Laboratorio Analisi Zootecniche sas –

46023 GONZAGA (MN) Tel. 0376.528295   P. IVA: 01649590203. info@lazoovet.it - www.lazoovet.it

Preparation and chemical methods used by the Laboratory for the creation of N.I.R. Calibration curves

Preparation:	Description:		
Wet sample preparation:	Homogenization in a 40-litre cutter -Drying in an oven -grinding to 0.5 mm.		
Hays preparation:	Homogenization in 40 liter cutter - grinding to 0.5 mm.		
Sample preparation with moisture <14% (feed and concentrates):	Homogenization in 40 liter cutter - grinding to 1 mm.		

Parameter:	Description:	Technique:	NIR calibration method:
Humidity %	Moisture samples with humidity <14%	N.I.R.	Thermobalance 130°C with constant weight on the ground
Humidity % 105°C	Moisture samples with humidity <14%	N.I.R.	In the stove 105°C Reg CE 152/2009 all.3.A
Humidity % 65°C	Moisture sampls humidity	N.I.R.	Stove 65°C/16-20h post cutter up to 0% humidity
Proteins%	PROTEINS	N.I.R.	AOAC 2001.11 ed.18° 2005 (N Kjeldahl x6.25) and7o AOAC 990.03 (Dumas)
Fats%	FATS AND OILS	N.I.R.	Reg. CE 152/2009 H.5.2 (With or not with hydrolysis)
Fibers%	FIBER	N.I.R.	Reg. CE 152/2009 with filter bags
Ashes%	ASHES	N.I.R.	Reg. CE 152/2009
Starch%	STARCH	N.I.R.	Meth. CE152/09 Polarimetric only point 5.2 and/or Enzymatic
aNDFs %	a-NDF - Neutral Detergent Fiber:	N.I.R.	V.Soest mod. Ankom (with NaSulfite and a-amylase)
aNDFom %	a-NDFom -Neutral Detergent Fiber: (net of ashes):	N.I.R.	V. Soest mod. Ankom (with Na2SO3, a-amylase and ash deduction)
ADF %	ADF - Acid Detergent Fiber:	N.I.R.	V. Soest mod. Ankom
ADL %	ADL - Acid Detergent Lignin:	N.I.R.	V. Soest mod. Ankom:
Ammonia ppm	AMMONIA:	N.I.R.	UV Boehringer Enzymatic Method
pH	Hydrogen ion concentrations	N.I.R.	Potentiometric
Lactic %	LACTIC ACID:	N.I.R.	Weigner method for fractional distillation
Acetic %	ACETIC ACID:	N.I.R.	Weigner method for fractional distillation
Butyric%	BUTYRIC ACID:	N.I.R.	Weigner method for fractional distillation
Sugars %	Water soluble sugars	N.I.R.	EC Regulation 152/2009 after inversion on aqueous and/or alcoholic extract
Protein solubility %-ratio	% of soluble protein on total protein	Calculation:	pH buffer 6.8 at 20°C + Kjeldahl
ADF-bound protein %-ratio	% of ADF bound protein on total protein	Calculation:	V. Soest mod. Ankom + Kieldahl
NDF-bound protein %-ratio	% of NDF bound protein on total protein	Calculation:	V. Soest mod. Ankom (without Na2SO3) + Kieldahl
Relative Feed Value -RFV -calculation	Relative Nutrient Value (RFV):	Calculation: [(120/aNDFom)*(88,9-(0,779*ADF))]/1,29	See formula parameters
UFL / kg -calculation	MILK FORAGE UNIT	Calculation: INRA	See formula parameters
Sugars from AGV % -calculation	Minimum theoretical SUGARS from recalculation of AGVs	Calculation: [(Lat+Acet*1,15+But*1,5)*1,2]	See formula parameters
TOT sugars by cut % -calculation	Total minimum theoretical SUGAR (by cut):	Calculation: (Sugars from Fermentation + Sugars detected)	See formula parameters