

The morphological changes of uterus in postnatal development of heifers

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References

- AKINLOYE, A.K. and OKE, B.O. (2014). Histology and ultrastructure of the uterus of African giant rat (*Cricetomys Gambianus*, Waterhouse) during oestrous cycle. *Folia Morphol.*, vol. 74, no. 3, pp. 311-317.
- ALI, A. et al. (2003) Ovarian follicular dynamics in buffalo cows (*Bubalus bubalis*). *Reprod Domest Anim.*, vol. 38, no. 3, pp. 214-218.
- BARTOL F.F et al. (1995) Neonatal exposure to progesterone and estradiol alters uterine morphology and luminal protein content in adult beef heifers. *Theriogenology*, vol. 43, no. 5, pp. 835-844.
- BELLO, A. et al. (2012) Morphometric analysis of the reproductive system of African zebu cattle. *Scientific Journal of Zoology*, vol.1, no. 2, pp. 31-36.
- BIELAŃSKI, A. (1972) *Rozrod Zwierat*. Warszawa: Państwowe Wydawnictwo rolnicze i lesne.
- DAY, M. L. et al. (1984) Endocrine mechanisms of puberty in heifers: Estradiol negative feedback regulation of luteinizing hormone secretion. *Biol. Reprod.* vol. 31, pp. 332-341.
- DAY, M. L. et al. (1987) Endocrine mechanisms of puberty in heifers. Role of hypothalamo-pituitary estradiol receptors in the negative feedback of estradiol on luteinizing hormone secretion. *Biol. Reprod.* 37:1054–1065.
- DESJARDINS, C. (1969) Maturation of bovine female genitalia from birth through puberty. *J. Anim. Sci.*, vol. 28, pp. 502–507.
- DESJARDINS, C., MacMILLAN, K. L. and HAFS, H.D. (1968) Reproductive organ DNA and RNA of male and female rats from birth to 100 days of age. *Anat. Rec.*, vol. 161, no.17.
- EVANS, A.C., ADAMS, G.P., RAWLINGS, N.C. (1994) Endocrine and ovarian follicular changes leading up to the first ovulation in prepubertal heifers. *J Reprod Fertil*, vol. 100, no. 1, pp. 187-194.
- FOOTE, R. H. (1972). Cattle, Sheep and Swine induced ovulation and fertility in prepubertal. *J Anim Sci*, vol.34, pp. 49-56.
- HONARAMOOZ, A. et al. (2004) Ultrasonographic evaluation of the pre-pubertal development of the reproductive tract in beef heifers. *Animal Reproduction Science*, vol. 80, pp. 15-29.
- CHELIKANI, P.K., AMBROSE, J.D. and KENNELLY, J.J. (2003) Effect of dietary energy and protein density on body composition, attainment of puberty, and ovarian follicular dynamics in dairy heifers. *Theriogenology*, vol. 60, no. 4, pp. 707-725.
- Mc DONALD, L.E. (1975). *Veterinary Endocrinology and Reproduction*. Philadelphia: Lea and Fabiger.
- Mc DONALD, L.E. (2003) *Veterinary Endocrinology and Reproduction*. 2. ed. Iowa State Press.
- MILLONING, G. (1962) Further observations on a phosphate buffer for osmium solutions in fixation. In BREESE S.S. (ed.) *Fifth International Congress in Electron Microscopy*. New York: Academic Press.
- MRÁZ, P. and POLÓNYI, J. (1988) Methods in electron microscopy of animal tissues. Bratislava: VEDA (in Slovak).

- MUKASA-MURGERWA, E. (1989) *A Review of Reproductive Performance of female Bos Indicus (Zebu) Cattle*. Addis Ababa: International Livestock Centre for Afrika.
- REYNOLDS E. S. (1963) The use of lead citrate at high pH as an electron-opaque stain for electron microscopy. *J. Cell Biol.*, vol. 17, p. 208.
- SALISBURY, G.W., Van DEMARK, N.L. and LODGE, J.R. (1985) *Physiology of reproduction and Artificial Insemination of Cattle*. Delhi: Nazia Printers.
- SENGER, P.L. (2011) *Pathways to Pregnancy and Parturition*. 2 ed. Madison: Current Conceptions.
- TARLETON, B.J., WILEY, A.A. and BARTOL, F.F. (1999) Endometrial development and adenogenesis in the neonatal pig: effects of estradiol valerate and the antiestrogen ICI 182,780. *Biology of Reproduction*, no. 61, pp. 253-263.
- TARLETON, B.J. et al. (1998) Ovary-independent estrogen receptor expression in neonatal porcine endometrium. *Biology of Reproduction*, vol. 58, pp. 1009-1019.
- VACEK Z. (1974) *Histology and histological techniques*. Martin: OSVETA (in Slovak).
- WEIBEL, E.R., KISTLER G.S. and SCHERLE, W.F. (1966) Practical stereological methods for morphometric cytology. *J. Cell Biol.*, vol. 30, pp. 23-38.
- WICK, R. and KRESS, A. (2002) Ultrastructural Changes in the Uterine Luminal and Glandular Epithelium during the Oestrous Cycle of the Marsupial *Monodelphis domestica* (Grey Short-Tailed Opossum). *Cells Tissues Organs*, vol. 170, no. 2-3, pp.111-131. doi: <https://doi.org/10.1159/000046185>
- WILLIAMS G.L. and AMSTALDEN M., (2010) Understanding postpartum anestrus and puberty in the beef female. *Applied Reproductive Strategies in Beef Cattle: Proceedings*, January 28-29, 2010 San Antonio, Texas, pp. 55-71.
- YAN, W. et al. (2008) Relaxin (RLX) and estrogen Affect estrogen receptor- α , vascular endothelial growth factor and RLX receptor expression in the neonatal porcine uterus and cervix. *Reproduction*, vol. 135, pp. 705-712.
- YAN, W. et al. (2006) Uterotrophic effects of relaxin related to age and estrogen receptor activation in neonatal pigs. *Reproduction*, vol. 131, pp. 943-950.