NEAR INFRARED REFLECTANCE SPECTROSCOPY : remote NIR Technique:

Dairyland Lab Inc. (USA)

Remote NIRS technique: Dairyland Lab Inc. (USA):
The Laboratorio Analisi Zootecniche began its collaboration with Dairyland Laboratories Inc Arcadia – WI (USA) in January 2017; through a process of equipment standardisation we have been able to align our equipment with that of Dairyland: as a result we are now able to work with new parameters present in American calibrations (especially CNCPS dynamic rationing).
The zootechnical foods are processed at our headquarters and the multi-spectral scans are taken using our equipment. The NIR multi-spectral scans are then sent to Dairyland. Using their equations, they then rework the data in the same day.
The most important parameters are the digestibility of the NDF (NDFD) and the undigested NDF (uNDF) in forage crops at various times, as well as the digestibility of the starch (IVSD, 7h: In Vitro Starch Digestion at 7 hours) in corn. All of which is incorporated in the Cornell Net Carbohydrate and Protein System (CNCPS). https://www.dairylandlabs.com/feed-and-forage

Remote NIR parameter testing: forage (1 of 2)

Corn silage / fresh chopped forage	Mixed ensilage / fresh chopped forage	Hay (Bovine)	Hay (Equine)	TMR
Crude Protein -CP:	Crude Protein -CP:	Crude Protein -CP:	Crude Protein -CP:	Crude Protein -CP:
Acid Detergent Insolub. CP -ADICP:	Acid Detergent Insolub. CP -ADICP:	Acid Detergent Insolub. CP -ADICP:	Acid Detergent Insolub. CP -ADICP:	Acid Detergent Insolub. CP -ADICP:
Neutral Detergent Insol. CP -w/Na2SO4:	Neutral Detergent Insol. CP -w/Na2SO4:	Neutral Detergent Insol. CP -w/Na2SO4:	Neutral Detergent Insol. CP -w/Na2SO4:	
Protein Solubility:	Protein Solubility:	Protein Solubility:	Protein Solubility:	Protein Solubility:
Ammonia-CP%	Ammonia-CP%			
Ammonia_ppm:	Ammonia_ppm:			
ADF:	ADF:	ADF:	ADF:	ADF:
aNDF:	aNDF:	aNDF:	aNDF:	aNDF:
aNDFom:	aNDFom:	aNDFom:	aNDFom:	aNDFom:
Lignin (ADL):	Lignin (ADL):	Lignin (ADL):	Lignin (ADL):	Lignin (ADL):
NDF Digestibility 12h	NDF Digestibility 12h	NDF Digestibility 12h		
NDF Digestibility 30h	NDF Digestibility 30h	NDF Digestibility 30h		
NDF Digestibility 120h	NDF Digestibility 120h	NDF Digestibility 120h		
NDF Digestibility 240h	NDF Digestibility 240h	NDF Digestibility 240h	NDF Digestibility 240h	NDF Digestibility 240h
Undigested NDF 12h	Undigested NDF 12h	Undigested NDF 12h		
Undigested NDF 30h	Undigested NDF 30 h:	Undigested NDF 30h		
Undigested NDF 120h	Undigested NDF 120h	Undigested NDF 120h		
Undigested NDF 240h	Undigested NDF 240h	Undigested NDF 240h	Undigested NDF 240h	Undigested NDF 240h
Starch:	Starch:		Starch:	Starch:
In Vitro Starch Digestibility -IVSD7h:				
Starch kd MIR P1T1:				

LABORATORIO ANALISI ZOOTECNICHE sas di Mancinelli D.r Eugenio e D.r Marco V.le Marconi n° 9 46023 GONZAGA (MN)
Tel. 0376.528295 0376.529091 Fax 0376.528362 P. IVA: 01649590203 e-mail info@lazoovet.it Sito web: http://www.lazoovet.it/

Remote NIR parameter testing: forage (2 of 2)

Corn silage / fresh chopped forage	Mixed ensilage / fresh chopped forage	Hay (Bovine)	Hay (Equine)	TMR
Fat (ethereal extract):	Fat (ethereal extract):	Fat (ethereal extract):	Fat (ethereal extract):	Fat (ethereal extract):
Total Fatty Acid (TFA):	Total Fatty Acid (TFA):	Total Fatty Acid (TFA):	Total Fatty Acid (TFA):	
Fatty Acids Profile (palm-stear-oleic-linol-linolen):	Fatty Acids Profile (palm-stear-oleic-linol-linolen):	Fatty Acids Profile (palm-stear-oleic-linol-linolen):		
Ash:	Ash:	Ash:	Ash:	Ash:
ethanol-solub. carbohydrates -ESC:	ethanol-solub. carbohydrates -ESC:	ethanol-solub. carbohydrates -ESC:	ethanol-solub. carbohydrates -ESC:	ethanol-solub. carbohydrates -ESC:
water-soluble carbohydrates (WSC):	water-soluble carbohydrates (WSC):	water-soluble carbohydrates (WSC):	water-soluble carbohydrates (WSC):	water-soluble carbohydrates (WSC):
Lactic Acid:	Lactic Acid:			
Acetic Acid:	Acetic Acid:			
Propionic Acid:	Propionic Acid:			
	Butyric Acid:			
pH:	pH:			pH:
Adjusted Crude Protein:	Adjusted Crude Protein:	Adjusted Crude Protein:	Adjusted Crude Protein:	Adjusted Crude Protein:
NFC:	NFC:	NFC:	NFC:	NFC:
	Relative Feed Value (RFV):	Relative Feed Value (RFV):	Relative Feed Value (RFV):	
	Relative Forage Quality (RFQ):	Relative Forage Quality (RFQ):		
TDN MILK2006:	TDN MILK2013:	TDN MILK2013:		TDN OARDC:
Nel 3x MILK2006:	Nel 3x MILK2013:	Nel 3x MILK2013:		Nel 3x OARDC:
Neg MILK2006:	Neg MILK2013:	Neg MILK2013:		Neg OARDC:
Nem MILK2006:	Nem MILK2013:	Nem MILK2013:		Nem OARDC:
Milk per TON Milk 2006:				
	Milk per TON Milk 2013:	Milk per TON Milk 2013:		
			Hemicellulose	
			Digestible Energy	
			Total Digestible Nutrients	

LABORATORIO ANALISI ZOOTECNICHE sas di Mancinelli D.r Eugenio e D.r Marco V.le Marconi n° 9 46023 GONZAGA (MN)
Tel. 0376.528295 0376.529091 Fax 0376.528362 P. IVA: 01649590203 e-mail info@lazoovet.it Sito web: http://www.lazoovet.it/

Remote NIR parameter testing: feed and row materials

Corn grains	Soy hulls / Brewers grains / Wheat middlings	Canola meal	Distillers	Beet pulp / Gluten feed	
Dry Matter	Dry Matter	Dry Matter	Dry Matter	Dry Matter	
Crude Protein -CP	Crude Protein -CP	Crude Protein -CP	Crude Protein -CP	Crude Protein -CP	
Acid Detergent Insolub. CP -ADICP			Acid Detergent Insolub. CP -ADICP		
Neutral Detergent Insol. CP -w/Na2SO4			Neutral Detergent Insol. CP -w/Na2SO4		
Protein Solubility			Protein Solubility		
ADF			ADF		
aNDF	aNDF	aNDF	aNDF	aNDF	
	aNDFom	aNDFom	aNDFom	aNDFom	
			Lignin ADL		
	NDF Digestibility at 12/72/120 h	NDF Digestibility at 12/72/120 h	NDF Digestibility at 12/72/120 h	NDF Digestibility at 12/72/120 h	
	Undigested NDF at 12/72/120 h	Undigested NDF at 12/72/120 h	Undigested NDF at 12/72/120 h	Undigested NDF at 12/72/120 h	
Total Fatty Acid (TFA)			Total Fatty Acid (TFA)		
Fatty Acids Profile (palm-stear-oleic-linol-linolen)			Fatty Acids Profile (palm-stear-oleic-linol-linolen)		
Crude Fiber	Crude Fiber	Crude Fiber	Crude Fiber		
Starch	Starch		Starch		
Fat (ethereal extract)	Fat (ethereal extract)	Fat (ethereal extract)	Fat (ethereal extract)	Fat (ethereal extract)	
Ash	Ash	Ash	Ash	Ash	
				water-soluble carbohydrates (WSC)	
In Vitro Starch Digestibility -IVSD7h					
Starch kd MIR P1T1					
TDN OARDC	TDN OARDC	TDN OARDC	TDN OARDC	TDN OARDC	
Nel 3x OARDC	Nel 3x OARDC	Nel 3x OARDC	Nel 3x OARDC	Nel 3x OARDC	
Neg OARDC	Neg OARDC	Neg OARDC	Neg OARDC	Neg OARDC	
Nem OARDC	Nem OARDC	Nem OARDC	Nem OARDC	Nem OARDC	

LABORATORIO ANALISI ZOOTECNICHE sas di Mancinelli D.r Eugenio e D.r Marco V.le Marconi n° 9 46023 GONZAGA (MN)
Tel. 0376.528295 0376.529091 Fax 0376.528362 P. IVA: 01649590203 e-mail info@lazoovet.it Sito web: http://www.lazoovet.it/