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“Bridging the gap between increasing knowledge and decreasing resources”

Non-Invasive Urine Sampling and Pregnancy Diagnosis in Domestic Cattle and Alpacas

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Abstract

Monitoring of reproduction and pregnancy diagnosis are very important and decisive tasks for successful breeding of every mammalian species in captivity. However, many methods require veterinarian assistant, animal cooperation or sedation. Urine is usually obtained by catheter, which is uncomfortable for animals and it should be done by well trained breeders. Non-invasive urine sample collection into plastic cup fastened on a telescopic rot was tested in this experiment. Consequently urine was examined by Cuboni reaction and Barium chloride test for determination of pregnancy or non-pregnancy status in animals. Twelve female alpacas from Czech private farms and twenty pregnant and twenty non-pregnant Fleckvieh heifers were included in this study. Urine samples were obtained repeatedly in regular intervals. In case of heifers (*Bos taurus*) the results of Barium chloride tests were influenced by pregnancy (Pearson's chi-sq.: 28.2427, DOF=1, $p < 0.0001$). Urine of pregnant animals reacted negatively, the test marked animals truthfully as pregnant, in 79.7% cases. On the other hand, reliability in detection of non-pregnant females was 50% only. The connection between Cuboni reaction and accurate pregnancy diagnosis was not confirmed (Pearson's chi-sq.: 0.570268, DOF=1, $p > 0.05$). In case of alpaca females (*Vicugna pacos*), no relationship was found between the real reproductive status of alpacas and the results of the barium chloride test or the Cuboni reaction, even if the accuracy was assessed for non-pregnancy versus the whole period of pregnancy, halves of pregnancy or thirds of pregnancy. It was concluded that the barium chloride test and the Cuboni reaction are not suitable for pregnancy diagnosis in alpacas. Barium chloride test examined in Fleckvieh cows showed a potential of this method for pregnancy diagnosis in contrast to Cuboni reaction.

Keywords: Barium chloride test, Cuboni reaction, gestation, heifer, lama, reproduction