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NDS Dynamics

NDS Features & Utilities: An Overview of 2015 Enhancements & Additions Upcoming in 2016

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January is named for Janus, the Roman god who marks transitions, endings, and beginnings. Because it is January it seems fitting to review some of the foremost features that were implemented in the NDS platform this past year, and identify some really great new utilities that will be implemented early in the coming year. Most of us have our NDS set up to automatically detect updates, which is the best option, as NDS will notify you of an available update, and give you the option of updating right away or postponing an update, as you choose. This setting is at Main tab> Settings button > Options tab on the lower right side. Updates generally include new material recently available from Cornell, minor code updates to address problems in program operation, and almost always new or improved features and utilities developed by the RUMEN team. When the update is accessed, a dialog box window shows up listing the major items included in the update. I always update as soon as the notification shows up, but often I am pressed for time to get rations done, and so do not always immediately read through the notifications window to learn what is new in the update. Fortunately, this information remains available by navigating to the Main tab > Utility tab > Update Description button (center column). This opens a pdf with all the previous release history where all update changes and additions are described. It is well worth periodically reviewing this to make sure you are taking advantage of all the features NDS provides. In the remainder of this newsletter we would like to highlight some of the more significant additions that were implemented in the past year, and let you know of some of the upcoming ones planned for 2016.

Major new features in NDS in 2015 included:

Excel Cost Template: this feature allows the user to create an Excel sheet for specified feed lists; these spreadsheets can then be used to keep current ingredient costs in for up to 10 pricelists, and prices then can be imported into NDS. You

ID Code 1	Ingredients	
C	Corn Grain Ground Fine	2/24/2014
C	Soybean Hulls Ground	3/31/2012
C	Sugar Lactose	3/31/2012
C	Soybean Meal 47.5 Solvent	1/18/2014
C	Amino Soy	3/31/2012
C	Whole milk - 3.25 PR 3.75 Fat	6/13/2011
F	Corn Silage Processed 30 DM 45 NDF Mediu	3/31/2012
F	Alfalfa Hay 17 CP 48 NDF 20 I NDF	3/31/2012

can create the template worksheet by navigating to Main > Utility > User Lists (left column): If you are receiving prices from a local supplier, you can either receive them as a spreadsheet, or throw them into one, and easily keep your formulation prices current.

Managing SARA risk in NDS: Avoiding SARA got easier with the introduction of two new features; The **P-Size Tab** up on the ration sub menu bar facilitates using results from the Penn State Particle Size System or the Z-Box to more accurately assess and recalibrate TMR peNDF, and then reformulate for peNDF. Using peNDF is also part of the new **Fiber Adequacy Tab** (right of the NCPS tab in the center of the ration screen) which integrates peNDF with rumen fermentable starch and some other factors to estimate rumen pH, and time under pH 5.8. We published two newsletter articles explaining these tabs last year that are accessed here: <http://www.rumen.it/en/newsletter>

The Wellbeing Risk Tab was created to facilitate making a final check on the safety of a ration relative to a number of potentially detrimental outcomes for cow health and productivity. This tab is active for lactating cows and for dry cows, although the specific fields that are evaluated are somewhat different. It consolidates, in an easily accessible location, some critical parameters affecting cow health and ration performance. All those parameters are available elsewhere in NDS, but in multiple locations; this tab puts the key ones in a single, easily accessible location for review. For instance, it includes fields for Cu and Se because of concerns that formulation errors could be toxic; it includes a large number of field related to carbohydrates because of their potential role in milk yield, SARA, and rumen fill/intake, it includes fields related to DCAD balance (of interest for both lactating and dry cows) and some minerals critical to dry cow hypocalcemia risk. In short it is an attempt to facilitate a final check before signing off on a ration. The fields are conditionally formatted to turn pink or red when problematic levels exist in a diet, and the threshold levels are customizable to user preferences on the Main > Utility > Well-being risks defaults on the right side. We expect to address this tab and suggested ranges for these field in an upcoming newsletter in the next few months.

A Step Feeding Tab is now available on the sub-menu tab menu bar. This is a useful tool because it allows formulation of what were essentially “grain charts” back in the day, and does it by running each “step” through the CNCPS model. No other ration platform that I am aware of facilitates CNCPS use to formulate these multi step concentrate recommendations! The tab also uses the levels set in the Wellbeing Risk tab to advise when the concentrate required / recommended for specified production level might be associated with increasing SARA risk. It allows the PMR in these situations to either be fixed, or to “float” by a variable amount set by the user. This is receiving wide use by users formulating for Robotic systems, and also is useful for tie-stall and other facilities where a PMR is fed.

Management of organizations with multiple NDS users was enhanced. NDS is used in an increasing number of larger consulting groups and by an increasing number of large feed manufacturers; both often have NDS users at varied skill and administrative levels. Several features were added in the past year to enhance use in such groups, including: **Parameter Export/Import** – Nutrient specifications / parameters for deployment to a group can now be made on a master computer and exported, then imported by others in the group who receive copies. This facilitates having uniform parameters across the group. **Auto-Synching composite formulations, nutrient specifications and prices:** The ability to have an administrator export an updated ingredient list (ingredients, nutrients, composites, or prices) and place it in the cloud where it will auto-update group users was added. Users who are members of that group can have their computers be set to check the cloud (the group’s own cloud location) and “auto-update” – ensuring that all are running on the same nutrient and cost specifications. Another feature introduced was the **“Policy Editor”**; this allows management / administrative control over the extent that group members can access or change many/most of the customizable aspects of NDS. This was done to ensure a level of uniformity and control for organizations that need or want this.

These are all rather large scale features that were added by the programmers at RUMEN this year. Other less extensive but still noteworthy feature and utility additions that were incorporated that you might want to check out if you are not currently using them include:

Inclusion lists- for both feeds and composites, users can click on the “Inclusion” tab when a feed is opened and see where it is being included in a recipe or mix. Very helpful when deciding to delete outdated feeds etc, and a user wants to ensure the feed to be deleted is not active in any current mix or ration.

Parking Feeds and recipes: When one has been a user of NDS for an extended time, the number of old recipes, feeds, and mixes can accumulate to pretty long list, which can be hard to wade through. Users can now “park” these feeds and

recipes, which removes them from appearing on lists of feeds or recipes, but retains them in the database if they need to be recalled at some future time.

Additives used to require the user to make a user nutrient; additives are now a new feed class, and a new “Additive tab simplifies and consolidates managing drugs and additives consistently. Users, should read through the Manual entry for “Additive Parameters” by navigating to Main tab > “Manual” button > Index tab > Additives

Amino Acids / MCal ME is available as a non-linear optimizer parameter. For those who balance for amino acids and also optimize, this is an excellent way to fine tune AA supply.

Additives		u.m.	a.f.	d.m.
Monensin	mg/lbs		90,700.01137	91,616.17582
Lasalocid	mg/lbs			
Decoquinat	mg/lbs			
Chlortetracycline	mg/lbs			
Oxytetracycline	mg/lbs			
Virginiamycin	mg/lbs			
Aureomycin	mg/lbs			
Salinomycin	mg/lbs			
Tylosin	mg/lbs			
Diflubenzuron	mg/lbs			
Zinc Bacitracin	mg/lbs			
Beta-Agonists	mg/lbs			

Mixer Wagon Report – now includes an option for printing adjusted amounts for high moisture feeds

Nutrient Decimal Place Precision - It is now possible to set the number of decimal places in the nutrient lists to different precisions for different types of nutrients. This is accessed on Main > Utility by a link button “Nutrient Decimal Places” in the left column.

These are some of the important features released or improved during 2015. It is by no means a complete list, and users are encouraged to print and read through the “Update Description” pdf, accessible as described in the 1st paragraph above.

Coming in 2016:

In 2016 the RUMEN development team for NDS will continue to release regular updates. As always, any changes or updates made available by the Cornell CNCPS modelling group will be included in these updates. We are excited about two new features developed by the RUMEN team which will be released in early 2016.

CNCPS biology adjustment (CNCPS v6.55): Adjustments included in the CNCPS Version 6.55 will be incorporated. The Modelling Group at Cornell fixed some issues on Amino acid calculations and made some changes for the CNCPS biology on the forage passage rate area, which will improve the prediction of ME from forage, especially in high forage rations.

Rumen Fill Tab: This will incorporate both uNDF240 and uNDF30 to estimate rumen fill, and will suggest whether a revision to the diet might result in an increase or decrease in dry matter intake. This should be very helpful in revising diets and there is a desire to manage the intake either up or down to improve performance.

Economic Module: Also coming is a new Economics reporting submodule. It will provide extensive economic evaluation across a farm, and facilitate updating prices right from the report screen. It will be a major extension of the old Economic report (which is available now if you right click on the farm name when you go to the “Recipes” for that farm).



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 model 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.

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