

## User manual of the *Dairy Annual Nutrient Manager*

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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.

- Right click on [NutrientManager.xls](#) and select “Save Target As...”
- Save 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 following screen will appear:

Dairy Annual Nutrient Manager						Clear All
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					P out
Area (ac)	20					
	Month - Month	Crop	Unit	Yield	N	P
1 <sup>st</sup> Crop	Mar-Jun	Sorghum, for silage (mature)	t/ac	5	814	136
2 <sup>nd</sup> Crop	Jul-Sep	Corn-Field, for silage (mature)	t/ac	15	2325	679
3 <sup>rd</sup> 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?						
<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 Unit Eq.

4. Select and introduce the information that best describe your situation or the information under which you would like to have 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 switch the indication between “planned” and “real” data. The application, by default opens with data as example, but a button on the top right allows the user to clear all data and start in a clean spreadsheet. The application is divided (from top to bottom) in seven sections. Sections 2, 4, 5, and 6 have a button on the right side to introduce more specific information about each one of these sections by the user.

- Before you start filling your information, save a clean copy of the application as a reference.
- In the top or “general” section fill the farm and field information as well as an estimated percentage of N loss in the soil after application.
- In the second or “crops” section the user selects up to three crops for a crop year specifying the months and the yields. The application calculates immediately the amounts of N and P extracted from these crops plus the amount of N loss by volatilization.
- In the third or “soil” section the user introduces 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 the user selects the type and amount of effluent applied to the field. The user can select the units as ac-in or gallons. The application balances the N and P.
- In the fifth or “dry manure” section the user selects 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 the user selects the type and amount of chemical fertilizer applied to the field. 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 the crop needs of nutrients were not met and there is a 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.
- The last or “calculator” section is handy to the user to calculate how much more effluent or dry manure could be still 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.

A button with the caption “print” in the top of the spreadsheet allows the user to print the spreadsheet with all the information in a portrait position in a page of size A4.