**Evaluation of an electronic handheld device to quantify blood ß-hydroxybutyrate concentration in dairy goats**

**Avaliação de um aparelho portátil para quantificar a concentração de ß-hidroxybutyrato em cabras leiteiras**

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Metabolic disorders involving carbohydrate and fat metabolism, such as clinical ketosis and pregnancy toxemia, are very common in dairy goats, especially in late gestation and early lactation. Therefore, an early detection of the subclinical disease could help minimizing economic loses by fetus mortality, milk production decrease and dam mortality, and increase treatment and prevention success. The objective of this study was to evaluate the accuracy and precision of the electronic handheld device Ketovet® (KetoVet Brazil, TaiDoc Technology, Taiwan) for the measurement of ß-hydroxybutyrate (BHBA) in whole blood in dairy goats. For method comparison, the sample (serum) was also analyzed in laboratory by standard methods within a maximum of five hours between blood collection and BHBA quantification. Ketovet® values and laboratory levels range from 0.1 to 9.0 mmol/L, with a 0.1 mmol/L scale. In total, 166 whole blood samples pairs from jugular vein were collected from pregnant, lactating or growing dams from three commercial herds in Minas Gerais State. One of the pair samples was tested by Ketovet® as the other pair was taken to laboratory to separate serum to be tested by gold standard method. When compared both methods the intercept value was of 0.134±0.014 and slope value of 0.788±0.037, showing that Ketovet® has a tendency to super estimate values of higher BHBA concentration, and to sub estimate samples with low BHBA concentrations when compared to gold standard method. It can be also observed a good precision of the hand held equipment by R2=0.74 and R=0.86 comparison. However, it is noted a men error of -0.007 mmol and a root mean squared error of 0.13 mmol, which correspond to a 17.3% bias. Considering that the hand held device and the gold standard method are both of 0.1 mmol, this scale reduce chances of obtaining a more precise and accurate measure. In conclusion, Ketovet® is a useful tool for monitoring subclinical ketosis and pregnancy toxemia in dairy goats. Due to the its high sensitivity and false positive effect it is a good tool for triage and disease control, and provide satisfactory precision for measuring BHBA concentration in dairy goat compared with gold standard test.

**Key-words:** hand held meter, ketosis, pregancy toxemia, rapid test