

Note: This document provides a guide for using the *Dairy Annual Nutrient Manager* located at <http://dairy.nmsu.edu>: Tools.

1. Prepare Excel security settings.
 - Open Microsoft Office Excel (a blank new file).
 - Go to Tools, Macro, Security...
 - In the “Security Level” tab, select “Medium” and press OK.
 - Close Excel program.
2. Download application (NutrientManager.xls) from <http://dairy.nmsu.edu>: Tools by clicking on *Nutrient Manager Application*.
 - Right click on NutrientManager.xls and select “Save Target As...”
 - Save zipped file in known place on your local computer.
3. Open *NutrientManager* application.
 - Find the NutrientManager.xls file saved in step 2 and open it.
 - A Security Warning will appear requesting to “Enable Macros”.
 - When you select “Enable Macros” the screen shown in Figure 1 will appear.
4. Select and introduce the information that best describe your situation, or information about the situation under which you would like to generate an annual nutrient plan. In general, yellow highlighted cells are input data and light blue highlighted cells are calculations made by the application. Blue font cells have additional information for the user when selected. Also, a button allows the user to switch the indication between “planned” and “real” data. The application opens with default data as a guide, but a button on the right top allows the user to clear all data and start in a clean spreadsheet. The application is divided (from top to bottom) into seven sections. Click on the buttons to the right of sections 2, 4, 5, and 6 to enter more specific information about each of these sections.
 - Before you start filling in your information, save a clean copy of the application as a reference.
 - In the top or “general” section, fill in the farm and field information as well as an estimated percentage of N loss in the soil after application.
 - You can select to balance both N and P or only N by clicking on the yellow button with name “P out”.
 - In the second or “crops” section, select up to three crops for a crop year, specifying the months and the yields. The application immediately calculates the amounts of N and P extracted from these crops plus the amount of N loss by volatilization.
 - In the third or “soil” section, introduce the amounts of N and P available for the crops as indicated in a soil analysis. The application balances the N and P.
 - In the fourth or “effluent” section, select the type and amount of effluent applied to the field. You can select the units as *ac-in* or *gallons*. The application balances the N and P.

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Dairy Annual Nutrient Manager						ClearAll
Date	01/28/2008		Victor E. Cabrera Dairy Specialist dairy.nmsu.edu Tools vcabrera@nmsu.edu		PLANNED	Nutrient Balance (lb)
Dairy	El Lechero				Print	N Loss 25%
Crop_Year	2007				Goal/Real	Nutrient Needed
Field_ID	La Pampa					
Area (ac)	20					
	Month - Month	Crop	Unit	Yield		
1 st Crop	Mar-Jun	Sorghum, for silage (mature)	t/ac	5	814	136
2 nd Crop	Jul-Sep	Corn-Field, for silage (mature)	t/ac	15	2325	679
3 rd Crop	Oct-Feb	Wheat, for hay (mature)	t/ac	10	4300	698
Total		Nutrient Needed			9,298	1,513
						Crops
						Soil Analyses
Texture by Feel					N	P
Nutrient Available in Soil			lb/ac			2
	Nutrient Still Needed				9,298	1,473
						Effluent Analyses
					N	P
Effluent Manure Application	NM Dairy Ponds 97% liq	ac-in	1		3360	507
		ac-in			0	0
		ac-in			0	0
	Nutrient Still Needed				5,938	966
						Effluent
						Manure Analyses
					N	P
Dry Manure Application	NM Dairy Cattle 25% wet	t/ac	5		2670	812
		t/ac			0	0
		t/ac			0	0
	Nutrient Still Needed				3,268	154
						Manure
						Fertilizer Content
					N	P
Chemical Fertilizers Applied		lb/ac			0	0
		lb/ac			0	0
		lb/ac			0	0
	Annual Nutrient Balance				3,268	154
						Fertilizer
CALCULATOR: How much more manure you could still apply?						Unit Eq.
<input checked="" type="radio"/> ac-in Effluent <input type="radio"/> gallons Effluent <input type="radio"/> Dry Manure						
NM Dairy Ponds 97% liq		ac-in	1.0			0.3

Figure 1. Dairy Annual Nutrient Manager default screen.

- In the fifth or “dry manure” section, select the type and amount of dry manure applied to the field. The application balances the N and P.
- In the sixth or “chemical fertilizer” section you can select the type and amount of chemical fertilizer applied to the field, if any. The application makes a final balance of N and P. The annual nutrient balance in a specific field is indicated in bold numbers. If the balance is indicated as a positive (black font), it means that crop needs of nutrients were not met and there is room to apply more nutrients to the field. If the balance is indicated as negative (red font), it means that there would be an excess of nutrients in the fields under the conditions indicated.
- The last or “calculator” section is handy for calculating how much more effluent or dry manure could still be applied to the field when the balance is positive in order to match the extracted with applied nutrients.
- An additional button with the name “Unit Eq.” in reference to unit equivalents takes the user to a page with the most common unit conversion needed to use the application.
- 5. Print results. To print results, click the button with the caption “print” at the top of the spreadsheet; this will print the spreadsheet with all the information in a portrait position on a page of size A4.

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