

PastureWatch™

Pasture Budget and Grazing Planner

If you are running PAM, you will find the Pasture Budgeting system under the menu option... *Data Entry / Pasture Budgets*

In PastureWatch click on the “Budget” tab.

Overview

Pasture Budgets are used

- To assist in achieving pasture and animal targets
- To predict surpluses and deficits in pasture supply
- In conjunction with pasture benchmarks

A Pasture Budget can be used to help make a range of decisions. The most common questions are how many animals a paddock can carry and meet the target FOO requirements, and how long will it take to reach the target FOO with the number of stock present in the paddock.

Setting your defaults for pasture budgeting

Monthly Pasture Growth Rates

These values can be derived from past years Pastures from Space data or entered manually. A set of default values can be entered in the “Default Values” tab in PastureWatch and under *Tools/PastureWatch Settings* in the Pasture Budget screen, or *Configuration/Customise your PAM program...* PastureWatch Settings tab if you are running PAM.

The defaults can be applied to every paddock if you wish, or each paddock can have its own set of pasture growth rates. These can be calculated from previous years’ data or manually entered.

To enter pasture growth rates on a paddock by paddock basis, you can either go to the screen where you set up your lists of paddocks or to a special screen within the Pasture Budgeting system. You can get to that screen once a budget has been started or added by either clicking on *View/Paddock PGR* or by clicking on the



Paddock PGR button at the bottom right of the Pasture Budget screen.

Monthly values for daily intake per Livestock Unit or DSE

When using the Pasture Budget, you are required to enter a DSE or LU value for each of your stock classes in each month. A DSE or LU rating is based on an animals intake. The higher the rating the higher the intake.

A set of default values can be entered in the “Default Values” tab in PastureWatch and under *Tools/PastureWatch Settings* in the Pasture Budget screen, or *Configuration/Customise your PAM program...* PastureWatch Settings tab if you are running PAM.

In winter rainfall (Mediterranean climate) areas research has shown that daily intakes vary through the year.

Naming your Livestock Units

Note that you can use your preferred name for a livestock unit

I refer to a livestock unit as one (eg.DSE, LU)

The name (eg. DSE or LU) that you choose is used as the display label on the screen throughout Pasture Watch. This option is also available in PAM under *Configuration/Customise your PAM QA plus program ... Livestock tab*

Please ensure you do your own homework on the appropriate values for your area when setting these defaults.

Response rates for nitrogen applied to pastures

Suggested default setting for response to one unit of Nitrogen

15 – 19 Kg/Ha/Day

Suggested duration of the response = 2 months.

A default value can be entered in the “Default Values” tab in PastureWatch and under *Tools/PastureWatch Settings* in the Pasture

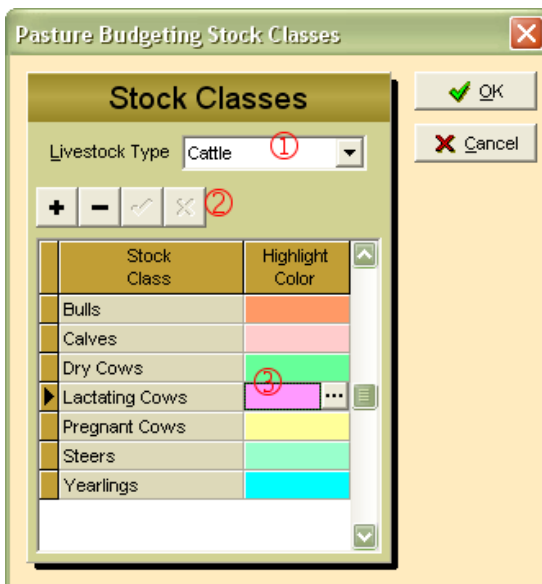
Budget screen, or *Configuration/Customise your PAM program...*
PastureWatch Settings tab if you are running PAM.

Please ensure you do your own homework on the appropriate values for your area when setting these defaults.

Budgeting – Adding your first Budget

Getting Started – The Steps:

1. Ensure you have set your default values for the pasture budget system. See page 1
2. Set up the Stock Classes list and colours (Under *Tools / Configure Stock Classes*)



Select the Livestock Type ①
Add New or Delete unwanted Stock Classes ②
Set the colour of each stock class ③
by clicking on the small button [...] and selecting a colour from the colour range.

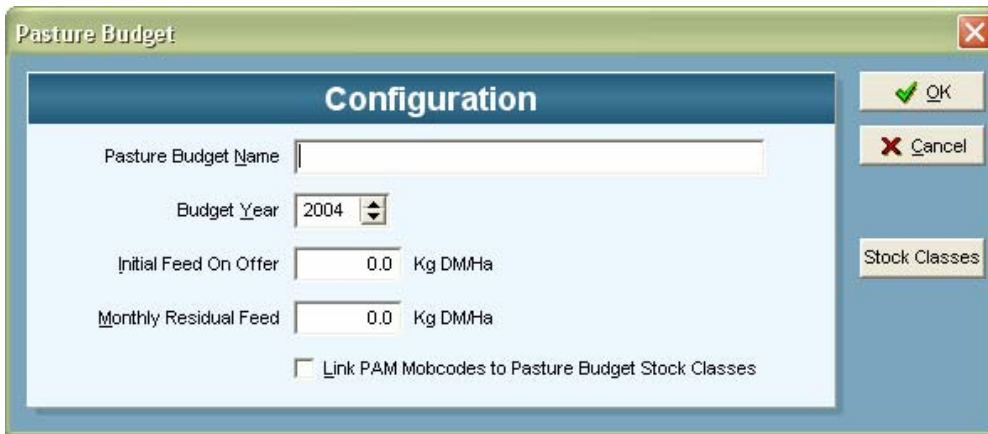
3. When done, click **OK** to close.

4. Now you are ready to start the budgeting job proper. Click on the Add button

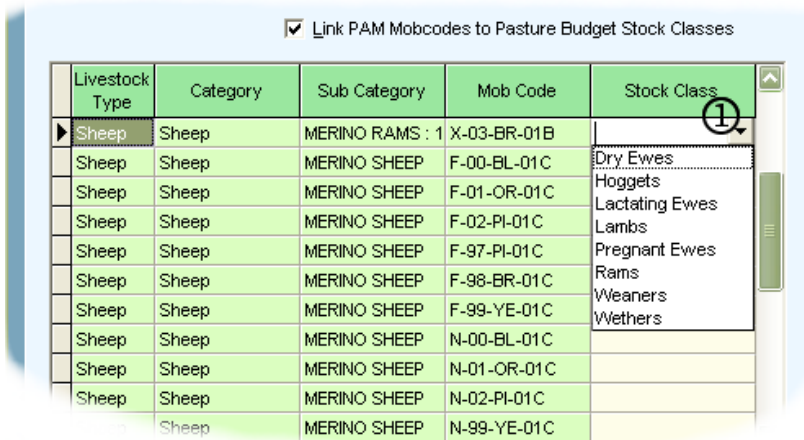


5. Set up the Budget name etc. as shown below ... then click **OK**

- ① Enter a meaningful name for your budget
 - ② Select or enter a year
 - ③ The initial FOO value you will expect to have in each paddock at the start of the budget year
 - ④ The residual FOO you would like to have in each paddock at the end of each month
 - ⑤ Select the first livestock type you have on your farm
 - ⑥ Tick the stock classes within that livestock type that you have on your farm
- Repeat 5 & 6 until you have included all livestock types and classes ...
- Please Note: If you want to add new Stock Classes, click on the **Stock Classes** button



In PAM the add dialog box looks like this one. If you choose to link your PAM mob codes to a Pasture Budget Stock Class, check the box and you will see this ...



You will need to allocate each of your PAM mob codes to a set of stock classes. You can add to your list of stock classes at any time using the **Stock Classes** button on this dialog and under the *Tools* menu on the main budget window.

PAM Users please note: If you have not yet told PAM what livestock type you mob categories are then go to *Configuration/Livestock Categories and Mobs ...* Then *Tools/Livestock Category Maintenance ...*Then ... *Tools / Modify a Category*

Type	Stock Class	April 2004		May 2004		June 2004		July 2004	
		Tally	DSE	Tally	DSE	Tally	DSE	Tally	DSE
Cattle	Pregnant Cows	38	8.0	38	8.0	38	8.0	38	8.0
Cattle	Steers	4	8.0	4	8.0	4	8.0	4	8.0
Cattle	Yearlings	28	7.0	28	7.0	28	7.0	28	7.0
Sheep	Dry Ewes								
Sheep	Hoggets	1200	1.1	1200	1.1	1200	1.1	1200	1.1
Sheep	Lactating Ewes								

The Pasture Budget Screen

Once the budget window has been fully set up the layout shows:

- Your list of stock classes, their tallies, their DSE or Livestock Unit ratings in the top section and ...
- Your paddocks, their sizes and the stock classes and tallies you have allocated to them.

The Budget Period

A budget period is by default 12 months, starting with the month you nominated as your “Break of Season” month under the “Default Values” tab in Pasture Watch or the *Tools / Pasture Watch Settings* in the PAM version.

"Season Break" Month

There is no need for you to complete the 12 month budget period. You may like to budget 1 or 2 or 3 months ahead at any time. The choice is entirely yours.

Now to Fill in the Budget Window!

Having added a new budget you will see your list of stock classes in the top section of the budget window. If you are using PAM, your opening tallies will also be shown.

Type	Stock Class	April 2004	
		Tally	LU
Cattle	Pregnant Cows	38	8.0
Cattle	Steers	4	8.0
Cattle	Yearlings	28	7.0
Sheep	Dry Ewes		
Sheep	Hoggets	1200	1.1
Sheep	Lactating Ewes		

If you are using Pasture Watch, enter in the stock class tallies and their Livestock Unit or DSE ratings for the first month. Note that some stock classes may not have a tally in the opening month. See “Lactating cows” shown here
It is now your choice which task to do

next.

You can either continue to fill out the stock class / tallies / DSE or LU ratings across the following months, or you can start allocating the stock classes to their paddocks.

Tip:

Stock Class	April 2004		
	Tally	LU	Tally
Pregnant Cows	28	7.0	28

To quickly replicate a stock class / tally / LU rating across many months, RIGHT click your mouse on the “Tally” cell of a stock class to see a pop up menu option *Fill Tally & DSE Values Right*.

Allocating Stock Classes to Paddocks

Using “Drag and Drop” ... LEFT Click on a Stock Class-Tally and holding down your LEFT mouse, drag the mouse to the paddock of your choice.

If the tally you have dragged to the paddock is more than you want in the paddock, change the tally by editing the number (while the paddock cell is “selected”...

Paddock (Area)	Tallies	LU/Ha
Jill's (33.00 Ha)	28	5.9
Joe's (28.00 Ha)	38	11.1
John's (36.00 Ha)	300	9.2
Merv's (14.00 Ha)	680	53.4

In this picture, Joe’s paddock is the currently “selected” cell ... the colour of Joe’s cell is different to the rest and there is a faint dotted line around the paddock-tally cell for Joe’s.

Type	Stock Class	April 2004		
		Tally	LU	Tally
Cattle	Pregnant Cows	38	8.0	
Cattle	Steers			
Cattle	Yearlings			
Sheep	Dry Ewes			
Sheep	Hoggets			
Sheep	Lactating Ewes			
Totals		4352	5517	

Paddock (Area)	Tallies	LU/Ha
Jill's (33.00 Ha)	28	5.9
Joe's (28.00 Ha)	12	3.7
John's (36.00 Ha)	300	9.2

So, to repeat the steps. Click on the Stock Class-Tally cell ... drag it down to the Paddock-Tally cell of your choice and “drop” it... to change the tally allocated to the chosen paddock, simply type the tally of your choice.

If you have “dropped” less than the total tally of a stock class into a paddock, the Pasture Budget system remembers that there are more to be allocated... If you hover your mouse over the Stock Class – Tally cell in the top section of the

window, you will see a summary of tallies ...

Note that the program allows you to drop two stock classes into any paddock for a month.

Having dragged and dropped your stock class tallies into their paddocks, you will immediately know the stocking rates for those paddocks. See the LU/Ha or DSE/Ha column.

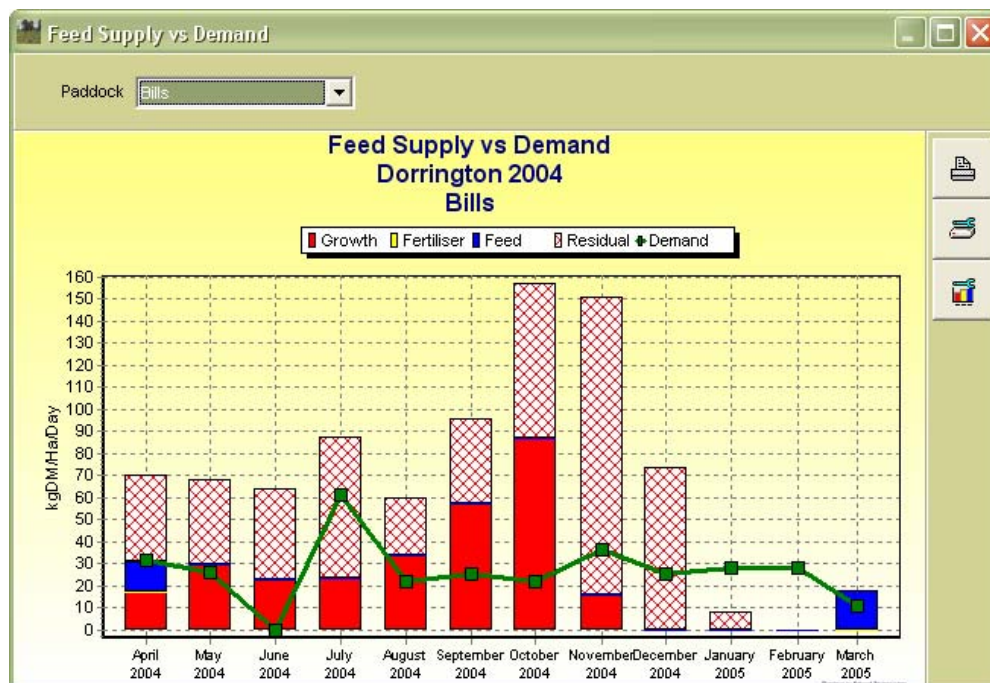
Advanced Users: You can also see the paddock carrying capacities based on your

- monthly pasture growth rates and
- monthly daily intake values entered in the Default Settings or Pasture Watch settings and the
- calculated residual feed on offer which “flows over” from one month into the next ...

to see the carrying capacities of your paddocks go to *View / Paddock Capacity Row*.

Advanced Users: You can also see the intake per head of each of the stock classes by turning on the Intake column in the top section of the window... go to *View / Intake Column*.

The Pasture Budget Graphs



The Feed Supply and Demand Graph

This graph can viewed on a paddock by paddock basis or for the entire operation.

This is the feedback you need from your budgeting efforts.



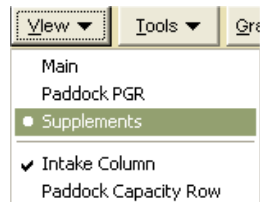
The bars show the expected feed available and the line shows the expected demand by your animals.

- Any pasture growth in a month is shown as solid red
- Any residual (uneaten) pasture left over after each month is shown as red cross hatching on white.
- If you apply nitrogen fertilizers to your paddocks to grow more feed, the effect of that is shown as solid yellow
- If you supply extra (supplementary) feed to your animals, the effect of that is shown as solid blue.

To apply nitrogen or to supply extra feed you go to the “Supplements” screen click here



or go to here



This screen is described on the next page.



The Pasture Cover Graph

This graph shows us the balance of pasture left in each paddock at the end of each month ... after we have built the budget.

The Supplements Screen

Paddock	Area	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
Bills	28.00 Ha	11.6	15.7	37.4	0.3	12.5	43.3	109.4	87.3	22.5	45.7	56.8
Bob's	52.00 Ha	27.5	47.6	58.6	79.4	85.2	109.0	170.5	177.5	123.2	70.8	25.7
Debbie's	35.00 Ha	27.3	54.2	75.9	100.6	133.0	186.8	272.6	257.7	200.3	145.4	97.8
Dick's	14.00 Ha	28.1	53.2	70.7	91.4	121.5	173.5	257.9	256.2	206.3	157.6	116.1
Ernie's	30.00 Ha	5.7	35.5	55.3	52.5	55.3	75.5	139.2	155.2	116.1	76.1	43.3
Gina's	46.00 Ha	12.3	23.6	38.6	32.5	28.4	40.6	95.0	83.6	27.2	26.7	42.6
Harry's	20.00 Ha	16.3	64.0	8.9	38.4	57.3	48.2	9.9	40.1	49.8	25.8	28.6
Hugh's	52.00 Ha	26.8	49.7	66.5	87.3	118.8	172.6	254.5	266.6	227.5	187.5	154.7
Jill's	33.00 Ha	20.6	41.8	60.7	71.4	86.4	119.7	188.9	190.2	141.6	93.8	53.3
Joe's	28.00 Ha	24.9	36.6	51.6	51.3	57.9	83.5	147.6	130.9	70.0	12.2	38.2

When you first view this screen it shows the pasture surpluses and deficits that it has calculated as a result of your pasture budgeting efforts. Surpluses are shown in BLACK and deficits are shown in RED. You will see that it is a very fast way to find the deficits. Having found the deficits you have several choices.

1. Leave them
2. Move stock

- 3. Feed the stock
- 4. Apply nitrogen to the paddock.

For option 2 you must return to the Main screen and move stock. For option 3 and 4 you use the facilities built into this Supplements screen.

30.00 Ha	5.7	35.5
46.00 Ha	12.3	23.6
30.00 Ha	16.3	64.0
52.00 Ha	26.8	49.7
33.00 Ha	20.6	41.8

Each cell on this screen has a hidden button which comes into view when the cell is selected...

When you click on these buttons you will see this dialog...

The deficit for the Paddock-Month is shown in the title of the dialog box.

You are given the choice of using feeds or nitrogen ... or a combination of both. Use the slider ① to tell the program the proportions of feeds and nitrogen you intend to use.

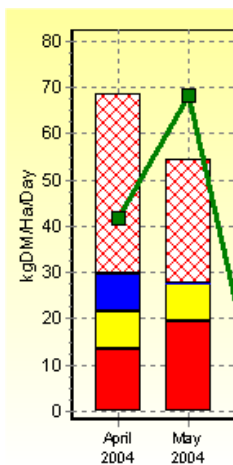
If you have chosen to use feeds, select the feed type(s) by entering in a percentage of each type. So, if you intend to use just Barley, enter 100% Barley ②. The program will calculate the amount of Barley required per day for the selected paddock-month. You may choose to feed more or less than the recommended amount. To make your own choice, enter the rate in the “Actual Rate” column.

In the example above, I have chosen to use 50% feed (Barley) and 50% nitrogen application. See that the program has calculated that I will need 5.42 units of nitrogen per hectare to supply the 50% of the paddock deficit for the chosen paddock-month ③.

In PAM, the Pasture Budget system displays a list of your nitrogenous fertilisers (eg. DAP, Urea, Agran etc.) and it calculates the rate per hectare of the chosen fertilizer rather than the units of nitrogen.

Having made your choices, click OK and return to the Supplements screen to see the effect of your choices.

Please Note: The paddock-month pasture deficit that the program calculates will take into account the desired monthly residual FOO value that you entered at the outset .. when you first added the budget. By using the recommended rates of feed or nitrogen will ensure that your paddocks supply the demand of the animals PLUS your desired residual FOO.



After choosing your supplements, view the supply and demand graph for the paddock ...

The nitrogen fertiliser and barley show as solid yellow and blue sections of the supply bar for the month of April.

Notice that there is now a surplus of pasture ... even though I only used the recommended amounts of supplements to set the deficit to zero. This is due to the required residual per month of 800 Kg DM/Ha.

The 800 Kg of dry matter is left over at the end of April and carries over to May ... shown as red cross hatching on a white background.

The Paddock PGR Screen



This screen shows you the monthly paddock PGR values that the budget is using to “drive” the pasture supply.

This screen enables you to manually “tweak” each paddock’s pasture growth rate values for each or any month.

Restore Default PGR Values Restore Default PGR Values for each Paddock Calculate PGR Values from Paddock Averages Copy First Paddock PGR Values to all

On the *Tools* menu there are several options which enable you to automatically “tweak” those values also.

General Information

The pasture budgeting system works on a snapshot view of a single day per month.

For example, if we set the required residual FOO per month to be 800 Kg DM/Ha, to display this amount of FOO on the graph, the program will divide the 800 by the number of days in each month to obtain the daily snapshot value for the graph.

Editing a Budget

The **Edit** button enables you to change your initial FOO and desired monthly residual FOO values and to add in new stock classes.

Deleting a Budget

The **Delete** button enables you to delete the selected budget.

PAM Pasture Budget Report

In the PAM version of the pasture budget you will find a report under the *Reports* button ... this report will show you

- the stock classes in each paddock for each month
- the budgeted feed (in Kgs per day) for each paddock for each month
- the planned nitrogen fertiliser applications (showing rate per hectare) for each paddock for each month