

MEASUREMENTS OF METABOLIC PARAMETERS IN LACTATING DAIRY COWS WITH NEAR INFRARED SPECTROSCOPY ANALYSIS USING CATTLE FAECAL SAMPLES

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The knowledge of the nutrition in animal production is difficult to assess due of difficulty to determine the amount and quality of feeds intake, mainly if forages are the most important compound in the diet.

It must be able to know responses to the metabolic process in lactating dairy cows carrying out feeds evaluation trials. These metabolisme studies with cows, requires measurements of: I) The amount of all feeds consumed. II) Excretion of faeces. III) Excretion of urine. Taking as a basis these trials, forage and total intake, dietary digestibility and balances of nitrogen and energy can be calculated. However, these feeds evaluation experiments with animals are very time consuming and expensive.

The faeces excreted by animals contain undigested residues of the diet consumed. For this reason, their analisis can be an successful tool to determine the amount and quality of feed intake and other important biological parameters.

The aim of this work was to know if faeces analisis by NIR could be used to determine with enough accuracy some attributes of different lactating dairy cows diets, using a global equation, developed on an heterogeneous population.

For this purpose a total of 79 faecal samples from eight grass, three grass silages and two maize silages metabolic trials, on six cows each one, were used to constitute the initial population. The calibration equations were developed to predict forage and total intake, organic matter digestibility, digestibility coefficient of crude energy and digestibility energy. The combination of several trials with different diets and animal conditions gave promising results.