

Tis the night before Christmas, and all through the dairy
Not a forage harvester was stirring, and all were quite merry.
The hay was in the shed and silage piles at rest,
But dairymen pondering what to plant next might be best.
When out of the visit, or phone call there arose such a nutritional clatter,
We spring to computer, research and NDS platform to help make sense of the matter!



Sorry for taking liberty with a seasonal favorite, but pondering what to discuss in this newsletter, this topic might be timely. This is more of an applied topic on how to use NDS to help make sense of differing hybrids. Now with some of the 2017 forages not even being fed yet or just starting on some piles of corn silage it seems questions are being asked about what to plant next year for best rumen health and milk production. With no snow covering some of these fields and extremely warm temperatures in the middle of the US it seems early to start this process but with business planning and end of the year purchase incentives, now may be the time to address how we might be able to help in this process.

Corn Silage:

Much of the data shown with hybrids is looking at starch availability and many are now including fiber digestibility in sales brochures and presentations. There are too many variables (heat, water, and the timing of those) through planting time, growing season, and harvest to determine concretely which would be the best choice. The first item to discuss is that each year's growing season (heat, water and the timing of those) will have a big (huge!) effect on plants through differences in the planting time, growing season, harvest timing, and preservation process. The specific effects of these factors on making any forage can never be predicted for any given year. Looking at the starch availability in the silage has much to do with timing of harvest, kernel moisture and whole plant moisture, kernel processing, and silage acid production just to name a few. Other items include traits like lower prolamin protein and vitreous or floury endosperm, which might be qualities that we would like to look at in our hybrid that we choose to feed high producing dairy cows next year. The fiber digestibility in some seed catalogues is now being reported and shown with some data that we can enter into CNCPS models to look at some of the possible outputs for dairy production. One issue with the data in the company literature is showing the increase over the control in 30, 120, and 240 hour NDFd and not showing what the control samples data is. If the control is not a good hybrid and is extremely low in NDFd then an increase over a poor sample might not be great comparison (little skeptic or bah humbug).

Corn Silage A 2017	22.0000	0.0000	0.0000	0.0000	0.0000
Corn Silage E fiber only 2017	0.0000	22.0000	0.0000	0.0000	0.0000
Corn Silage E 2017	0.0000	0.0000	22.0000	0.0000	0.0000
Corn Silage E Half 2017	0.0000	0.0000	0.0000	22.0000	0.0000
Corn Silage BF 2017	0.0000	0.0000	0.0000	0.0000	22.0000
Rest of TMR-Hay, corns , SBM	34.2000	34.2000	34.2000	34.2000	34.2000
Analysis					
CP (%)	16.14	16.14	16.14	16.14	16.14
CHO B3 pdNDF (%)	18.99	19.65	19.65	19.36	21.24
CHO C uNDF (%)	10.92	10.26	10.26	10.55	8.67
Starch (%)	27.48	27.48	27.48	27.48	27.48
NCPS					
NDF in ration (% DM)	29.91	29.91	29.91	29.91	29.91
CHO B3 degraded (% DM)	13.69	14.41	14.41	14.08	15.43
Starch degraded (% DM)	19.72	19.78	20.35	20.06	19.72
Allowable Milk					
ME Allowable Milk (lbs/d)	87.32	89.06	89.30	88.40	91.53
MP Allowable Milk (lbs/d)	85.75	87.99	89.83	87.94	90.10
		2.24	3.55	2.65	4.35
Costs and efficiency					
D.M. lbs	56.203	56.203	56.203	56.203	56.203
Forages	51.91	51.91	51.91	51.91	51.91
IOFC \$/head	8.999	9.388	9.616	9.379	9.754

The above chart shows a condensed ration with differing corn silages as the first five ingredients, and the corn silages highlighted in red (22,000 lb. inclusion) are the same dry matter pounds in each ration listed by column from left to right. The remaining ingredients ("Rest of TMR-") are shown combined as the sixth ingredient to shorten the list and for simplicity. Using the Comparison function in NDS and choosing which analysis to show allows the CNCPS outputs for these diets to be easily compared side by side. Crude Protein and Starch for example are the same for all diets as is NDF however it can be seen from the highlights some differences in outputs in digestible NDF (CHO B3) fractions, Starch degraded, and the predictions on milk production. Also, while holding DMI constant and milk price constant, the economics are shown. The only differences in corn silage inputs are the NDFd and starch digestibility values taken from the hybrids reported from the commercial forage labs.

Back to the decisions about all the agronomic aspects of the forage production year to year which will remain the primary influencer on most farms for the coming year. It is very interesting to look at the digestibility of these differing hybrids and its influence on milk production (about a 5 lb/day range) and income over feed cost (~ a \$0.76 /head / day range).

May visions of sugar plums and great silage dance in our heads!!

Send us your comments on this topic! Dave is at rumendvm@gmail.com; Buzz is at bburhans@dairynutritionhealth.com



Note that the features and utilities developed by the NDS team described above are not components of the underlying CNCPS model, and do not change the CNCPS outputs or results. Questions about use of these features should be directed to the NDS support team, and not to the CNCPS group at Cornell.

