



CattleFeeder

version 0.2

ProLivestock

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Disclaimer

ProLivestock accepts no liability for the reliability of results obtained with this software - full responsibility rests with the user.

Product Support

ProLivestock maintains toll-free telephone support for this software. If you have difficulty with any aspect of installation, use or interpretation of results or if you have suggestions for improvement, call us at:

1-888-535-5054

or contact us in writing or by e-mail or fax at the addresses given above.

Installing and Running the Program

ProLivestock CattleFeeder is a 32-bit Windows® application. It can only be installed on computers running Microsoft Windows® 32-bit operating systems: Windows 95, Windows 98 or Windows NT.

To install:

- Exit all running programs and restart your computer;
- Insert Disk 1 into your floppy drive (A: is assumed, substitute the correct drive letter if other than A:);
- Click Run... on Start Menu, enter A:\SETUP in the Open line, click OK, follow the on-screen instructions;
- When installation is complete, restart Windows. Start the program by clicking *CattleFeeder* in the Start Programs menu.

If, upon running the SETUP program, you encounter the message: **Setup has run into a conflict with a running application**, click Cancel. This probably means that you are autostarting one or more programs when Windows loads. Prevent these programs from autostarting by moving their icons out of the Startup folder. Then restart your computer.

Navigation

In all windows, you can navigate between input boxes by:

- pressing the Tab key on your keyboard to move forward or the Shift + Tab combination to move back;
- holding down the Ctrl key while pressing the arrow keys on your keyboard;
- clicking on a field with your left-mouse button.

If you have entered a value in a numeric field, dependent values are not calculated until you either move to another field or press the Enter key on your keyboard.

All windows display command buttons which activate particular functions of the software. These command buttons are normally clicked with the right mouse button, but their functions can also be activated by pressing the Alt key in combination with the underlined letter in the command button's caption.

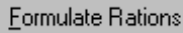
In the Formulate Rations window, the Alt key in combination with the up and down arrow keys and the Delete key allows you to move and delete ingredients. See the Formulate Rations section for details.

Opening Window

The opening window displays the 4 command buttons described below:



Edit Ingredient Libraries opens the Edit Ingredient Libraries window, where you can add, delete or make changes to the ingredients stored in each of the libraries.



Formulate Rations opens the main working window, where you will design, interpolate, evaluate, save, retrieve and print rations.



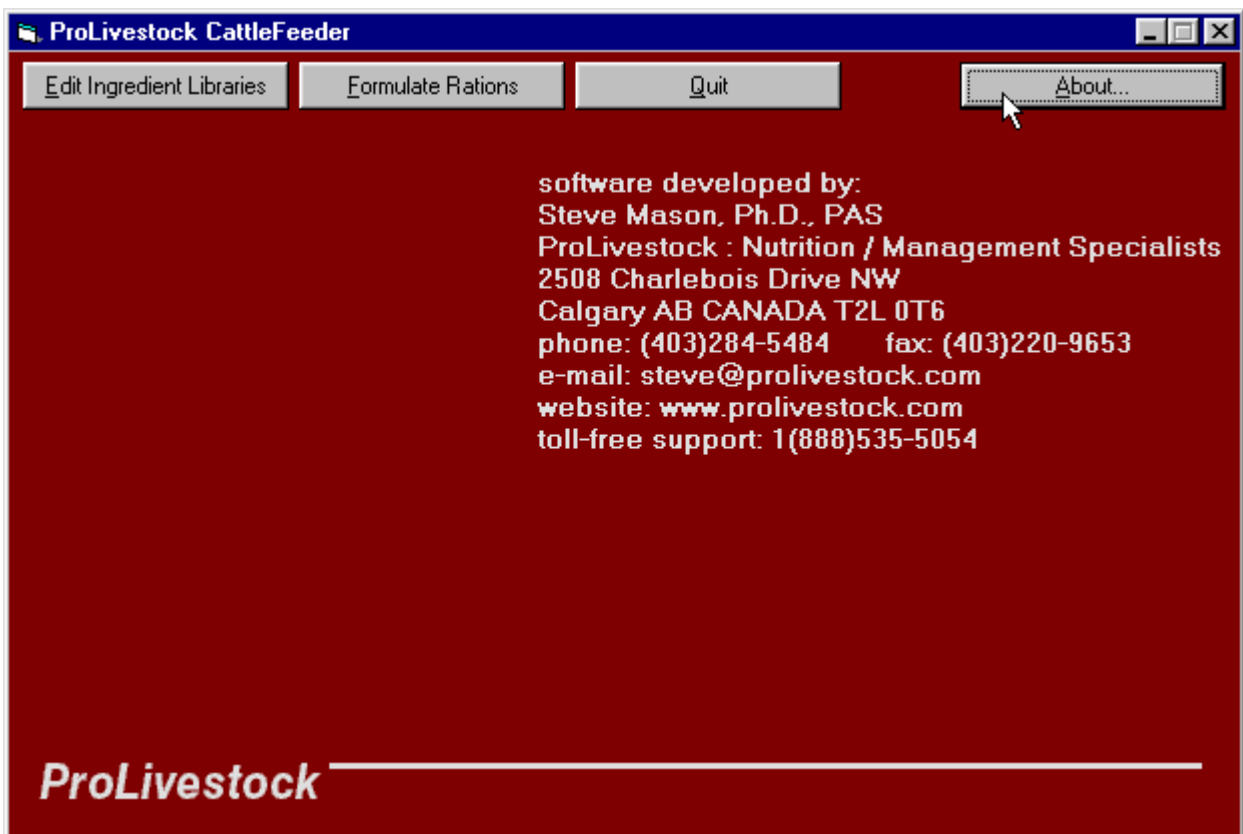
Quit terminates the program. If you need to interrupt your work, there is no need to quit. You can simply close any windows that are currently open, then minimize *CattleFeeder* by clicking the minimize icon in the upper right corner of the opening window (shown below).



About... gives credit and contact information about the author of the program as well as *ProLivestock's* toll-free support number. This is the number to call if you need help or if you have suggestions for improvement of the program.

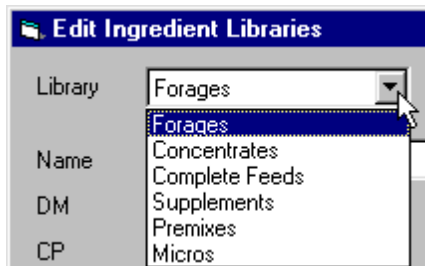


Window control buttons at the right-hand end of the title bar can be used to minimize the opening window or stop the program. The left (minimize) button allows you to suspend the program without quitting. This is handy if your work is interrupted and you are required to use another Windows® application. The right (exit) button stops the program - equivalent to clicking the Quit button.



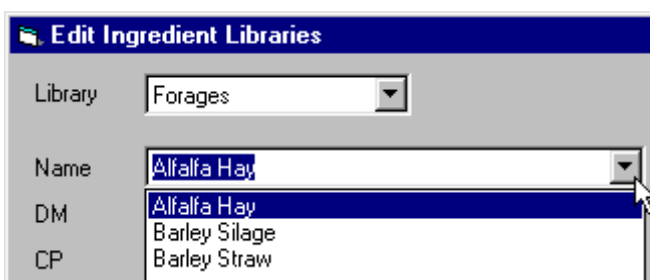
Edit Ingredient Libraries

The Edit Ingredient Libraries window (shown in full at the bottom of this page) is where you will add, delete and modify ingredients stored in the libraries. The six libraries are listed in the Library pull-down box in response to clicking the ▾ button at its right-hand end, as shown on the left.



You can add any ingredient to any library - the six libraries are intended only to help you organize ingredients in a logical way. However, it is important that all forages be put in the Forages library in order for the program to properly compute Forage Dry Matter % for each ration.

Sample ingredients have been added to each library. These can be viewed by clicking the the right-hand end of the Name pull-down box. Notice that the nutrient analysis fields change in response to the selection of each

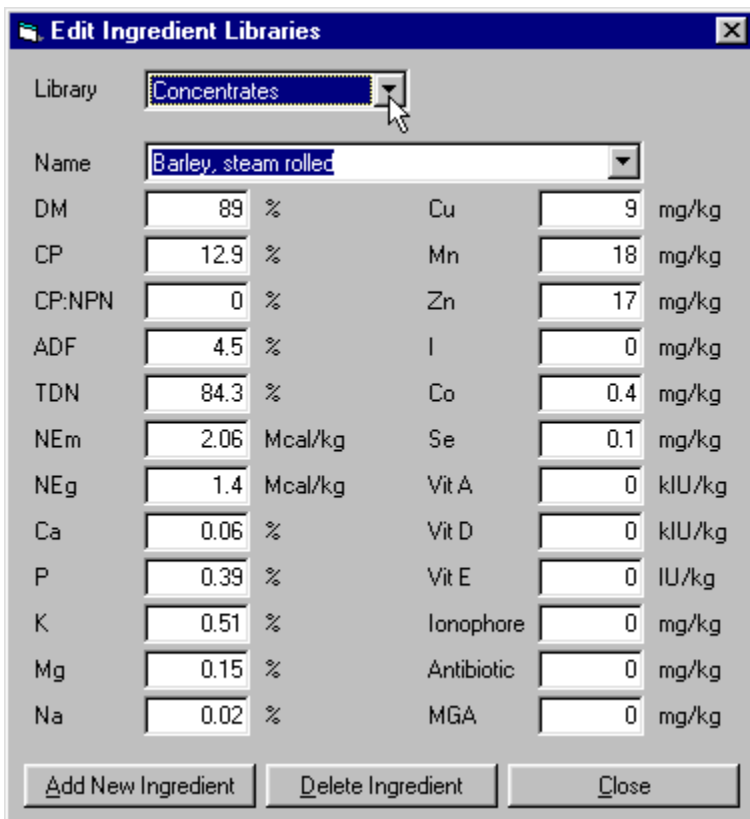


ingredient. Do not assume that the nutrient specifications for any of these ingredients is appropriate to use in formulating your particular rations. Add to, delete or modify these ingredients to comply with your own analysis results.

You can change specifications for any ingredients within a ration formula without affecting library values. Therefore, it is suggested that you use the

libraries to store commonly used or reference ingredients only, with analysis results for feeds from individual feedlots being saved with their ration formulas. For example, you may store an average barley silage analysis as a template in the

feed library, bring this into the ration formulator, then modify it to comply with analysis results obtained for the barley silage from the particular feedlot for which you are doing the formulations.



Changing Ingredient Specs

You can change the name or nutrient specifications of the current ingredient simply by editing the contents of the appropriate input boxes. These values are permanently saved to the library when you:

- move to a different input box;
- select a different library or ingredient;
- click one of the 3 command buttons at the bottom of the window, or;
- click the exit button in the upper right corner of the window.


Edit Ingredient Libraries Command Buttons

The three command buttons at the bottom of the Edit Ingredients Libraries window perform as follows:

Add New Ingredient

Add New Ingredient clears the current ingredient from the window, allowing you to enter specifications for a new ingredient. The new ingredient will be added to the library which appears in the top drop-down box. Therefore, you should select the library to which you want to add the new ingredient before you click the Add New Ingredient button.

The minimum specifications required for a new ingredient are its Name and its DM%. If these values have been entered, the new ingredient is permanently saved when you select either a different library or a different ingredient, click one of the 3 command buttons at the bottom of the window or click the exit button in the upper right corner of the window. If either Name or DM% are missing when one of these events occurs, you will be notified that the new ingredient was not added to the ingredient library.

Delete Ingredient

Delete Ingredient permanently erases the current ingredient from the current library. Because this action is permanent, you will be asked to verify that you want to proceed.

Close

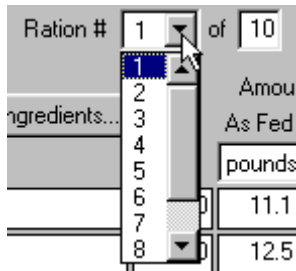
Close terminates ingredient library editing functions. You must close this window before you can proceed to ration formulation.


Formulate Rations

The Formulate Rations window (shown at the bottom of this page) is the program's main working window. All rations (maximum of 15) are formulated in this window.

The Feedlot Name and Ration Name fields are for identification only. Try to keep ration names as short as possible - names longer than about 10-12 characters (depending on the characters) will be truncated on the ration formula printouts.

Ration # and Number of Rations



When the Formulate Rations window is initially opened, the Ration # fields will read: Ration # 1 of 1. To change the number of rations, enter a new number (maximum is 15) in the second field. Now you can formulate any one of these rations by clicking the  on the first field and choosing the ration number you want to formulate from the pull-down list, as shown on the left.

Formulate Rations
21 January 1999

Feedlot Name:

Ration Name: Ration #: of

Mix	Ingredient Name	%	Amount Fed pounds	DM	%
▲	Alfalfa Hay	87.0	7.49	6.52	40.00
▲	Barley Silage	40.0	14.66	5.87	36.00
▲	Barley, steam rolled	89.0	3.66	3.26	20.00
▲	10% Beef Starter Supp	94.2	.69	.65	4.00
▲	15% Beef Silage Supp	93.2	0.00	0.00	0.00

Organic Components					
CP	CP:NPN	UIP	eNDF	NE _m	NE _g
----- % -----	----- % of CP -----	----- % -----	----- % -----	----- Mcal/kg -----	-----
19.0	0.0	28.0	40.0	1.50	0.91
11.0	0.0	20.0	35.0	1.54	0.94
12.9	0.0	20.0	10.0	2.06	1.40
10.6	1.2	25.0	0.0	0.89	0.56
15.6	3.6	25.0	0.0	1.10	0.67

Charolais x (Angus x Hereford) compensating steer calves weighing 650 lbs, condition score 5, gaining 2.50 lbs/day, implanted, monensin at 24.0 mg/kg DM	Ration Total	61.5	26.51	16.29	100.00
	Target	26.51	16.29	100.00	
	Difference	0.00	0.00	0.00	

Open...
NRC Reqs...
Interpolate...
Economics...
Print...
Save...
Clear
Close

Navigating Ingredient Specifications

Specifications for each ingredient are organized in groups to reduce the amount of scrolling required to see them. Ingredient Name, Mix status, DM% and Amounts Fed reside permanently on the left side of the window. Nutrient values and costs appear in 5 groups which appear when selected using the buttons on the top right side of the window.

Home	Macro	Trace	Vit/Add	Costs	
Organic Components					
CP	CP:NPN	UIP	eNDF	NE _m	NE _g
----- %	----- % of CP	----- %	----- %	----- Mcal/kg	-----
19.0	0.0	28.0	40.0	1.50	0.91

The specs included in each group are illustrated here. For brevity, only the first ingredient is shown.

Specs for any ingredient can be changed by editing values in the appropriate input boxes. Values which are not contained in input boxes (Ca:P ratio and Ingredient Cost, \$/head per day) are calculated and cannot be edited.

Home	Macro	Trace	Vit/Add	Costs	
Macro Minerals					
Ca	P	Ca:P	K	Mg	Na
----- %	----- %	ratio	----- %	----- %	-----
1.55	0.26	5.96	2.25	0.30	0.04

Home	Macro	Trace	Vit/Add	Costs	
Trace Minerals					
Cu	Mn	Zn	I	Co	Se
----- mg/kg (ppm) -----					
7.0	36.0	24.0	0.00	0.70	0.28


Home	Macro	Trace	Vit/Add	Costs	
Vitamins and Additives					
Vit A	Vit D	Vit E	Ionoph	Antibio	MGA
----- kIU/kg	----- IU/kg	----- mg/kg (ppm)	-----	-----	-----
0	0	0.0	0.0	0.0	0.0

Home	Macro	Trace	Vit/Add	Costs
Ingredient Costs				
\$/head				
\$	per	per	per	per
120.00	tonne		0.60	

Adding, Deleting and Mixing Ingredients

The 3 command buttons in the upper left part of the Formulate Rations window activate ingredient manipulation functions, as follows:

Add Ingredients...

Add Ingredients... opens the Add Ingredient(s) to Formulation dialogue shown below. Clicking the  button on the Ingredient Library field drops down the list of ingredient libraries. Selecting one of the libraries fills the main list box with the names of ingredients in that library.

Add Ingredient(s) to Formulation ✕


Ingredient Library: Supplements

Select Ingredient(s) to Add:

10% Beef Finish Supp

15% Beef Silage Supp

32% Sweet Beef Supp

Ingredients are selected by clicking their names in the list box. When you have selected the ingredients you want to use in your rations, click the **Add** button. If you open this window and decide not to add any ingredients, click the **Close** button or the  button on the title bar to return control to the Formulate Rations window.

Delete Ingredients...

Delete Ingredients... opens the Delete Ingredient(s) from Formulation dialogue shown below. The list box will contain the names of all ingredients currently appearing in the Formulate Rations window. Select ingredients to be deleted by highlighting them with a click of the left mouse button. When all selections have been made, click Delete to remove them from the current ration set. If you open this window and decide not to delete any ingredients, click the Close button or the X button on the title bar to return control to the Formulate Rations window.



If one of your selections is a mixed ingredient (see below re: mixing ingredients), you will be asked to verify that you want to delete the mix and all of its component ingredients.

Ingredients can also be deleted using the Alt + Delete key combination with the cursor in one of the fields of the ingredient to be deleted.

Mix...



Mix... opens the Mix/Unmix dialogue shown below. This button will be disabled if no mixes have been specified. To specify a mix, mark each ingredient to be included in the mix with a common number (1-9) in the Mix box to its left, as shown on the left below. To mix those ingredients, select their common number in the list box of the Mix/Unmix dialogue and click the Mix/Unmix command button. The result is shown below on the right. The mix is initially assigned the name Mix + number but this can be changed by simply editing the field.

To unmix a mix, click Mix..., select its number in the list box of the Mix/Unmix dialogue and click the Mix/Unmix command button again. The Mix/Unmix dialogue operates as a toggle - mixed ingredients are unmixed while unmixed (marked) ingredients are mixed. If there are both mixed and unmixed (marked) ingredients in the Formulate Rations window, selection of the mix numbers for both will result in the mixed ingredients being unmixed and the unmixed ingredients being mixed.

Mix	Ingredient Name	DM
	Alfalfa Hay	8%
	Barley Silage	40%
1	Barley, steam rolled	8%
1	Canola Meal	9%
1	Grower Premix - Price	9%
2	Barley, steam rolled	8%
2	32% Sweet Beef Supp	9%

Mix	Ingredient Name	DM
	Alfalfa Hay	8%
	Barley Silage	40%
1	Mix 1	8%
2	Mix 2	8%

Selecting Weight Units



Different weight units may be used for amounts fed, ingredient costs and ration costs. You can choose the units you want to use for each of these with the 3 pull-down option boxes on the Formulate Rations window shown below. Amount Fed and Ingredient Costs units are converted by the program to express ration costs in the units chosen on the Ration Total line at the bottom of the Ingredient Costs group window.

Formulate Rations 21 January 1999

Feedlot Name: Universal Feeders Ltd. Ration Name: Starter 1 Ration #: 1 of 10

Buttons: Home, Macro, Trace, Vit/Add, Costs

Mix	Ingredient Name	DM %	Amount Fed		DM %	Ingredient Costs			
			As Fed	DM		\$	per	per day	
	Alfalfa Hay	87.0	7.49	6.52	40.00	120.00	tonne	0.41	
	Barley Silage	40.0	14.66	5.87	36.00	32.00	ton	0.23	
	Barley, steam rolled	89.0	3.66	3.26	20.00	0.13	kilogram	0.22	
	10% Beef Starter Supp	94.2	.69	.65	4.00	0.10	pound	0.07	
	15% Beef Silage Supp	93.2	0.00	0.00	0.00	0.12	pound	0.00	
Charolais x (Angus x Hereford) compensating steer calves weighing 650 lbs, condition score 5, gaining 2.50 lbs/day, implanted, monensin at 24.0 mg/kg DM		Ration Total	61.5	26.51	16.29	100.00	77.14	tonne	0.93
		Target		26.51	16.29	100.00			
		Difference		0.00	0.00	0.00			

Buttons: Open..., NRC Reqs..., Interpolate..., Economics..., Print..., Save..., Clear, Close

Moving and Deleting Ingredients using Keystrokes

Ingredients can be rearranged using Alt + ↑ and Alt + ↓ keystroke combinations. Place the cursor in one of the fields of the ingredient you want to move. If you want to move the ingredient up, press Alt + ↑. Each time you do this, the ingredient will exchange places with the one above it, until it reaches the top of the ingredient list. The ingredient moves in the opposite direction when you press Alt + ↓.

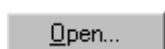
The Alt + Delete key combination will delete an ingredient when the cursor is in one of its fields.

Ration Targets

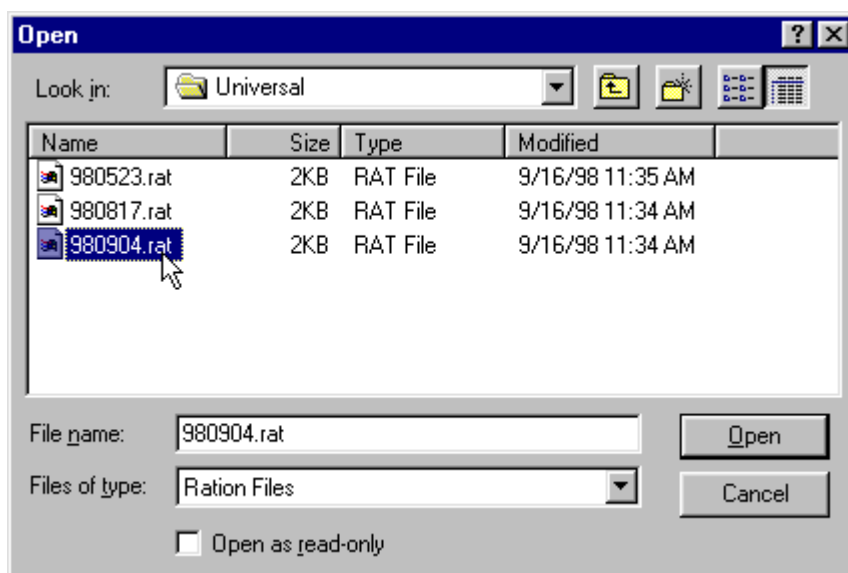
The input boxes on the Target line of the Formulate Rations window allow you to define nutrient target levels for each ration you are formulating. These may or may not correspond with nutrient requirements. For example, in the feedlot, it is generally accepted that starter rations will not meet the cattle's requirements for the rate of gain which is ultimately desired. Targets for starter rations and the several 'step-up' rations commonly used are usually based on criteria other than strictly-defined nutrient requirements such as intake potential and rumen digestive stability. To define NRC Requirements, see the discussion under the **NRC Reqs...** command button below.


Ration Manipulation Command Buttons

Along the bottom of the Formulate Rations window are 7 command buttons which activate manipulation of rations along with the Close button which hides the window. Functions activated by these buttons are as follows:



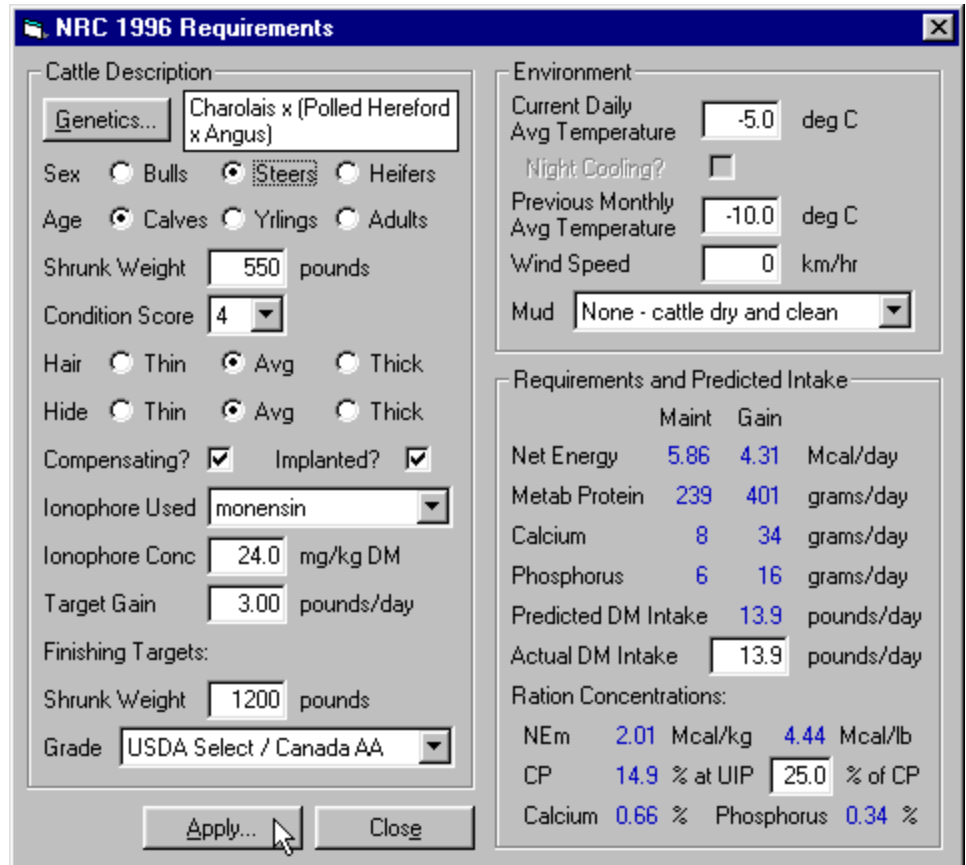
Open... activates the Open dialogue shown below, allowing you to retrieve ration files that have been previously saved. Folders and files are selected as in all 100% Windows®-compatible applications. The default extension for all ration files is .rat.



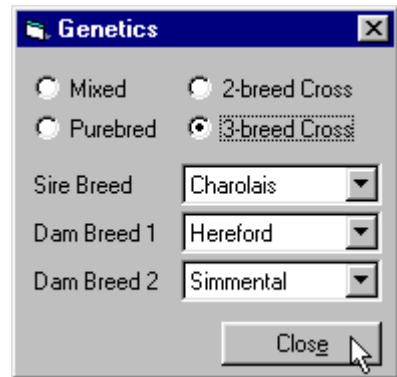
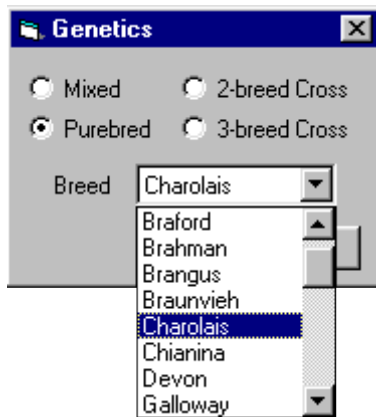
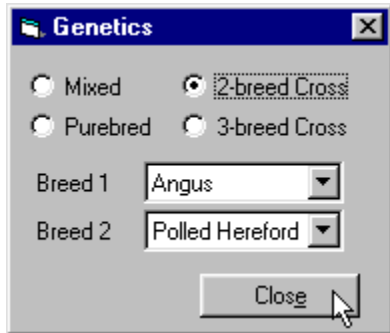
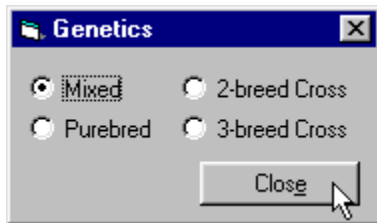
Click the  icon to see file details. If you have named your files in a way that does not allow you to immediately see when they were formulated, the Modified date may be useful for that purpose.

NRC Reqs...

NRC Reqs... opens the NRC 1996 Requirements window shown below. Here you can specify characteristics of the cattle you are feeding and their environment. Requirements based on these characteristics are calculated using equations originally published in the '1996 Nutrient Requirements of Beef Cattle', which have been corrected in several subsequent publications.



The Genetics... button in the upper left corner of the Cattle Description section opens the Genetics dialogue, shown on the left and below. If you choose Mixed, the appearance of the window does not change and you can simply click the Close button to register your choice. However, if you choose one of the other 3 options, the appearance of the Genetics window will change, as shown below, allowing you to select breeds from pull-down lists.

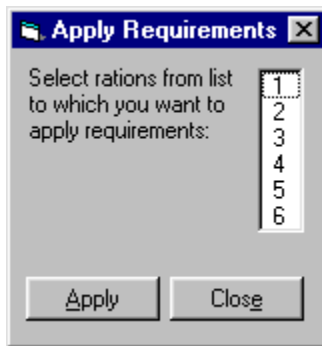


Each of the input boxes on the NRC 1996 Requirements window must contain a value before requirements are calculated. These text boxes are:

- Shrunken Weight, pounds - the average shrunken weight of the cattle whose requirements are to be calculated - must be greater than 100 pounds;
- Ionophore Conc, mg/kg DM - a value is required only if Ionophore Used is not none;
- Target Gain, pounds/day - average daily gain expected while feeding the ration for which requirements are being calculated - must be greater than 200 pounds;
- Shrunken Weight, pounds - the anticipated shrunken finished weight for these cattle;
- Current Daily Avg Temperature, deg C - the Night Cooling? check box is enabled only when Current Daily Avg Temperature is greater than 35 deg C;
- Previous Monthly Avg Temperature, deg C;
- Wind Speed, km/hr - enter the wind speed experienced by the cattle.

All other inputs have default values. If the defaults are not changed, these values will be used in the calculations.

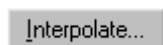
If the value of Predicted DM Intake, pounds/day does not seem appropriate for the cattle being fed, you can enter an alternative value in Actual DM Intake, pounds/day. Ration concentrations will be calculated based on the Actual DM Intake value and these values will be applied to the selected rations.



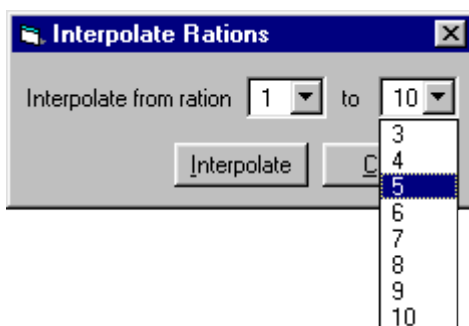
If the number of rations currently specified in the Formulate Rations window is only one, then the Apply... button at the bottom of the NRC 1996 Requirements window applies the calculated requirements to that ration. When there is more than one ration, the Apply... button opens the Apply Requirements dialogue shown on the left. Here you can select the ration(s) to which you want the requirements applied. The rations list allows for multiple selections using Windows® standard keystroke combinations :

- a single item can be selected with a click;
- multiple individual items can be selected with Ctrl + click;
- a contiguous group can be selected by clicking the top item in the group followed by Shift + click of the bottom item.

Mineral (except for Ca and P) and vitamin requirements are not calculated - tabular values given in '1996 Nutrient Requirements of Beef Cattle' are used. These are applied to rations at the same time as are the calculated values.



Interpolate... opens the Interpolate Rations dialogue shown below. Once you have formulated the first and last rations in a stepped series, the interpolation function will automatically calculate ingredient levels for the intermediate steps. For



example, you may want to formulate a series of 4 starter rations containing decreasing amounts of hay and increasing amounts of barley silage and barley grain. You can formulate rations 1 and 4, then allow the interpolation function to calculate rations 2 and 3. You might want to follow these starter rations with 6 more rations to get the cattle up to 'full-feed' by formulating rations 5 and 10 then interpolating the intermediate steps.

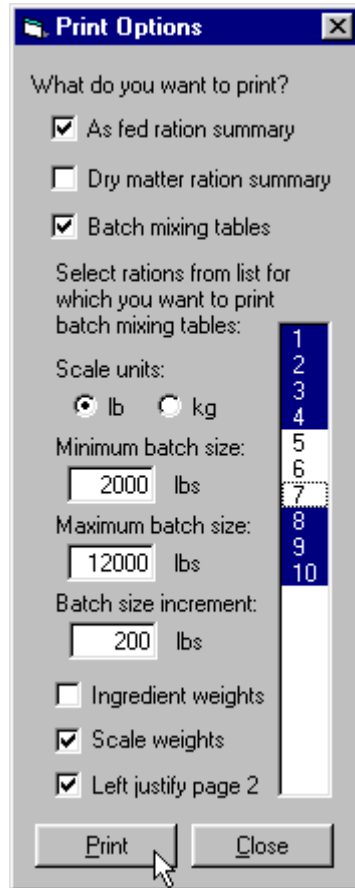
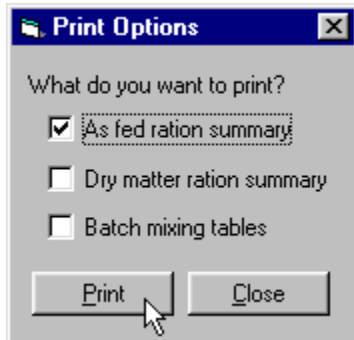
In the first case, you would choose 1 and 4 from the pull-down lists in the Interpolate Rations dialogue, then click the Interpolate command button to perform the calculations. In the second, you would choose 5 and 10.

The Close command button terminates the interpolate function without performing any calculations.



Print... opens the Print Options dialogue (below left) where you can choose the printed output you require by clicking any combination of the 3 check boxes. Examples of all printed output options are in the Appendix.

If you click the Batch mixing tables check box, the Print Options dialogue will extend as shown below. In the lower part of the dialogue you can specify options



for printing these tables:

Select rations from list for which you want to print batch mixing tables: this list allows for multiple selections using Windows® standard keystroke combinations :

- a single item can be selected with a click;
- multiple individual items can be selected with Ctrl + click;
- a contiguous group can be selected by clicking the top item in the group followed by Shift + click of the bottom item.

Scale units: determines the units used for batch sizes, increments and ingredient weights;

Minimum batch size: should be set to the smallest batch likely to be mixed;

Maximum batch size: the largest batch required;

Batch size increment: the weight increment between individual batches on the printout;


A maximum two pages of batch mixing tables will be printed for each ration. If the range from minimum to maximum load sizes is too large or the increment too small, you will be advised to modify your inputs.

Ingredient weights selects a batch printout where actual weights of each ingredient are printed;

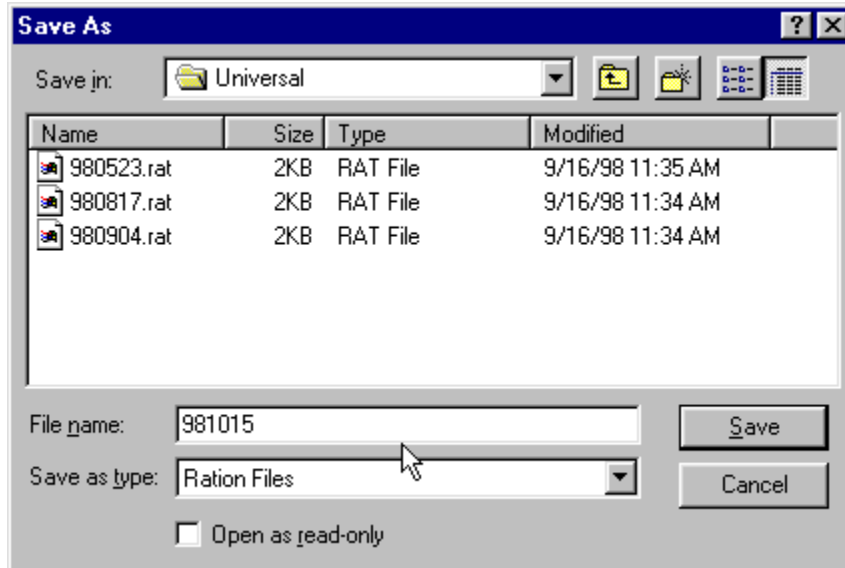
Scale weights selects a printout where the weight of each ingredient is added to the total weight of the ingredients to its left. This type of printout is useful when the scale on the mixer is not reset after adding each ingredient. However, to facilitate the use of a scale weight batch mixing table, ingredients must be organized in the order in which they are added to the mix at the feedlot. This must be done in the Formulate Rations window using the Alt + ↑ and Alt + ↓ keystroke combinations described earlier.

Left justify page 2 causes the second page of a 2-page batch table to be printed with the wide, hole-punch margin on the right so it can be put in a binder back-to-back with the first page.

Save...

Save... opens the Save As dialog shown below. Locate the folder where you want to save the file using the Windows® standard controls at the top of the dialogue. To create a new folder, click the  icon and enter a name.

Enter a file name in the File name: field. Realize that, in 32-bit Windows® applications, you are not restricted to 8-character file names as you were in



Windows® 3.x. The .rat extension is automatically appended to the name you give the ration.

Some thought should be given to the way in which ration files are organized. One way is to create a sub-folder for each feedlot within a common feedlot rations folder.

If ration files are designated by the date of formulation (as shown on the left), then they will appear in a logical date-order when displayed in the Open and Save As dialogues or in any other sorted list.

Clear

Clear removes all ingredients from the Formulate Rations window and clears all values stored within the program. This is useful if you decide to abandon your work to start again.

Close

Close hides the Formulate Rations window while retaining all of its current values. You will close the Formulate Rations window whenever you want to either Edit Ingredient Libraries or minimize *CattleFeeder* while you are using other applications.

The following pages are examples of printed output from *CattleFeeder*.

ProLivestock CattleFeeder : Batch Mixing Table - Scale Weights in Kilograms

Universal Feeders Ltd. : Grower 1

18 May 2007

Batch Size	Alfalfa Hay	Barley Silage	Barley, sr	10% Starter	15% Silage
1000	0	877	980	980	1000
1250	0	1096	1225	1225	1250
1500	0	1315	1470	1470	1500
1750	0	1534	1715	1715	1750
2000	0	1753	1960	1960	2000
2250	0	1972	2205	2205	2250
2500	0	2191	2451	2451	2500
2750	0	2410	2696	2696	2750
3000	0	2630	2941	2941	3000
3250	0	2849	3186	3186	3250
3500	0	3068	3431	3431	3500
3750	0	3287	3676	3676	3750
4000	0	3506	3921	3921	4000
4250	0	3725	4166	4166	4250
4500	0	3944	4411	4411	4500
4750	0	4164	4656	4656	4750
5000	0	4383	4901	4901	5000

ProLivestock CattleFeeder : Batch Mixing Table - Ingredient Weights in Kilograms

Universal Feeders Ltd. : Grower 1

18 May 2007

Batch Size	Alfalfa Hay	Barley Silage	Barley, sr	10% Starter	15% Silage
1000	0	877	104	0	20
1250	0	1096	130	0	25
1500	0	1315	156	0	30
1750	0	1534	181	0	35
2000	0	1753	207	0	40
2250	0	1972	233	0	45
2500	0	2191	259	0	49
2750	0	2410	285	0	54
3000	0	2630	311	0	59
3250	0	2849	337	0	64
3500	0	3068	363	0	69
3750	0	3287	389	0	74
4000	0	3506	415	0	79
4250	0	3725	441	0	84
4500	0	3944	467	0	89
4750	0	4164	492	0	94
5000	0	4383	518	0	99

ProLivestock CattleFeeder : Batch Mixing Table - Scale Weights in Kilograms

Universal Feeders Ltd. : Starter 1

18 May 2007

Batch Size	Alfalfa Hay	Barley Silage	Barley, sr	10% Starter	15% Silage
1000	283	836	974	1000	1000
1250	353	1045	1217	1250	1250
1500	424	1254	1461	1500	1500
1750	495	1463	1704	1750	1750
2000	565	1672	1948	2000	2000
2250	636	1880	2191	2250	2250
2500	706	2089	2435	2500	2500
2750	777	2298	2678	2750	2750
3000	848	2507	2922	3000	3000
3250	918	2716	3165	3250	3250
3500	989	2925	3409	3500	3500
3750	1060	3134	3652	3750	3750
4000	1130	3343	3896	4000	4000
4250	1201	3552	4139	4250	4250
4500	1272	3761	4383	4500	4500
4750	1342	3970	4626	4750	4750
5000	1413	4179	4869	5000	5000

ProLivestock CattleFeeder : Batch Mixing Table - Ingredient Weights in Kilograms

Universal Feeders Ltd. : Starter 1

18 May 2007

Batch Size	Alfalfa Hay	Barley Silage	Barley, sr	10% Starter	15% Silage
1000	283	553	138	26	0
1250	353	691	173	33	0
1500	424	830	207	39	0
1750	495	968	242	46	0
2000	565	1106	276	52	0
2250	636	1245	311	59	0
2500	706	1383	345	65	0
2750	777	1521	380	72	0
3000	848	1660	414	78	0
3250	918	1798	449	85	0
3500	989	1936	483	91	0
3750	1060	2074	518	98	0
4000	1130	2213	552	104	0
4250	1201	2351	587	111	0
4500	1272	2489	622	117	0
4750	1342	2628	656	124	0
5000	1413	2766	691	131	0

ProLivestock CattleFeeder : Dry Matter Formulas

Universal Feeders Ltd.

18 May 2007

Ingredients	\$/tonne	1	2	3	4	5	6	7	8	9	10
		Starter 1	Starter 2	Starter 3	Starter 4	Grower 1	Grower 2	Grower 3	Finisher 1	Finisher 2	
Alfalfa Hay	120.00	40.0	30.0	20.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0
Barley Silage	35.00	36.0	46.0	56.0	66.0	76.0	61.0	46.0	31.0	16.0	11.0
Barley, sr	112.00	20.0	20.0	20.0	20.0	20.0	35.0	50.0	65.0	80.0	85.0
10% Starter Supp	215.00	4.0	3.0	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
15% Silage Supp	232.00	0.0	1.0	2.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
Ration Cost, \$/tonne As Fed		74.35	65.91	58.66	52.38	46.88	54.75	64.47	76.78	92.88	99.41
Ration Cost, \$/tonne Dry Matter		120.97	116.14	111.30	106.46	101.62	107.38	113.13	118.88	124.63	126.55

ProLivestock CattleFeeder : As Fed Formulas

Universal Feeders Ltd.

18 May 2007

Ingredients	\$/tonne	1	2	3	4	5	6	7	8	9	10
		Starter 1	Starter 2	Starter 3	Starter 4	Grower 1	Grower 2	Grower 3	Finisher 1	Finisher 2	
Alfalfa Hay	120.00	28.3	19.6	12.1	5.7	0.0	0.0	0.0	0.0	0.0	0.0
Barley Silage	35.00	55.3	65.3	73.8	81.2	87.7	77.8	65.5	50.1	29.8	21.6
Barley, sr	112.00	13.8	12.8	11.8	11.1	10.4	20.1	32.0	47.2	67.0	75.0
10% Starter Supp	215.00	2.6	1.8	1.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0
15% Silage Supp	232.00	0.0	0.6	1.1	1.6	2.0	2.2	2.4	2.8	3.2	3.4
Ration Cost, \$/tonne As Fed		74.35	65.91	58.66	52.38	46.88	54.75	64.47	76.78	92.88	99.41
Ration Cost, \$/tonne Dry Matter		120.97	116.14	111.30	106.46	101.62	107.38	113.13	118.88	124.63	126.55