Dairy One News from Dairy One - Where Information Creates Opportunity.

September 2001, No. 24
Forage Laboratory

OUT WITH THE OLD...

OUT, are the (01) NIR Prime, (02) NIR Prime with Minerals, (05) NIR CNCPS and wet (15) CNCPS packages. **IN**, are the new **NIR Model** and **Wet Model Profile** packages. The increasing prevalence of models used for ration balancing prompted us to design packages that provide the majority of the required components. Additionally (and most significantly), the components are provided in the form and order required for direct data entry into each specific model. For example, in the CNCPS option, lignin is the third component listed and reported as a percentage of the NDF. This is the order and form that lignin is used in the CNCPS. The available model formats are displayed in Table 1.

The formats are provided in both printed and electronic forms. This will speed data entry and enable you to share the information with producers in the form with which it is utilized.

What does this mean to you? When requesting either the **NIR** or **Wet Model** packages, you must specify the output format that you desire on the sample information sheet. Updated sample information sheets may be obtained by contacting our customer support group at 1.800.496.3344. If no format is specified, the *Standard* format serves as the default.

The Wet Model Profile has been expanded to include starch, sugar and chloride. The addition of these components resulted in a price increase of only $5.00. The new NIR Model package has been expanded to include ADICP, NDICP, degradable protein and starch for all feed types. A complete listing of new services, components and pricing appears on the accompanying Services sheet.

These new services were designed to keep pace with today's progressive feed models. We're sure that you'll agree these will ease the development of modern high powered rations.

PICTURE THIS...

Need a quick and inexpensive overview of your TMR? The answer is the new **NIR TMR Snapshot**. This package provides **CP, SP, ADF, NDF, Fat, Ash, and NFC** using the speed and sophistication of NIR for only $14.00. The ability to accurately analyze TMR's was developed using the latest and most sophisticated version of NIR calibration software. Using a database of over 7,500 diverse TMR samples, individual calibrations are developed for each sample as it is analyzed. The database is composed primarily of lactation rations, although all ration types are represented enabling you to analyze TMR's ranging from low fiber, high concentrate beef rations up through high fiber heifer rations and everything in between.

If you also need minerals, choose the **TMR Snapshot with Wet Chemistry Minerals** package. This includes the components listed above along with **Ca, P, Mg, K, Na, Fe, Zn, Cu, Mn, and Mo** for $23.00.

Please note - an analysis of a TMR by NIR must be performed by one of these two packages. TMR's may not be run using any of the other NIR services. Likewise, TMR's are the only sample types that can receive these two services. All other feed types must use one of the other NIR packages.

Customer demand led us to develop this valuable service. Now TMR's can be routinely monitored at the price and speed of typical forages.

SAVE A TREE

Printed copies of all reports are always sent via mail. Most of our customers are receiving the bulk of their results electronically by either fax or e-mail and find the mailed copy redundant. Help fight the war against redundancy and protect the environment at the same time. Contact the Forage Lab Customer support group at 1.800.496.3344 and request that your account be flagged for only fax or e-mail results (most people are switching to e-mail). This will eliminate the redundant report and save a tree at the same time. *The trees of America thank you.*

INTRODUCING RATION BALANCER PLUS

Built upon our popular Ration Balancer Package, Ration Balancer Plus includes the most popular add-on analyses of Fat, Ash and Lignin to provide a more complete analytical package. Cost: $49.00

NSC vs. NFC

Nonstructural carbohydrates or non-fiber carbohydrates? These two terms have been used interchangeably over the last decade. There has been a movement among academia and the industry to better define the carbohydrate portion of feeds and the usage of these terms. The suggestion is to define NFC as carbohydrates determined by calculation and NSC as carbohyrates determined by analysis. To try and keep the industry moving forward, we will adopt this convention. NFC will now be calculated as follows:

NFC% = 100% - (Cp% + (NDF% - NDICP%) + Fat% + Ash%)

Deducting NDICP compensates for it being found in both the CP and NDF fractions. The deduction of NDICP will result in slightly higher NFC values than formerly obtained with our old NSC calculation.

The new NSC will be defined as follows:

NSC% = Starch% + Sugar%

Sugar analysis is now available for $5.00. NSC will only be reported when both starch and sugar are actually analyzed. Outlined below are example comparisons between old and new values for corn silage and alfalfa hay.

	Old NSC%	New NFC%	New NSC%
Corn silage	38.3	39.7	29.7
Alfalfa Hay	27.7	30.5	9.7

NFC is a calculated value that served us well as a "ball park" figure over the years. As we learn more about nonstructural carbohydrate requirements, the need for actual sugar and starch requirements will continue to grow. Eventually, NFC will become obsolete and replaced by the direct measurements of starch and sugar. Get a leg up on the future - start monitoring true nonstructural carbohyrates today!

(default) Standard	CNCPS	CPM	Dalex	NRC
Moisture	DM	DM	DM	TDN1X
DM	NDF	NDF	CP	DE, Mcal/kg
CP	Lig%NDF	CP	SP%CP	DM
Avail. CP	CP	SP%CP	NEl	NDF
ADICP	Fat	ADICP%CP	NEg	ADF
Adj. CP	Ash	Fat	NEm	Lignin
SP%CP	SP%CP	Ash	ADF	CP
NDICP	NDICP%CP	Lig%NDF	NDF	NDICP
ADF	ADICP%CP	NDICP%CP	TDN	ADICP
NDF	Ca	Ca	Ca	A%CP (2)
Lignin	P	P	P	B%CP
NFC	Mg	Mg	K	C%CP
Starch	Cl	K	S	Kd CP
Sugar	K	S	Mg	Fat
Fat	Na	Na	Zn	Ash
Ash	S	Cl	Fe	Ca
TDN	Cu	Fe	Cu	P
NEl	Fe	Zn	Mn	Mg
NEm	Mn	Cu	Na	Cl
NEg	Zn	Mn	Cl	K
RFV			Fat	Na
Ca	ADF	ADF	Ash	S
P	ADICP	ADICP	Lig%NDF	Cu
Mg	NDICP	NDICP	ADICP%CP	Fe
K	Lignin	Lignin	NDICP%CP	Mn
Na	NFC	NFC		Zn
Fe	TDN	TDN	NFC	
Zn	NEl	NEl	RFV	NFC
Cu	NEm	NEm	Moisture	RFV
Mn	NEg	NEg	Avail. CP	Moisture
Mo	RFV	RFV	ADICP	Avail. CP
S	Moisture	Moisture	Adj. CP	Adj. CP
Cl	Avail. CP	Avail. CP	NDICP	SP%CP
	Adj. CP	Adj. CP	Lignin	Starch
	Starch	Starch	Starch	Sugar
	Sugar	Sugar	Sugar	TDN
	Mo	Mo	Mo	NEl
				NEm
				NEg
				Mo

Table 1.
Formats and components in wet chemistry **Model Profile** options.

1. Components required by the models appear before the break. Additional components follow the break.

2. Protein figures A%CP, B%CP, C%CP and Kd CP are directly from the NRC tables at this time. Figures will only appear for feeds with published values.

NIR SERVICES

301	$16.00	**NIR Model** – provides nutrients required by the most common models. Select the appropriate model and the results are printed in sequence required for data entry. The standard option is the default when no other option is selected. DM, CP, SP, RDP, ADICP, NDICP, ADF, NDF, Lignin, Fat, Ash, Starch, NFC, RFV, TDN, NEI, NEm, NEg, ME, DE, Ca, P, Mg, K, and S.
302	$26.00	**NIR Model with Wet Chemistry Minerals** – same as (301) plus macro and micro minerals Ca, P, Mg, K, Na, Fe, Zn, Cu, Mn, and Mo performed by wet chemistry.
03	$12.00	**NIR** – DM, CP, SP, ADICP (haylages only), ADF, NDF, NFC, RFV, TDN, NEI, NEm, NEg, ME, DE , Ca, P, Mg, and K.
04	$21.00	**NIR with Wet Chemistry Minerals** – same as (03) plus macro and micro minerals Ca, P, Mg, K, Na, Fe, Zn, Cu, Mn, and Mo performed by wet chemistry.
305	$14.00	**NIR TMR Snapshot** – DM, CP, SP, ADF, NDF, Fat, Ash, NFC, TDN, NEI, NEm, NEg.
306	$23.00	**NIR TMR with Wet Chemistry Minerals** – same as (305) plus macro and micro minerals Ca, P, Mg, K, Na, Fe, Zn, Cu, Mn, and Mo performed by wet chemistry.

WET CHEMISTRY SERVICES

09	$18.00	**Basic** – DM, CP, ADF, NDF, unavailable protein (ADICP on haylages and distillers grains only), NFC, RFV, TDN, NEI, NEm, NEg.
10	$28.00	**Basic plus Minerals** – DM, CP, ADF, NDF, unavailable protein (ADICP on haylages and distillers grains only), NFC, RFV, TDN, NEI, NEm, NEg, ME, DE , Ca, P, Mg, K, Na, Fe, Zn, Cu, Mn, and Mo.
11	$34.00	**Ration Balancer** – DM, CP, ADF, NDF, unavailable protein (ADICP on haylages and distillers grains only), NFC, RFV, TDN, NEI, NEm, NEg, ME, DE , Ca, P, Mg, K, Na, Fe, Zn, Cu, Mn, and Mo plus sulfur and soluble protein.
311	$49.00	**Ration Balancer Plus** – DM, CP, SP, unavailable protein (ADICP on haylages and distillers grains only), ADF, NDF, Lignin, Fat, Ash, NFC, RFV, TDN, NEI, NEm, NEg, ME, DE , Ca, P, Mg, K, Na, Fe, Zn, Cu, Mn, Mo and S.
12	$20.00	**Mineral Ingredient or Mixture** – DM, Ca, P, Mg, K, Na, Fe, Zn, Cu, Mn, Mo. This package must be used for all mineral mixtures and individual mineral ingredients. Minerals are analyzed in duplicate and the average is reported.
13	$18.00	**Guarantee Analysis** – DM, CP, Crude Fiber, and Crude Fat (ether extract).
315	$77.00	**Model Profile** – provides nutrients required by the most common models. Select the appropriate model and the results are printed in sequence required for data entry. The *Standard* option is the default when no other option is selected. DM, CP, SP, ADICP, NDICP, ADF, NDF, Lignin, Fat, Ash, Starch, Sugar, NFC, NSC, RFV, TDN, NEI, NEm, NEg, ME, DE , Ca, P, Mg, K, Na, Fe, Zn, Cu, Mn, Mo, S, Cl.
16		**Custom Package** – this allows you to design a package that best meets your needs. A custom package is assembled by combining services listed under "Additional Services". The cost of this service includes a $6 base fee plus the cost of the individual items selected. For example, if you want CP ($4), NDF ($4), Ca and P (2 minerals, $8), the cost of the package is $22. No base fee is required when you select a standard package and add supplemental services to it. For example, if you select #11 Ration Balancer ($34) plus Fat ($9), the total cost is $43.
207	$13.00	**Fermentation Analysis** – for evaluating silage quality. Includes DM, Lactic acid, Acetic acid, Lactic/Acetic ratio, Propionic acid, Butyric acid, Iso-butyric acid, Total acids, pH, Crude Protein, Crude protein equivalent from Ammonia, and ammonia N as a percentage of total N. Goal, typical and graphic results are also displayed to aid in interpretation.
33	$19.00	**In Vitro True Digestibility (IVTD).** $13.00 when submitted in groups of 20 or more at the same time.

ADDITIONAL SERVICES OR CUSTOM PACKAGE COMPONENTS

Crude Protein	$4.00	Calcium	1 mineral @ $5.00
Soluble Protein	$5.00	Phosphorus	2 mineral @ $8.00
Degradable Protein	$7.00	Magnesium	3 mineral @ $12.00
ADF	$4.00	Potassium	
NDF	$4.00	Sodium	
Lignin	$7.00	Iron	
Fat (ether extract)	$9.00	Zinc	
Starch	$8.00	Copper	
Sugar	$5.00	Manganese	
Ash	$3.00	Molybdenum	
Crude Fiber	$5.00		
ADICP	$5.00	Sulfur	$3.00
NDICP	$5.00	Cobalt	$5.00
Urea	$5.00	Chloride	$8.00
Ammonia	$5.00		
Nitrates	$8.00		
pH	$3.00		

MYCOTOXINS

Aflatoxin
Vomitoxin
Zearalenone
Fumonisin
T2
Ochratoxin

1 toxin @ $25.00, 2 @ $45.00, 3 @ $65.00,
4 @ $85.00, 5 @ $100.00, 6 @ $115.00.

SAMPLE INFORMATION SHEET

Please provide the following information. See reverse side for instructions and details.

Dairy One

FORAGE LABORATORY

730 Warren Road, Ithaca, New York 14850
Ph: 800.496.3344 • Fax: 607.275.1350
http://www.dairyone.com

Office Use Only

Code: _____ **Date:** _____ **No:** _____

1. Please Bill Account ☐ Farm ☐ Agribusiness ☐ Agribusiness

Name	Name	Name
Street	Street	Street
City	City	City
State Zip	State Zip	State Zip
County	County	County
Fax	Fax	Fax
email	email	email

2. Herd Averages: Breed: _____ Body wt., lbs: _____ Fat test, %: _____ True protein, %: _____

3. Feed type - if your feed is not listed below, you must use a wet chemistry service.

Forages	Silage	Fresh cut	Pasture	Hay
Legume	☐	☐	☐	☐
Mixed mostly legume	☐	☐	☐	☐
Mixed mostly grass	☐	☐	☐	☐
Grass	☐	☐	☐	☐
Bermudagrass	☐	☐	☐	☐
Ryegrass	☐	☐	☐	☐
Sorghum	☐	☐	☐	☐
Sorghum Sudan	☐	☐	☐	☐
Sudangrass	☐	☐	☐	☐
Barley forage	☐	☐	☐	☐
Oat forage	☐	☐	☐	☐
Triticale forage	☐	☐	☐	☐
Wheat forage	☐	☐	☐	☐
Corn silage	☐	☐	☐	☐
Corn silage/haylage mix	☐	☐	☐	☐

Grains	Hi Moist/wet	Dry
Shelled corn	☐	☐
Ear corn	☐	☐
Steam flaked corn	☐	☐
Barley	☐	☐
Oats	☐	☐
Triticale	☐	☐
Wheat	☐	☐
Brewers	☐	☐
Distillers	☐	☐

TMR	
Fresh	☐
High	☐
Medium	☐
Low	☐
Dry	☐
Close-up	☐
Heifer	☐
Beef	☐

☐ Other: _____

4. Comments or description: _____

5. Treatments: _____ NPN treated No: _____ Yes _____ If yes, must select wet chemistry package.

6. Services - for MODEL packages 301, 302, 315, select report format: ☐ Standard ☐ CNCPS ☐ CPM ☐ Dalex ☐ NRC

NIR Packages

☐ 301	NIR Model (select format above)	$16.00
☐ 302	NIR Model with wet chemistry minerals	$26.00
☐ 03	NIR	$12.00
☐ 04	NIR with wet chemistry minerals	$21.00
☐ 305	NIR TMR Snapshot	$14.00
☐ 306	NIR TMR with wet chemistry minerals	$23.00

Wet Chemistry Packages

☐ 09	Basic	$18.00
☐ 10	Basic plus minerals	$28.00
☐ 11	Ration Balancer	$34.00
☐ 311	Ration Balancer Plus	$49.00
☐ 12	Mineral Ingredient or Mix	$20.00
☐ 13	Guarantee Analysis	$18.00
☐ 315	Model Profile (select format above)	$77.00
☐ 16	Custom Package - See reverse for details	$6.00

Additional services or Custom Package Components

☐ 21	Crude Protein	$4.00
☐ 22	ADF	$4.00
☐ 23	NDF	$4.00
☐ 24	Soluble Protein	$5.00
☐ 25	Fat	$9.00
☐ 26	Ash	$3.00
☐ 28	Lignin	$7.00
☐ 29	Crude Fiber	$5.00
☐ 30	ADICP	$5.00
☐ 31	NDICP	$5.00
☐ 32	Degradable Protein	$7.00
☐ 34	Starch	$9.00
☐ 254	Sugar	$5.00
☐ 61	Nitrates	$8.00
☐ 64	Urea	$5.00
☐ 65	Ammonia	$5.00
☐ 67	pH	$3.00

Minerals

☐ 41	Calcium	1 mineral	$5.00
☐ 42	Phosphorus	2 minerals	$8.00
☐ 43	Magnesium	3 minerals or more	$12.00
☐ 44	Potassium		
☐ 45	Sodium		
☐ 46	Iron		
☐ 47	Zinc		
☐ 48	Copper		
☐ 49	Manganese		
☐ 50	Molybdenum		
☐ 59	Sulfur		$3.00
☐ 66	Chloride		$8.00
☐ 203	Cobalt		$5.00

Other Services

☐ 207	Fermentation Analysis (VFA)	$13.00
☐ 33	In-vitro true digestibility (IVTD)	$19.00
	Quantities of 20 or more	$13.00

Mycotoxins

☐	Aflatoxin	☐	Vomitoxin
☐	Zearalenone	☐	T2
☐	Fumonisin	☐	Ochratoxin

1 toxin @ $25.00, 2 @ 45.00, 3 @ $65.00, 4 @ $85.00, 5 @ $100.00, 6 @ $115.00

Delivery Services

☐	Postage for sample sent via US Mail in Dairy One mailer	$2.00
☐	International charge per fax	$3.00
☐	Records search	$35.00/hr

Total cost: $ _____ Check No: _____

If paying by credit card, please complete the following:

Circle one: VISA MasterCard American Express

Card No. _____

Expiration date: _____

Signature: _____

Please send me: _____ Forage Mailers _____ Manure kits _____ Water kits