

Class Exercise 03

Least Cost Breeding (LC-B): Lactating Pregnant Cow

Attendees Group Number:

Attendees Names (Last Name, First Name, Initials)

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INPUT

1. Use your cell phone, and run the Taurus Mobile app.
2. Choose the local language such as Lao or Khmer or Vietnamese. Do not use the English version.
3. From the main menu select the Least Cost Breeding (LC-B).
4. In the Animal Information screen, enter the following information:

The screenshot shows the 'Animal Information' screen in the Beef_LA_Eng [LC_B] software. The title bar indicates the version is 2023.10.30 and the user is 'Lacating-DIM-100'. The screen contains the following fields and dropdown menus:

Title	Example-03
Beginning Body Weight (kg) (kg)	600
Ending Body Weight (kg) (kg)	800
Daily Gain (kg/day)	0
Overhead Cost (\$/day) (\$/day)	0.2
Feed Intake Adjustment (-/+) (%)	0
Maintenance Adjustment (-/+) (%)	0
Condition Score	5. Average
Compensatory Growth	No
Breed	Holstein
Frame	Medium
Sex	Cow
Daily Milk Production (kg) (kg)	20
Milk Fat (%) (%)	3.5
Calf Birth Weight (kg) (kg)	20
Days Pregnant (days)	50
Implant	Yes
Additive	None
Temperature	Normal
Mud	None

A 'Main Menu' button is located at the bottom right of the screen.

This a 700-kg Holstine cow of medium frame, with average condition score, producing 20 kg of milk per day with milk fat of 3.5%. The cow is 50-days pregnant, and the expected calf birth weight will be 30 kg. The overhead cost is 0.20 per day. We use implant but no feed additives. The temperature is normal and there is no mud.

Note that the 700-kg cow is entered with beginning weigh of 600 kg and ending weight of 800 kg, which is averaged as 700 kg.

5. Goto Feeds screen and add the following feeds and then go to the Ration screen and enter the following prices:

Library	Feed Number	Feed Name	Feed Price
0	18	ALFALFA middlings bloom	137.79
0	30	ALMOND hulls 15 percent Crude Fiber	82.67
0	154	BUCKWHEAT grain	110.23
0	162	CALCIUM phosphate di	529.1
0	231	CORN grain flaked	132.28
0	267	FAT animal Hydroponic	264.55
0	383	MOLASSES cane	88.18
0	399	OAT hay dough stage	110.23
0	430	OYSTERSHELL ground	110.23
0	563	RICE hulls	0
0	675	UREA 45% nitrogen	264.55
0	692	WHEAT grain Soft red winter (SRW)	137.78

6. Go to the Nutrient Constraints screen, and recalculate nutrient constraints

Nutrient Constraints							
	InternalName	DisplayName	Pct_Unit_Metric	Pct_UsrMin	Pct_UsrMax	Amt_Unit_Metric	Amt_
▶	DM	Feed Dry Matter	% DM			kg	14.89
	NEM	Net Energy for M...	Mcal/kg	1.723	1.723	Mcal	
	CP	Crude Protein	% DM	14.142		kg	
	CA	Calcium	% DM	0.475	2.000	kg	
	P	Phosphor	% DM	0.305	1.000	kg	

7. Do not add any constraints for feeds and feed groups.
8. Go to the Ratio constraints and confirm that it is set as shown below:

Ratio Constraints						
Numerator Code	Numerator Name	Denominator Code	Denominator Name	Constraint Amount	Constraint Unit	
CA	Calcium	P	Phosphor	1.200	3 MIN DM minimum constraint, 100	

9. Go to Reports screen and generate the report.

OUTPUT

Using the information in the report fill out the following tables:

Methane Emission:

Item	Value
Methane Emission in MJ per day per head (MJ/d)	
Methane Emission in Mcal per day per head (Mcal/d)	
Methane Emission in gram per day per head (g/day)	
Methane Emission in gram per kg of dry matter intake (g/kg)	
Methane Conversion Rate (%)	

Nutrients Requirements:

Nutrient	Description	Unit	Supplied by Ration Dry Matter	NRC Min	Meets Minimum NRC Requirements?
DM	Intake	Kg			
NEM	Energy	Mcal			
CP	Protein	Kg			
CA	Mineral	%DM			
P	Mineral	%DM			

Ration composition:

Feed Number	Feed Name	Kg As Fed	Price/day
18	ALFALFA middlings bloom		
30	ALMOND hulls 15 percent Crude Fiber		
154	BUCKWHEAT grain		
162	CALCIUM phosphate di		
231	CORN grain flaked		
267	FAT animal Hydroponic		
383	MOLASSES cane		
399	OAT hay dough stage		
430	OYSTERSHELL ground		
563	RICE hulls		
675	UREA 45% nitrogen		
692	WHEAT grain Soft red winter (SRW)		
	TOTAL		