CUMBERLAND VALLEY ANALYTICAL SERVICES
" Laboratory services for agriculture ... from the field to the feed bunk "

Farm:	**NOVITA AURORA**	Lab ID:	**36624 019**
Desc:	**12/30/24-1/12/25 NOVAMEAL**	Sampled:	**01/15/2025**
Account:	**NOVITA NUTRITION, LLC**	Arrived:	**01/22/2025**
		Completed:	**02/04/2025**
		Reported:	**02/07/2025**

Rumen and Intestinal Digestibility Assay of Protein by Freeze Drying
(Multi-Step Protein Evaluation)

DRY MATTER	**% DM**
Residue after oven drying	87.8

PROTEIN	**%** (as received)	**%** (dm basis)
Protein as nitrogen x 6.25 from Leco nitrogen combustion analysis	29.2	33.3

SOLUBLE PROTEIN	**% CP**	**% DM**
1 hour water solubility, filtered on 1.5 micron filter, as-received particle size	23.4	7.8

RUMEN DEGRADABLE PROTEIN	**% CP**	**% DM**
Total protein less rumen undegradable protein recovered by freeze drying	15.9	5.3

RUMEN UNDEGRADABLE PROTEIN	**% CP**	**% DM**
16 hour incubation in rumen fluid from high group TMR ration, as-received particle size, recovered by freeze drying	84.1	28

INTESTINAL DIGESTED PROTEIN		**% CP**	**% DM**
Protein that is rumen undegradable but digested in pepsin for 1 hour, then in trypsin, chymotrypsin, amylase, and lipase for 24 hours, as-received particle size		69.2	23.1
As percentage of Rumen Undegradable Protein	82.5%		

TOTAL TRACT DIGESTED PROTEIN	**% CP**	**% DM**
Total protein less intestinal undigested residue recovered by 1.5 micron filter	85.1	28.4

TOTAL TRACT UNDIGESTED PROTEIN	**% CP**	**% DM**
Intestinal undigested residue, recovered on 1.5 micron filter	14.9	4.9

Analysis performed by modified procedure of D. A. Ross and M. E. Van Amburgh. Rumen undegradable protein is determined on material recovered by freeze drying. Total tract undigested protein is based on material recovered on a 1.5 micron filter.

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12/30/24-1/12/25 NOVAMEAL

SAMPLE INFORMATION

Lab ID:	36624 019	Series:	
Crop Year:	2024	Version:	2.0
Cutting#:			
Feed Type:	MIXED FEEDS		

CHEMISTRY ANALYSIS RESULTS

Moisture	12.2
Dry Matter	87.8

PROTEINS	% SP	% CP	% DM
Crude Protein			33.3
Adjusted Protein			33.3
Soluble Protein		24.1	8.0
Ammonia (CPE)			
ADF Protein (ADICP)		7.7	2.55
NDF Protein (NDICP)		9.5	3.16
NDR Protein (NDRCP)			
Rumen Degr. Protein			

FIBER	% NDF	% DM
ADF	39.3	13.5
aNDF		34.8
aNDFom		34.4
NDR (NDF w/o sulfite)		
Crude Fiber	26.4	9.1
Lignin	8.09	2.78
NDF Digestibility (12 hr)		
NDF Digestibility (24 hr)		
NDF Digestibility (30 hr)	64.8	22.2
NDF Digestibility (72 hr)		
NDF Digestibility (240 hr)		
uNDF (30 hr)	35.2	12.1
uNDF (240 hr)		

CARBOHYDRATES	% Starch	% NFC	% DM
Silage Acids			
Ethanol Soluble CHO (ESC-Sugar)		27.6	7.2
Water Soluble CHO (WSC-Sugar)			
Starch		0.4	0.1
Soluble Starch			
Soluble Fiber			
Starch Digestibility (7 hr)			
Crude Fat			3.90
Fatty Acids, Total (%DM)			
Acid Hydrolysis Fat			

MINERALS

Ash (%DM)	5.52
Calcium (%DM)	0.07
Phosphorus (%DM)	1.01
Magnesium (%DM)	0.41
Potassium (%DM)	1.44
Sulfur (%DM)	0.56
Sodium (%DM)	0.15
Chloride (%DM)	0.20
Iron (PPM)	396.00
Manganese (PPM)	25.00
Zinc (PPM)	71.00
Copper (PPM)	10.00
Molybdenum (PPM)	

FERMENTATION

pH	
Total VFA	
Lactic Acid (%DM)	
Lactic as % of Total VFA	
Acetic Acid (%DM)	
Propionic Acid (%DM)	
Butyric Acid (%DM)	
Isobutyric Acid (%DM)	
1, 2 Propanediol (%DM)	
Nitrate Ion (%DM)	
Nitrate-Nitrogen, ppm	

ENERGY & INDEX CALCULATIONS

TDN (%DM)	72.5
Net Energy Lactation (Mcal/lb)	0.75
Adjusted Net Energy Lactation (Mcal/lb)	0.82
Net Energy Maintenance (Mcal/lb)	0.84
Net Energy Gain (Mcal/lb)	0.55
ME (Mcal/lb)	1.26
NDF Dig. Rate (Kd, %HR, Van Amburgh, Lignin*2.4)	4.89
NDF Dig. Rate (Kd, %HR, Van Amburgh, iNDF)	
Relative Feed Value (RFV)	
Relative Forage Quality (RFQ)	
Milk per Ton (lbs/ton)	
Dig. Organic Matter Index (lbs/ton)	
ROM (Residual Organic Matter)	
NFC (Non-Fiber Carbohydrates)(%DM)	26.1
NSC (Non-Structural Carbohydrates) ESC (%DM)	7.3
NSC (Non-Structural Carbohydrates) WSC (%DM)	
DCAD (meq/100gdm)	3.2

Additional sample information, submitted documents and lab pictures linked to QR code

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Additional Memo

120 hr NDFDom= 82.5% NDFom

Farm: NOVAMEAL BARREL FOR SAMPLE JUL
Desc: NOVAMEAL PELLET BARREL SAMPLE 5/30/
Submitter: ADLER, JAMES
Account: NOVITA NUTRITION, LLC
Copies to: ENDRES, DON; FENWICK, GEORGE

Lab ID: **35735 046**
Sampled: **07/17/2024**
Arrived: **07/30/2024**
Completed: **08/06/2024**
Reported: **08/19/2024**

Report of Amino Acid Analysis

Feed Type: MIXED GRAINS
Dry Matter: 87.9 %

	W/W % As - Received	W/W % Dry Matter Basis
Cysteine	0.61	0.69
Methionine	0.54	0.61
Lysine	0.84	0.96
Alanine	2.11	2.40
Aspartic Acid	1.97	2.24
Glutamic Acid	5.58	6.35
Glycine	1.21	1.38
Isoleucine	1.04	1.19
Leucine	3.52	4.00
Proline	2.73	3.11
Threonine	1.08	1.23
Valine	1.40	1.59
Arginine	1.24	1.41
Histidine	0.69	0.78
Hydroxylysine	0.00	0.00
Hydroxyproline	0.00	0.00
*Lanthionine	0.00	0.00
*Ornithine	0.00	0.00
Phenylalanine	1.41	1.60
Serine	1.46	1.66
*Taurine	0.00	0.00
Tyrosine	1.19	1.35
Tryptophan	0.26	0.29
Total	**28.9**	**32.8**
Crude protein (Nitrogen% x 6.25)	30.6	34.8
AA nitrogen as % of total nitrogen:	**76.0**	

w/w % - grams per 100 grams of sample. Crude Protein is determined by combustion analysis and reported as N% x 6.25. *Taurine, Lanthionine, and Ornithine are non-proteinogenic amino acids. For more information go to www.foragelab.com under Lab Services / Forage and Feed / Amino Acids.

Methods: Acid Hydrolysis - Modification of Gehrke, el. Al,. 1985. (JAOAC 68:811-821) Performic acid preoxidation for sulfur amino acids - Modificaition of Mason et al., 1980 (Z Tierphysio, Tierernahrg u Futtermttelkde 43: 143-146; Elkin and Griffith, 1985 (JAOAC 68:1117-1121). Alkaline hydrolysis: J. Landry and S. Delhaye. 1992. Simplified procedure for the determination of tryptophan of foods and feedstuffs from barytic hydrolysis. J Agr Food Chem 40:776-779.
HPLC methods: Post-column with Ninhydrin Derivatization AOAC: 994.12