

ORAL ABSTRACTS

ADVANCING MEAT CLASSIFICATION AND VETERINARY TRAINING THROUGH 3D TECHNOLOGY

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This paper was presented at the 10th International Congress on Advances in Veterinary and Technics (ICAVST 2025) in Sarajevo, Bosnia and Herzegovina.

Support / sponsor note: This research was funded by a grant from the Sarajevo Canton Ministry for Sciences, Higher Education and Youth for 2024.

How to cite: Dučić N, Tandir F, Avdić R, Čaklovica K, Fazlović N, Vejzović A, et al. 2025. Advancing meat classification and veterinary training through 3D technology. Veterinaria, 74Suppl(1), 77-8.

ABSTRACT

The use of different distant learning methods in veterinary medicine has become more popular since the COVID-19 pandemic. Technologies such as virtual reality (VR), 3D models, video lectures, and other digital tools have enhanced the educational experience by enabling interactive 3D visualization, particularly in teaching anatomy and simulating clinical procedures. A crucial aspect of veterinary hygiene and public health is the accurate categorization of meat, a responsibility that lies with veterinary professionals. This classification is vital not only for regulatory compliance but also for combating food fraud - a persistent issue that undermines food safety, public health, and consumer trust. In light of frequent food fraud cases both locally and globally, it is essential for professionals and consumers alike to understand the distinguishing characteristics of various meat categories. This study aimed to assess the ability of twenty-five fourth-year veterinary students at University of Sarajevo to identify meat categories and describe muscle anatomy using three different teaching methods: traditional classroom learning, computer-based learning with 3D scanned models, and immersive VR. To support this goal, an innovative virtual resource “3DMeat” was developed using 3D scanning technology. The findings of this study indicate that technology-based learning tools, especially immersive and interactive approaches like VR and 3D visualization, can substantially improve student engagement and knowledge retention when learning complex topics such as meat categorization. This research also aimed to bridge the gap between professional, legally defined meat classifications and commonly used market terms by explaining the morphological and anatomical features of muscles associated with each category.

Keywords: Food fraud, Meat categories, 3D technology

UNAPREĐENJE KLASIFIKACIJE MESA I VETERINARSKE EDUKACIJE POMOĆU 3D TEHNOLOGIJE

SAŽETAK

Upotreba različitih metoda učenja na daljinu u veterinarskoj medicini postala je popularnija nakon pandemije COVID-19. Tehnologije poput virtualne stvarnosti (VR), 3D modela, video predavanja i drugih digitalnih alata poboljšale su obrazovno iskustvo omogućavajući interaktivnu 3D vizualizaciju, posebno u nastavi anatomije i simulaciji kliničkih procedura. Tačna klasifikacija mesa predstavlja ključni aspekt veterinarske higijene i javnog zdravlja, a za nju su odgovorni veterinarski stručnjaci. Ova klasifikacija je od suštinskog značaja ne samo radi usklađenosti s propisima, već i u borbi protiv prevara s hranom – čestog problema koji ugrožava sigurnost hrane, javno zdravlje i povjerenje potrošača. S obzirom na učestale slučajeve prevara s hranom, kako na lokalnom tako i na globalnom nivou, od suštinske je važnosti da i stručnjaci i potrošači razumiju karakteristike različitih kategorija mesa. Cilj ove studije bio je procijeniti sposobnost dvadeset pet studenata četvrte godine Veterinarskog fakulteta Univerziteta u Sarajevu da prepoznaju kategorije mesa i opišu anatomiju mišića koristeći tri različite metode učenja: tradicionalnu nastavu u učionici, učenje putem računara uz 3D skenirane modele i imerzivnu VR. U tu svrhu razvijen je inovativni virtualni resurs “3DMeat” korištenjem tehnologije 3D skeniranja. Rezultati istraživanja pokazuju da alati za učenje zasnovani na tehnologiji, posebno imerzivne i interaktivne metode poput VR-a i 3D vizualizacije, mogu značajno poboljšati angažman studenata i retencijue znanja prilikom učenja složenih tema kao što je klasifikacija mesa. Istraživanje je također imalo za cilj da premosti jaz između profesionalnih, zakonski definisanih klasifikacija mesa i uobičajenih tržišnih pojmova, objašnjavajući morfološke i anatomske karakteristike mišića koje su povezane sa svakom kategorijom.

Ključne riječi: Prevara s hranom, kategorije mesa, 3D tehnologija