



Montgomery Soil Conservation District
18410 Muncaster Road - Derwood, MD 20855 - Phone (301) 590-2855

COMPARISON OF FORAGE TESTING LABS

4/22/2022 Update

The following comparison of forage testing labs is being provided as a free service of the Montgomery Soil Conservation District (MSCD). MSCD does not recommend any specific laboratory and is not responsible for any returned packages or inaccurate or conflicting results. MSCD may provide assistance with collecting samples upon request.

General Information

- ASSUME PAYMENT MUST BE INCLUDED WITH SAMPLES.
- Samples should be mailed with the appropriate sampling form for the lab and the check for the cost of the sample analyses.
- Forages by their nature are not homogeneous; a single roll or bale of hay may have been taken from the edge of a hayfield, a low spot in a field or an area of a field with significant weed encroachment. For this reason, samples should be taken from no fewer than five bales and twenty cores and mixed to produce a representative sample.
- If known sources of hay are different, each should receive a separate sample.
- The hay sample should weigh roughly a half of a pound to provide sufficient material to run the tests.
- Most labs have a menu of additional components which can be included in the analyses. Contact the lab for pricing and additional requirements for these component analyses, which include tests for Selenium, Mycotoxins, and vitamin levels.



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LAB	COST	ANALYSES
Waypoint Analytical Pennsylvania, Inc. 280 Newport Road Leola, PA 17540 Phone: 717-656-9326 https://www.waypointanalytical.com	\$15.50	FBNIR1: Moisture, Dry Matter, Crude Protein, Soluable Protein, ADF, NDF, Acid Detergent Insoluable Protein, Calcium, Phosphorus, Potassium, Magnesium, Energy, RFQ, RFV
	\$17.00	FBNIR2: FPNIR1 + Lignin, Starch, Sugar, Fat, Ash, Sulfur
	\$23.00	FBNIR3: FPNIR2 + NDF Digestibility, VFA Profile, Kd Rates
Equi-Analytical Laboratory Services 730 Warren Road, Ithaca, NY 14850 Phone: 1-877-819-4110 https://equi-analytical.com	\$19.00	(600): Moisture, Dry Matter, Digestible Energy, Crude Protein, ADF, NDF, Ethanol Soluable Carbohydrates, (ESC), Water Soluable Carbohydrates (WSC), Starch, Non-Fiber Carbohydrates (NFC), Calcium, Phosphorus.
	\$30.00	(601): (600) + Lysine, Lignin, Fat, Ash, Magnesium, Potassium, Sodium, Iron, Zinc, Copper, Manganese, Molybdenum
	\$99.00	(604): (602) + Cobalt, Sulfur, Chloride.
Dairyland Laboratories, Inc 217 East Main Street Arcadia, WI 54612 Phone: 608-323-2123 https://www.dairylandlabs.com	\$18.50	(Basic): Moisture, Crude Protein, ADF, NDF, Acid Detergent Insoluable Crude Protein, Protein Solubility, Adjusted Crude Protein, Starch, Water Soluable Carbohydrates (WSC), Calcium, Phosphorus, Potassium, Magnesium, Sulfur, Non-Fiber Carbohydrates, Relative Feed Value
	\$24.00	(Equine Choice): Basic + Neutral Detergent Insoluable Crude Protein, Fat, Ash, Total Fatty Acids, Lignin, Equine TDN, Digestible Energy, Hemicellulose
Rock River Laboratory, Inc PO Box 169 Watertown, WI 53094 Phone: 920-261-0446 https://rockriverlab.com	\$19.00	(Basic NIR): Moisture, Protein, Acid Detergent Insoluable Crude Protein, Acid Detergent Fiber, Neutral Detergen Fiber, Soluable Protein, Water Soluable Carbohydrates (WSC), Starch, NRC 2001 Energy Calculations
	\$19.00	(NIR Extra): Basic NIR + Neutral Detergent Insoluable Crude Protein, Calcium, Phosphorus, Potassium, Magnesium, Sulfur
Cumberland Valley Analytical Services, Inc 4999 Zane A Miller Drive Waynesboro, PA 17268 Phone: 301-790-1980 https://www.foragelab.com	\$19.50	(NIR1): Dry Matter, Moisture, Crude Protein, Soluable Protein, Acid Detergent Fiber, Neutral Detergent Fiber, Lignin, Starch, Water Soluable Carbohydrates, Fat, Ash, Calcium, Phosphorus, Magnesium, Potassium, Relative Feed Value
	\$31.00	(NIR2): NIR1 + Wet Chemistry Calcium, Phosphorus, Magnesium, Potassium, Sodium, Iron, Manganese, Zinc, Copper

FEED AND FORAGE INFORMATION SHEET

CUSTOMER INFORMATION		SUBMITTED BY/COPY TO INFORMATION	
Account #			
Fax Number		E-Mail	

					Analysis Request (see tables below)	
Sample ID	Farm/Feedstuff	Grower ID	Date Sampled	Lot #	Test Code	Additional Tests

BASIC TEST PACKAGES (Please call the laboratory for current pricing and specific testing capability)	PLEASE INDICATE IF THE FEEDSTUFF HAS A NITROGEN (NPN) OR MINERAL ADDITIVE
NIR Packages: FPNIR1: Moisture, Dry Matter, Crude Protein, Soluble Protein, Acid Detergent Fiber, Neutral Detergent Fiber, Acid Detergent Insoluble Protein, Calcium, Phosphorus, Potassium, Magnesium, Energy, Relative Feed Quality, Relative Feed Value FPNIR2: FPNIR1 + Lignin, Starch, Sugar, Fat, Ash, Sulfur FPNIR3: FPNIR2 + NDF Digestibility, Volatile Fatty Acids Profile, Kd Rates	
Wet Chemistry Packages: FP1: Moisture, Dry Matter, Crude Protein FP2: FP1 + Crude Fat FP3: FP2 + Crude Fiber FP4: FP3 + Sodium, Calcium, Phosphorus FP5: FP1 + Acid Detergent Fiber, Total Digestible Nutrients, Net Energy FP6: FP5 + Crude Fat, Ash FP7: FP5 + Digestible Protein, Acid Detergent Insoluble Protein, Calcium, Phosphorus, Potassium, Magnesium FP8: FP7 + Neutral Detergent Fiber, Soluble Protein, Crude Fat, Ash FP9: (Mineral Analysis) Phosphorus, Potassium, Magnesium, Calcium, Sodium, Iron, Manganese, Sulfur, Copper, Zinc	

INDIVIDUAL TESTS (Wet Chemistry) (Please call the laboratory for current pricing and specific testing capability)		
Dry Cow (DCAD) Chloride Chloride (as NaCl) pH Nitrate-N	NSC (Starch and Sugar) Mold & Yeast Count Mycotoxin Screen Total Aflatoxin Total Vomitorin (DON)	Protein Dispersibility Index Urease Activity KOH Solubility Calibrate™

Comments:

PLEASE SUBMIT ALL SAMPLES TO OUR PENNSYLVANIA LAB LOCATION (ADDRESS LISTED ABOVE)



Equi-Analytical

Laboratory Services

730 Warren Road • Ithaca, NY 14850

P: 877-819-4110 • service@equi-analytical.com

www.equi-analytical.com

Sample Submission Form v.3.0

A Dairy One enterprise dedicated to serving the equine community.

An analysis is only as good as the sample submitted. For sampling instructions, policies, and more information, visit our website at www.equi-analytical.com.

All prices (USD) are per sample. Prices and services are subject to change without notice. See reverse for complete package description.

Name/Company: _____ Account No.: _____

Street: _____ County (NY only): _____

City: _____ State: _____ Zip: _____ Country: _____

Email: _____ Phone: _____ Fax (area code): _____

2nd email: _____ **Results sent by email.** I'd also like to receive copies by fax ☐

Shipping and Labels (Domestic Only)

- ☐ I use my own carrier ☐ UPS Label - Ground \$7.00 ☐ UPS Label - 2-Day (Air) \$20.00 ☐ UPS Label - Next Day (Air) \$27.00
- ☐ Equi-Analytical single sample mailer \$3.00

To order UPS shipping labels or sampling kits, visit dairyone.com/shop or email supply@dairyone.com.

Payment

☐ Bill my account Please be sure your account no. is listed at the top of this form.

☐ Check enclosed Check No.: _____

Bill my credit card: ☐ Visa ☐ Mastercard ☐ American Express

Name on credit card: _____ Card No.: _____

Signature: _____ Exp. Date: _____

Each International sample is charged a \$7.00 International handling fee.

Report my results in the following units (check one): ☐ English (Mcal/lb.) ☐ Metric (Mcal/kg)

Sample Type:		
Description and Date sampled:	Date received:	KC:

Analysis Packages (complete package descriptions on reverse side)

Hay and Pasture

- ☐ **(600) Fast Track \$19:** DM, DE, CP, ADF, aNDF, ESC, WSC, starch, NFC, Ca, P
- ☐ **(601) Equi-Tech \$30:** DM, DE, CP, est. lysine, ADF, aNDF, lignin, ESC, WSC, starch, NFC, fat, ash, Ca, P, Mg, K, Na, Fe, Zn, Cu, Mn, Mo

Hay, Pasture, and Grains

- ☐ **(603) Trainer \$67:** DM, DE, CP, est. lysine, ADF, aNDF, ESC, WSC, starch, NFC, Ca, P, Mg, K, Na, Fe, Zn, Cu, Mn, Mo.
- ☐ **(604) Equine Complete \$99:** DM, DE, CP, est. lysine, ADF, aNDF, lignin, ESC, WSC, starch, NFC, fat (EE), ash, Ca, P, Mg, K, Na, Fe, Zn, Cu, Mn, Mo, Co, S, Cl
- ☐ **(644) Carb Pack \$39:** DM, ESC, WSC, starch
- ☐ **(616) Custom Package \$8:** check here to design your own package. Use reverse side to complete your request.

Commonly requested additional services

- ☐ **(59) Sulfur (S) \$7**
- ☐ **(66) Chloride (Cl) \$11**
- ☐ **(105) Selenium (Se) \$52 (Domestic only)**
- ☐ **(161) Nitrates \$12**

Services

(visit our web site www.equi-analytical.com for more information)

NIR Services

(600) Fast Track \$19: includes moisture, dry matter, digestible energy, crude protein, acid detergent fiber, neutral detergent fiber, ethanol soluble carbohydrates (ESC), water soluble carbohydrates (WSC), starch, non-fiber carbohydrates (NFC), calcium and phosphorus

(601) Equi-Tech \$30: includes moisture, dry matter, digestible energy, crude protein, estimated lysine, acid detergent fiber, neutral detergent fiber, lignin ethanol soluble carbohydrates (ESC), water soluble carbohydrates (WSC), starch, non-fiber carbohydrates (NFC), fat, ash.

Minerals analyzed using wet chemistry calcium, phosphorus, magnesium, potassium, sodium, iron, zinc, copper, manganese, molybdenum.

Wet Chemistry Services

(603) Trainer \$67: includes moisture, dry matter, digestible energy, crude protein, estimated lysine, acid detergent fiber, neutral detergent fiber, ethanol soluble carbohydrates (ESC), water soluble carbohydrates (WSC), starch, non-fiber carbohydrates (NFC), calcium, phosphorus, magnesium, potassium, sodium, iron, zinc, copper, manganese, molybdenum.

(604) Equine Complete \$99: includes moisture, dry matter, digestible energy, crude protein, est. lysine, acid detergent fiber, neutral detergent fiber, lignin, ethanol soluble carbohydrates (ESC), water soluble carbohydrates (WSC), starch, non-fiber carbohydrates (NFC), fat (EE), ash, calcium, phosphorus, magnesium, potassium, sodium, iron, zinc, copper, manganese, molybdenum, cobalt, sulfur, chloride.

(644) Carb Pack \$39: includes moisture, dry matter, ethanol soluble carbohydrates (ESC), water soluble carbohydrates (WSC), starch

Check the boxes for the desired services

- ☐ (616) Custom Base Fee \$8.00
- ☐ (21) Crude Protein (CP) \$8.00
- ☐ (22) Acid Detergent Fiber (ADF) \$8.00
- ☐ (23) Neutral Detergent Fiber (aNDF) \$8.00
- ☐ (28) Lignin \$12.00
- ☐ (27) Fat - Acid Hydrolysis (AH), liquids \$17.00
- ☐ (26) Ash \$7.00
- ☐ (34) Starch \$14.00
- ☐ (37) Fat - Base Hydrolysis (BH) \$18.00
- ☐ (126) Fat - Ether Extract (EE) \$12.00*
- ☐ (127) Fat - Acid Hydrolysis (AH) \$17.00
- ☐ (129) Crude Fiber \$11.00
- ☐ (154) Ethanol Soluble Carbohydrates (ESC) \$15.00
- ☐ (254) Water Soluble Carbohydrates (WSC) \$11.00
- ☐ (161) Nitrates \$12.00

* Fat, EE applicable for most plant based samples

Mineral Analyses

\$9.00 for 1 mineral
\$12.00 for 2 minerals
\$17.00 for 3 or more minerals

- ☐ (41) Calcium (Ca)
- ☐ (42) Phosphorus (P)
- ☐ (43) Magnesium (Mg)
- ☐ (44) Potassium (K)
- ☐ (45) Sodium (Na)
- ☐ (46) Iron (Fe)
- ☐ (47) Zinc (Zn)
- ☐ (48) Copper (Cu)
- ☐ (49) Manganese (Mn)
- ☐ (50) Molybdenum (Mo)

Other Minerals

- ☐ (59) Sulfur (S) \$7.00
- ☐ (66) Chloride (Cl) \$11.00
- ☐ (203) Cobalt (Co) \$7.00
- ☐ (105) Selenium (Se) \$52.00 (Domestic Only)
- ☐ (115) Iodine (I) \$52.00 (Domestic Only)
- ☐ (230) Aluminum (Al) \$7.00
- ☐ (231) Boron (B) \$7.00
- ☐ (232) Chromium (Cr) \$7.00 *excludes Chromium Oxide
- ☐ (233) Strontium (Sr) \$7.00

Microbiology Packages

- ☐ (611) Mold & Yeast Counts \$29.00

Mycotoxin Testing (Domestic Only)

- ☐ **(443) Mycotoxin Panel \$105** - Aflatoxin B1, B2, G1, G2, Vomitoxin, Zearalenone, T2, 3-acetyl DON, 15-acetyl DON
- ☐ **(447) Ochratoxin A \$77**
- ☐ **(448) Fumonisin B1, B2, B3 \$77**
- ☐ **(449) Full panel \$210** - Packages 443, 447, 448

Sampling Procedures

Your analytical results are only as good as the sample submitted for analysis. Collecting a representative sample is the first step of the analytical process. Following recommended sampling procedures will help insure that our results truly reflect the nutrient composition of your sample. Please reference our website for sampling instructions.

Policies

- An analysis is only as good as the sample submitted. Every effort should be made to ensure that a good representative sample is taken. Upon arrival at the lab, half of the sample will be used for analysis and half will be saved as a back-up.
- Proper payment must accompany all samples at the time of submittal. Failure to provide payment will result in your analyses being held until proper payment is received.
- All results pass through an "edit system". The edit system contains expected ranges for most feed types. If any component of an analysis falls outside of the typical range, the results are flagged, evaluated and subject to retesting.
- If you are unsure of any result that you receive, you may call the lab at 877-819-4110 and request that the component in question be reanalyzed to confirm the original result. Retest requests made within 7 days of the "Date Printed" on the report will be performed free of charge.*
- All pricing is USD per sample. Prices and services subject to change without notification.
- Any samples exceeding recommended sample sizes may be assessed the handling fee at our discretion and without notice. This also applies to other atypical samples. Visit our website for more information on sampling or call prior to submitting your samples.
- By providing your email you are authorizing Dairy One, Equi-Analytical, and its email Provider, Constant Contact, to send you future electronic communications including analytical results, newsletters, and service announcements. You may unsubscribe at any time by clicking the SAFE UNSUBSCRIBE link located at the bottom of all Constant Contact email communications.
- There will be a \$3.00 charge for insufficient paperwork.
- Grind all sample request will be subject to a minimum \$10.00 per sample charge.

*Please note sample retention times: Wet samples are retained for one week, dry ground samples retained for two weeks.



DAIRYLAND

Laboratories, Inc.

www.dairylandlabs.com

ARCADIA | 217 E. Main St. | Arcadia, WI 54612 | 608-323-2123

ST CLOUD | P.O. Box 580 | St Cloud, MN 56302-9900 | 320-240-1737

STRATFORD | P.O. Box 418 | 117609 Forward St. | Stratford, WI 54484 | 715-687-9997

DEPERE | 1111 Lawrence Dr. | DePere, WI 54115 | 920-336-4521

BATTLE CREEK | 4900 W. Dickman | Battle Creek, MI 49037 | 269-753-0048

JEROME | 150 Bridon Way | Jerome, ID 83338 | 208-324-7511

Customer# _____ Payment Enclosed \$ _____ **(VISA/MC Accepted) #/Exp.** _____

Sampled By _____ Address _____

Name

Complete Address

Sampled For _____ Address _____

Name

Complete Address

Email: _____ Fax: _____

NIR Calibrations are available on the following products:

Hay Small Grains Corn Silage/Haylage Mix Canola Meal Soy Hulls
Western Hay Corn Silage TMR Corn Gluten Feed Wheat Midds
Haylage BMR Silage Distiller Grains Meat & Bone Meal Blood Meal
Corn Grain Small Grain Silage Soybean Meal Beet Pulp Wet Brewers Grain

Sample Description #1

Sample Description #2

Sample Description #3

NIR/Chemistry Packages

NIR Complete (N9) NDF Digestibility pkg w/24&30hr, VFA Screen, IVSD 7hr +starch kd	\$29.50			
NIR CNCPS 6.5 (N3) (includes CNCPS NDFD time points+starch kd)	\$29.50			
UW Grain 2.0 (HM Corn, Dry Corn, Snaplage)	\$51.50			
NIR NDF Digestibility (N8) Milk 2006 for corn sig (RFV, RFQ hay/haylage)	\$26.00	(Circle One) 24 hr. 30 hr. 48 hr.	(Circle One) 24 hr. 30 hr. 48 hr.	(Circle One) 24 hr. 30 hr. 48 hr.
NIR Select - OARDC (N7)	\$20.00			
NIR Basic (N1)	\$18.50			
Equine Choice DE (N7H)	\$24.00			
CSPS (Q1) Starch by NIR	\$25.00			

The following Chemistry minerals and NIR packages can be combined with the above NIR packages. If the Chemistry and NIR packages listed below are requested individually (not in combination with an NIR Package) then a base fee of \$7.00 per sample will be added to the listed price.

Basic Minerals (M2) Ca, P, K, Mg, S	\$12.00			
DCAD (M3) Ca, P, K, Mg, S, Cl, Na	\$15.00			
Complete Minerals (M4) Ca, P, K, Mg, S, Zn, Cu, Mn, Fe, Na, Al, B	\$24.00			
Complete Mineral w/DCAD (M7) Ca, P, K, Mg, S, Zn, Cu, Mn, Fe, Na, Al, B, Cl	\$28.00			

For mineral mixes add \$16.00/sample to listed price.

Molds & Mycotoxins

Mold and Yeast Count & Identification	\$41.00			
Mold and Yeast Count	\$26.00			
Mycotoxins HPLC/MS/MS	2-5 Days in Lab			
Aflatoxin B1,B2,G1,G2	\$50.00			
Vomitoxin/DON	\$50.00			
Zearalenone	\$50.00			
T-2/HT2	\$50.00			
Fumonisin B1,B2,B3	\$50.00			
Ochratoxin A	\$50.00			
Mycotoxin Basic (13 Toxins) Includes: Aflatoxin B1, B2,G1,G2 ,Vomitoxin(DON) Zearalenone, T2 /HT2, Fumonisin-B1, B2, B3, Ochratoxin A, Fusaric Acid	\$160.00			
Mycotoxin Select (17 Toxins) Includes Mycotoxin Basic Plus 3 & 15 Acetyl DON, Citrinin,Patulin	\$210.00			
Mycotoxin Complete (21 Toxins) Includes Mycotoxin Select plus Fusarenon X, Nivalenol, Neosolaniol,DAS	\$275.00			

CARDS

MAILING ENVELOPES

UPS LABELS

UPS MAILERS

PRIORITY MAILERS



Sampled By _____ Name _____
Sampled For _____ Name _____

Chemistry Analysis				
A - Crude Protein	\$17.00			
B - CP, ADF (ADF Energy calcs) (not on TMRs)	\$20.00			
C - CP, ADF, NDF (ADF Energy calcs. Not on TMRs) (RFV on hay/haylage)	\$27.00			
D - CP, NDF, Fat (ether extract), Ash (OARDC Energy calcs)	\$40.00			
1) - D plus ADF, AD-ICP, Lignin (OARDC Energy calcs)	\$63.00			
2) - D1 plus ND-ICP, Protein Sol., Starch, Sugar (4-6 days in lab)	\$95.00			
G - Swine Basic Pkg (Includes CP, ADF, NDF, Fat, Ash, ME energy calcs)	\$44.00			
H - CP, Fat (ether extract)	\$27.00			
J -Equine TDN and DE includes M2 mineral	\$47.00			
K -Whey Package (includes Crude Protein, Ash, Lactose,DCAD minerals & Karl Fischer Moisture)	\$52.00			
L - Invitro NDFD (must include NDF) circle desired time pts (7-10 Days In Lab)	\$37.00 ea.	12, 24, 30, 48, 72, 120, or 240 hr.	12, 24, 30, 48, 72, 120, or 240 hr.	12, 24, 30, 48, 72, 120, or 240 hr
L1 - Invitro NDFD 6.5 forages (includes 30,120,240 hr) (7-10 Days In Lab)	\$87.00			
L2 - Invitro NDFD 6.5 commodities (includes 12,72,120hr (7-10 Days In Lab)	\$87.00			
Q2 Corn Silage Processing (Includes Chemistry Starch)	\$25.00			
Q4 peNDF (Mertens 1.18 mm) - Includes Chemistry NDF	\$25.00			
Invitro Starch Digestibility 7 hr. (must include starch) (4-6 days in lab)	\$39.00			
Fermentation Quality Analysis (VFA Profile)	\$37.00			
Particle Size (Forage or grain micron size)	\$22.00			
Germination (7-10 Days In Lab)	\$24.00			
Moisture Only	\$15.00			
Nitrates	\$11.00			
Roasted Soybean Package (PDI) (4-6 days in lab)	\$47.00			
Mixer Test (For grain & complete feeds & TMRs)	POR			
Fatty Acid Profile	\$63.00			
Ross RUP (16hrs) + UCP (10-15 Days In Lab)	\$98.00			
Lysine, Methionine, Cysteine +9 (5-7 Days in Lab)	\$95.00			
Amino Acid Complete w/Tryptophan (5-7 Days in Lab)	\$150.00			
Minerals & Supplemental Analysis				
The following minerals and supplemental analysis can be added to any Chemistry package at the listed price. If requested individually, then a base fee of \$7.00/sample will be added to the list price.				
M2 - Ca, P, K, Mg, S	\$12.00			
M3 - DCAD - Ca, P, K, Mg, Cl, Na, S	\$15.00			
M4 - Complete Mineral - Ca, P, K, Mg, S, Zn, Cu, Mn, Fe, Na, Al, B	\$24.00			
M7 - Complete Mineral w/DCAD - Ca, P, K, Mg, s, Zn, Cu, Mn, Fe, Na, Al, B, Cl	\$28.00			
Any individual Mineral(s). Within M4 pkg. Please Specify_____	\$14.00 ea			
Molybdenum	\$18.00			
For mineral mixes add \$16.00/sample to listed price.				
1. ADF	\$10.00	11. pH	\$9.00	1. 11. 1. 11. 1. 11.
2. AD-ICP (Must Include ADF)	\$6.00	12. Protein Solubility (Must Include CP)	\$11.00	2. 12. 2. 12. 2. 12.
3. Ash	\$8.00	13. NDF	\$10.00	3. 13. 3. 13. 3. 13.
4. Chloride	\$13.00	14. ND-ICP (Must Include NDF)	\$6.00	4. 14. 4. 14. 4. 14.
5. Crude Fiber	\$14.00	15. Salt (Chloride as % Na Cl)	\$13.00	5. 15. 5. 15. 5. 15.
6. Crude Protein	\$10.00	16. Starch	\$15.00	6. 16. 6. 16. 6. 16.
7. Fat (Ether Extract)	\$13.00	17. Sugar (WSC)	\$15.00	7. 17. 7. 17. 7. 17.
8. Fat (Acid Hydrolysis)	\$26.00	18. Lactose	\$15.00	8. 18. 8. 18. 8. 18.
9. Mojonnier Fat (Whey/dairy products)	\$32.00	19. Prolamin (Grain & Corn)	\$20.00	9. 19. 9. 19. 9. 19.
10. Lignin (Must include ADF)	\$14.00	20. NPN or Urea (circle one)	\$28.00	10. 20. 10. 20. 10. 20.

FEED AND FORAGE ANALYSIS REQUEST FORM



Date:		Account Name & Location:		
Feeder:	Storage Type	Treated?	Cutting No.	Processed?
Sample ID #1:		Yes or No		Yes or No
Sample ID #2:		Yes or No		Yes or No
Sample ID #3:		Yes or No		Yes or No

NEAR INFRARED REFLECTANCE (NIR) SPECTROSCOPY ANALYSIS PACKAGES

①	②	③	Comprehensive Nutrition: TTNDFFD (Combs, 2012), 0, 3, 7, & 16 hr. <i>in situ</i> Starch D, Dynamic NDF k_d , Dynamic Starch k_d , Moisture, Protein, ADICP, NDICP, ADF, aNDF/aNDFom, Fat (EE), Total & Individual Fatty Acids, Ash, Lignin, Soluble Protein, Sugar (WSC), Starch, Ca, P, K, Mg, S, pH, Milk 2006 Energy Calcs, Fermentation Products, CNCPS Inputs, & Total Amino Acids
①	②	③	Dynamic CNCPS: TTNDFFD (Combs, 2012), 7 hr. <i>in situ</i> Starch D, Dynamic NDF k_d , Dynamic Starch k_d , Moisture, Protein, ADICP, NDICP, ADF, aNDF/aNDFom, Fat (EE), Ash, Lignin, Soluble Protein, Sugar (WSC), Starch, Ca, P, K, Mg, S, pH, Milk 2006 Energy Calcs, Fermentation Products, & CNCPS v6.5 inputs
①	②	③	Dynamic NDFFD: TTNDFFD (Combs, 2012), Dynamic NDF k_d by using 24, 30, & 48 hr. NDFFD, Moisture, Protein, ADICP, NDICP, ADF, aNDF/aNDFom, Fat (EE), Ash, Lignin, Soluble Protein, Sugar (WSC), Starch, Ca, P, K, Mg, S, pH, Milk 2006 Energy Calcs, and Fermentation Products
①	②	③	Corn Grain Digestibility: (HMCS and Snaplage only) 7 hr. <i>in situ</i> Starch D, Moisture, Protein, ADICP, NDICP, ADF, aNDF/aNDFom, Fat (EE), Ash, Lignin, Soluble Protein, Sugar (WSC), Starch, Ca, P, K, Mg, S, pH and NRC 2001 Energy Calcs
①	②	③	NDF Digestibility: Choose 24, 30, OR 48 hr. time point (default is 48 hr.), Moisture, Protein, ADICP, NDICP, ADF, aNDF/aNDFom, Fat (EE), Ash, Lignin, Soluble Protein, Sugar (WSC), Starch, Ca, P, K, Mg, S, pH, & Milk 2006 Energy Calcs
①	②	③	NIR Extra: Moisture, Protein, ADICP, NDICP, ADF, aNDF/aNDFom, Fat (EE), Ash, Lignin, Soluble Protein, Sugar (ESC), Starch, Ca, P, K, Mg, S, pH & NRC 2001 Energy Calcs. (Starch analysis on corn silage, small grain silage, or corn grain only.)
①	②	③	TMRs by NIR: Moisture, Protein, ADICP, NDICP, ADF, aNDF/aNDFom, Fat (EE), Ash, Lignin, Soluble Protein, Sugar (ESC), Starch, & NRC 2001 Energy Calcs
①	②	③	Basic NIR: Moisture, Protein, ADICP, ADF, aNDF/aNDFom, Soluble Protein, Sugar (ESC), Starch, Ca, P, K, Mg, S, & pH (Starch analysis on corn silage, small grain silage, or corn grain only.)
①	②	③	Complete Equine: Sugar (WSC), Digestible Energy KER, Moisture, Protein, ADICP, NDICP, ADF, aNDF/aNDFom, Soluble Protein, Starch, Ca, P, K, Mg, S, & pH
①	②	③	Distiller's Grains by NIR: 16 hr. Rumen <i>in situ</i> RUP and DMD, Moisture, Protein, ADICP, NDICP, ADF, aNDF/aNDFom, Fat (EE), Ash, Lignin, Soluble Protein, Starch, pH, & NRC 2001 Energy Calcs
①	②	③	Comprehensive Commodities: Moisture, Protein, ADF, NDF, Fat (EE), Ash with 12, 30, 72, 120, & NDFFD (No Lignin)
①	②	③	Commodities by NIR: Moisture, Protein, ADF, NDF, Fat (EE) & Ash
①	②	③	Major Minerals: (with DCAD) Ca, P, K, Mg, S, Na, & Cl
①	②	③	Total Minerals (with DCAD) Ca, P, K, Mg, S, Na, Cl, Zn, Mn, Cu, Fe, & Al

WET CHEMISTRY ANALYSIS PACKAGES

WET CHEMISTRY ANALYSIS ADD-ON MENU

①	②	③	TMR-D: Moisture, Protein, aNDF, Fat, Ash, Starch, TMR & Digestibility measures	①	②	③	Protein
①	②	③	Moisture/Protein	①	②	③	Soluble Protein
①	②	③	Base Mix Check: Moisture, Protein, Ca, P, K, Mg, S, & Cl	①	②	③	ADF
①	②	③	Simple Feed: Moisture, Protein, ADF, Ca, P, K, Mg, S, & Cl	①	②	③	NDF
①	②	③	Simple Feed Plus NDF: Moisture, Protein, ADF, NDF, Ca, P, K, Mg, S, & Cl	①	②	③	Crude Fiber
①	②	③	Core Nutrient: Moisture, Protein, ADF, aNDF, Fat, Ash, Ca, P, K, Mg, S & Cl	①	②	③	Lignin
①	②	③	Core Nutrient Plus Energy: Moisture, Protein, ADFCP, NDICP, ADF, aNDF, Fat, Ash, Lignin, Starch, Ca, P, K, Mg, S, Cl, & NRC 2001 Energy Calcs.	①	②	③	Fat
①	②	③	Commodity Core Nutrient and Energy Check: Moisture, Protein, ADICP, NDICP, ADF, aNDF, Fat, Ash, Lignin, Ca, P, K, Mg, S, Cl, & NRC 2001 Energy Calcs.	①	②	③	Nitrate
①	②	③	Whey and Liquid Feed: Moisture, Protein, aNDF, Fat, Ash, Ca, P, K, Mg, S, & Cl	①	②	③	Starch
①	②	③	Swine Energy Analysis: Moisture, Protein, ADF, aNDF, Fat, Ash, Ca, P, K, Mg, S, & Cl	①	②	③	Sugar
①	②	③	TMR Mixer Accuracy: (4 samples) Moisture, Protein, Salt, Ca, P, K, Mg, S, & Cl	①	②	③	Individual Sugars
①	②	③	Feed Mill Mixer Evaluation: (10 samples) Moisture, Zn, & Mn	①	②	③	Salt (Calculated from Chloride)
①	②	③	Yeast and Mold Count	①	②	③	Non-Protein Nitrogen
①	②	③	Yeast and Mold Count with Species Identification	①	②	③	Ash
①	②	③	Rapid Mold and Yeast Count (No Identification)	①	②	③	pH
①	②	③	Toxin (Circle toxin): DON, Zearalenone, T-2, Fumonisin, & Aflatoxin	①	②	③	Selenium
①	②	③	Common Mycotoxin Screen (7 Toxins): Commonly requested toxins	①	②	③	Molybdenum
①	②	③	Fusarium Screen (13 Toxins): Identifies toxins produced by Fusarium	①	②	③	Feed/Grain Particle Size
①	②	③	Basic Screen (12 Toxins): Identifies toxins produced by Fusarium and Aflatoxin	①	②	③	Kernel Processing Score
①	②	③	Comprehensive Mycotoxin Screen (19 Toxins): with Basic, Fusarium, & Citrinin	①	②	③	3, 7, or 16 hr. Rumen <i>in situ</i> Starch D (circle one)
①	②	③	Fecal Starch with Total Tract Starch Digestibility	①	②	③	24, 30, or 48 hr. <i>in vitro</i> Fiber D (circle one)
①	②	③	TMR Hygiene: Comprehensive Nutrition (NIR), Mold and Yeast with ID, Vomitoxin, Clostridium, 7h Starch Digestibility (Wet Chemistry)	①	②	③	16 hr. Rumen <i>in situ</i> RUP
Additional Comments or Requests:				①	②	③	Protein Intestinal Digestion
				①	②	③	3-Step 16 hr. RUP and Intestinal Digestibility
				①	②	③	Ross/Multi-Step Protein Evaluation
				①	②	③	Fermentation Products: pH, $\text{NH}_3\text{-N}$, 6 Fermentation Acids, Ethanol, & Fermentation Shrink (DM Loss, Goesser et al. 2015)
				①	②	③	Advanced Fermentation Products: pH, $\text{NH}_3\text{-N}$, 6 Fermentation Acids, 6 Fermentation Alcohols & Fermentation Shrink (DM Loss, Goesser et al. 2015)

Representative:

Forage Terms and Explanations From the UVM Forage Testing Lab:

As Fed Basis:

All values under this heading show the content of nutrients with the moisture in the forage included. Because of the dilution with water, the values will be lower than the dry basis column. Forages should not be compared on an as received basis unless they have the same percent dry matter.

Dry Matter Basis:

Values in this column give the nutrient information with the water removed. This allows comparisons to be made between forages (moisture/water no longer a factor). It is the best indication of nutrient value because animals tend to eat on a dry matter basis, i.e. dry matter intakes vary with milk yields and size of cows but range between 2.5% - 3.5%.

Dry Matter (DM):

100% minus the moisture in the feed.

Crude Protein (CP):

The total protein content of the feed. By analysis, it is the nitrogen content times 6.25.

Acid Detergent Insoluble Crude Protein (ADICP):

Also called Bound Protein. The protein bound to the acid detergent fiber fraction of the feed. Protein that has been heat damaged and is unavailable to the animal. About 1% is naturally occurring in forages.

Available Protein (AV CP):

Crude protein minus % ADICP above 1.0. For example: 19.0% CP, 1.5% ADIN = 18.5% AV CP

Soluble Protein (SOL PRO):

The protein fraction that is rapidly broken down in the rumen. When expressed as protein solubility it is expressed as a % of the CP.

Acid Detergent Fiber (ADF):

This value refers to the cell wall portions of the forage that are made up of cellulose & lignin. These values are important because they reflect the ability of an animal to digest the forage. As the ADF increases, digestibility of a forage decreases along with the energy.

Neutral Detergent Fiber (NDF):

This value is the total cell wall, which is comprised of the ADF portion plus hemicellulose. These values are important in ration formulation because they reflect the amount of forage the animal can consume. As NDF increases, dry matter intake (DMI) will decrease. $DMI \text{ as a \% of body weight} = 120/NDF$.

Lignin:

Lignin is a complex strengthening material in the cell walls of plants. Lignin reduces the digestibility of plant tissues; as lignin increases, the digestibility of the forage decreases.

Net Energy Lactation (NEL):

The energy value of the feed for milk production, expressed as megacalories (Mcal) per pound of feed. It is calculated from the ADF of the feed. Different forages use different equations to determine NEL, therefore correctly identifying forages is important (i.e. grass, mixed grass/legume, or legume haylages).

Total Digestible Nutrients (TDN):

An older system of estimating the energy value of a feed. Equations also differ depending on type of forage.

Non-Fiber Carbohydrates (NFC):

Determined by the following equation: $NFC = 100 - ((CP + (NDF - NDICP) + Fat + Ash))$. Ash represents the mineral content of the feed.

Relative Feed Value (RFV):

An index of feed quality relative to feed with an ADF of 41% and NDF of 53% having an RFV of 100%. This term is not used in ration balancing but serves as a simple, yet crude means of forage comparison.

Digestible Energy (DE):

The energy value of hay for non-ruminants, expressed as Mcal (megacalories) per pound of feed. The equation determining DE involves CP, NFC, NDF and Fat.

Mineral Components:

The abbreviations of minerals are as follows:

Macro Minerals: The major minerals, reported on a percentage basis:

Ca: Calcium
P: Phosphorus
K: Potassium
Mg: Magnesium
S: Sulfur
Na: Sodium

Micro Minerals: The minor minerals, reported in parts per million:

Fe: Iron
Mn: Manganese
B: Boron
Cu: Copper
Zn: Zinc

Neutral Detergent Insoluble Crude Protein (NDICP):

Nitrogen expressed as protein in the neutral detergent fiber residue. An estimate of the portion of the rumen undegradable protein that is potentially available to the animal.

Non-Structural Carbohydrates (NSC):

$NSC = Sugar + Starch$