NDS Dynamics

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Welcome to NDS Newsletter

By David Weber DVM

NOT ONE MORE NEWSLETTER TO READ YOU SAY!

NDS Dynamics would like to send you a newsletter quarterly to keep you up to date with changes in NDS and the industry. If this is something you are not interested in please send us an email to take you off our list.

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Managing Cost of Production with Cow Comfort and Forage Quality

By Dr. Rick Grant
William H. Miner Agricultural Research Institute

The foundation of a profitable dairy farm is good cow comfort and high quality forage. Unless these two items are in place on a farm, cows will likely not respond optimally to the formulated ration. For example, accurate prediction of rumen fermentable carbohydrate is critical, especially when feeding a lower starch diet. But, we know that nutritional models often predict lower productive responses than actually observed on-farm when starch is replaced with sugar, soluble fiber, and digestible neutral detergent fiber. We also know that the on-farm management environment explains over half of the variation among farms in milk production. Modest investments in housing or changes in cow management routines can result in substantial improvements in cow health and performance. In the future, our models must incorporate important management inputs such as stocking density and grouping strategy for lactating as well as dry and transition cows. Additionally, nutrition models need to do a better job of predicting rumen fiber digestion and passage dynamics in order to consistently feed higher forage diets in an era of high-priced corn and other grains.

"On-farm management environment explains over half of the variation among farms in milk production."

The interaction between facilities and management routines determine the physical and social environment within which a dairy cow must perform. Importantly, dairy cows have a behavioral time budget that must be satisfied. The 24-hour time budget reflects the net behavioral response of a cow to environmental inputs. Deviations from benchmarked behavioral routines

Please see *Managing Cost* on page 3

The Change in Protein Fractions

By Charles J. Sniffen, Ph.D

The protein fractions have been changed as a result of research and what can be accomplished in the lab. For the soluble fraction, NH_3 is routinely measured in the lab whereas the 10% tricloroacetic or tungstic acid precipitates were not. Research showed that a significant % of the soluble proteins and peptides escaped from the rumen, so a liquid passage equation was placed back in the model. About 20 to 40% of this protein escapes from the rumen. This adds value to alfalfa hay.

Attention:

Protein fractions have been changed in CNCPS 6.1

Protein Fraction Changes in the CNCPS Model

Protein Fractions	CNCPS 5.0/CPM 3.0		Protein Fractions	CNCPS 6.1	
	Pools	Kd, %/hr.		Pools	Kd, %/hr.
Soluble			**Soluble**		
A	NH_3, AA, small peptides	1,000	A1	NH_3	200
B1	True protein, large peptides	200 to 300	A2	AA, peptides, true proteins	30 to 50
Insoluble			**Insoluble**		
B2	True proteins	4 to 12	B1	True protein	4 to 12
B3	True proteins	0.1 to 1.0	B2	True protein	0.1 to 1.0 for concentrates; 3 to 8 – based on NDF Kd
C	ADF-N or enzymatic indig. protein	0	C	ADF-N or enzymatic indig. protein	0

Research determined that the protein in the NDIP fraction in forages disappear at the same rate as the fiber so the B2 fraction rates were changed to reflect that. The other big change was the in CNCPS 5.0 the insoluble protein fraction was determined on the neutral detergent residue without Na Sulfite. In 6.1 it is with Na sulfite (NDRIP vs. aNDIP). If one balances to a MP balance of 0 in CPM this will result in a +200g MP positive balance in 6.1, which can result in a ration of 14 to 16% CP for a high producing ration.

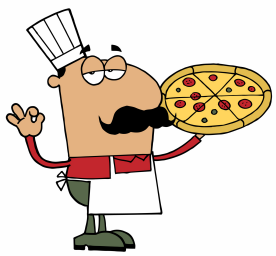
"More protein in my milk makes you one happy producer!"

Did you know?

Super Bowl Sunday rates as the number one day for pizza consumption!

And each person in America eats an average of 46 slices of pizza a year!

The NFL uses the cow skins from 3000 head of cattle to make enough footballs for one year!



Managing Cost from page 1

represent departures from natural behavior and serve as a basis for estimating performance and economic losses due to poor facility or management environment. The housing environment must provide each cow with unhindered access to feed, water, and a comfortable resting area. Major components of the cow's environment that a dairy producer may control include: ventilation and air quality, temperature-humidity index, photoperiod and light intensity, stall design and maintenance, space available per cow, feeding area design and management, flooring traction and compressibility, grouping strategies that build self-confidence, stocking density of stalls and feed bunk, low-stress animal handling and movement, and time spent outside the pen and away from resources.

Recent research have been focused focus on the dairy cow's resting and feeding requirements, their relationship with productivity, and how the cow's management environment affects her ability to practice these natural behaviors. Negative environmental conditions such as improper grouping strategy and pen moves, overstocking stalls and manger space, and poor time budgeting compromise natural resting, feeding, and rumination behaviors.

Nutritional software's are now available to assess the impact of environment on cow behavior and milk production. A long-term goal is to incorporate more detailed environmental inputs into ration formulation models to better predict dynamic cow behavior, feed intake patterns, ruminal fermentation, and milk component output.

NDS Training Session during ADSA

By Rachel Eickman

Where: Indianapolis at the Hampton Inn Downtown
When: July 10th – 12th
Why: We will be hosting two different sessions for you to pick from:

Wednesday July 10th 'Starting with the Basics' from 5-9 pm

This is designed to give an overview of the program from start to building diets. We will explore all parts and aspects of the NDS Program.

Thursday July 11th and Friday July 12th 'What's new and digging deeper with NDS'

This two day seminar will be for people starting with or already using NDS. Using the NDS software the time will be used going through basic to more complex functions and features also looking at new features.

Hampton Inn Downtown
105 S Meridian Street
Indianapolis, IN 46225

$50 Registration fee for Wednesday
$500 Registration fee for Thursday & Friday
RSVP now to save your seat!
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