

AminoCow[®] and Milk Steps

Presenting Rations for Different Levels of Production

Milk Steps

- ⊗ **When you have a completed ration, you can use “MilkSteps”.**
- ⊗ **This provides multiple amounts of feed to achieve multiple levels of production.**
- ⊗ **Great for stanchion barns.**
- ⊗ **An option for where computer feeders are used.**
- ⊗ **Great for demonstrating the nutrient requirement variation between production levels.**

Nutritional Information Mixes Modify Feeds AABYFormula Reports **Options** Save Quit Help

Holstein Lactating Lact # 2 Weight 1455 Milk 3.2 % Protein 3.2 DIM 60 BCS 2.5

Ration: Mt. View High Group 1A 2nd Lactation NEI Calculation: User ReCalc All

Units lb-Mcal/lb Currency \$ Adjst MCRP RDP View Notes

- Balance
- Graph
- MilkSteps**
- AminoAcid Cost
- MepronValue
- AASupply
- ExportToTextFile

Feeds						Feed Ingredient Profile												
Mi	Feed Name	Ty	AsFed	DM	DM%	NEI	CP	RDP	RUP	ADF	NDF	NFC	\$/DM	Fat	MP	Met	Lys	Ca
						Mcal/lb	%DM	% CP	% CP	%DM	%DM	%DM		%DM		%DM	%DM	%C
0	Alfa hay early bl	F	4.0000	3.6000	90.00	0.61	18.00	72.00	28.00	31.00	42.00	27.40	0.070	3.00	0	0.266	0.864	1.4
1	Alfa sil early bln	F	31.0000	13.9500	45.00	0.61	18.00	78.00	22.00	31.00	42.00	27.60	0.070	3.00	0	0.241	0.713	1.4

Here is an example of MilkSteps. The MilkSteps procedure calculates the amount of forage and concentrates to be fed to cows at varying levels of production. This feature is commonly used for herds housed in tie stall or stanchion barns. In these situations, forage might be fed at different rates and a concentrate mix or individual grains are fed according to production.

Click "Options", "MilkSteps".

Milk Steps

- ❁ **To use MilkSteps, a ration must first be optimized for forages and concentrates and balanced for amino acids, vitamins and minerals.**
- ❁ **Depending in part on the options selected, the MilkSteps procedure calculates the required energy and protein for each level of production based on appropriate adjustments to dry matter.**
- ❁ **All calculations begin with the base ration and the body weight, lactation number, days in milk, milk protein, and milk fat of the described cow.**

Milk Steps

- ⊗ **Using the base ration, MilkSteps begins by calculating the required energy and protein for each production level (milk step).**
- ⊗ **Then, 'MilkSteps' calculates the energy and protein supplied by the forages in the ration and subtracts these totals from the requirements to obtain the required nutrients from concentrates.**

Milk Steps

- ❁ **The nutrients supplied by the concentrates in the ration are then calculated. Using the forage nutrients at fixed amounts for all milk production levels, ‘MilkSteps’ calculates the amount of concentrate necessary to meet the dry matter requirements for each increment.**
- ❁ **If no options are selected, this result is displayed in the “MilkSteps Report”. If forage rates are adjusted, then AminoCow adds grain and/or subtracts forage to maintain the amount (but not the percent) of forage NDF and ADF for each milk step.**

Ration Evaluator - Milk Steps Options

Help Quit

Do you wish to set a fixed limit for a feed? Yes

Fixed Feed: None

Do you wish to adjust forage amounts? Yes

Do you wish to specify a protein source? Yes

Protein Source: None

Next Quit

Recalc All

Notes

M	Fat	MP	Met	Lys	Ci
---	%DM	-----	%DM	%DM	%C
70	3.00	0	0.266	0.864	1.4
70	3.00	0	0.241	0.713	1.4
75	3.00	0	0.129	0.207	0.2
57	4.30	0	0.201	0.274	0.0
17	1.00	0	0.755	3.285	0.2
39	20.00	0	0.365	0.957	0.2
17	2.10	0	0.138	0.746	0.5
53	0.60	0	0.160	0.608	0.6
13	0.00	0	0.000	0.000	0.0
53	0.40	0	0.012	0.057	0.3
18	0.00	0	0.000	0.000	19.

AminoCow Milk Steps Options.

The first question you are asked is if you would like to set a fixed limit for a feed. This might be something in limited supply or just a personal preference. For our example, click "Yes".

Ration Evaluator - Milk Steps Options

Help Quit

Do you wish to set a fixed limit for a feed? Yes

Fixed Feed: None

Do you wish to adjust forage amounts? Yes

Do you wish to specify a protein source? Yes

Protein Source: None

Next Quit

Corn grain ground
Soybean meal 48 %
Cottonseed whole
Soybean hulls
Beet pulp dehy
Urea 45%
Molasses dehy

	MP	Met	Lys	Ci
%DM	-----	%DM	%DM	%C
00	0	0.266	0.864	1.4
00	0	0.241	0.713	1.4
00	0	0.129	0.207	0.2
30	0	0.201	0.274	0.0
00	0	0.755	3.285	0.2
0.00	0	0.365	0.957	0.2
10	0	0.138	0.746	0.5
60	0	0.160	0.608	0.6
00	0	0.000	0.000	0.0
40	0	0.012	0.057	0.3
00	0	0.000	0.000	19.
00	0	85.000	0.000	0.0
%DM-	-----	--%MP--	--%MP--	-%C

A list of the Grains and Byproducts currently in your ration appears in the column on the right. You can select one feed. We will choose "Cottonseed whole" to maintain the feeding amount at 2 lbs. per head per day for all levels of production.

It is not required to select a feed which will be limited; this is an option.

Milk Steps

- ❁ **If a concentrate is to be fed at a fixed amount (as a top-dress, for example), the dry matter and nutrients contained in this one ingredient are subtracted from the concentrate requirement before it is calculated.**
- ❁ **This fixed feed is fed at the amount specified in the base ration and is displayed as a fixed ingredient.**

Ration Evaluator - Ration Worksheet

Nutritional Information Mixes Modify Feeds AABYFormula Reports Options Save Quit Help

Holstein Lactating Lact # 2 Weight 1455 Milk 97 % Fat 3.6 % Protein 3.2 DIM 60 BCS 2.5

Ration: **Ration Evaluator - Milk Steps Options**

Help Quit

Do you wish to set a fixed limit for a feed? Yes

Fixed Feed Cottonseed whole

Do you wish to adjust forage amounts? Yes

Do you wish to specify a protein source? Yes

Protein Source: None

Next Quit

M	Fat	MP	Met	Lys	Ci
70	3.00	0	0.266	0.864	1.4
70	3.00	0	0.241	0.713	1.4
75	3.00	0	0.129	0.207	0.2
57	4.30	0	0.201	0.274	0.0
17	1.00	0	0.755	3.285	0.2
39	20.00	0	0.365	0.957	0.2
17	2.10	0	0.138	0.746	0.5
53	0.60	0	0.160	0.608	0.6
43	0.00	0	0.000	0.000	0.0
53	0.40	0	0.012	0.057	0.3
18	0.00	0	0.000	0.000	19.
91	1.00	0	85.000	0.000	0.0
DM	--%DM-	-----	--%MP--	--%MP--	-%C

“Cottonseed whole” is displayed as the fixed feed.

We have checked “Yes” to the question asking if we wish to adjust forage amount. The computer will automatically calculate increasing or decreasing levels of forages to try to meet the cow’s needs.

For our example, we will not specify a protein source.

Click “Next”.

AminoCow - Milk Steps Report

Ration: **Mt. View Mid Group 1B** Breed: **Holstein # 2** Date: **7/8/2004** Units: **lb-Mcal/lb**

Milk Steps											
Milk	30	40	50	60	70	80	90	100	110	120	
Grain (DM)	0.5	0.6	4.5	11.8	19.0	21.7	24.4	28.4	32.3	36.3	
Extra (DM)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Required (DM)	36.1	38.9	41.7	44.5	47.3	50.2	53.0	55.8	58.6	61.4	
DMI	0.5	0.6	4.5	11.8	19.0	21.7	24.4	28.4	32.3	36.3	
Required (+ / -)											
NEI	2.0	0.6	0.0	0.0	0.0	-0.9	-1.7	-2.3	-2.9	-3.5	
CP	1.1	0.7	0.5	0.4	0.4	0.2	-0.1	-0.3	-0.5	-0.7	
NFC	2.3	2.5	0.9	2.3	1.3	1.6	2.0	2.6	3.2	3.8	
RDP	0.3	0.1	-0.4	0.3	0.3	0.3	0.4	0.6	0.8	1.0	
ADF	3.3	3.6	3.2	2.3	1.4	1.3	1.1	0.7	0.4	0.0	
NDF	5.2	5.6	5.2	3.9	2.7	2.5	2.3	1.9	1.4	0.9	
As Fed											
Grain	0.5	0.7	5.0	13.1	21.2	24.2	27.2	31.6	36.1	40.5	
Protein Source											
Cottonseed whole	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Forage	78.2	84.5	82.1	71.7	61.3	61.7	61.9	59.3	56.6	54.0	

Notice the grain levels steadily increase as production levels increase. Also, notice how the forage levels are at their greatest at the 40 lbs. milk step, but then actually decrease. Cottonseed stays at 2 lbs for all production levels.

Ration Evaluator - Milk Steps [Close]

Print Select Printer Html Return Help

AminoCow - Milk Steps Report

Ration: **Mt. View Mid Group 1B** Breed: **Holstein # 2** Date: **7/8/2004** Units: **lb-Mcal/lb**

Milk Steps											
Milk	30	40	50	60	70	80	90	100	110	120	
Grain (DM)	0.5	0.6	4.5	11.8	19.0	21.7	24.4	28.4	32.3	36.3	
Extra (DM)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Required (DM)	36.1	38.9	41.7	44.5	47.3	50.2	53.0	55.8	58.6	61.4	
DMI	0.5	0.6	4.5	11.8	19.0	21.7	24.4	28.4	32.3	36.3	
Required (+ / -)											
NEI	2.0	0.6	0.0	0.0	0.0	-0.9	-1.7	-2.3	-2.9	-3.5	
CP	1.1	0.7	0.5	0.4	0.4	0.2	-0.1	-0.3	-0.5	-0.7	
NFC	2.3	2.5	0.9	2.3	1.3	1.6	2.0	2.6	3.2	3.8	
RDP	0.3	0.1	-0.4	0.3	0.3	0.3	0.4	0.6	0.8	1.0	
ADF	3.3	3.6	3.2	2.3	1.4	1.3	1.1	0.7	0.4	0.0	
NDF	5.2	5.6	5.2	3.9	2.7	2.5	2.3	1.9	1.4	0.9	
As Fed											
Grain	0.5	0.7	5.0	13.1	21.2	24.2	27.2	31.6	36.1	40.5	
Protein Source											
Cottonseed whole	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Forage	78.2	84.5	82.1	71.7	61.3	61.7	61.9	59.3	56.6	54.0	

As milk production increases, forage and grain levels adjust to accommodate the nutritional needs of the cow.

Extra Protein Source: **None** Fixed Feed: **Cottonseed whole**