids in milk were determined by gas chromatography and the following fatty acids composition: butyric acid, caproic acid, caprylic acid, capric acid, stearic acid, oleic acid, linoleic acid, arachidonic acid, eicosapentaenoic acid, docosahexaenoic acid, rumenic acid. The fatty acid content of sheep's milk in this study showed a tendency of variation, both within and between sampling areas, and characterized by its relatively high content of saturated fatty acid (SFA) during the period of harvest. Key words: milk, fatty acid composition, sheep

24) Amina, H. P., Aida, H., Nejra, H., Alma, R., Lejla, V., Almira, S., **Husein, O.** & Kavazović, A. (2018). Hormonal status of milking sheep. *Radovi Poljoprivrednog Fakulteta Univerziteta u Sarajevu\Works of the Faculty of Agriculture University of Sarajevo*, 63(68 (2)), 72-82.

**Citatna baza: CABI**

**Abstract:** The complex process of maintaining the constancy of the internal environment depends on homeostatic mechanisms and homeoregulators, who are trying to intensity of metabolic processes subordinated to the needs of the body, depending on the condition such as pregnancy and lactation. In fact the most important role hormones such bioactive substances that in very small amounts regulating metabolic processes. The aim of this study was to determine hormonal status in sheep as demanding metabolic load. According to the research goals is included always blood sampling from the same animal, through three different periods (July, August, September). Testing was performed on a total of 117 sheep Pramenka breed with areas of Livno and Travnik (Vlasic). In sheep blood serum were determined by ELISA values following hormones: triiodothyronin, thyroxin, cortisol and insulin. Hormonal status of test animals was relatively stable for periods of sampling, but are significant differences between sites, with the exception of cortisol. The lack of statistical significance of differences in cortisol between areas of Livno and Travnik can be due to stress sampled by taking blood that is equally increased cortisol levels and "concealed" all other factors that affect its level in serum. High concentrations of thyroid hormones, particularly in sheep from the locality Livno, can be a sign of decreased appetite, which is one of the earliest disorders in conditions of heat stress. In both areas was determined and high insulinemia, possibly as a result of feeding that significantly change the hormonal regulation of metabolism in lactating and leads to stimulation of the endocrine pancreas.

25) Porobija, A. H., Hodzic, A., Ohran, H., Vegara, M., Rustempašić, A., & Velic, L. (2018). Biochemical and Endocrine Profiling of Bosnia and Hercegovina's Native Pramenka Sheep. *Journal of Animal Research*, 8(5), 741-750.

**Citatna baza: DOAJ**

**Abstract:** The aim of this investigation is to determine changes in concentrations of biochemical and metabolic hormones in the blood of Pramenka sheep. The study included 117 sheep of Pramenka breed monitored during three different periods (July, August, September) from Livno and Travnik (Vlašić) areas. The following biochemical parameters were determined in sheep blood samples: glucose, cholesterol, triglycerides, total protein, albumin, urea, aspartate aminotransferase (AST), alanine aminotransferase (ALT), lactate dehydrogenase (LDH), gamma-glutamyltransferase (GGT), alkaline phosphatase (ALP), were performed by spectrometric analyzer (Kodak Ektachem, analyzer DT 60 II, DTSC Modul and DTE Modul). In sheep blood serum determined the following hormones by ELISA values: triiodothyronine, thyroxine, cortisol, and insulin. Hormonal status of test animals was relatively stable during periods of sampling, but significant differences have been confirmed based on locality, with the exception of cortisol. The lack of statistical significance of differences for cortisol between areas of Livno and Travnik can be due to stress caused by collecting blood samples which have equally increased cortisol levels and "concealed" all other factors that affect its level in the serum. High concentrations of thyroid hormones, particularly in sheep from the locality of Livno, can be a sign of decreased appetite, which is one of the earliest disorders in conditions of heat stress. In both areas, high insulinemia was determined as well, possibly as a result of feeding which significantly changed the hormonal regulation of metabolism in lactation process and led towards stimulation of the endocrine pancreas. **Keywords:** blood, biochemical, hormones, sheep

**Lista naučnih radova u zbornicima koji prate relevantnu bazu podataka (kongresi, simpozijumi, savjetovanje)**

26) Fajardo, R., Astuti, P.K., Bagi, Z., Bodrogi, L., Pintér, T., Skoda, G., Ohran, H., Wanjala, G. and Kusza, S., (2023). Continental vs. tropical breed: Immunity comparison under heat stress conditions utilizing qRT-PCR technique. In *BIO Web of Conferences* (Vol. 80, p. 05001). EDP Sciences.

<https://doi.org/10.1051/bioconf/20238005001>

**4th International Conference on Smart and Innovative Agriculture, Yogyakarta, Indonesia, October 10-11, 2023**

**Abstract:** Understanding the responses of animals to seasonal heat stress on the genomic level has led to the identification of genes implicated in thermal stress reaction mechanisms. In this study, the relative gene expression of Interleukin-10 (IL-10), an anti-inflammatory cytokine and biomarker for heat stress-mediated immune modulation, was observed during the

summer and winter seasons in continental and tropical sheep breeds, namely, Hungarian Indigenous Tsigai and White Dorper, employing quantitative real-time polymerase chain reaction (qRT-PCR). Temperature-humidity indices (THI) were calculated to assess heat stress levels. The results indicate that IL-10 CT-values were significantly higher during the summer, when heat stress prevails, in both sheep breeds compared to winter. While the White Dorper exhibited a higher numerical value for the summer relative gene expression ratio (16.2) compared to the Hungarian Indigenous Tsigai (12.3), no significant differences in CT values were observed between breeds or among sexes. These findings suggest the immune-adaptive characteristics of the two sheep breeds during seasonal heat stress. The variation of IL-10 gene expression levels between the two breeds can be attributed to their geographical origins; the White Dorper emerging from arid subtropical South Africa and the Hungarian Indigenous Tsigai Sheep thriving in the seasonally harsh Carpathian climate for centuries. Keywords: gene expression, heat stress, Hungarian Tsigai, IL-10, White Dorper

27) **Ohran, H.** (2023). Genetics of Thermal Stress Tolerance in Breeding Animals. Genetics&Applications |ABMBBIH – Special Edition, Book of Abstracts of the International Conference of Biochemists and Molecular Biologists in Bosnia and Herzegovina, pp 73.

<https://doi.org/10.31383/ga.speced03>

**International Conference of Biochemists and Molecular Biologists in Bosnia and Herzegovina, May 18-20, 2023**

Abstract: Climate change is one of the biggest global concerns regarding livestock production. The negative impacts of climate change on the welfare and production of breeding animals are numerous. It leads to losses of pastures and reduction of water resources, outbreaks of diseases and infectious agents, all of which negatively influence the quantity and quality of animal products and cause financial burdens. Climate affects livestock growth rates, reproduction, milk and egg products, morbidity, and mortality. When the ambient temperature exceeds the upper or lower critical values of the internal temperature of animals, a special form of stress called thermal stress occurs. It is accompanied by damage to intracellular structures, i.e. essential macromolecules such as proteins and lipoproteins, DNA and RNA, as well as changes in gene expression patterns. The detection of genomic regions, whose activation is mediated by climate, is one of the central research topics in evolutionary biology, with the potential to illuminate the genetic basis of adaptation and tolerance to climate change. The identification of such genetic markers is necessary for the selection of superior breeds that can survive in different agroecological zones. There are over 400 genes that are associated with the response to temperature change. This paper aims to review the potential biomarkers responsible for adaptability traits, which can be further used for the selection of animals tolerant to thermal stress in the changing climate scenario. Keywords: Thermal Stress, Climate Change, Genetic markers, Animals

28) Masala, A., Alilović, I., **Ohran, H.**, Kusza, S., Goletic, T., Hrkovic-Porobija, A., & Hodzic, A. (2019). Genetic Polymorphism  $\beta$ -Lactoglobulin Gene in Dubska Pramenka Sheep Breed. In

International Conference on Medical and Biological Engineering (pp. 641-645). Springer, Cham.

<https://doi.org/10.1007/978-3-030-17971-7>

**International Conference on Medical and Biological Engineering, CMBEBIH 2019. 16-18 May; Banja Luka, Bosnia and Herzegovina**

**Abstract:** Polymorphism exists in  $\beta$ -lactoglobulin (LGB) milk encoding gene in dairy animals, resulting in presence of different protein isoforms in milk. There is a link between genetic polymorphism in dairy proteins with technological properties of milk, milk yield and allergic reactions in humans. This study was conducted to identify LGB protein isoforms and their frequencies in population of Dubska Pramenka sheep breed. A total of 90 blood samples were genotyped using PCR-RFLP analysis. Genotypes were determined by PCR amplification followed by digestion with *RsaI* for identification of A and B alleles and using *MspI* for C allele identification. Two genetic variants (A and B) and three genotypes (AA, AB and BB) were identified. The presence of allele C in this study was not noticed. Gene frequencies of LGB A were 13; LGB B were 61; LGB AB were 26. There is no data on the genetic influence on the quality and quantity of milk from Dubska pramenka sheep, and there is need for further studies.

**Keywords:** LGB, Dubska Pramenka sheep, PCR-RFLP

29) Karić E., Hrković-Porobija Amina, **Ohran Husein**, Hodžić Aida. (2015). Metabolic blood profile Pramenka Sheep during lactation. International Congress "One World - One Health - One Vision", Sarajevo, Bosnia and Herzegovina, October 14 - 16, 2015

**International Congress "One World - One Health - One Vision", Sarajevo, Bosnia and Herzegovina, October 14 - 16, 2015, University of Sarajevo – Veterinary Faculty**

**Abstract:** The goal of this study is to investigate metabolic blood profile of the Pramenka sheep during lactation for the purpose of getting the reference value for the Pramenka sheep during lactation. Samples from 129 sheep of the Pramenka breed were taken in the area of Livno and Travnik. The blood was sampled from v. jugularis externa and these following parameters were determined in the serum: total protein, glucose, cholesterol, albumin, urea, GGT, LDH, ALKP, ALT, AST, P, Ca and Mg. The results of the research show a significant influence of the summer diet on the concentrations of the examined parameters in the Pramenka blood plasma during lactation.

**Keywords:** Pramenka, metabolic blood profile, lactation

30) Amina Hrković-Porobija, Aida Hodžić, **Husein Ohran**. (2014). Metabolic hormones by pramenka sheep in lactation period. The 2nd International Scientific Meeting of Anatomy and Physiology; Fundamentals of Medicine, Juni 2014, Zagreb, Croatia

**The 2nd International Scientific Meeting of Anatomy and Physiology; Fundamentals of Medicine, Juni 2014, Zagreb, Croatia**

**Abstract:** The complex processes of keeping constancy in the living organism depends on homeostatic and homeoretic mechanisms, which tend to keep the intensity of metabolic processes within the physiological needs of the organism, where the most important part are hormones as biological active substances, which in very small concentrations regulate metabolic processes. Serum concentrations of the hormones can vary in dependence of external and internal factors. The beginning of the lactation is a turning point where the endocrine system diverts from one to the other homeoretic process. The main goal of this work was to examine the most important metabolic hormones in the blood of Pramenka sheep in the lactation period, in the area of Livno and Travnik. For that intention, the examination involved 127 sheep (58 sheep from the area of Livno, and 69 from Travnik) that had a diet based on summer pasture during the examination period (July, August and September). In the serum of the examined animals, samples were taken in three periods during the examination, and the next hormones were determined: triiodothyronine (T3) and thyroxine (T4), insulin and cortisol. The concentration of hormones in the serum of sheep vary in different periods of sampling, that can be in connection with homeostatic adaptation on alterations in energy supply of the animals during lactation period, when the energy consumption is negative, but the milk production reaches the maximum.

**Keywords:** pramenka, serum, metabolic hormones

### 3.2. Naučni skupovi u zemlji i inostranstvu

|      |                                                                                                                                                                                            |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2013 | The Second symposium of large and small practice veterinarian of BiH with international participation (North-American veterinary conference, Veterinary Chamber of BiH), 25-26 April, 2013 |
| 2018 | Obuke akademskog osoblja na visokoškolskim ustanovama sa ciljem unapređenja prakse inkluzivnog odgoja i obrazovanja – u organizaciji UNICEF-a, Septembar 2018.                             |
| 2018 | WSAVA Smjernice u stomatologiji – Veterinarski fakultet, Univerzitet u Sarajevu, 13.10.2018.                                                                                               |
| 2018 | 1. Naučno-stručni skup o egzotičnim životinjama „Egzotične životinje u nauci i praksi“ sa međunarodnim učešćem, Sarajevo 14. – 16.12.2018. – organizator i predavač                        |
| 2019 | CMBEBIH – „International Conference on Medical and Biomedical Engineering“, Banja Luka, BiH, 16 – 18 May, 2019.                                                                            |
| 2019 | Reptilomanija+ - Edukativna izložba sa radionicama u organizaciji Veterinarskog fakulteta Sveučilišta u Zagrebu, 29.Maj – 3.Juni 2019.                                                     |
| 2019 | 2. Naučno-stručni skup o egzotičnim i divljim životinjama sa međunarodnim učešćem i edukativnom izložbom, Sarajevo 02. - 03.11.2019. – podrška organizaciji                                |
| 2020 | Konferencija o humanim inovacijama u edukaciji „Ibrahim Arnautović“. Sarajevo, 30. – 31. Oktobar 2020. – predavač                                                                          |
| 2022 | International Conference “Erasmus+ Internationalization Ambassadors-Together for a Green Future” - Banat’s University of Agricultural Sciences and                                         |

|      |                                                                                                                                                                                                                                                                   |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      | Veterinary Medicine "King Michael I of Romania", Timisoara, Romania, 23. – 27. May 2022.                                                                                                                                                                          |
| 2023 | International Conference of Biochemists and Molecular Biologists in Bosnia and Herzegovina – ABMBBIH Conference 2023; Sarajevo, BiH, 18 – 20 May, 2023. - predavač                                                                                                |
| 2023 | Applied Biotechnology for 2030 Agenda, ICGEB Meetings and Courses 2023, University of Sarajevo- Institute for Genetic Engineering and Biotechnology. Use of genetic markers in the assessment of climate change resilience of indigenous animals – workshop tutor |
| 2024 | Naučno-stručni skup „Gmizavci u veterinarskoj medicini“ - Univerzitet u Sarajevu – Veterinarski fakultet, 7. Novembar, 2024. - organizator                                                                                                                        |
| 2024 | 9th Student Congress „Food-Nutrition-Health“ with international participation – član naučnog odbora Kongresa, 14. – 16. Novembar, 2024.                                                                                                                           |

### 3.3. Naučno-istraživački projekti

|           |                                                                                                                                                    |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| 2019/2020 | „Ekspresija gena toplinskog stresa kod autohtone bosanskohercegovačke ovce pramenke“ – Ministarstvo za obrazovanje, nauku i mlade Kantona Sarajevo |
| 2022/2024 | “Oksidativni stres i proteini akutne faze kod pasa prekomjerne tjelesne mase” – Federalno ministarstvo obrazovanja i nauke                         |

### 3.4. Univerzitetski udžbenici

1. Amina Hrković-Porobija, **Husein Ohran**, Aida Hodžić (2019). Praktikum iz fiziologije domaćih životinja II. Sarajevo: Veterinarski fakultet, Univerzitet u Sarajevu. ISBN - 978-99976-816-9-0; COBISS.BH-ID – 141828609
2. Lejla Velić, Toni Eterović, Kiril Kretevski, Pamela Bejdić, Nedžad Hadžiomerović, Nedžad, Amina Hrković-Porobija, **Husein Ohran**, Nejra Hadžimusić, Benjamin Čengić, Amel Ćutuk (2021). Bakterijske i virusne bolesti pasa i mačaka. Sarajevo: Veterinarski fakultet Univerziteta u Sarajevu. ISBN - 978-9958-599-86-6; COBISS.BH-ID – 45948678
3. Trifković, J., **Ohran, H.**, Škapur, V., Stojković, M. (2024). Anatomija i fiziologija domaćih životinja za studente poljoprivrednih fakulteta. Univerzitet u Istočnom Sarajevu, Poljoprivredni fakultet. ISBN - 978-99976-816-9-0; COBISS.BH-ID – 141828609

## 4. DOPRINOS PROCESU INTERNACIONALIZACIJE

Kroz mnogobrojne aktivnosti, dr.sci. Husein Ohran je dao doprinos procesu internacionalizacije Univerziteta u Sarajevu i Veterinarskog fakulteta. Kandidat je u dosadašnjem radu sudjelovao u dvije međunarodne mobilnosti. U periodu od 11.05. – 17.05.2025. godine, dr.sci. Husein Ohran je u sklopu Erasmus+ Teaching mobilnosti boravio na Institutu za veterinarsku fiziologiju, Fakultet veterinarske medicine, Freie Universität Berlin, Njemačka. U navedenom periodu kandidat je održao osam sati nastave na temu fiziologije

termoregulacije i termalnog stresa na njemačkom i engleskom jeziku. Prilikom mobilnosti, kandidat je u kratkim crtama predstavio Univerzitet u Sarajevu i Veterinarski fakultet, te svoja dosadašnja istraživanja, otvorivši mogućnost potencijalne saradnje sa ovom renomiranom evropskom institucijom.

Zatim, u periodu 23.05. – 27.05.2022., kandidat je u sklopu Erasmus+ Training mobilnosti boravio u Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania", Temišvar, Rumunija. Tokom ove mobilnosti, kandidat je učestvovao na internacionalnoj konferenciji "Erasmus+ Internationalization Ambassadors - Together for a Green Future". Učešće na pomenutoj konferenciji je uzelo oko 100 učesnika iz 21 zemlje sa veterinarskih i poljoprivrednih fakulteta, između ostalih Univerziteta iz Rumunije, Mađarske, Poljske, Albanije, Armenije, Mongolije, Kenije, Konga, Malija, Nigerije, Haitija, Egipta, Jordana, Maroka, itd. Akcenat ove konferencije je bio umrežavanje i uspostavljanje saradnje između institucija učesnika konferencije, te je kandidat ostvario veliki broj kontakata.

Pored iznad navedenog, dr.sci. Husein Obran je aktivni učesnik na još nekoliko međunarodnih konferencija navedenih u prethodnom poglavlju, pri čemu se izdvaja Internacionalna konferencija biohemičara i molekularnih biologa u BiH – "ABMBBIH Conference 2023" sa velikim brojem učesnika iz zemalja širom Europe na kojoj je kandidat bio predavač.

## 5. DRUŠTVENI DOPRINOS

Društveni doprinos koji kandidat ostvaruje ogleda se kroz nekoliko aktivnosti. Dr.sci. Husein Obran dobitnik je nekoliko nagrada i priznanja: nagrade za najboljeg asistenta izabranog od strane studenata druge godine svake godine od početka zaposlenja – akademske 2019/2020., 2020/2021., 2021/2022., 2022/2023. i 2023/2024. godine; nagrade dodijeljene od Asocijacije studenata veterinarskog fakulteta za doprinos organizaciji prvog studentskog naučno-istraživačkog kongresa medicinske grupacije fakulteta Univerziteta u Sarajevu „One Health, One Future“, zatim za pomoć pri izradi studentskog časopisa „Veterinar“ i za doprinos radu ASVF 2023/2024. Posebno ističemo nagradu Univerziteta u Sarajevu za rezultate naučnog/umjetničkog rada u 2021. godini.

Dodatno, društveni doprinos se ogleda kroz učešće u radu tijelima/grupama/komisijama Fakulteta i Univerziteta. Kandidat je član Tima za promociju upisa na Univerzitet u Sarajevu - Veterinarski fakultet, Komisije za nastavu i studentska pitanja Univerzitet u Sarajevu - Veterinarskog fakulteta, te je bio član Radne grupe Univerziteta u Sarajevu za pripremu komentara, prijedloga i sugestija na Prednacrt Zakona o izmjenama i dopunama Zakona o naučnoistraživačkoj djelatnosti Kantona Sarajevo (Odluka broj: 0101-1239/25 od 03.02.2025. godine).

Osim toga, bio je član naučnog odbora IX studentskog kongresa sa međunarodnim učešćem „Hrana-ishrana-zdravlje“.

Društveni doprinos kandidat ostvaruje i kroz članstvo u Udruženju biohemičara i molekularnih biologa u Bosni i Hercegovini (UBMBIH) te Alumni klubu Fondacije Konrad Adenauer (KAS) u Sarajevu.

## MIŠLJENJE I PRIJEDLOG

Na osnovu uvida i analize svih raspoloživih podataka u priloženoj dokumentaciji predviđenoj Konkursom koju je dostavio dr.sci. Husein Ohran, viši asistent Univerziteta u Sarajevu - Veterinarskog fakulteta, kao jedini kandidat za izbor u zvanje DOCENT za oblast Temeljne nauke veterinarske medicine te na osnovu dosadašnjih saznanja o ukupnom nastavno – pedagoškom, naučnom i profesionalnom radu i kvalitetama, članovi Komisije konstatuju da je kandidat:

- stekao naučni stepen doktora veterinarskih nauka;
- proveo po jedan izborni period u zvanju asistenta i višeg asistenta za oblast Temeljne nauke veterinarske medicine;
- uz pokazane nastavničke sposobnosti izvodi praktičnu nastavu na Integriranom studiju veterinarske medicine I i II ciklus na obaveznim predmetima Fiziologija domaćih životinja I, Fiziologija domaćih životinja II, Uvod u naučno-istraživački rad u veterinarskoj medicini te izbornih predmeta Morfofiziologija domaće perad, Dentalna morfologija i Ekofiziologija proizvodnih životinja;
- objavio ukupno 30 naučnih radova u časopisima i zbornicima koji se nalaze u relevantnim naučnim bazama podataka, od čega 17 radova u časopisima koji prate relevantnu međunarodnu bazu podataka (Web of Science – 15 i Scopus - 2), osam (8) radova u časopisima koji prate relevantnu bazu podataka, te pet (5) radova u zbornicima koji prate relevantnu bazu podataka (kongresi, simpozijumi, savjetovanje);
- koautor u tri (3) univerzitetska udžbenika;
- učestvovao u dva (2) nacionalna naučno-istraživačka projekta;
- učestvovao na više naučno-stručnih skupova;
- uspješno pohađao TRAIN program iz oblasti pedagoškog obrazovanja i kompetencija akademskog osoblja Univerziteta u Sarajevu te stekao osnove pedagoškog obrazovanja;
- ostvario društveni i doprinos internacionalizaciji kroz mnogobrojne aktivnosti (mobilnosti, naučne konferencije, rad u tijelima/grupama/komisijama, članstva).

Imajući u vidu sve navedeno, članovi Komisije smatraju da dr.sci. Husein Ohran, viši asistent, ispunjava sve uslove iz Zakona o visokom obrazovanju i Statuta Univerziteta u Sarajevu neophodne za izbor u naučno-nastavno zvanje docent za oblast Temeljne nauke veterinarske medicine. Uzimajući u obzir ukupan radni angažman kandidata te iskazani interes za kontinuiranim učenjem, članovi Komisije su mišljenja da kandidat posjeduje sve nastavno - pedagoške, naučne, stručne i prevashodno moralne kvalitete primjerene savremenom univerzitetskom nastavniku.

Stoga jednoglasno i sa zadovoljstvom predlažemo Vijeću Univerziteta u Sarajevu - Veterinarskog fakulteta i Senatu Univerziteta u Sarajevu da se dr.sci. Husein Ohran, viši asistent na Univerzitetu u Sarajevu – Veterinarskom fakultetu, izabere u naučno-nastavno zvanje **DOCENT** za oblast **Temeljne nauke veterinarske medicine**.

U Sarajevu, 19.11.2025.

Članovi Komisije:

Prof. Dr. Aida Hodžić, predsjednik

Prof. Dr. Amina Hrković, član

Prof. Dr. Faruk Tandir, član