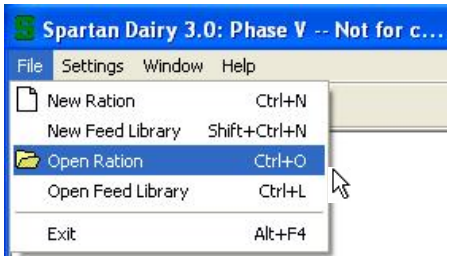
Spartan Dairy 3 Tutorial

Evaluating an existing ration and rebalancing it

In this exercise, we will open an existing ration, alter the animal description, edit feeds, and rebalance to meet the new requirements.

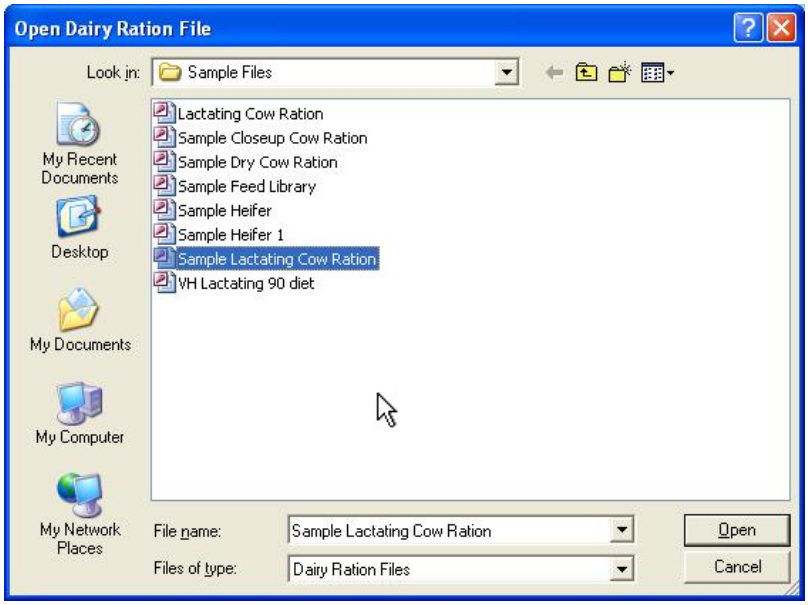
1. Opening a Ration File

When you start Spartan Dairy 3, the main application window will open. To open an existing ration file, you can press the file folder button  , press Ctrl-O, or use the main menu to select **File > Open Ration**.



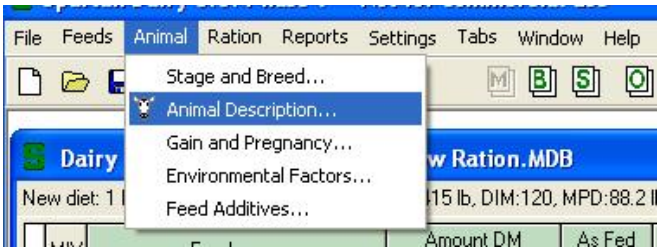
For this tutorial, let's use the sample lactating cow ration.

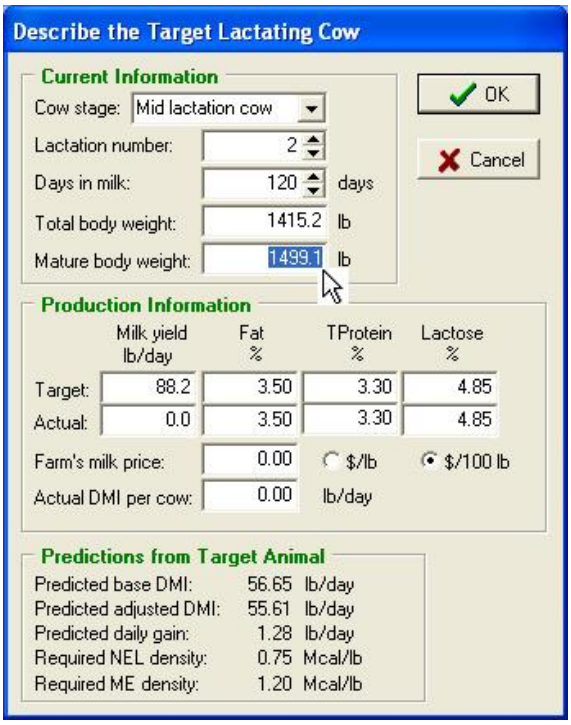
This screenshot shows the open file dialog for Windows XP. It will look a little different for Windows 7 and Vista.

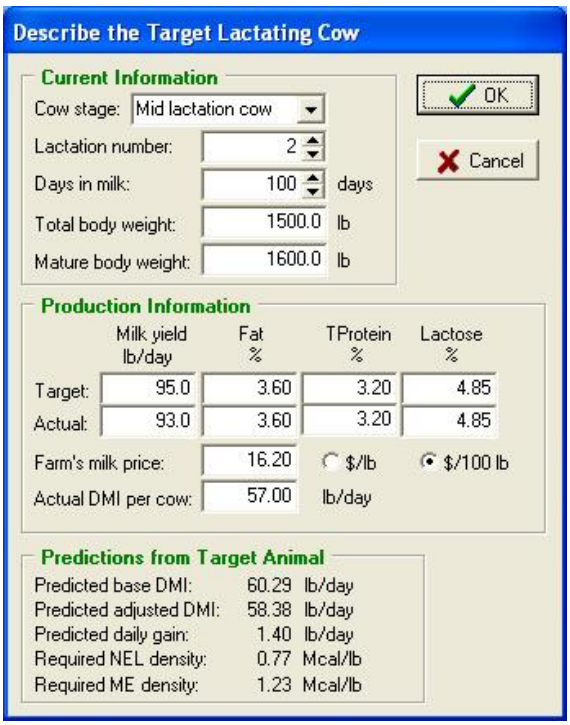


2. Modifying an Animal Description

Click on the hot button or use the menu and choose animal description. In this example, we are working with a lactating cow, so the "Describe the Target Lactating Cow" dialog opens.







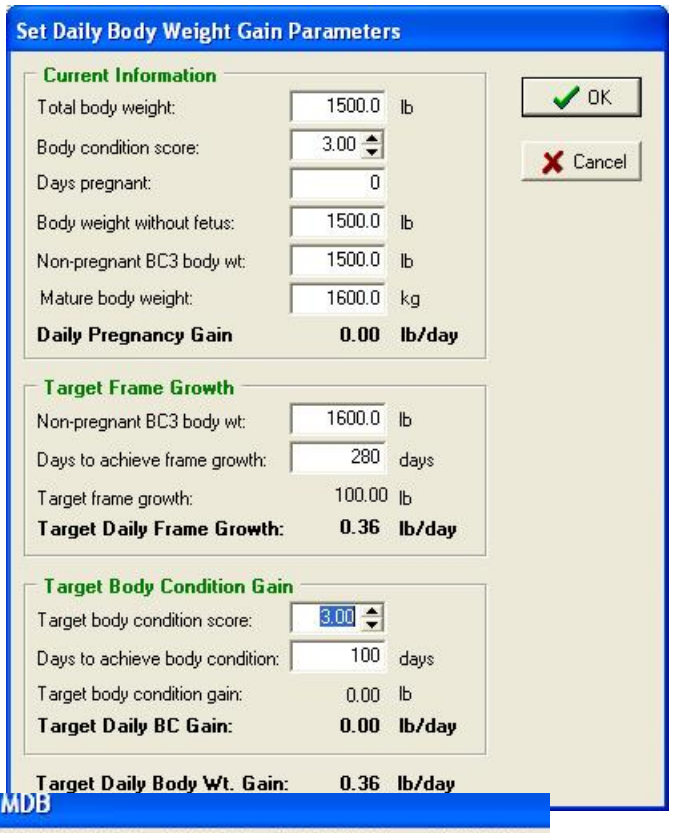
Original description → New description

In this example, we first drop days in milk to 100, then increase mature BW to 1600, increase total body weight to 1500 lb, increase target milk yield to 95 lb, change fat to 3.60%, change protein to 3.2%, and insert values for actual milk, fat, protein, farm milk price and actual intake.

NOTE: Whenever you change total body weight, we suggest you first adjust mature body weight. Mature BW is on a body condition 3 basis (See Understanding animal weights at the end of Chapter 8). Thus, mature BW should never be less than total BW, unless the animal is currently fat. Then, the loss of body condition would decrease total BW while keeping BC3-adjusted body weight constant. In Spartan 3, we assume body frame can never be lost, so BC3 adjusted BW can never decrease. Thus, whenever you want to change BW, you should change Mature body weight, and the program will recalculate the current total BW based on days in milk. In this example, when we change mature BW to 1600 lb for a cow at 100 DIM, we get a current total BW of 1505 lb. We then dropped that to 1500.

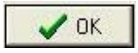
Next we will edit the BW gain of the cow so that she is not gaining body condition. Choose **Animal > Gain and Pregnancy** in the Ration menu.

This brings up the Set Body Weight Gain Parameters dialog.

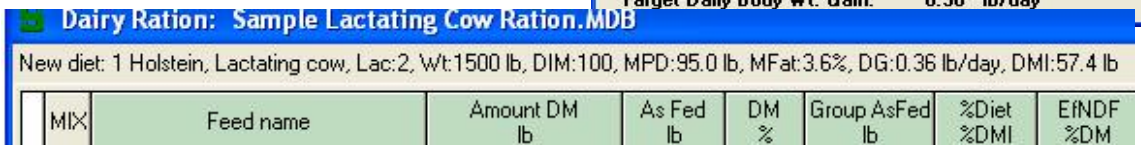


You should check here that the current non-pregnant BC3-adjusted BW is not more than the mature BW.

In this example, our cow must add 100 lb of frame growth in the next 280 days. But we will change the target Body Condition Score to 3.0 so that she simply maintains her current BCS. Thus, she has not target BC gain, but still has a target frame gain of 0.36 lb/day.

Press 

and notice that the essential elements of the cow description are visible at the top of the worksheet window.



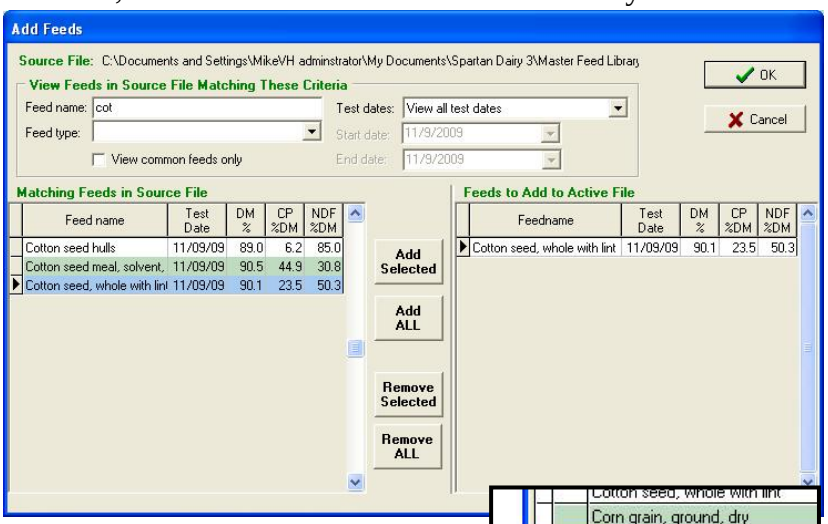
The target for this ration is 1 Holstein Lactating cow in her 2nd lactation with a body weight of 1500 lb. She is 100 Days in Milk and is producing 95 lb/day of milk that 3.6% fat. She is gaining 0.36 lb/day and is eating 57.4 lb DM/day. Note these are the values for the targets, not the actual milk and DMI.

Next we will modify feed characteristics.

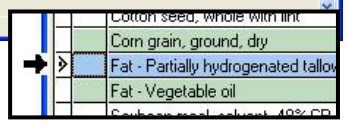
3. **Modifying Feed Characteristics.** We will now add a new feed and then change its nutrient content.

Use the worksheet menu to **Add Feeds**, or press **Ctrl+F**, or click the  hot button.

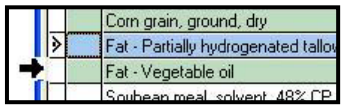
First a dialog will appear for you to select the source library or ration. You can add a feed from a library file or another ration. In this case, we will choose the Master Feed Library. Next the Add Feeds dialog will appear. In this example, we want to add cottonseeds. Because the Master Library has many feeds, the easiest way to do this is to type "cot" in the **Feed name** box. Three feeds show up; double click "Cotton seed, whole with lint" or click it once and use the **Add Selected** button. Once it appears on the **Feeds to Add to Active File** grid, press the Okay button.

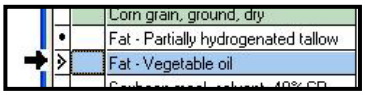


Next let's delete the two fat sources. Select "Fat-Partially hydrogenated tallow" by placing the cursor to the left of the row and clicking once.

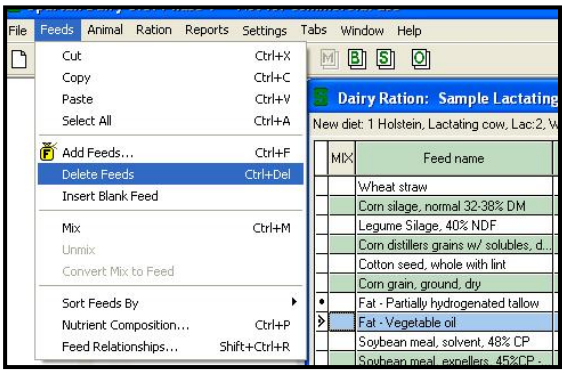


To select both feeds, move the cursor to the left of the "Fat – Vegetable oil" row and now click while pressing the **Crtl** key. indicates a selected feed and indicates that a feed is selected and it is the active row.



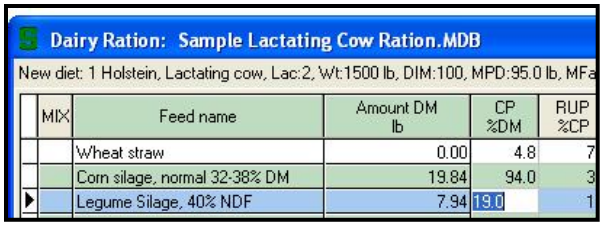


Now delete the two selected feeds by using the worksheet menu to choose **Delete Feeds** or use **Ctrl+Del.**

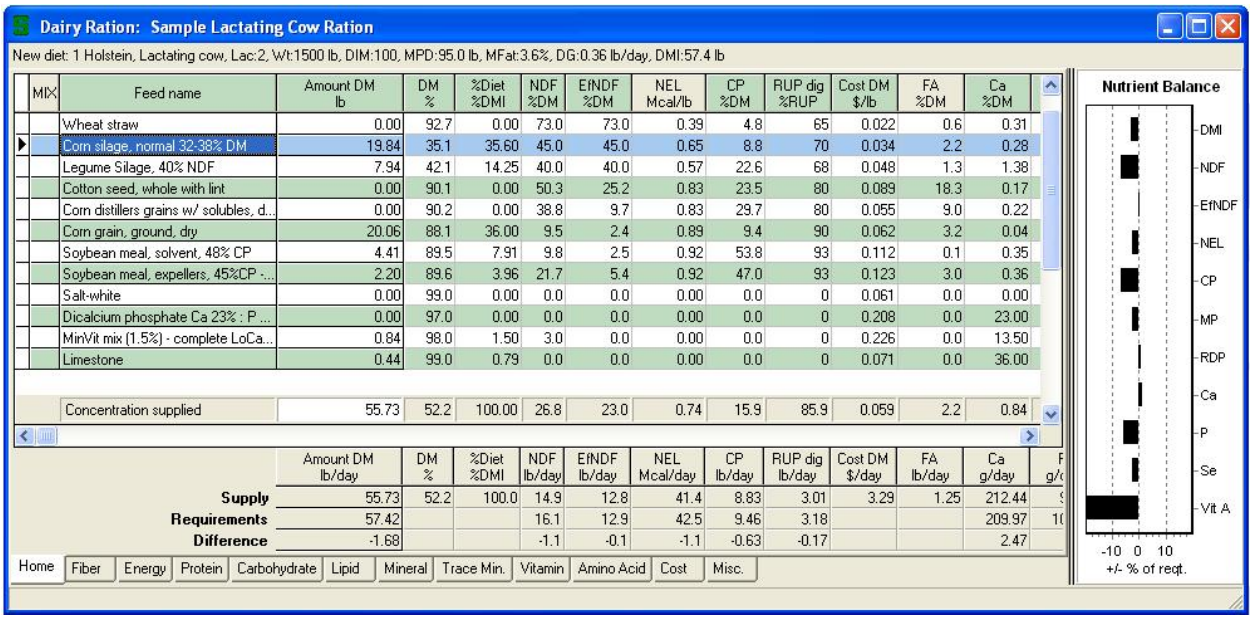


The last thing we will do before evaluating and rebalancing the diet is to change the CP concentration of the legume silage to 19%.

Go to the protein tab, select the CP cell for legume silage and write in the new value of 19.0. Once you press **Enter** or **Tab** or click on another cell, the change is done and cannot be undone.



We are now ready to evaluate the diet and rebalance. Check out the totals for each column, and you should note that the cow can eat a little more feed, but that the diet is reasonably close to meeting requirements for fiber, energy, protein, and minerals.

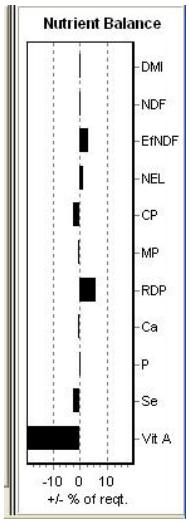


4. **Adjusting Feed Amounts**

Change the amounts of feeds to rebalance the diet using 3 lb of cottonseeds and feed a total of 57.4 lb instead of 55.7 lb. Simply, write new values over the old ones. You can change amounts of feeds using the Group AsFed column, AsFed column, Amount DM column, or %Diet column. Usually we use the Amount DM column.

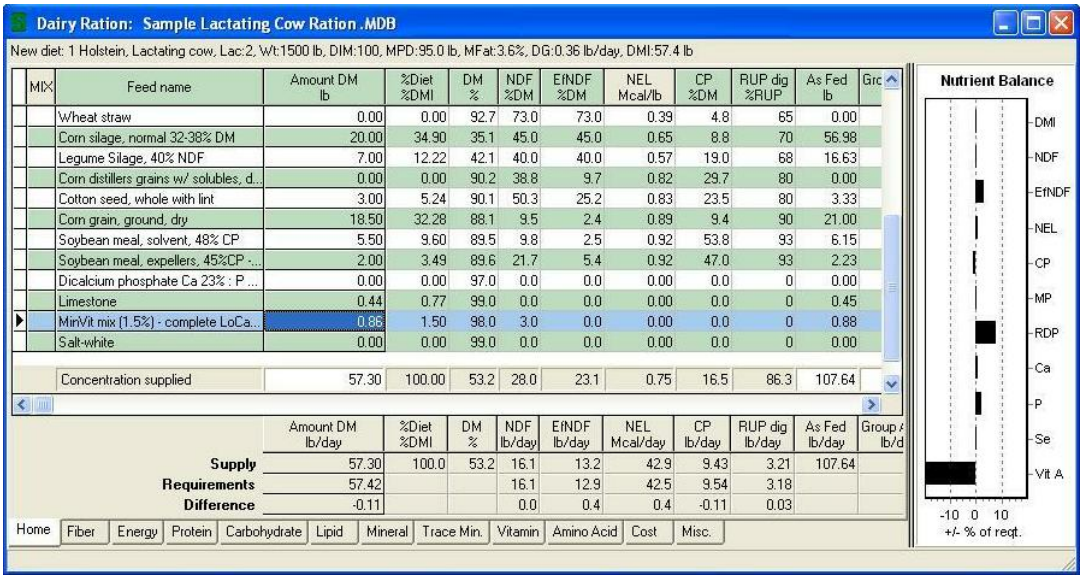
5. Manually Balancing the Ration

First add in the 3 lb cottonseed, and you can see there is too much total DM per day and more NDF and EfNDF than needed. So drop the legume silage to 7.0 lb DM, round off the corn silage to 20.0 lb, and drop the corn grain to 19.5 lb so that the DMI is correct. Examine the nutrient balance graph. →

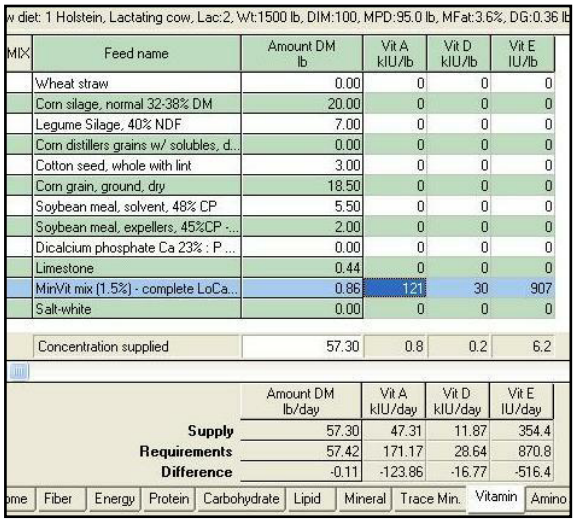


The diet looks good for DMI, NDF, EfNDF, and NEL, but is a little short on CP and Se. Whether the CP should be increased is debatable and depends on how much you trust an MP system. If you go to the protein tab, note that the MP01 system estimates that this diet is 0.24 lb short on MP per day rather than only 0.06 lb for Spartan MP system. To be sure to meet the protein needs of these cows, we will boost CP a little. So decrease corn grain a little more to 19.0 lb to make room for more soybean meal. Let's first see what happens with just solvent-extracted soybean meal (Soy-48); if we increase soy-48 to 7.0 lb/day, the diet has even less MP. By dropping corn grain down to 18.5 lb, adding in 2.0 lb of expeller soybean meal, and dropping the soy-48 to 5.5 lb, the protein balance looks very good according to the Spartan model.

The finished ration



Everything looks pretty good but according to the nutrient balance graph, vitamin A is low. We should check the other minerals and vitamins by examining the Mineral, Trace Min, and Vitamin Note that all the vitamin A in the calculated ration supply is from the MinVit mix. All the in the ration other than the MinVit mix are given values of 0 because of the large degree of variation. Thus, the supply is listed as only 47 kIU/day, but it is likely much greater than that.

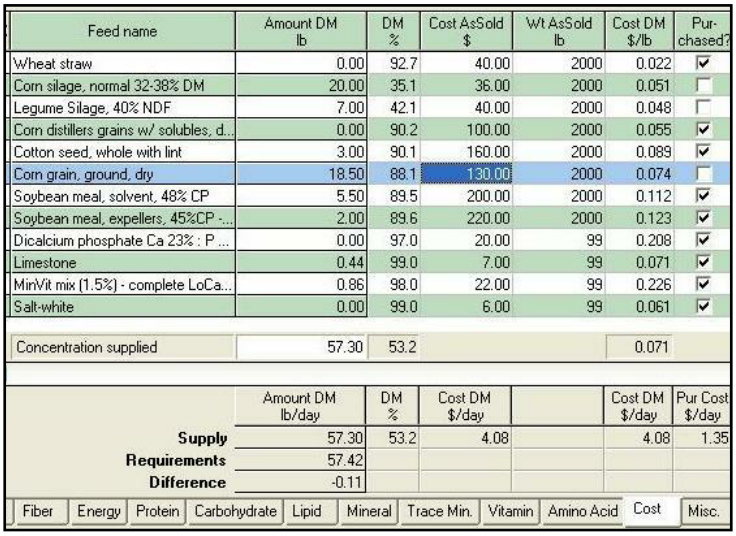


also

tabs.

feeds

Next go to the Cost tab. You can distinguish between feeds that are purchased and those that are home-grown. Note that for feeds that were priced on a 100 pound basis, the Wt AsSold is listed at 99 lb—this is due small rounding errors from shifting and forth from metric and pounds.



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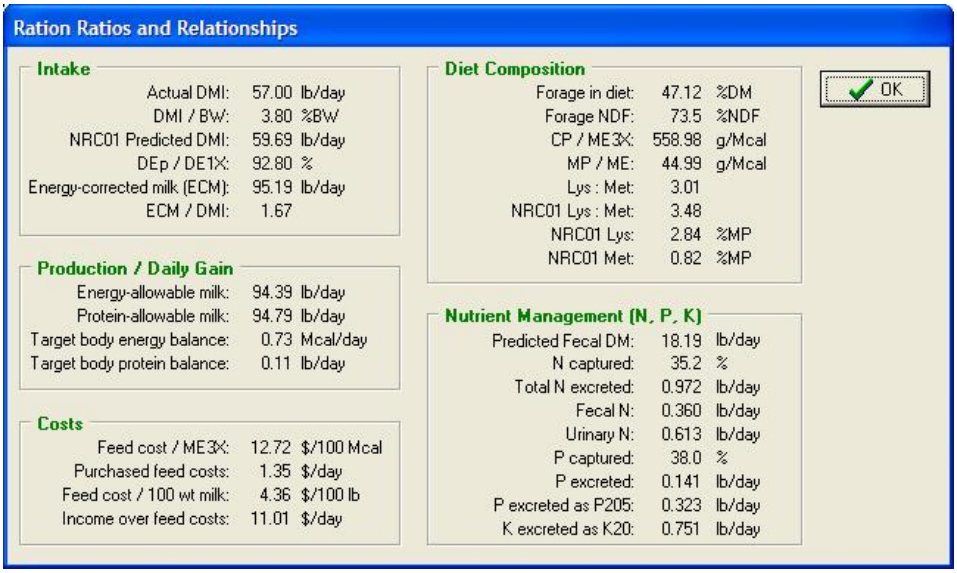
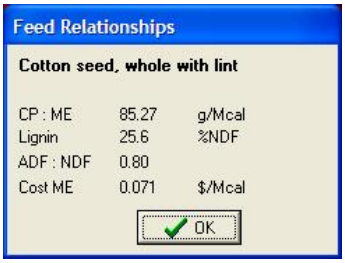
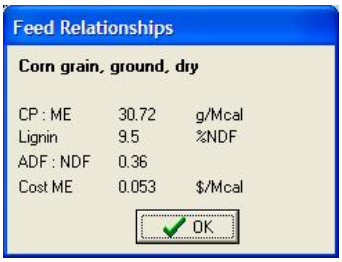
Next examine the Ratios and Relationships dialog. Energy-corrected milk is a relative value that adjusts for milk that is higher in and protein than the average (3.5% fat). Note that the actual DMI is the value that inserted in the animal description dialog. Using this actual DMI, the allowable milk is very close to what is actually happening.



You can get some of this same type of info on an individual feed basis by choosing **Feeds>Feed Relationships** of the Worksheet menu.

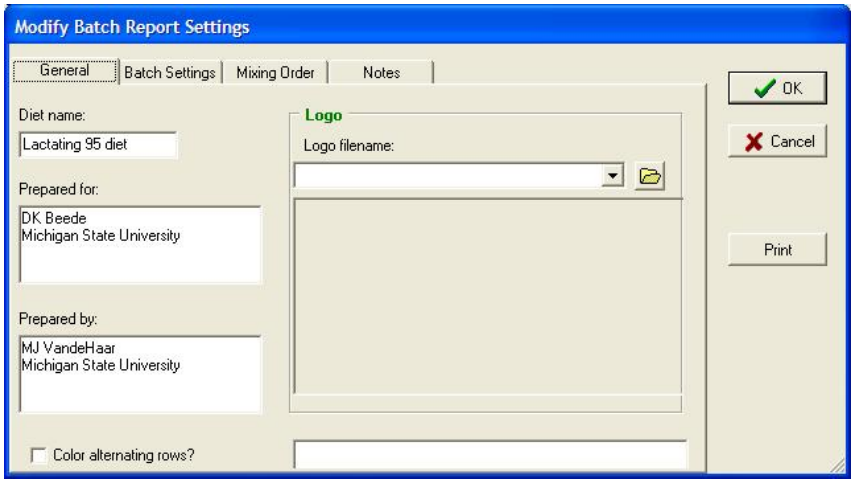




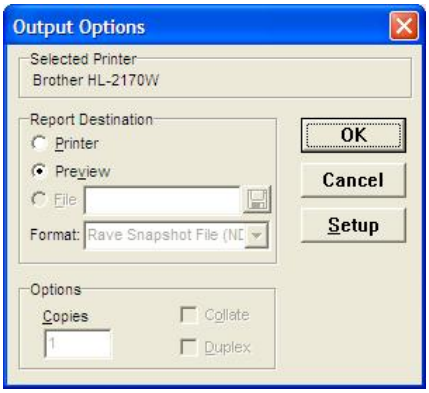
6. Printing a Batch Report

If you want to print the recipe to make a batch of this ration, choose **Reports>Batch Report.**

In the Modify Report Settings dialog, you can input information regarding the ration was prepared for and by and choose whether to have alternating colors on the output. You can also print change the size of the batch, number of animals for incrementing batch size recipe, the order of feeds, or write notes to print on the report.



To move to the next step, press Print. This directs you to the Output Options dialog. First take a quick look at the report on your monitor by choosing Preview. You can also print to a printer or to a file so that the batch report can be emailed to someone else.



If you have printed this ration before and the settings are already set, you can choose one of the Report hot buttons instead of using the menu. The hot buttons M B S O quickly take you to the Output Options dialog.

7. Saving the Ration

To save the revised ration, choose **File>Save As** or **File>Save**, just like with any other Windows program.