Using of LOCAL calibration for predicting feed value of fresh forages from faeces samples

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INTRODUCTION

The prediction of forages feed value is important to estimate the ruminant performances. LOCAL calibration could be well adapted for their application to the prediction of forages feed value.

OBJECTIVE

To evaluate the suitability of NIRS to predict, the feed value of fresh forages using the LOCAL algorithm on faeces samples .

MATERIAL and METHODS

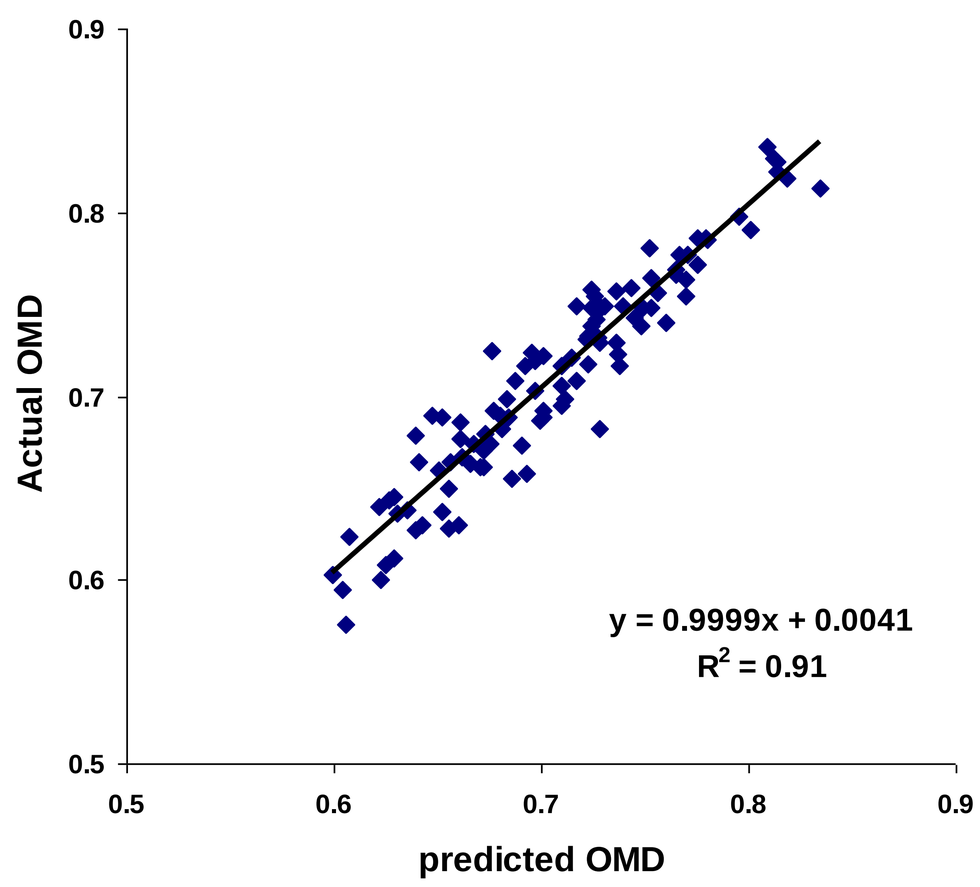
- **In vivo organic matter digestibility (OMD) and voluntary intake (VI) of:**
  - ✓ **1220 faeces samples belonging to 10 types of forages (several phenological stages, growth cycles (1st, 2nd or 3th), years and locations).**
- **NIR scanning and calibration procedures:**
  - ✓ **The samples were scanned using a Foss-NIRSystem 6500 monochromator with Autocup sampler (700-2500 nm, steps 2 nm).**
  - ✓ **LOCAL Calibration: WINISI III v 1.6 software (n=1085). Validation n=135.**

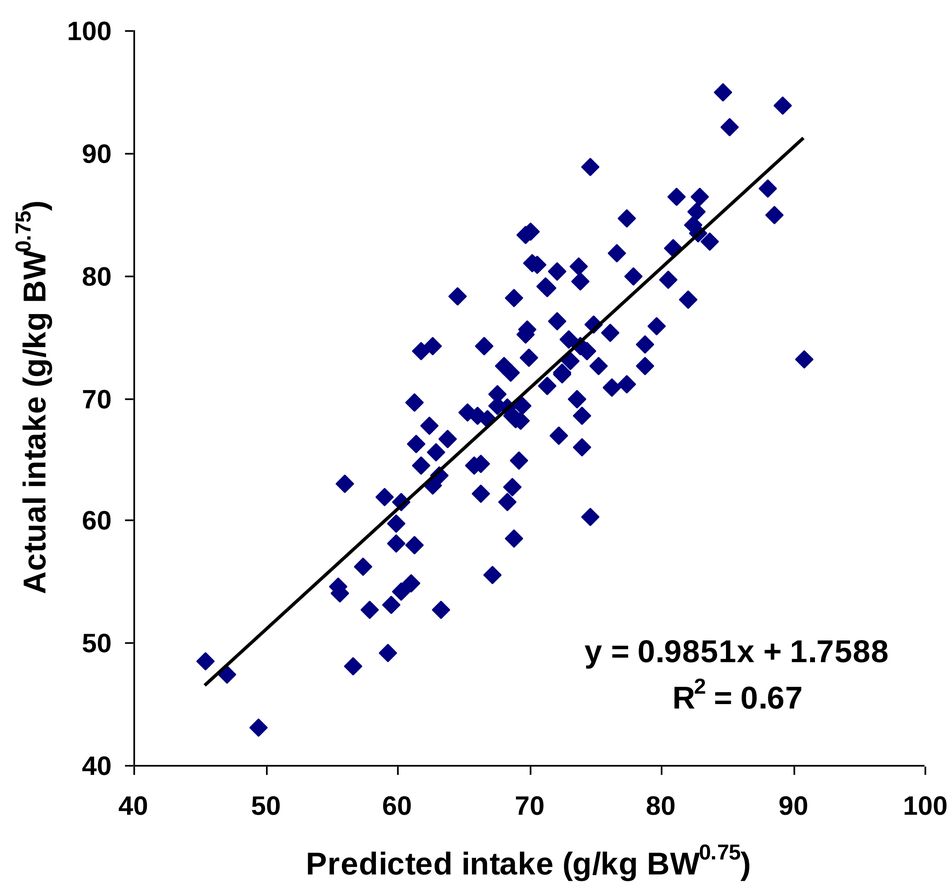
RESULTS

Table 1. Validation statistics for prediction of organic matter digestibility (OMD) g/g and voluntary intake (VI) g/kg BW0.75 using the LOCAL algorithm

	N	Factors	SEP	Bias	r^2V	RPD
OMD	130	25(-4)	0.017	0.004	0.91	3.5
VI (g/kg $BW^{0.75}$)	130	15(-6)	6.04	0.61	0.67	1.8

N= number of samples; Factors= Number of PLS factors, in brackets number of PLS factors excluded SEP=standard error of prediction; r^2V= coefficient of determination in validation set; RPD=residual predictive deviation





Linear regression plot of predicted versus measured values within the validation set for organic matter digestibility (OMD) and voluntary intake (VI) on faeces

CONCLUSIONS

LOCAL approach is appropriate to predict the OMD values.

More effort should be made to expand the variability or reduce the error for the VI determination.