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Vaginal Cytology in Timor Deer Hind (*Cervus timorensis*) under Natural Estrus Cycle

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Abstract

The vaginal epithelium is influenced by hormonal changes during the oestrous cycle, allowing cyclic monitoring of the various reproductive stages. Hormonal fluctuations, especially of oestrogens, cause changes in the vaginal cellular profile. Increasing oestrogen concentrations cause cells proliferation, with thickening, of the vaginal epithelium and subsequent cell differentiation. The vaginal cytology of Indonesian hind deer has not been reported before.

Determination of the oestrous cycle especially the length of oestrus and time of ovulation plays an important role in improving fertility and reproductive performance of farm animals. This study investigated the length of oestrous cycle and oestrous period in order to estimate the time of ovulation, hence the right time for insemination.

Adult and healthy timor hind aged three years were used in this research. Vaginal smears were collected every morning for 90 days by gently passing a sterile cotton swab into the vaginal canal followed by a quick 180° rotation. Smears were transferred to 1-5 slides, air dried, and immediately fixed with 100 % ethanol and stained with Giesma. Smears were examined under a light microscope at magnification of 400 X. Two hundred epithelial cells from each slide were evaluated and classified.

Results of this research showed that there were four highest point (20, 18, and 16 days, averaging 18 days) superficial cells (85.75 %), and four lowest point parabasal epithelial cell (14.25 %), during 88 observation days. Under oestrus condition, the cell population consists of ca. 90 % superficial cells and ¡ 5 % parabasal or intermediate cells, while under metoestrus the cytology was characteristic with a dramatic ?shift? to 80-100 % of parabasal and intermediate cells.

This change is produced in about 24-28 hours. We conclude that monitoring the cellular pattern of the vaginal epithelium of hind deer with natural oestrus is an efficient tool to determine the length of the oestrous cycle, which in timor hinds is 18 days.

Keywords: Estrus cycle, timor deer hinds, vagina cytology

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