Accepted Manuscript

Title: Assessing the accuracy of current near infra-red reflectance spectroscopy analysis for fresh grass-clover mixture silages and development of new equations for this purpose

Authors: A.L. Thomson, D.J. Humphries, C. Rymer, J. Archer, N. Grant, C.K. Reynolds

Please cite this article as: Thomson AL, Humphries DJ, Rymer C, Archer J, Grant N, Reynolds CK, Assessing the accuracy of current near infra-red reflectance spectroscopy analysis for fresh grass-clover mixture silages and development of new equations for this purpose, *Animal Feed Science and Technology* (2010), https://doi.org/10.1016/j.anifeedsci.2018.03.009

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Assessing the accuracy of current near infra-red reflectance spectroscopy analysis for fresh grass-clover mixture silages and development of new equations for this purpose

A. L. Thomson[1], D. J. Humphries[1], C. Rymer[1,] J. Archer[2], N. Grant[2], and C. K. Reynolds[1*]

[1] *Centre for Dairy Research, School of Agriculture, Policy and Development, University of Reading, Whiteknights Road, Reading, RG6 6AR, UK*

[2] *Agri-Food and Biosciences Institute, Large Park, Hillsborough, Co Down, BT26 6DR, Northern Ireland*

[*]Corresponding author: C. K. Reynolds. Email: c.k.reynolds@reading.ac.uk

Highlights

- NIRS equations calibrated on grass silages were tested on clover-containing silages

- There was adequate prediction accuracy for some variables, including digestibility

- Crude protein and protein degradability showed poorer prediction accuracy

- Crude protein and nitrogen degradability bias increased with clover concentration

- Creating bespoke grass-clover calibration equations increased prediction accuracy

Abstract

The purpose of this study was to ascertain whether Near Infra-Red Reflectance Spectroscopy (NIRS) prediction equations calibrated on grass silage samples, could