DOI: 10.22055/IVJ.2021.266036.2341
DOR: 20.1001.1.17356873.1401.18.4.2.6

Preparation of age profile based on incisors changes in Khouzestan Arabian mares

Kaveh Khazaeel[1*], Hamid Pesarakli[2], Alireza Ghadrdan Mashhadi[3] and Mahdi Pourmahdi Borujeni[4]

[1] Assistant Professor, Department of Basic Sciences, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran
[2] Graduated of Veterinary Medicine, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran
[3] Professor, Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran
[4] Professor, Department of Food Hygiene, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran

Received: 09.01.2021 Accepted: 02.05.2021

Abstract

The horse age estimation is based on the evaluation of teeth. The ability to age estimation can be used when buying livestock, predicting its useful sporting life span, and helping to determine disease prognosis and insurance targets. In the present study, evaluation of incisor teeth of Khouzestan Arabian mares was performed to prepare the age profile of changes in the incisors. In this study, 78 Arabian mares of Khouzestan were examined. After confirming the authenticity of the animals, the images were digitally prepared from vestibular, rostral, and occlusal surfaces of the lower incisors. The prepared images were analyzed by the computer and the parameters related to the growth of deciduous and permanent teeth and their number and changes in the occlusal surface of the lower incisors were investigated. Finally, dental age profile was presented. The dI_3 tooth in Khouzestan Arabian mares had a variety of eruption times, while the eruption time of the dI_1 and dI_2 teeth was almost similar to that of other horses. In permanent teeth, premature growth of I_2 and I_3 was observed in some cases. Dental star first appeared on the occlusal surface of the lower incisors at about 5.5 years old, and the enamel spot on I_1 appeared about a year earlier than usual. In the age range of 15 days to 24 years old, the growth of the incisors teeth and some of its morphological changes were observed in cases earlier than usual.

Key words: Age Profile, Age Estimation, Dental Changes, Incisor Teeth, Khouzestan Arabian Mare

[*] **Corresponding Author**: Kaveh Khazaee**,** Assistant Professor Department of Basic Sciences, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran
E-mail: k.khazaeil@scu.ac.ir

Refrences

Ahmadinejad, M. (2003). *Horse Behavior* (1st Edition). College of Applied Science and the skill of Agriculture. Tehran, Iran. Pp. 104-116. (In Persian).

Carmalt, J. L., & Allen, A. L. (2008). Morphology of the occlusal surfaces of premolar and molar teeth as an indicator of age in the horse. *Journal of Veterinary Dentistry*, 25(3), 182-188.

De Lahunta, A., & Habel, R. E. (1986). *Applied Veterinary Anatomy* (1st Edition). WB Saunders Company. Philadelphia, USA. Pp. 5-16.

Dyce, K. M., Sack, W. O., & Wensing, C. (2018). *Text Book of Veterinary Anatomy* (5th Edition). WB Saunders Company. Philadelphia, USA. Pp. 512-520.

Getty, R. (1975). *Sisson and Grossman's the Anatomy of the Domestic Animals*, Vol. 1. (5th Edition). WB Saunders Company. Philadelphia, USA. Pp. 460-470.

König, H. E., & Liebich, H. G. (2020). *Veterinary Anatomy of Domestic Mammals: textbook and colour atlas* (7th Edition). Schattauer Verlag. Stuttgart, Germany. Pp. 286-293.

Lowder, M. Q., & Mueller, P. E. (1998). Dental embryology, anatomy, development and aging. *Veterinary Clinics of North America: Equine Practice*, 14(2), 227-245.

Luszczyński, J., & Pieszka, M. (2011). Usefulness of selected incisor characteristics for determining the age of Hucul horses. *Annals of Animal Science*, 11(4), 569-575.

Luszczyński, J., Pieszka, M., Długosz, B., & Plucińska, N. (2015). Comparison of changes on the incisors of Arabian and Anglo-Arabian horses. *Medycyna Weterynaryjna*, 71(12), 782-786.

Martin, M. T., Martin, M. T., Scrutchfield, W. L., & Joyce, JR. (1999). A systematic approach to estimating the age of a horse. *AAEP Proceedings, Lexington*, 45, 273-275.

Martin, T. M. (2002). *American Association of Equine Practitioners guide for determining the age of the horse* (6th Edition). Fort Dodge. Iowa, USA.

Muylle, S., Simoens, P., & Lauwers, H. (1996). Ageing horses by an examination of their incisor teeth: an (im) possible task?. *Veterinary Record*, 138(13), 295-301.

Muylle, S., Simoens, P., & Lauwers, H. (1999). Age-related morphometry of equine incisors. *Journal of Veterinary Medicine*, 46(10), 633-643.

Muylle, S., Simoens, P., Lauwers, H., & Van Loon, G. (1997). Ageing draft and trotter horses by their dentition. *Veterinary Record*, 141(1), 17-20.

Muylle, S., Simoens, P., Lauwers, H., & Van Loon, G. (1998). Ageing Arab horses by their dentition. *Veterinary Record*, 142(24), 659-662.

Muylle, S., Van Loon, G., & Simoens, P. (2007). Galvayne's groove and the presence of a hook on the upper corner incisors are poor indicators of age in horse teeth. *Pferdeheilkunde*, 23(1), 59.

Navin, J. N. (1882). *Navin's Veterinary Practice* (1st Edition). Indianapolis, Fairmount. Indiana, USA. Pp. 431-446.

Richardson, J. D., Cripps, P. J., & Lane, J. G. (1995). An evaluation of the accuracy of ageing horses by their dentition: changes of dental morphology with age. *Veterinary Record*, 137, 117-121.

Richardson, J. D., Lane, J. G., & Waldron, K. R. (1994). Is dentition an accurate indication of the age of a horse?. *Veterinary Record*, 135(2), 31-34.

Richardson, J. D., Cripps, P. J., Hillyer, M. H., O'Brien, J. K., Pinsent, P. J., & Lane, J. G. (1995). An evaluation of the accuracy of ageing horses by their dentition: a matter of experience?. *Veterinary Record*, 137(4), 88-90.

Schummer, A., & Nickel, R. (1979*). The Viscera of the Domestic Mamals* (2nd Edition). Verlag Paul Parey. Berlin, Germany, Pp. 75-80, 93-97.

Silver, I. A. (1963). *The Ageing of Domestic Animals* (1st Edition). Science in Archaeology: a comprehensive survey of progress and research. New York, USA. Pp. 250-268.