

SORGHUM-SUDAN ON LINE

In response to the increased demand for NIR services, we are proud to add the following feed types to our list of NIR calibrations: ryegrass, sudangrass, sorghum sudangrass and sorghum in both the fresh chopped and ensiled forms. We do not receive many hays of these forages and thus, no calibrations were developed at this time.

The calibrations were developed using NIR Systems Model 6500 full scanning monochromators and ISI Software. Samples for calibrating were selected from the thousands of samples received in our lab on an annual basis. Potential calibration samples are identified by their "spectral fingerprint". The spectral data helps define the individuality of all samples. For a good calibration, we want as many different individuals from the population as possible. This diversity is essential to develop a calibration that truly represents the population.

Once the samples are selected, they are analyzed by wet chemistry to determine the reference nutrient values for calibration. Sophisticated math procedures are then used to develop the calibration. Upon completion, a new set of samples are run through the calibration to validate its effectiveness. If all checks out, the calibration is ready to put into production. If not, a new math treatment is applied until accuracy is attained.

Individual calibrations must be developed for each nutrient component. For example, to produce the complete ryegrass calibration, individual calibrations for CP, SP, ADF, NDF, Ca, etc. had to be developed. Calibrating is a time consuming and expensive process.

We hope that you will take advantage of these new NIR services. A complete list of NIR feed types is included for your reference.

Table 1. Northeast DHIA Applicability Chart

	Hay	Fresh	Silage
Legume	X	X	X
MML	X	X	X
MMG	X	X	X
Grass	X	X	X
Barley			X
Corn		X	X
Oat			X
Rye		X	X
Sorghum		X	X
Sorghum-Sudan		X	X
Sudangrass		X	X
Triticale		X	X
Triticale & Peas		X	X
Wheat			X
Shelled Corn - Dry & High Moisture			
Ear Corn - Dry & High Moisture			

TURNIPS ARE TOPS?

Are turnip tops the forage of the future? It is too early to tell, but they found their way into one Florida dairyman's feeding program. Wallace Eicher is one of Florida's leading dairyman with a rolling herd average over 25,000 lbs. of milk. He works with Bill Miller from Purina Mills on his feeding programs. His basic ration consists of green chopped oats, corn silage, cottonseed hulls, corn, soybean meal, and 2 commercial concentrate mixtures. Bill figures that the cows are consuming a respectable 58 - 62 lbs. of dry matter per day. This is tremendous, given the depressing effect that hot, humid weather has on dry matter intake.

Bill describes Wallace as "the kind of guy who likes to get things done right". He's very particular about his management practices and takes care of all of the little details. He's an excellent feeder, paying strict attention to feed bunk management.

The green chopped oats are fed at a rate of 60 lbs./head/day. As a consequence of life, wild turnips appear as undesirable weeds in the oat fields. Wallace has observed that whenever they chop a significant proportion of turnips with the oats, that the cows increase in milk production. This became the source of an inside joke between them until one day, they finally decided to have the turnip tops analyzed.

Much of their amazement, the analysis yielded a 35.1 CP%, 16.2% ADF, 16.6% NDF, .84 Mcal NEI, 2.01% Ca and .53% P (DM Basis). Incredibly, this was a whole plant analysis. Given just the results, one might assume that the sample was primarily leaf material. However, they did a good job of sampling and took a representative sample from top to bottom, much like the plant would be harvested by the flail chopper.

Of course, their initial response to these results was "no way". A lot of people spray their fields to eliminate the turnips and it was unfathomable that they could be this nutrient dense. As an exercise, applying the relative feed value (RFV) calculation to this sample yields a RFV of 427.

Skepticism crept into the air. Their disbelief in the original results led them to take 2 more samples. One from a domestic variety of turnips and another from some wild turnips growing alongside the road. The new tests confirmed the original results and they were forced to believe that these weeds may be a nutritional benefit.

In general, Bill says that grazing cows will avoid the wild turnip tops. The turnips appear as lone sentinels in the middle of a well grazed pasture. However, disguised in a TMR, they become a part of the diet.

Given the nutritional profile of the turnips, they would not be suitable as the sole forage source in a ration. The lack of fiber would lead to early disaster. However, appearing as a "supplement" to the base forage, it appears to have provided additional protein and energy that contributed to a milk production response. This unwelcome weed suddenly looked a little better.

Bill and Wallace now joke that maybe they should plant the whole field in turnips.

We would like to thank Bill Miller for taking the time to speak with us about these samples. Bill commented that "sharing information about

successes and failures in feeding programs are part of what makes his job interesting”.

THE FAT ROLLS IN

As cows continue to reach new heights in milk production, it becomes increasingly difficult to meet their demands for energy. The addition of fat to many rations has become a popular way to increase energy density. Fat is being added in many forms. Direct addition of tallow, the inclusion of high fat oil seeds such as whole cottonseed and whole soybeans, and bypass fat products such as Megalac are some examples. When properly used, all of these products will enhance the energy value of the diet.

The increased popularity of supplementing diets with fat has also led to an increased demand for fat analysis. Coupling the heavy demand with a research project that we are involved with that requires fat analysis on the majority of its samples, put us “behind the eight-ball” this winter. We were unable to keep pace with the high demand for fat analyses and fell behind, thereby increasing turnaround time for many samples. To make matters worse, when we placed the order for a second ether extraction unit, we were informed that it would take 6 - 8 weeks for delivery. The instruments are manufactured on demand and shipped from Sweden.

The combination of above circumstances hurt turnaround time and we are sorry for the delays.

The second instrument finally arrived and is up and running. We are ready! We are prepared! Keep the fat rolling in!

NEW FIBER TECHNOLOGY

In our efforts to seek new ways to deliver accurate results in a more efficient manner, we are evaluating a new system of fiber analysis. The ANKOM Filter Bag Technique (FBT) is a revolutionary new procedure that eliminates the sample transfer and filtering steps. ANKOM has worked with Northeast DHIA and Cornell University to refine the procedure. Results of these efforts appear in the journals of Dairy and Animal Sciences (JDS. 76: SUPPL. 1, p.250, P309; JAS 72:SUPPL. 1, p.114, P436).

We are doing some final in-house testing before putting the system into production. If successful, we hope to have the system on-line for the Fall busy season.

Coming in June - The American Dairy Science Assoc. (ADSA) Annual Meeting will be held in Ithaca, NY from 6/25 - 6/28/95 at Cornell University. The meeting provides a forum for the dissemination of the latest research. A broad variety of topics including dairy genetics, nutrition, management and dairy products (to name a few) will be presented.

We will have a booth/exhibit at the meeting and encourage you to stop by. Tours of the lab and DHIA Center will also be conducted. If you are an ADSA member, you will note that we are listed in the program under Dairy Tours. It states that we will be open for tours throughout the ADSA meeting. This is not true. Specific times will be listed for tours and posted at our exhibit.

Stop by and see us at the booth. We're looking forward to visiting with you in Ithaca.

FORAGE SERVICES SURVEY

In our continuing effort to enhance and evaluate the services that we provide, please take a minute to complete and return this brief survey by 5/12/95. Please circle the appropriate response to each question.

1. The Forage Sample Information Sheet is a 2 part form. The white copy is supposed to be sent back to the lab with the sample and the yellow copy is for your records. A lot of the samples come back to the lab with both copies. With increasing environmental awareness, it's a shame to continually throw out all of those yellow copies. They are not recyclable.

We need to know if the yellow copy is useful.

- a. The yellow copy is important. I keep it for my records.
 - b. The yellow copy is not important. I prefer a one page sample information sheet.
2. UPS Authorized Return Service (ARS) is available for forage samples at a cost of \$3.00 for any size package from anywhere in the continental US. It was initiated this winter to help decrease the delivery time of samples to the lab.
 - a. I have not tried this service.
 - b. I have tried this service and continue to use it.
 - c. I have tried this service and discontinued using it.Why? _____

3. Rank the following items of how you most often prefer to receive results. (1=most preferred, 4=least).

_____ mail _____ E-Mail
_____ Fax _____ phone

4. The RMS service will be changing as we move to a new processing center. A new On-Line system will be available. The possibility exists for having forage results available on the new system. One phone number would be all that is required to access records or forage results.

- a. On-Line services are not important to me.
- b. Keep Forage E-Mail in its existing form.
- c. One On-Line service that enabled me to access all Northeast DHIA data (forage, records, milk) would be a true asset.

5. Some interest has arisen regarding the determination of In Vitro Dry Matter Digestibility (IVDMD). IVDMD is a measure of digestibility determined by incubating the sample in rumen fluid under controlled conditions for a specified period of time. This information is particularly useful if cows are not performing as predicted. For example, during the drought of 1992, we knew that corn silage was less digestible and therefore had less energy than we were able to predict. IVDMD is a method to more directly evaluate digestibility.

IVDMD could only be run early in the week and might take 3 - 5 days to complete the analysis, I realize the usefulness of this service and the time involved in the analysis. I would like to see this service available.

I am:

- a. Very interested, would use frequently.
- b. Moderately interested, would use on occasion.
- c. Would use as a diagnostic tool in specific cases.
- d. Not interested.

Thanks for your help!