NASEM Dairy-8
Bugs Fixed

Last updated on July 7, 2023

Version 2023-07-07

The following bugs are fixed:

1. To resolve bugs caused by using the program in other countries, the current culture for the program is set to English (United States) [en-US]. Culture affects how culture-dependent data (dates, currencies, numbers and so on) is presented.
2. The NDF value for dry brewers yeast in the feed library was set at 1.634, which seems unexpectedly low. This bug was first reported by Mirko Ivković from University of Novi Sad, Serbia. We have decided to keep the low value, but the user can change it if needed.
3. Changing the Milk Protein 305d-RHA in the inputs did not affect the output (milk protein prediction) as in the previous version. For example, for RHA of 873 or 1000 in the input screen, the predicted milk protein, in the report 6-3, was 1179.53 g/d for both simulations. This bug was first reported by Silvia Onetti from Vita Plus Corp, Madison, WI, USA. This bug is now fixed.
4. The values of equations switches, inputted by users in the research mode, were ignored. This bug was first reported by MaryGrace Erickson, Ph.D. Candidate, Department of Animal & Dairy Sciences, University of Wisconsin, Madison, USA. This bug is now fixed.
5. To improve the performance of the Windows 10 version of the software, we have upgraded from NET Framework 4.6.1 to NET Framework 4.8, which is the same one that we use for the Windows 11 version of the software.

Version 2023.02.07

The following bugs are fixed:

1. **Bug**: in Table 1.2, the value of Gravid Uterine Gain is correct except it should be negative. This bug is fixed.
2. **Bug**: In Table 4.2, values and signs are wrong for Pregnancy, ME, NEL, NE:DEIn, and NE:ME. This bug is fixed.

Version 2022.12.08

The following bugs are fixed:

1. The value in the sidebar for the "NEL allowable milk" is different from the one reported in table 1.3 for the "Milk, NEL Allowable This bug is fixed. The variable in the sidebar is now mapped to the same variable as in report1.3, that is, it is mapped to Mlk_Prod_NEalow.
2. The program cannot find the RTF Editor when printing the reports. Microsoft Word program. To solve this problem, click the “Switch Report Viewer” button in the Report screen and then select the built-in Windows WordPad.

3. When the DNDF switch in the Feeds screen changes DE values in Table 3, but not Table 4.1 and Table 4.3. This bug is fixed.
4. The `Monensin` switch in the Feeds does not work. This bug is fixed.
5. How to purchase the book? We have added a link to the National Academies Press (NAP) website to purchase the Nutrient Requirements of Dairy Cattle, Eighth Revised Edition.

Version 2022.09.02

The following bugs are fixed:

1. How to backup and restore the feed library? Response: In the new version the capacity to backup and restore feed library are added as two buttons in the left pane of the Program Settings tab. The restore capacity can also be used also to share your customized feeds with your colleagues or customers when you send them your backed up feed library.
2. The feed **Milk replacer 20% protein 20% fat**] in the feed library should have a CP content of 20.8% (currently 18.8%). Response: It is fixed.
3. The feed **Whole milk** in the feed library should have a total fatty acid value of 28.9% (currently is blank). Response: It is fixed.
4. On ration page in calves, if you select the "Use dry feed intake estimate" it does not populate the feeds grid with the amount, even though it calculates the correct percentage for the liquid feed. Shouldn't that automatically populate in the ration grid? Response: For this to work, you must enter the amount for at least one dry feed.
5. In sidebar we have several things with g/d but then put in 2 decimal places. This far exceeds measurement accuracy. If units are g/d in sidebar, could we output just whole numbers or may just 1 decimal place? Response: This is added to the list of requested features for future releases.
6. NEL balance on sidebar is not correct. It should be the same as the value in table 4.2. That number is correct. Response: It is now fixed by using Trg_NELbal instead of An_NELbal in the this.sb_data_frame
7. We need to activate the "Milk replacer contains vegetable protein" toggle. If yes, fecal metabolic protein loss should be = (liquid feed DMI * 34.4) + (solid feed DMI * 20.6). Response: It is now activated.
8. We have already talked about the MP from body reserve. It should be 0 anytime the animal is in 0 or positive energy balance. If in negative energy balance (this needs to be adjusted for user entered reserve change (ie adjusted energy balance = (NEL balance from table 4.2 + NEL for reserve gain in Table 4.2). Response: It is now fixed.
9. We need to activate the "Discount starter ME content for undeveloped rumen" toggle. If yes, starter ME should be decreased by 10%. Response: It is now activated.
10. n sidebar we give Microbial N outflow g/d but in reports we give Microbial CP, kg/d. The values are correct but wouldn't it be better to give both in the same units (MiCP, kg/d)? If so just multiply MiN by 0.0625 to get MiCP, kg/d. Response: This is added to the list of requested features for future releases.
11. I would really like to have the following variables: MP:ME supplied, MP:ME recommended, CP:ME supplied, and CP:ME recommended. Use MP:ME / 0.62 to get CP:ME from Table 11-3 in book. I realize there is not an equation listed but this is in keeping with Table 11-3 and the 0.62 is from footnote. Currently MP:ME supply and req are in table 6.2 but that heading is about MP, so why not just put in Table 6.1? I don't know why heading for T6.1 is "Animal Inputs", but its fine. Response: These ratios area added to Table 6.1. The title of Table 6.1 is now changed to 'Protein Supply'.
12. In output Table 2.1, what does ""RUP, Base, %DM"" mean and how does it compare to "Dig. RUP, %DM"? I also think it would be better if we moved that row down one so that we have

RDP, then RUP, then Digest RUP. Response: The FD_RUP_BASE is called “RUP, Base” in the feed library and to change its name in this table, we must change its name in the feed library, which may have a lot of side effects. The FD_RUP_BASE is recalculated when a feed is added from the feed library or when a feed is edited. “RUP” and “RUP, Base” are the same. I have moved the FD_RUP_BASE row down one so we have RDP, then RUP_BASE, then FD_DCRUP.

13. In output Table 6.1 of output "MP from body reserves" makes no sense. Response: This has been corrected. If cows are losing body condition, they get a little protein but if reserve change is 0 or positive, then this value will be zero.
14. Output Table 6.2 "Req MP:ME" does not match Eqn 11-10. It seems to change with diet, but it should only depend on BW/MatBW. MP:ME = (53 – 25 × BW/MatBW). Response: It is fixed.
15. For heifers, the sidebar has protein-allowable gain, although it does not always show up even when using same simulation and I don’t understand that. No tables have this info. Please just delete it for all heifers. I don’t think it is helpful. Response: The protein-allowable gain is not part of default sidebars for Heifers unless the user manually adds it. If the user saves the ration, it stays with the saved ration file. So, if you load a ration file, which contains the added protein-allowable gain, it will show-up. But if you create a new ration, it will not show up, because it is not a default sidebar item for heifers. There is no need to delete the protein-allowable gain, because it is not part of default sidebar item for heifers.
16. Two sidebar variables are missing: (1) Minimum MP Required for Optimal Growth (2) MP Supplied / ME Supplied. Response: The Minimum MP Required for Optimal Growth is now removed from the list of sidebar variables, because it is not needed anymore. The) MP Supplied / ME Supplied is now added.
17. Tables 6-1 through 6-5 the value of **Lactation Nutrient Allowable based on NP** is wrong and any cells in these tables that depends on this variable are also wrong. The value for this item is 628.27 gram over estimated. Response: The **Lactation Nutrient Allowable based on NP** maps to variable **An_NPuse_g**. The calculation equation for this variable is checked. It turned out that all components were OK except for the **Mlk_NP_g**, which was exactly 628.27 gram over estimated. This bug is now fixed.
18. The Diet Digestible Energy intake (Mcal/d) DE for calf liquid feeds for calf module in table 4.1 not match with the same value for the same variable in the same table in the R-Code. For example, using the simulation file Example-Young-Calf.nd8, the Diet DE intake is 5.39 Mcal/d but in R-code is 4.11 Mcal/d. Cells in this table, that depends on DE, are also have the same problem. Response: It turned out that the Dt_DEIn_base_ClfLiq, Diet DE Intake for calf liquid feeds, which is used in calculating Diet DE intake is responsible. This is now fixed in the R-Code.
19. If user is working “as fed”, in Table 1.2, the as fed value is indicated as DMI (somebody just brought it to my attention). Response: It is now fixed.
20. In table 6.3, the addition of RP-Lu did not increase absorbed Leu but inclusion of RP-Lys did increase abs Lys. Response: It is now fixed.
21. Given that the AA additives are all place holders could you change library so they all have same RUP digestibility? Response: It is done. The RUP digestibility for the AA additives in the feed library are all set to 90.
22. In table 6.3, the coefficient of the squared EAA does not seem to be OK. Also, the Nutr Allow Milk NP is not exactly the sum of the column above it? Response: Both bugs are now fixed.

23. For heifers and cows, we don't do body condition change, so gain = ADG = growth. We should keep the term the same whether is protein or energy allowable. I am good with ADG. For both energy and protein, it is ADG without conceptus. So why not write "…. Allowable ADG (without conceptus)". I put that in parenthesis just to point out it is not always relevant. It is really (without pregnancy gain). But I don't care too much. Response: These recommendations were followed.
24. In the ration screen sidebar, change the "Energy allowable ADG w/o conceptus" to just "Energy allowable ADG". Response: It is done.
25. In the ration screen sidebar, change the "Protein allowable growth" to "Protein allowable ADG" and move it to be under the Energy allowable ADG. Response: It is done.
26. In report 1.2, delete the "Gravid Uterine Gain" line for young calves. Response: It is done.
27. In report 6.1, delete the "MP from Body Weight Change" line for young calves. Response: It is done.
28. For calves, in report 6.2, delete the "Pregnancy" line and in footnote 1 delete "and 0.33" and "and pregnancy, respectively". Delete the next sentence starting with "For Lactation Nutrient **Allowable**" Response: It is done.
29. We have tried to move away from the 'Target milk production' in the Tables for Chapter 6 and used "User entered milk production", so I would suggest to keep this same terminology in the sidebar to avoid confusion. I do wonder if it would be possible to add options to the sidebar: personally, what I will be looking at will be the efficiency of utilization of MP, His, Ile, Leu, Lys, Met, Phe, Thr, Trp and Val. It would be nice to have these values easily accessible without having to go to the reports, if it is easily doable. Response: Both suggestions are implemented.

Version 2022.02.15

The following bugs are fixed:

1. The display name for one of the feed nutrients, **Fd_DNDF48_NDF,** is changed from **NDF digestibility (% NDF)** to **48 h In vitro NDF Digestibility (% NDF)** to better describe this nutrient.
2. The display name for **Rumen Undegradable Protein** in Table 6.1 is changed to **Rumen Undegraded Protein**.
3. The bug in saving simulation files in British Imperial system is fixed.
4. The bug in the age of calves is fixed. To fix this bug in your old simulation files, you must save your old simulation files with the new version of the software and then reload them.
5. The bug in unit conversion error in the grazing inputs is fixed. To fix this bug in your old simulation files, you must save your old simulation files with the new version of the software and then reload them.

Version 2022.02.03

The following bugs are fixed:

1. **Bug:** The software does not show properly on computers with lower resolution.
   Resolution: We now support resolutions a s low as 1280 x 720, which is common with older computers with poor resolutions

2. **Bug**: When entering numbers in South Africa, the decimal points do not show properly.
   Resolution: This is not a bug in our software. The user must change his or her display language from [English, South Africa] to [English, US.]
3. **Bug:** The calculation of the Total Required (Nutrient Allow) and the Total Required (Target) in Report 6.2 is not correct.
   Resolution: These errors are corrected and the Total Required (Target) label is simplified to Total Required.
4. **Bug:** The entry for Selenium (mg/kg) in Report 7 is not correct.
   Resolution: It is corrected
5. **Bug:** When running the model in R language, the R script enters the debug mode.
   Resolution: The debugging directives in the R script (lines 3726 – 3727) are removed.
6. **Bug:** When generating an Excel file, the following error message pops up: "Unable to cast COM object of type 'Microsoft.Office.Interop.Excel.ApplicationClass'".
   Resolution: This error is not a bug in our software. It is mostly caused by incorrect COM Interop settings in the Windows registry of the user computer. To solve this problem, the user must repair the Office 365.
7. **Bug:** Installation of software is blocked on commuters running the new Windows 11 operating system.
   Resolution: We have created a new setup program for Windows 10 by removing the mandatory DotNetFX461 engine, because Windows 11comes with the newer engine, DotNetFX48, which is backward compatible with FX461 and blocks the FX461 during installation.
8. **Bug**: The Calf module does not work.
   Resolution: The error was caused by the index of the array **f_Fd_DE_base[ ]** being out of range at line number 2374 in the CModel. It is corrected now.