



# *NIRS Forage & Feed Testing Consortium*

## **Who We Are and What We Do**

Patty Laskowski  
NIRS Consortium



- **History**
- **Organization Characteristics**
- **Consortium Activities**
- **Membership**
- **Participation**



## History

- **The Group formed in 1992**
- **By-Laws adopted June 10, 1998**
- **First Board of Directors elected June 10, 1998**
- **Incorporated in MN**
  - as non-profit
  - articles approved June 15, 1998
- **Became a federal non profit 2002**
  - 501(c)(6)
  - Federal ID # is 41-1944585



## Organization Characteristics

- **Advantages to joining the NIRS Consortium include:**
  - Labs can improve performance
  - Cost effective to share in equation development
  - Promote NIRS use so your lab is up to date



- **Our Pricing Structure consists of membership participation to share in the costs of:**
  - Running the technical and business of the organization
  - maintaining and updating equations



## **Membership Fees**

Membership Category	Fee
Regular	\$2500
Research/Nonprofit	\$1000
Sponsorship	\$1500
Collaborator	\$0
Instrument Company	\$2000
New Member Set-up (one time)	\$1000



## Commercial Equation Fees

Equation	Products	Fee	Output
Basic Equations	mixed hay, mixed haylage, alfalfa hay, grass hay, & fermented corn silage	no fee, comes with regular, research, and instrument memberships	DM, CP, ADF, NDF, Minerals
Second Level Equations			
1. Hay/Haylage TDN	mixed hay, mixed haylage, alfalfa hay, grass hay	\$500 annual fee plus \$.25 per sample/ max total annual fee \$1500	dNDF48, RFQ, Ash
2. Fermented Corn Silage TDN	fermented corn silage	\$500 annual fee plus \$.25 per sample/ max total annual fee \$1500	dNDF48, Ash
3. Fermented Corn Silage Starch	fermented corn silage	to be determined	Total Starch
4. RUP	mixed hay, mixed haylage, alfalfa hay	\$2000 one-time WARF license fee	RUP



## Small Group Equation Fees

Equation	Products	Fee	Output
Unfermented Corn Silage	unfermented corn silage	annual cost sharing among those participating	dNDF48, starch, ADF, NDF, CP

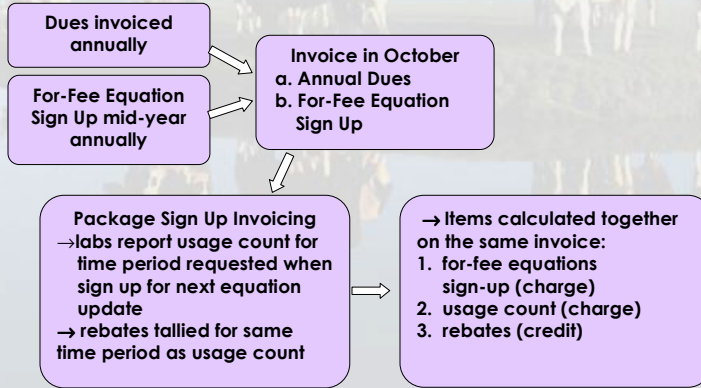
## Plant Breeders Equation Fees

Equation	Products	Fee	Output
Alfalfa Seed Breeders	fresh cut alfalfa	annual cost sharing among those participating	DM, CP, ADF, NDF, ADL, ash, dNDF48, RUP



# Invoicing

## Billing Flow Chart



# Invoice Example

DESCRIPTION	NUMBER	AMOUNT
June 2007 Hay/Haylage TDN Equation Package release		500.00
June 2007 Fermented Corn SilageTDN Equation Package release		500.00
Usage Count for Hay/Haylage TDN Equations for time period Oct 1, 2006 thru Sept 30, 2007	1000	250.00
Spectra & Chemistry sent in for commercial equation updates (for-fee TDN equations) & Rebate from Oct 1, 2006 thru Sept 30, 2007-- <b>CREDIT</b>	400 corn silage	(500.00)
	<b>TOTAL</b>	<b>\$ 750.00</b>



## Rebates

Example: Hay/Haylage NDFD equation				
Volume	100	2000	5000	10000
# of NDFD samples				
<b>Annual equation fee</b>	\$ 500.00	\$ 500.00	\$ 500.00	\$ 500.00
<b>Per use fee</b>	\$25.00	\$ 500.00	\$1,000.00	\$1,000.00
<b>Total fee</b>	\$525.00	\$1,000.00	\$1,500.00	\$1,500.00
<b>Cost per sample</b>	<b>\$5.25</b>	<b>\$0.50</b>	<b>\$0.30</b>	<b>\$0.15</b>
<b>With chem contrib. at \$500 level</b>				
<b>Annual fee</b>	\$ 500.00	\$ 500.00	\$ 500.00	\$ 500.00
<b>Per use fee</b>	\$25.00	\$ 500.00	\$1,000.00	\$1,000.00
<b>Rebate</b>	-\$500.00	-\$500.00	-\$500.00	-\$500.00
<b>Total fee</b>	\$25.00	\$ 500.00	\$1,000.00	\$1,000.00
<b>Cost per sample</b>	<b>\$0.25</b>	<b>\$0.25</b>	<b>\$0.20</b>	<b>\$0.10</b>
<b>With chem contrib. at \$200 level</b>				
<b>Annual fee</b>	\$ 500.00	\$ 500.00	\$ 500.00	\$ 500.00
<b>Per use fee</b>	\$25.00	\$ 500.00	\$1,000.00	\$1,000.00
<b>Rebate</b>	-\$200.00	-\$200.00	-\$200.00	-\$200.00
<b>Total fee</b>	\$325.00	\$ 800.00	\$1,300.00	\$1,300.00
<b>Cost per sample</b>	<b>\$3.25</b>	<b>\$0.40</b>	<b>\$0.26</b>	<b>\$0.13</b>



## Consortium Activities

- **Our mission:**
  - The NIRS Forage and Feed Testing Consortium Leads the Industry in unifying knowledge, accuracy, and application of NIRS technology.**
  - This improves business conditions for all forage and feed testing industry by promoting accuracy through uniformity, standardization, and good practices.



## Consortium Activities

- **We carry out our mission by:**
  1. **Standardizing instruments = spectral matching of member instruments to a master or standardization between instruments**
  2. **Managing our Instrument Monitoring Program**
    - **Diagnostics**
    - **Check Cell Tests**



## Consortium Activities

- **We carry out our mission by:**
  3. **Supporting our members**
    - A. **Workshops to improve operator skills:**
      - **Using Instrument Software**
      - **Instrument Mechanics/Maintenance**
      - **Using NIR for Lab Quality Control**
      - **New Calibration Development**
      - **New Calibration Methodology (eg. Local)**
    - B. **Technical Support Webpage (Help Desk)**
      - **go to NIRSC website and click on "NIRS Consortium Technical Support"**



## Consortium Activities

- **We carry out our mission by:**
  4. **Continually monitoring and updating our group equations**
  5. **Developing new equations to meet our members' needs**
    - unfermented corn silage
    - starch in fermented corn silage
    - sugars in grasses



- **Equations are of two types:**
  1. **“Basic” equations developed as a by-product of data from members' daily activity – all members have access**
  2. **“Second Level” equations that members want to develop and agree to share in cost of chemistry = for fee equations or packages**



- Equations are of three categories:
  1. Commercial
  2. Small Group
  3. Plant Breeders



### NIRS Consortium Product Equation Packages

**Variant:**

I = Basic/ DM, ADF, NDF, CP, minerals, RFV

II = Basic + dNDF, RFQ, ash

III = Basic + II + RUP

**Variants Available**

Package	Description	I	II	III
<u>Mixed Hay</u>	legume & grass hays	X	X	X
<u>Mixed Haylage</u>	legume & grass haylages	X	X	X
<u>Alfalfa Hay</u>	alfalfa hay only	X	X	X
<u>Grass Hay</u>	warm & cool season grasses	X	X	
<u>Corn Silage Fermented</u>	fermented corn silage	X	X no RFQ	
<u>Alfalfa Breeders</u>	fresh cut alfalfa: research			X
<u>Roasted Soybeans</u>	roasted soybeans		other	
<u>Scissors Clip</u>	fresh clip alfalfa		other	
<u>Corn Silage Unfermented</u>	unfermented corn silage		other	

Equation versions current June, 2007.



- **We carry out our mission by:**
  - 6. Supporting Quality Control**
    - All commercial members must be enrolled in NFTA's certification program
    - As a group we describe uniform reference method technique & sample handling technique
      - [Guidelines for Optimizing Accuracy and Consistency in the NIRSC Laboratory](#)



- **We carry out our mission by:**
  - 7. Member participation in forage quality testing research**

Effect of particle size on performance of NIRS predictions

Evaluation of check cell type and ring integrity on output

Effect of Drying Method (oven & microwave) on digestible fiber

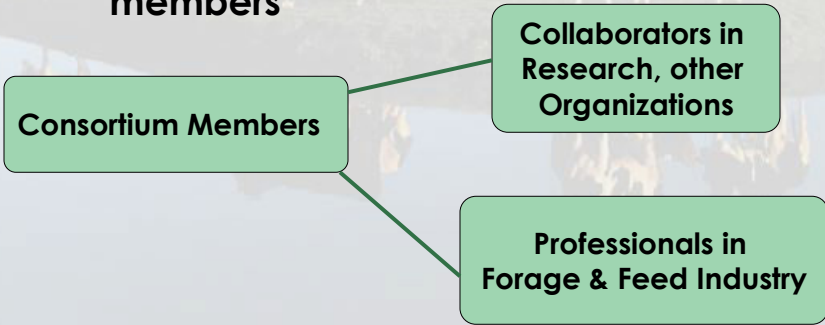
Evaluation of standardization technique on instrument performance

Use of Local equations for commercial labs & seed research

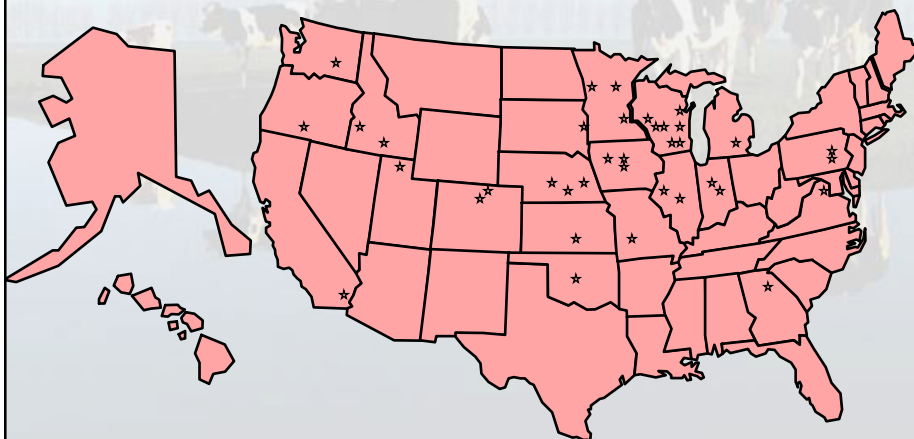
Evaluation of Starch methods for commercial labs



- We carry out our mission by:
  8. Information exchange between our members



## Membership





## Membership

- **Membership Sectors of Representation**
  - Government & University
  - Commercial Labs
  - Plant Research
- **Each Sector is equally represented on the Board of Directors**



## Joining the NIRSC

How do I join the NIRS Forage and Feed Testing Consortium?  
Follow the Following Steps:

1. Review the New Member Information Packet including these documents:
  - a. How Do I Join
  - b. New Member Set Up Process
  - c. Classes of Membership
  - d. Equation Descriptions
  - e. Consortium Price Structure and Sign Up
  - f. Pricing Structure Rebate Options
  - g. New Member Information Form
2. Complete the New Member Information Form and send to the Consortium Business Manager.
3. Review your facility and be able to meet these requirements:
  - a. Consortium members must have NIRS instruments capable of handling complex forage and feed products. Spectral output of each instrument is matched (standardized) to a Consortium Master Instrument. The standardization of all instruments is needed for labs to use equations provided by the Consortium.
  - b. Laboratories must have software capable of handling complex equations.
  - c. Each lab is expected to do routine diagnostics daily and send a diagnostic report to the Consortium Technical Manager weekly.
  - d. Labs are expected to provide samples of products as requested. This will ensure the spectra of samples being analyzed by all member laboratories is represented within the Consortium calibration libraries.
  - e. Labs conducting commercial testing of forage and feed products are expected to have membership for certification of their labs (NIRS and chemical when applicable) through the National Forage Testing Association (NFTA), and upon request supply laboratory ID's and results (confidentially) to the Consortium Technical Manager.

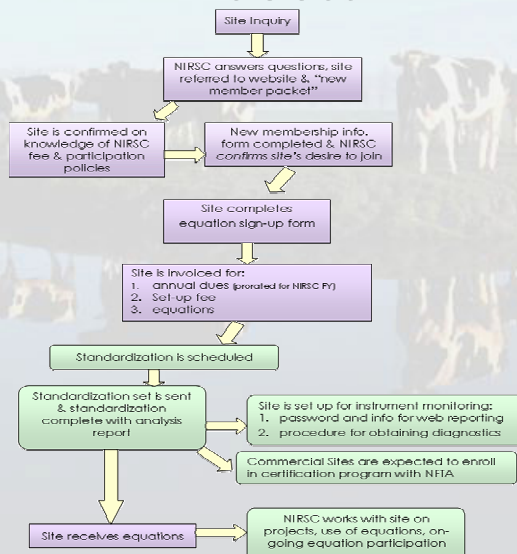


# New Member Information Form

Laboratory or Entity Name:	
Address:	
Telephone:	Fax:
Name of Contact Person:	
Title of Contact Person:	
Email of Contact Person:	
Names, titles, & emails of other involved persons at your lab:	
Type of Business or Organization: (e.g. seed breeder, university research lab, etc.)	Category of NIRSC membership: (see accompanying membership categories document)
Instrument Make & Model:	Instrument Serial #:
Type of attachment on instrument: (e.g. spinning cup, autoadder, external cup, etc.)	Is instrument Autogain equipped?
What is your desired timeline for completing standardization and getting equations running?	
What types of projects, equations, etc. are you interested in participating, in development or update etc.?	
Other comments:	
I would like to confirm our business/organization joining the NIRSC now	<input type="checkbox"/>
I would like to get more information before joining the NIRSC	<input type="checkbox"/>



# New Member Set-up Process





## Participation

- **The Strength of our group depends on membership participation**
  - Spectra, Chemistry, Physical Samples
  - Committees
  - Special Projects
  - Feedback
  - Board