Non-invasive pregnancy diagnosis from urine by the Cuboni reaction and the barium chloride test in donkeys (Equus asinus) and alpacas (Vicugna pacos)

A. Kubátová, T. Fedorova, I. Skálová, L. Hyniová

Department of Animal Science and Food Processing, Faculty of Tropical AgriSciences, Czech University of Life Sciences Prague, Kamýcká 129, 165 21 Prague 6, Czech Republic

Abstract

The aim of the research was to evaluate two chemical tests for non-invasive pregnancy diagnosis from urine, the Cuboni reaction and the barium chloride test, in donkeys (Equus asinus) and alpacas (Vicugna pacos). The research was carried out from April 2013 to September 2014. Urine samples were collected on five private Czech farms from 18 jennies and 12 alpaca females. Urine was collected non-invasively into plastic cups fastened on a telescopic rod, at 6-9 week intervals. In total, 60 and 54 urine samples from alpacas and jennies, respectively, were collected. The Cuboni reaction was performed by the State Veterinary Institute Prague. The barium chloride test was done with 5 ml of urine mixed together with 5 ml of 1% barium chloride solution. Results of the Cuboni reaction were strongly influenced by the reproductive status of jennies; the test was 100% successful throughout the second half of pregnancy. However, no relationship was found between the real reproductive status of alpaca females and results of the Cuboni reaction. It was concluded that the barium chloride test is not suitable for pregnancy diagnosis either in donkeys, due to significant influence of season on the results, or in alpacas, because no relationship between results of the test and the reproductive status of alpaca females was found. In conclusion, the Cuboni reaction has potential to become a standard pregnancy diagnostic method in donkeys.

Key words: chemical test, jennies, non-invasive, spontaneous urination, urine collection

Introduction

Pregnancy diagnosis is essential for better reproductive management in captive animals (Thomas et al. 2010). Urine sampling by free catch is a non-invasive research method (Cote 2014) that enables collection of urine without restraining or capturing animals (Waits and Paetkau 2005), and breeders can collect urine by themselves. Pregnancy diagnosis from urine can be done by hormone analysis of the urine, but these methods mostly require collection of multiple samples and laboratory testing which are not always...