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Evaluation of the effect of age and estrous cycle phases on anatomical structure of the cervix in Zandi ewe breed

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Abstract

Many previous studies have proved that the anatomical features of ewe cervix can affect the success of artificial insemination. These characteristics differ in sheep breeds. This study aimed to describe the anatomical features of cervix in Zandi ewes.One hundred and ninety threenonpregnant and clinically healthy reproductive tracts of adult and non-adult Zandi sheep were collected from a slaughter house and were divided into follicular or luteal phase.Then, the morphology of the vaginal protrusion of cervix was classified as slit, papilla, duckbill, flap or rose. The depth of penetration of an inseminating pipette was recorded. The cervical canal of each tract was filled with a silicone sealant for casting the mould. The cervices were sectioned longitudinally, and the length, number of cervical rings and the arrangement of the rings were recorded. The degree of completeness and interdigitations of the folds recorded as one of three grades 1, 2, and 3 cervices. The results showed the Papillatype was more common in vaginal protrusion of cervix and the most depth of penetration was in Slittype. The mean length of cervix, distance from cervix external os to first ring and the depth of penetration in adult ewes were significantly more than those in non-adult ewes. The mean distance betweencervical external osand first and second ringsand the depth of cervical penetration in follicular phase were more than those in luteal phase.The mean number of cervical ridges was 5 and 6 in 94% and 6% of cervices, respectively. Grades 1, 2, and 3 cervices, were observed in 64%, 25% and 11% of samples, respectively. The information generated in this study would be useful for increasing the success rate of penetration in ewes exhibiting estrus in order to improve the lambing rate of tropical ewes following transcervical AI.

Key words: Zandi sheep, Cervix, Morphology, Artificial Insemination

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