

FISHING SEASON OPENS AT DHIA

One of the annual rites of spring and summer is fishing. At DHIA, we have our own version. Last week's fleet brought in a prize catch of herring, capeline, smelt and anchovies. You see, aside from our mainstay of analyzing dairy feeds and forages, we will basically agree to analyze almost anything. This leads to some very interesting samples. Last week, one of our zoo customers sent in the above species of fish. The fish make up the typical diet of Humboldt penguins. The zoo is conducting trials to evaluate the nutritional composition of the fish. One important aspect that they are interested in is vitamins. After being caught by commercial fisherman, some of the vitamins in the fish breakdown. The zoo hopes to determine the extent of decomposition in order to properly supplement the penguin's diet.

The primary nutrients are listed below in TABLE 1:

TABLE 1				
	Herring	Capelin	Smelt	Anchovies
DM, %	31.7	22.2	24.2	24.8
CP, %	61.2	65.0	54.1	56.4
Ca, %	1.12	1.31	1.03	1.81
P, %	1.27	1.37	1.05	1.46

The challenging part of this analysis was how to prepare the sample for analysis. Typically, forages are received in a chopped form, then dried and ground. In this case, we received several whole fish of all species. Since the zoo was interested in the analysis of the whole fish, we had to discover a way to prepare and dry the fish so that they could be finely ground through a 1-millimeter screen. Without going into all the details, you may want to note that the typical household blender that had 1001 uses, now has 1002.

We'd like to thank the Brookfield Zoo of Brookfield, Illinois for submitting the samples for analysis and wish the penguins "Bon Appetit".

JUST WHEN YOU THOUGHT IT WAS SAFE TO GO BACK INTO THE WATER

Well, if you thought the fish samples were good, the week got more interesting as it progressed. We received a call from a gentleman in Connecticut who was interested in analyzing goat hair, and what its potential feed value might be. That's right, goat hair. Apparently, in the production of cashmere, the coarse outer guard hair is removed and discarded. Thus, there are tons of guard hair to dispose of and they're interested in recycling it as a feed.

Hair is protein and it was not surprising that the sample analyzed 97% CP on a DM basis. Hair protein contains a large amount of sulfur containing amino acids and this was revealed by a high sulfur content (3.4% S, DM basis).

How well will hair perform as a feed ingredient? Based solely on its chemical composition, it could serve as a high protein, high sulfur supplement. However, the chemical analysis does not reveal

anything about the palatability or digestibility of these nutrients by the animals. A digestion trial involving animals would have to be run to determine these factors.

One interesting note is that the ADF of this sample tested 88.8% (DM basis). This brings up an interesting point. The ADF method is a plant tissue procedure used to determine the cellulose and lignin content of the plant. Thus, whenever any animal product is analyzed by either ADF or NDF, it is unclear what appears in these fractions. We know it is not hemicellulose, cellulose or lignin. These results should be interpreted with caution. There is a good chance that this material is indigestible. Work is underway at Cornell to better understand what is represented by detergent analyses of animal tissues.

Back to goat hair. Will it make a usable feed? Problems may arise with the physical form and handling of the material. Feeding it will be a challenge as it would probably have to be chopped into small particles and blended into a TMR. This might be the only way the cows would accept it.

As the goat hair story continues to unravel, we'll keep you abreast of the fast breaking details.

COWS COMPETE WITH TEENAGERS FOR JUNK FOOD

Cows in Western New York have gotten the munchies. A few dairymen have begun feeding potato chips, popcorn, corn curls and corn chips to their cows. These products have failed to meet certain quality standards set by the manufacturer and will not be marketed through stores. To dispose of the products, they are being offered to dairymen at \$20/ton. The chips are coming from a plant in Pennsylvania.

Dr. Paul Heslink and Ted Mathews are two of the first dairymen to use the product. Currently, they are splitting a tractor-trailer load. The trailer is backed up to a homemade loading dock and left on the farm. This provides clean, safe, dry and pest-free storage. The product is unloaded and handled with a high lift tractor and blended into a TMR. When a new load arrives, they simply exchange trailers.

The snack foods average about 8% CP and 27% fat on a DM basis. The fat is primarily vegetable fat and ranges from 14 to 40% (DM basis). Care should be exercised when feeding products high in unsaturated vegetable fats. High levels of these types of fats can cause problems with fiber digestion and mineral absorption. When overfed, they can easily throw cows off feed, depress butterfat, and reduce milk production. Generally, 1 lb/head/day of supplemental fat is a recommended safe level.

Dr. Heslink blends 4 lbs/head/day into a TMR for the milking herd. His herd of 51 cows is currently averaging 71 lbs. of milk/head/day. Initially, he tried to push the cows a little too hard by feeding 7lbs/head/day. To quote, "We blew the cows off!" It was more fat than they could handle. Once the cows got back on feed and the ration was adjusted to 4 lbs/head/day, they are rolling along just fine. Dr. Heslink said, "Both he and the cows prefer the corn products". The new ration hasn't increased milk production, but it has lowered his feed costs. Four lbs. of this byproduct is roughly equivalent in energy to 6 lbs. of corn. With corn priced at \$125/T, 6 lbs. of corn

would cost \$.37/head/day. The byproducts at \$20/T, cost only \$.04/head/day at a feeding rate of 4 lbs. Thus, the potential savings are about \$.33/head/day.

Dr. Heslink is always on the lookout for byproducts to incorporate into his rations. In the current dairy economy, it pays to locate byproducts that the cows will accept without adversely affecting milk production. Inexpensive feed sources are one of the best ways to cut your production costs.

TRITICLE AND PEAS ANALYSIS NOW AVAILABLE BY NIR

A mixture of triticle and peas was the "hot new crop" last year. Several seed companies were selling the mixture for harvest primarily as silage. The average analysis for samples from last year is as follows:

Triticale & Peas, Average Analysis DM Basis			
CP, %	18.5	Ca, %	.68
ADF, %	37.6	P, %	.39
NDF, %	54.7	Mg, %	.22
TDN, %	62	K, %	2.88
NEI, Mcal/lb	.55		

There was also a high demand to have the analysis done by NIR. In response, we have developed a calibration specifically for triticle and triticle & peas silage mixtures. It includes all of the components in our standard NIR package.

SOLUBLE PROTEIN AT NO EXTRA CHARGE!

Soluble protein has now been added to the NIR calibration for high moisture shelled and ear corn. As part of the standard package, there is no additional charge for this service.

Thanks to all the people who participated in our recent survey. We are in the process of summarizing the results. Your input was very important and greatly appreciated. It will be used to assess what type of services will be provided in the future.

Thanks again for helping us out.

Lab Closing - the Forage Lab will be closed Thursday and Friday, July 4th and 5th.