



NutbalPro 201

Training Case Tutorial

- NUTBAL 201 works with 2 different profiles within a herd for one date, incorporating some of the utilities such as Cowscore and Pkmilk to set up a new breed.
- We will also run a case that uses a default feed and calculates cost of feeding.

Case Information

2

The Pro 201 Ranch has 25 four-year old Brahman x Angus F1 cows, BCS 5.0, 1025 lbs. and 25 six-year old Angus cows, BCS 5.5, 1175 lbs. As of today's date, these cows are 240 days pregnant. The last calf crop averaged 500 lbs at 210 d for both breed types. They are in a pasture with adequate forage, moderate slope and good water distribution. They are being fed 1 lb/d cottonseed cake (\$190/T, 3% waste, \$5/T delivery) at this time. The local feed store has a 20% breeder cube (\$155/T, 5% waste, \$5/T delivery) that the rancher wants to consider feeding. Diet quality is 6.25% crude protein and 56.25% digestible organic matter. Fecal N is 1.2% and fecal P is .25%. Thirty days ago, the average high temperature was 55° F, the average low was 35° F and the humidity was 30%. Current conditions are high = 40°, low = 25°, and humidity = 40%. Wind is 15 mph.

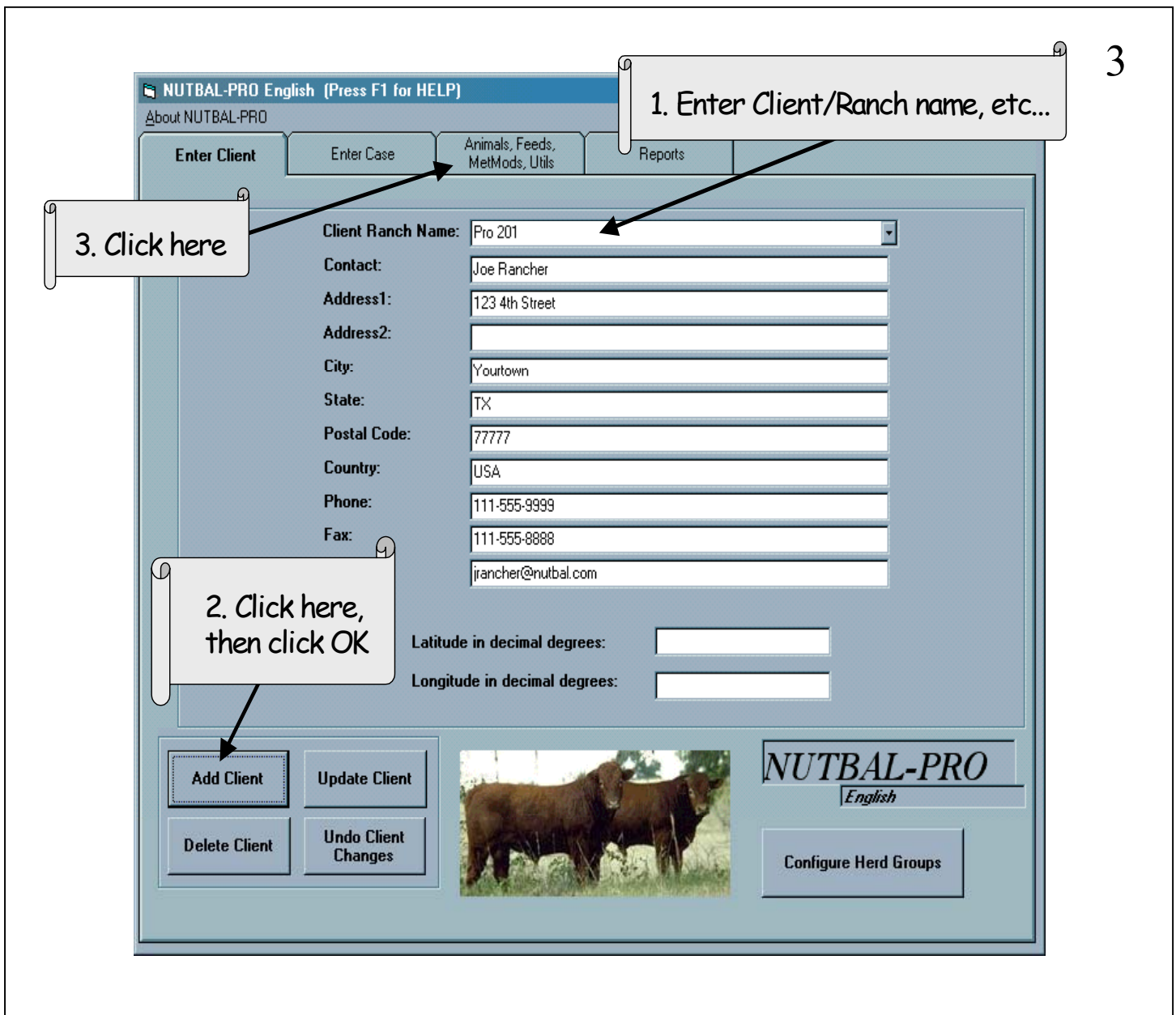
What is the projected average daily gain or loss? _____

What is the projected BCS in 30 days? _____

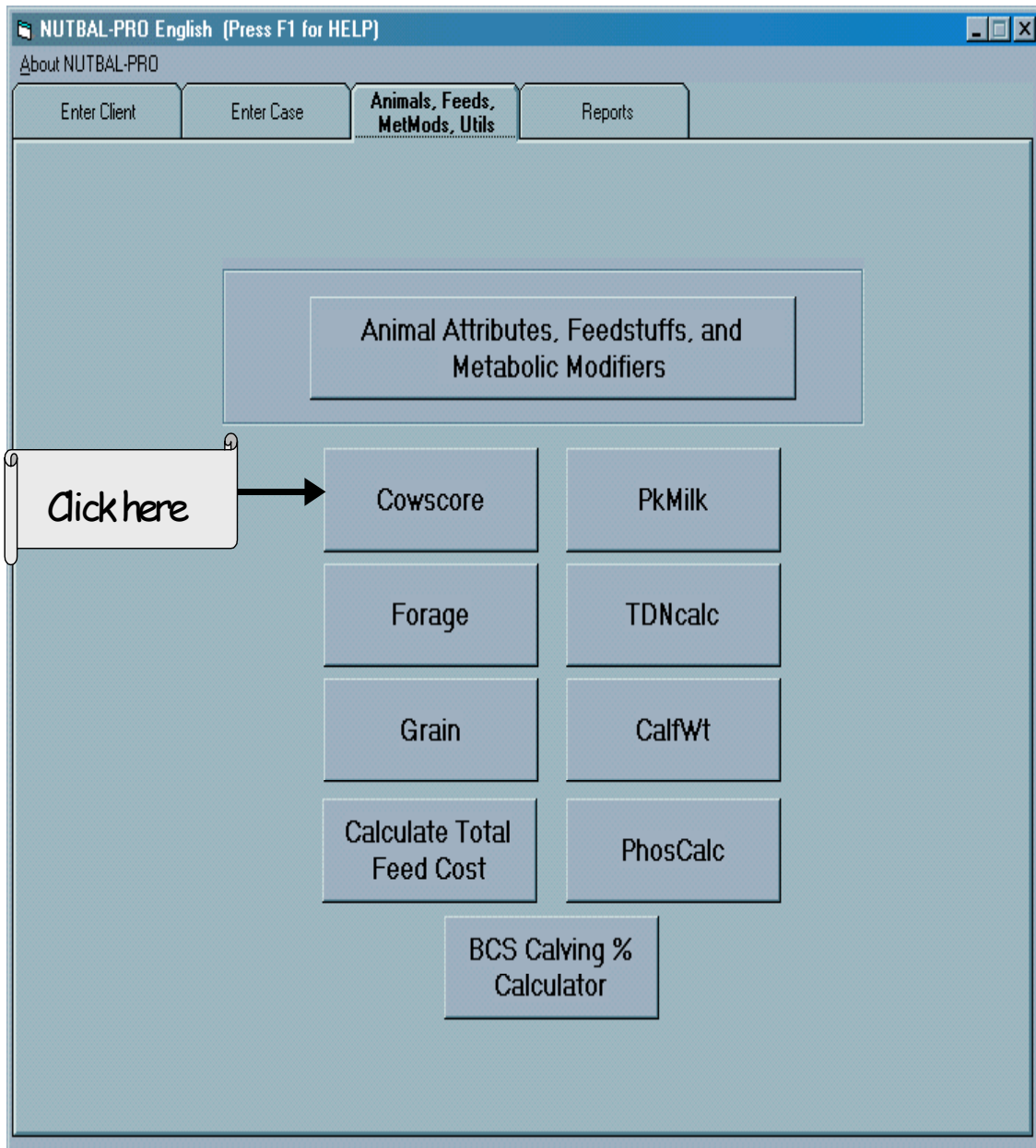
How much forage dry matter intake is predicted? _____

Is this feeding program adequate? _____ Any suggestions? _____

- Let's use this information to fill out a sample sheet.



- Set up the client/ranch.
- Recall one advantage of NUTBAL is that you can build breeds, feeds, etc., that are very specific to what you are working with; a general default may not accurately describe the situation.
- You need to add new breeds or feeds to the program *before* you start the case.
- The Animals, Feeds tab will take you to screens where you create new breedtypes, etc.



- Let's gather more information in the cows before we build the breedtype.

Enter information for 4 year old cows

Cowscore

Select a BCS System: 1-3 1-5 1-9

Enter age in:

Days

Months

Years

Age: 48

Sex: FEMALE

Compute:

Frame Score

Body Condition Score

Weight (lbs)

Frame Score 4.25

Body Condition Score 5.00

Weight (lbs) 1025.00

COMPUTE Print Form

7. Close

1. Choose

2. Enter

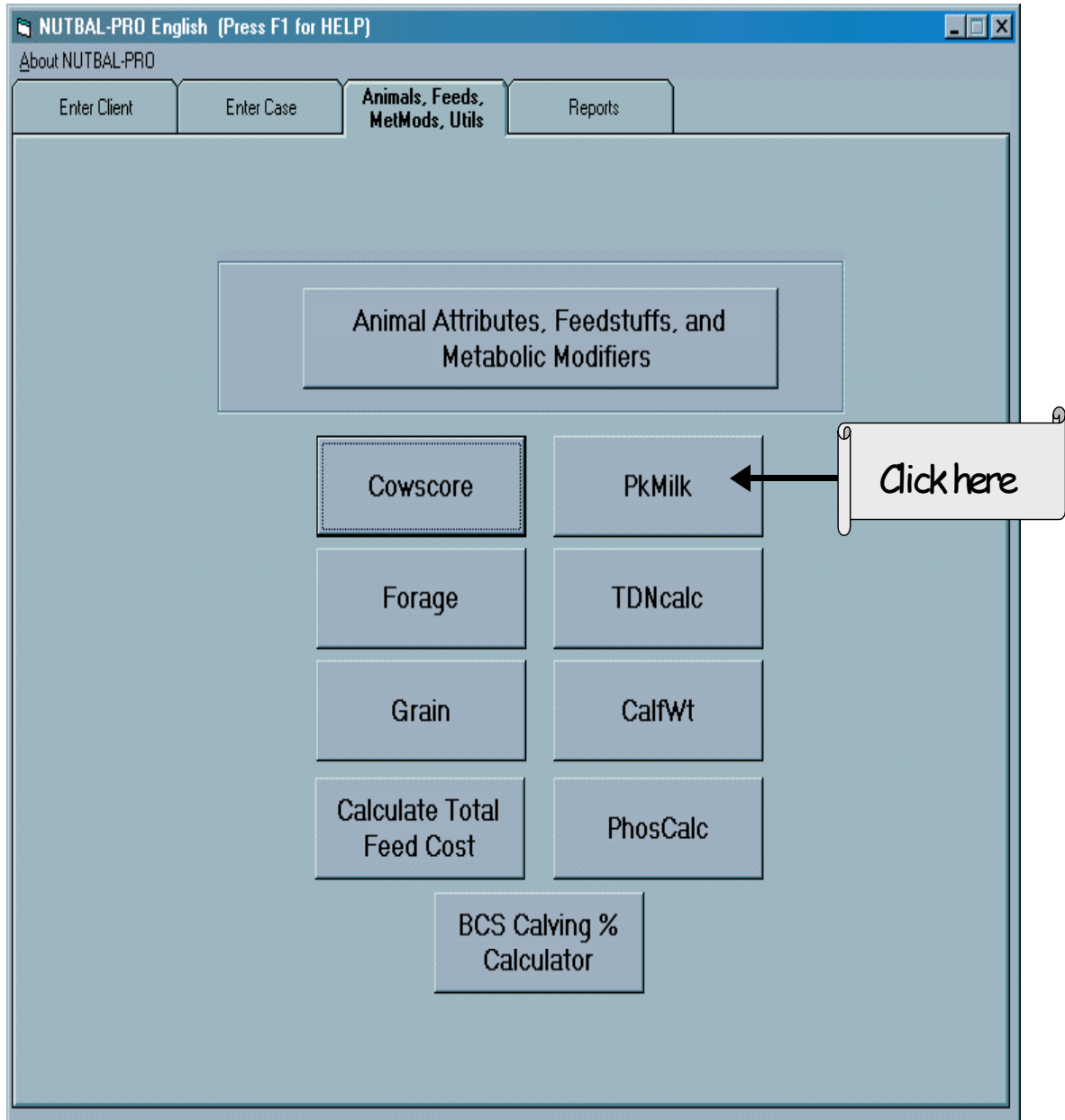
3. Choose

4. Enter BCS and weight only

5. Click here and record frame score

6. Repeat for 6 year old (72 mo) cows, should get frame score 4.4

- Refer back to page 2 to fill in these fields for the Brahman X Angus cows.
- If you have any combination of 2 of the following: frame score, body condition score, or weight, Cowscore can calculate the missing factor (frame score, in this case) so we can better describe the cow.
- Your program also has a Print button so you can print this out.
- Keep this new information handy. You will need it later.



- Pkmilk = peak milk, a very important factor in determining a lactating cow's total nutritional requirement.

1. Enter information for 4 year old cows

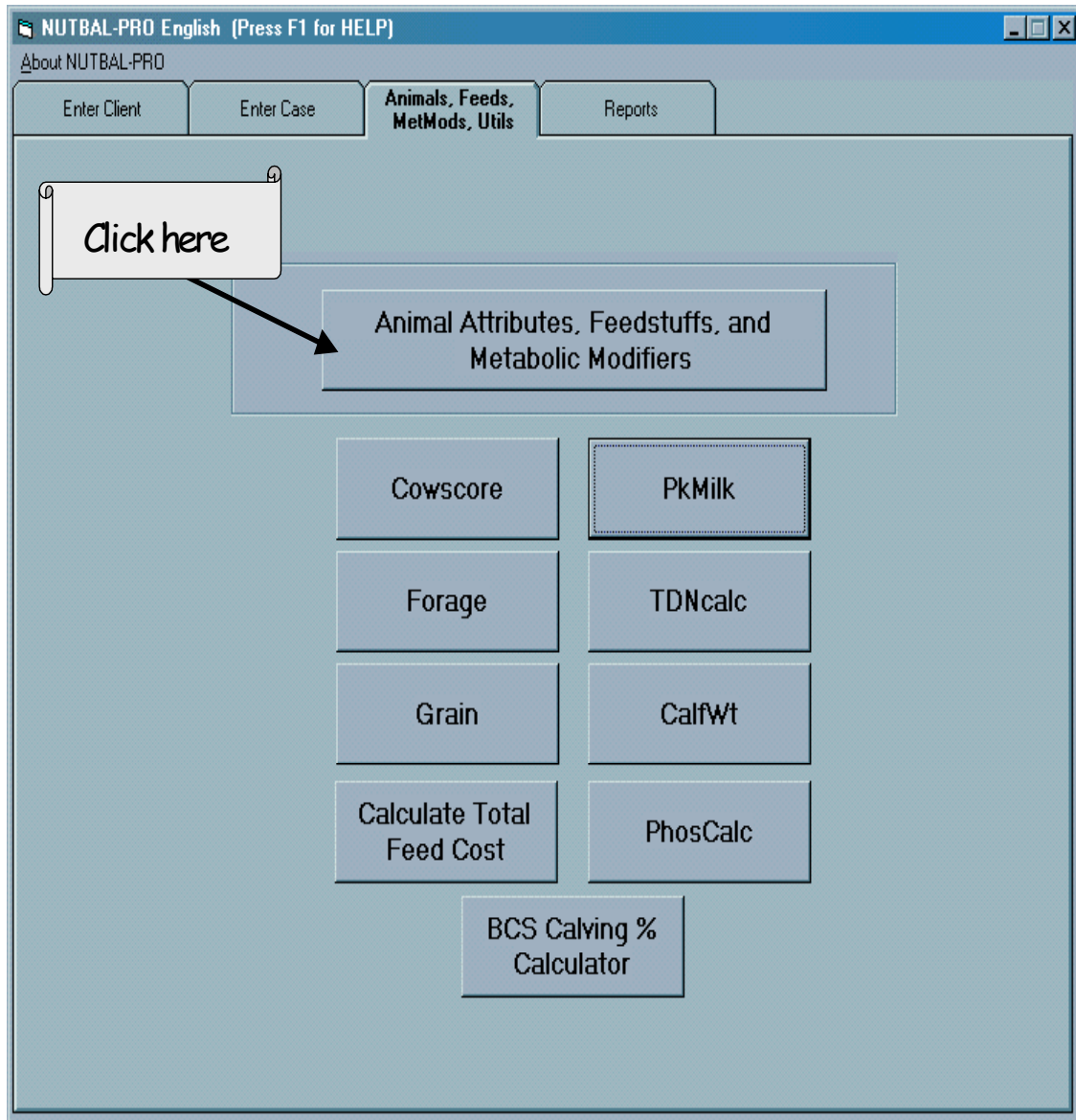
2. Click here,
record answer

Calf's Age (days):	210
Frame Score of Cow:	4.25
Calf Weight (lbs):	500
COMPUTE	Print Form
Peak Milk (lbs/day):	14.97

4. Close

3. Repeat for 6 year old
(frame score 4.4) cows,
should get 14.62 lbs/d

- Pkmilk can utilize information from any point in time to estimate peak milk production.
- Use the frame scores we calculated in Cowscore.



- Now that we have found a few missing pieces of the puzzle, we can build breedtypes that fit the Pro 201 cows.

Animals, Feeds, and Metabolic Modifiers

Animal Attributes | Feedstuff | Metabolic/Digestive Modifiers

1. Choose Cattle, then Angus breed-type from lists

2. Edit breed-type and frame score

3. Click in field then hit F1 key for help

Animal Kind: CATTLE }
 Breedtype: ANGUS x Brahman F1 FS 4.25 Milk 14.97 }

Frame Score:	U 4.25	Peak milk day:	45
Protein Requirement Adjustment:	1	Peak milk yield (lbs/day):	U 14.97
Net basal metabolism adjustment:	0	Milk solids not fat (%):	8.3
Intake adjustment factor:	1	Milk fat (%):	4
Percent dairy breedtype:	0	Milk protein (%):	3.4
Breedtype:	0	Gestation Period (days):	283
Breedtype:	50	Offspring birthweight (lbs):	70.11
Bos Indicus:	50	Fiber production:	0
Hide Factor:	MODERATE	Age at puberty (days):	365
Maximum hair length (in):	3.50	Age at maturity (months):	60
Total length of lactation:	270	Genetic Maximum Gain (lbs/day):	4.409
Energy partitioning factor during lactation		Genetic Maximum Intake (% Body Wt):	4.2
a Coefficient	0.006		
b Coefficient	0.002		

Add Record | Update Record | Delete Record | Undo Attribute Changes | Return to Case Screen

- We will start with taking a default breed and editing various factors until we have described the F1 (~first cross) cows
- Some of these fields will rarely change.
- You should focus on frame score, net basal metabolism adjustment (if applicable), percent __ breedtype, hide factor, and peak milk yield.

Use this information to set net basal metabolism adjustment in animal attributes

NUTBAL-PRO
_ □ ×

File Edit Bookmark Options Help

Contents Index Back Print

Net basal metabolism adjustment

Close

NUTBAL-Pro allows adjustments in net basal metabolism of a [breedtype](#) based on the relative amount of *Bos indicus* and *Bos taurus* bloodlines, amount of [dairy breed influence](#), and level of [dual purpose bloodlines](#). These differences are due to varying proportions of soft tissue relative to body weight in the various breeds. Higher proportions of soft tissue increases the net metabolism of the animal, especially the liver and digestive tract. There are several breed examples in the NUTBAL-Pro [animal attribute](#) database but the range in values used are depicted below. For requirement calculations, NUTBAL-Pro assumes that the animal in question is a beef breed and requires that a breed's net basal metabolism be adjusted relative to that standard.

<u>Breed Class</u>	<u>Energy Adjustment Factor</u>
Beef Breeds	+ 0.00
Dual Purpose Breeds	+ 0.15
Dairy Breeds	+ 0.20
<i>Bos indicus</i> Breeds	- 0.20

To compute an energy adjustment factor for a crossbred animal, one needs to know the proportions of the four breed classes above. The example below provides a mechanism for assigning an energy adjustment factor to a breedtype.

<u>Breedtype</u>	<u>Proportion</u>	<u>Factor</u>	<u>Fraction</u>
Hereford	0.50	+ 0.00	+ 0.0000
Brahman	0.25	- 0.20	- 0.0500
Brown Swiss	0.25	+ 0.15	+ 0.0375

		Total	- 0.0125

Calculations:

Angus .5 * 0 = 0

Brahman .5 * -.2 = -.1

Total **- .1**

Animals, Feeds, and Metabolic Modifiers

Animal Attributes | Feedstuff | Metabolic/Digestive Modifiers

Animal Kind: CATTLE

Breedtype: ANGUS x Brahman F1 FS 4.25 Milk 14.97

Frame Score: Peak milk day:

Protein Requirement Adjustment: Peak milk yield (lbs/day):

Net basal metabolism adjustment:

Intake adjustment factor:

Percent dairy breedtype:

Percent dual purpose breedtype: Gestation Period (days):

Percent continental meat breedtype: Offspring birthweight (lbs):

Percent Tropical Breeds/Bos Indicus: Fiber production:

Hide Factor: MODERATE Age at puberty (days):

Maximum hair length (in): Age at maturity (months):

Total length of lactation: Genetic Maximum Gain (lbs/day):

Energy partitioning factor during lactation: Genetic Maximum Intake (% Body Wt):

a Coefficient

b Coefficient

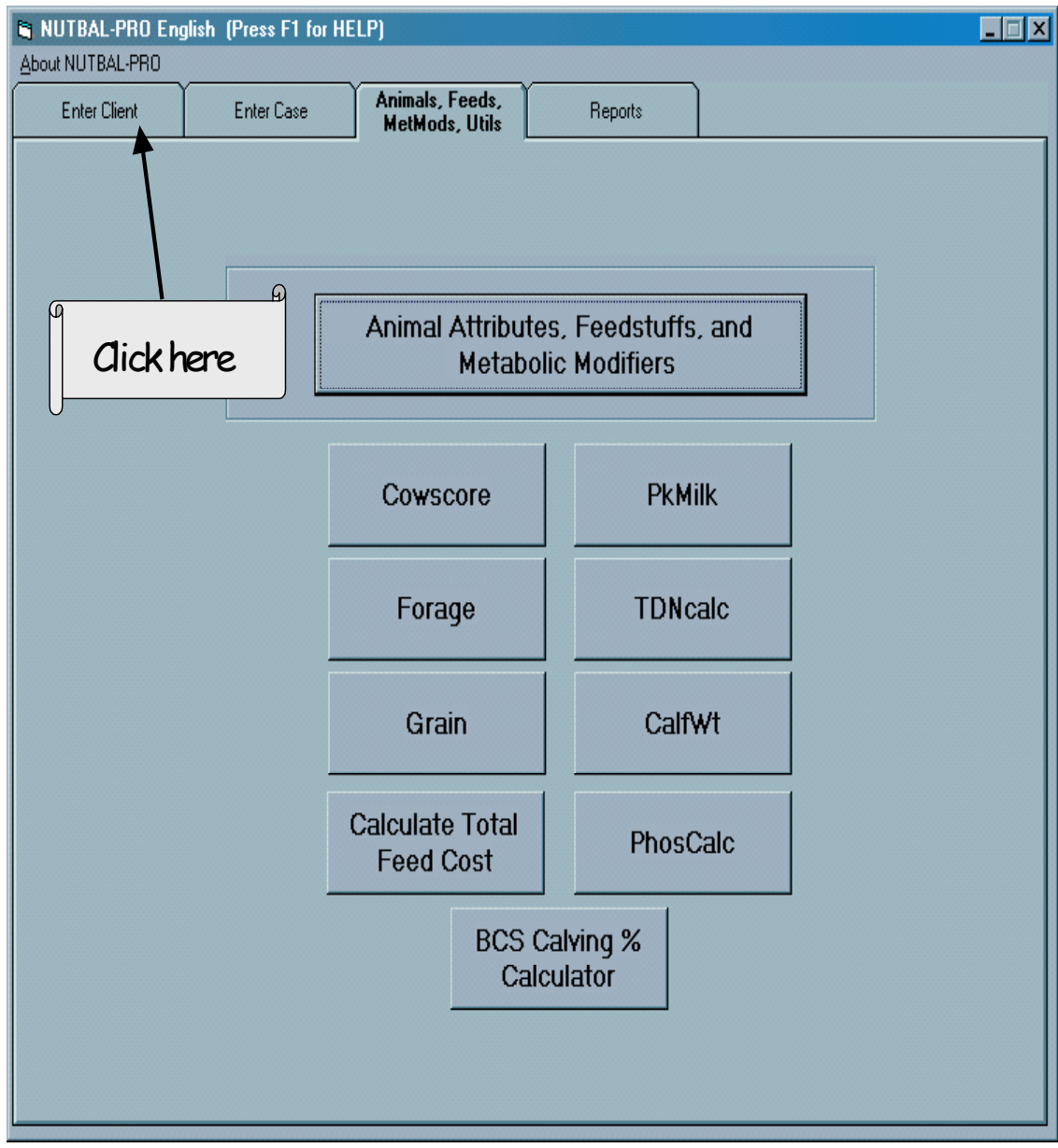
4. Close

1. Enter correct information

2. Click here, then click OK

3. Repeat for 6 year old cows. Begin by choosing Angus breed-type

- After adding the new breedtype for the young F1 cows, go back to the default Angus and work up the breedtype for the 6-year-old cows.
- We would edit the name to “Angus FS 4.4 Milk 14.62”.
- We only need to change the frame score and peak milk yield this time.
- The “U” buttons are links to utilities that concern the field beside the button.
- Pro 201 uses a default feed, so we are ready to close this window.



NUTBAL-PRO English (Press F1 for HELP)

About NUTBAL-PRO

Enter Client: Enter Case Animals, Feeds, MetMods, Utils Reports

Client Ranch Name: Pro 201

Contact: Joe Rancher

Address1: 123 4th Street

Address2:

City: Yourtown

State: TX

Postal Code: 77777

Country: USA

Phone: 111-555-9999

Fax: 111-555-8888

E-Mail: jrancher@nutbal.com


Latitude in decimal degrees:

Longitude in decimal degrees:

Click here

Add Client Update Client

Delete Client Undo Client Changes



NUTBAL-PRO
English

Configure Herd Groups

- Double check that the correct client ranch name is still on the screen.
- Now, we will create the herd for Pro 201 ranch.

The screenshot shows the NUTBAL-PRO software interface. At the top, the title bar reads "NUTBAL-PRO English (Press F1 for HELP)". Below the title bar, there is a menu bar with "About NUTBAL-PRO" and a set of tabs: "Enter Client", "Enter Case", "Animals, Feeds, MetMods, Utils", and "Reports". The "Enter Client" tab is active. The main window contains a form with the following fields:

- Ranch Name: Pro 201
- Name of Herd: Cows
- Animal Kind: CATTLE
- Description: Training Case

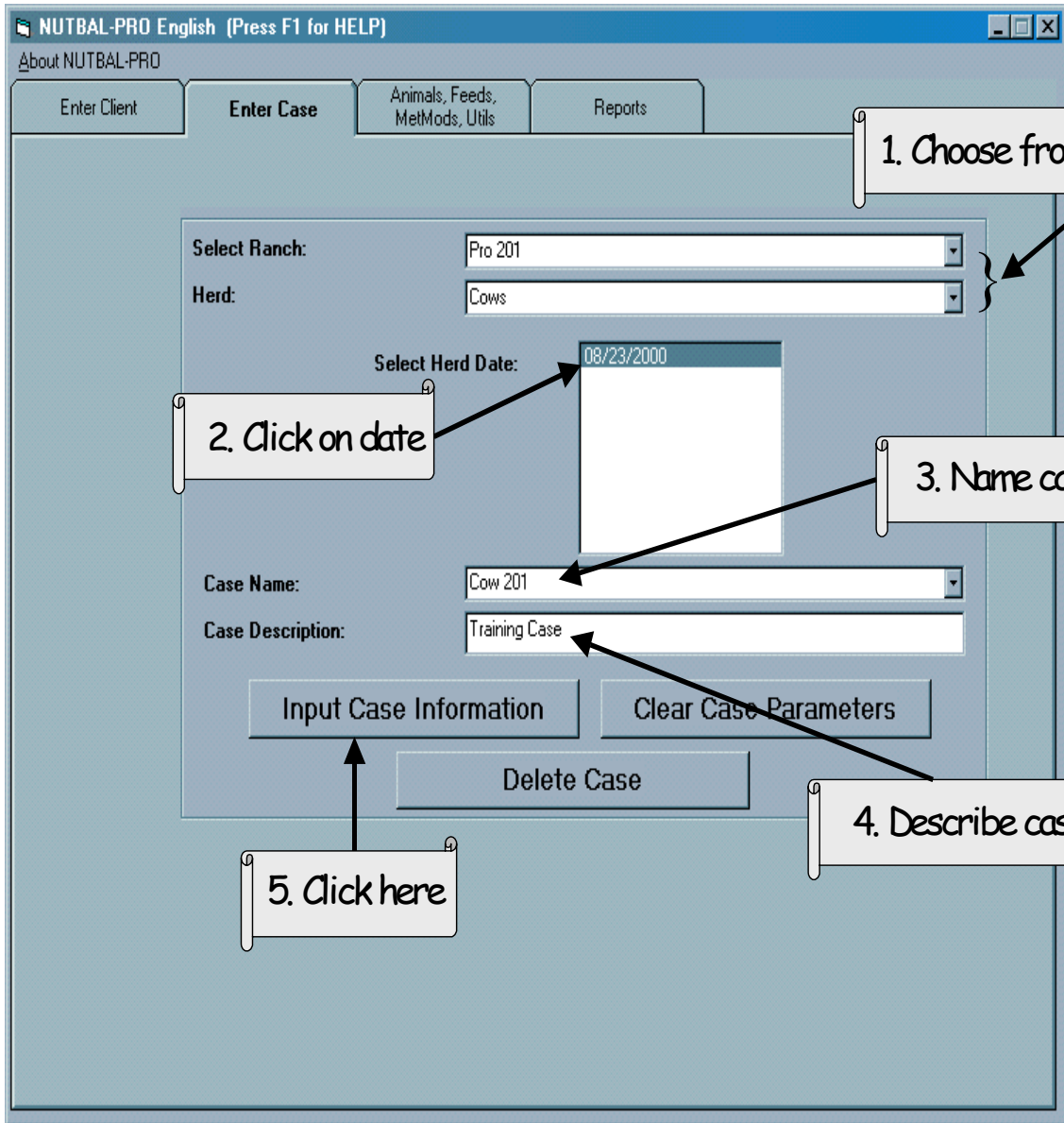
Below the form are several buttons: "Add Herd", "Update Herd", "Delete Herd", "Add or Modify Herd Profiles and Classes", and "Return to Client Screen". Five callout boxes with arrows point to specific elements:

- Callout 1: "1. Enter" points to the Ranch Name field.
- Callout 2: "2. Choose from list" points to the Name of Herd dropdown menu.
- Callout 3: "3. Enter" points to the Description field.
- Callout 4: "4. Click here, then click OK" points to the "Add Herd" button.
- Callout 5: "5. Click here" points to the "Add or Modify Herd Profiles and Classes" button.

The screenshot shows the NUTBAL-PRO software interface with the following fields and callouts:

- 9. Click here**: Points to the 'Enter Case' button.
- 1. Enter date**: Points to the 'Date' field (08/23/2000).
- 2. Name profile**: Points to the 'Profile Name' dropdown (F1 Cows).
- 3. Choose from lists**: Points to the 'Class Category' and 'Breedtype' dropdowns.
- 4. Enter correct information**: Points to the 'Age in months' field (48).
- 5. Choose BCS System**: Points to the 'BCS of dam at parturition' dropdown (5).
- 6. Enter current weight (1025 lbs) and tab twice. (Note rounding error)**: Points to the 'Current Weight (lbs)' field (1023.856).
- 7. Click here, then click OK**: Points to the 'Add Profile' button.
- 8. Repeat for 6 year old cows, begin by choosing Angus FS 4.4 Milk 14.62 breed-type**: A large callout box at the bottom right.

- This slide shows the profile for the 4 year-old cows.
- The rounding error mentioned in #6 occurs because NUTBAL's database is stored in metric units and converts back and forth to display English units.
- For Step 8: To add the second profile for the 6-year-olds, we will type over the current information leaving the date as is, naming the profile "Angus cows", repeat the remaining steps using info from page 2.
- DO NOT click on Update Profile. You would alter the F1 cow profile.
- Once we add the Angus cow profile to the herd, we are ready to start the case.



- Let's enter the case.

NUTBAL-PRO English (Press F1 for HELP)

About NUTBAL-PRO

Enter Client **Enter Case** Animals, Feeds, MetMods, Utils Reports

Case: Ranch: Herd: Date:

Response Adjustments Metabolic Modifiers Forage/Fodder Diet Quality Environmental Conditions Pasture Conditions Feedstuff Allocation

2. Click here →

1. Enter information →

Type of Sample:	<input type="text" value="FECAL"/>
Lab Analysis ID:	<input type="text" value="12345"/>
Crude Protein (%):	<input type="text" value="6.25"/>
Digestibility (% DOM):	<input type="text" value="56.25"/>
DOM to CP Ratio:	<input type="text" value="9.00"/>
Rumen degradable protein DIP (% of CP):	<input type="text" value="38.49"/>
Degradable By-Pass Protein DUP:	<input type="text" value="49.21"/>
Fecal N (%):	<input type="text" value="1.2"/>
Fecal P (%):	<input type="text" value="0.25"/>

Clear Current Screen

Add Case Update Case Delete Case Undo Case Changes Run Case Analysis Return to Main Case Screen

- Enter the results from the lab

NUTBAL-PRO English (Press F1 for HELP)

About NUTBAL-PRO

Enter Client **Enter Case** Animals, Feeds, MetMods, Utils Reports

Case: Ranch: Herd: Date:

Response Adjustments Metabolic Modifiers

Forage/Fodder Diet Quality **Environmental Conditions** Pasture Conditions Feedstuff Allocation

Activity:

CONDITIONS	PREVIOUS 30-DAYS	CURRENT
Maximum Temperature (F):	<input type="text" value="55"/>	<input type="text" value="40"/>
Minimum Temperature (F):	<input type="text" value="35"/>	<input type="text" value="25"/>
Mean Daily Humidity (%):	<input type="text" value="30"/>	<input type="text" value="40"/>

Windspeed (mph):

Coat Condition:

Night cooling:

Direct Sunlight Exposure (hrs):

Hours Access to Grazing/Feed at Night:

Work Intensity:

Hours of Work:

1. Enter information

4. Click here

2. Enter wind speed

3. Click here, then click OK

NUTBAL-PRO English (Press F1 for HELP)

About NUTBAL-PRO

Enter Client Enter Case Animals, Feeds, MetMods, Utils Reports

Case: Cow 201 Ranch: Pro 201 08/23/2000

1. Choose from lists

2. Enter information

3. Click here to run cost utility

CONCENTRATE NAME	CP	TDN	AMT FED	% WASTE	\$ per ton	Upper Limit	Lower Limit
COTTONSEED CAKE	41.00	75.00	1	3			
20% BREEDER CUBES, NATURAL CP	21.1	84.2		5			

ROUGHAGE NAME	CP	TDN	AMT FED	% WASTE	\$ per ton	Upper Limit	Lower Limit

Clear Current Screen

Add Case Update Case Delete Case Undo Case Changes Run Case Analysis Return to Main Case Screen

- Nutbal Pro 201 deals with a feeding situation.
- We would like to compare the feed we are using to another (see page 2).
- Since we are not feeding 20% cubes, select it but leave the amount fed field blank.

1. Enter information

Cost Factor	Value
Feeding Waste (%)	3.00
Market Value (\$/ton)	190
Processing Cost (\$/ton)	0.00
Storage Cost (\$/ton)	0.00
Delivery Cost (\$/ton)	5
Feeding Cost (\$/ton)	0.00
Waste Cost (\$/ton)	5.85
Total Cost (\$/ton)	200.85

Print Form

3. Close

2. Record answer and repeat for 20% cube

- The various cost factors of this utility allows you to compare issues such as labor and storage cost allocation when it comes to what you feed.
- This screen shows the information for the current feed-cottonseed cake.
- Refer to page 2 for info on the optional feed-20% cube.
- You should get \$168/ton.

4. Click here

NUTBAL-PRO English (Press F1 for HELP)

About NUTBAL-PRO

Enter Client **Enter Case** Animals, Feeds, MetMods, Utils Reports

Case: Ranch: Herd: Date:

Response Adjustments Metabolic Modifiers

Forage/Fodder Diet Quality Environmental Conditions Pasture Conditions **Feedstuff Allocation**

CONCENTRATE NAME	CP	TDN	AMT FED	% WASTE	\$ per ton	Upper Limit	Lower Limit
<input type="text" value="COTTONSEED CAKE"/>	41.00	75.00	1	3	200.05		
<input type="text" value="20% BREEDER CUBES, NATURAL CP"/>	21.1	84.2		5	168		
<input type="text"/>							
<input type="text"/>							
<input type="text"/>							

1. Enter correct information

ROUGHAGE NAME	CP	TDN	AMT FED	% WASTE	\$ per ton	Upper Limit	Lower Limit
<input type="text"/>							
<input type="text"/>							
<input type="text"/>							
<input type="text"/>							

2. Click here, then click yes

3. Click here, wait for small screen to flash across

Clear Current Screen

Add Case Update Case Delete Case Undo Case Changes Run Case Analysis Return to Main Case Screen

- Referring to step 2, at some point we have already added the case. Though we have just added new information, we would click Update Case to save this info.
- If you do not click Run Case Analysis, the case you just worked on will not be available for generating a report.

1. Choose from lists as they become active

NUTBAL-PRO English (Press F1 for HELP)

About NUTBAL-PRO

Enter Client Enter Case Animals, Feeds, MetMods, Utils **Reports**

Select a Ranch Name: Pro 201 Select a Herd: Cows
Select a Case Name: Cow 201 Select a Herd Profile: F1 Cows

Date for Selected Case: 8/23/00

Available Case Reports

- Standard NUTBAL Report Based on CP and Energy
- Standard NUTBAL Report Based on MP and Energy
- Feed Report
- DELETE Case Reports for the Select Case

Available Profile Reports

- Mediation Report Based on CP and Energy
- Diagnostic Balance Report

2. Click here



Save Report to Word, ASCII file, etc...

Print Report

Close

View next page of report

1 of 1+ 100% Total:2 100% 2 of 20

STANDARD BALANCE REPORT

Case Information

Ranch Name: Pro 201
 Herd: Cows
 Profile Name: Angus cows
 12/23/00
 Cow 201
 Training Case

Vegetation:
 Pasture ID:
 Animal Kind: CATTLE
 Animal Class: COW 60-7 MONTHS
 Breedtype: ANGUS FS 4.4 Mik 14.62
 Standard Ref. Wt. (lbs): 1131.684
 Current Weight (lbs): 1175.024
 Current Body Condition: 5.50
 Days Lactating: 0
 Days Pregnant: 240

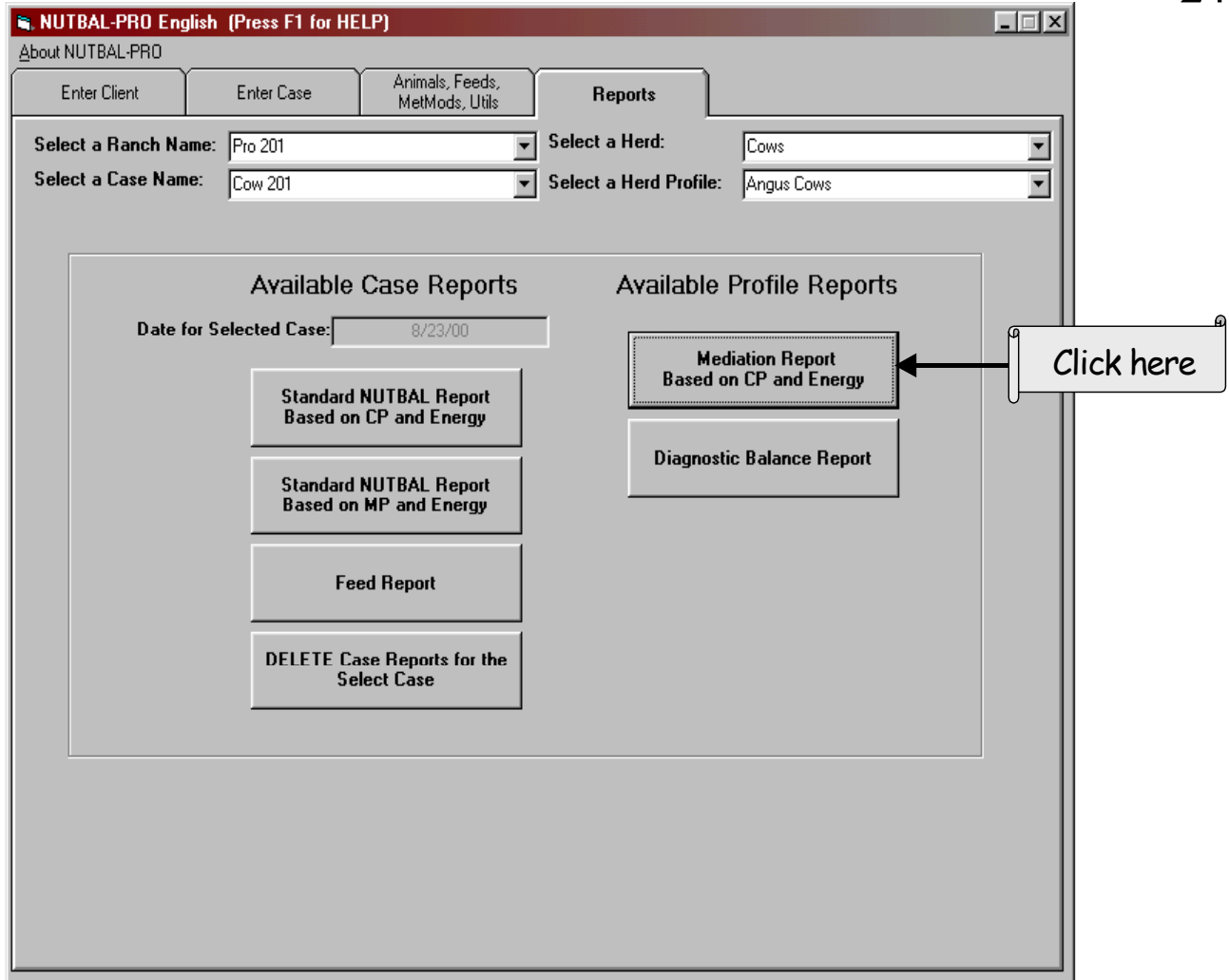
<u>Nutritional Status</u>	<u>Intake</u>	<u>Requirement</u>	<u>Balance</u>
Crude Protein (lbs)	1.883	1.627	0.256
N Em (Mcal / day)	14.743	12.344	2.399
N Eg (Mcal / day)	1.399	0.000	1.399

Performance

Weight Performance goal in lbs/day: 0.000
 Estimated weight change in lbs/day: 0.530
 Estimated body condition in 30 days: 5.66
 Performance Limited By: ENERGY

<u>Dry Matter Intake</u>	<u>lbs</u>	<u>% Std. Ref. Wt.</u>	<u>AUE</u>
Concentrates:	0.910	0.080	0.035
Roughage:	0.000	0.000	0.000
Forage:	24.151	2.134	0.929
Sub Total:	25.061	2.214	0.964

- The Standard report will run all the profiles for the herd selected, but only displays one page at a time.
- The Print report button sends the reports to the default printer. If you do not have a printer hooked up to your computer, it may freeze up.



- The Standard report shows the impact of the cottonseed cake we are currently feeding. But how does the 20% cube compare? Let's look at the Mediation Report to find out.

NUTRITIONAL MEDIATION POTENTIAL REPORT

Grazed Forage Consumption (DM Lbs/Head): 22.278 (AUE=0.857)

CASENAME: Cow201
 HERD: Cows
 PROFILE: F1 Cows
 DATE: 08/23/2000
 BREED: ANGUS x Brahman F1 FS 4.25 Milk 14.97
 DAYS PREG: 240
 DAYS LACT: 0

Cost of Supplements
 AS FED BASIS

Describes best choice

Diet Ingredients	\$/Animal/Day	\$/Herd/Day	\$/Period
COTTONSEEDCAKE	0.04	1.03	1.03
TOTALS	0.04	1.03	1.03

Supplemental Feeding Efficiency
 AS FED BASIS

\$/Animal/Period = 0.04
 Days in period = 1
 Number of animals = 25

Best choice

Diet Ingredients	Lb/Day Per Animal —		
	ALLOCATED	CONSUMED	WASTED
COTTONSEEDCAKE	0.410	0.398	0.012
TOTALS	0.410	0.398	0.012

How much to feed.

Ingredients in Diet
 AS FED BASIS

Describes amount

Diet Ingredients	— Lbs Consumed —		
	Day/Animal	Day/Herd	Period/Herd
COTTONSEEDCAKE	0.398	9.938	9.93
TOTALS	0.398	9.938	0.000

Sensitivity Analysis
 AS FED BASIS

Feed Ingredients	Current Cost	Required Cost
20%BREEDERCUBES, NATURAL CP	168.00	105.38

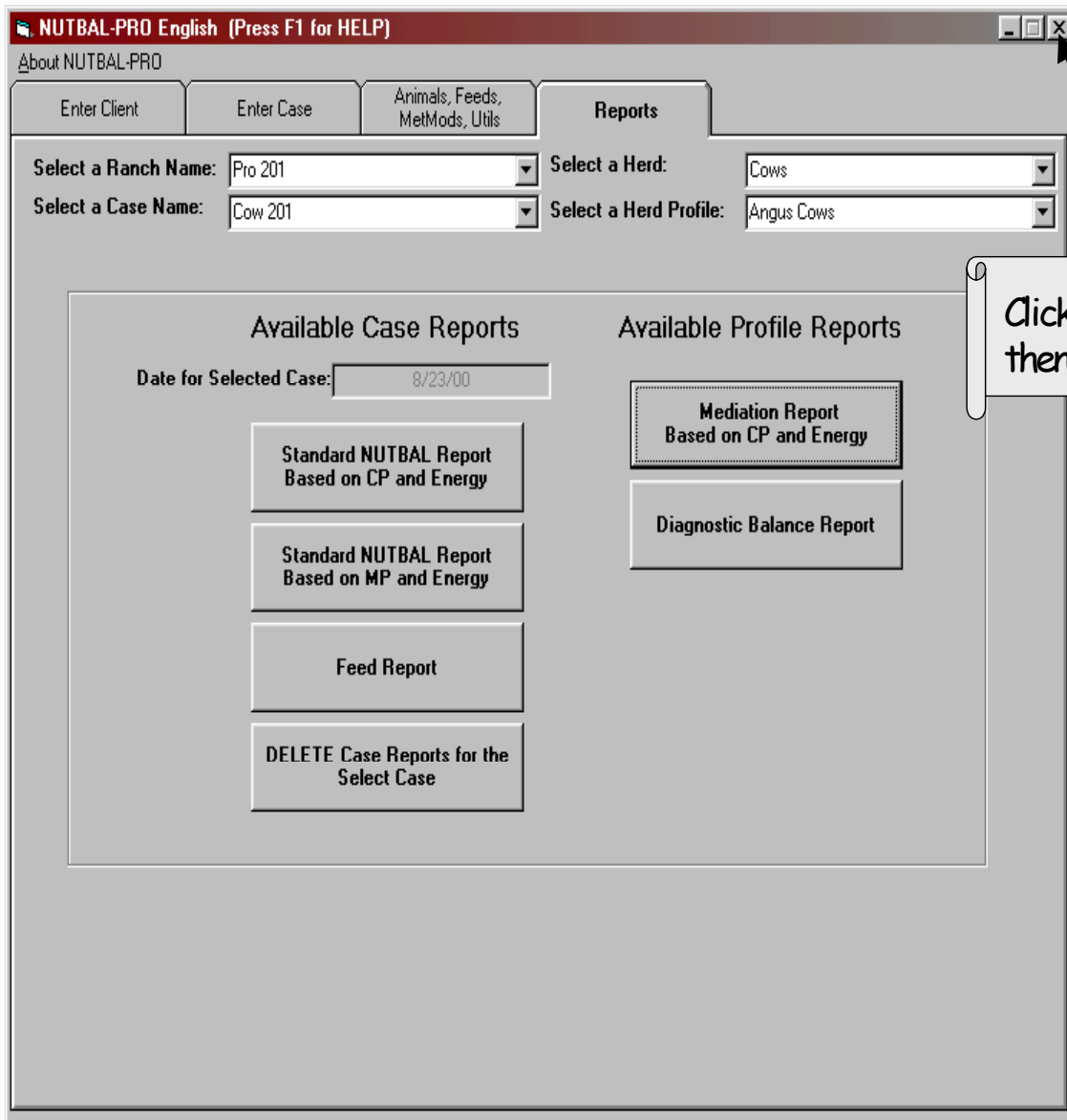
Diet Nutrients Per Day Per Animal
 100% DRY MATTER BASIS

	Intake	Requirements
CP(Lbs):	1.540	1.541
NEm(Mtals):	10.909	10.909
NEg(Mtals):	1.303	0.000

The 20% cube would have to be only \$105.38 in order to be as cost efficient as

View mediation report, then click X in upper right corner to close

- This report is for the F1 cows only. Go back to the report tab, select the Angus cow profile, click Mediation for the second profile's report.



- You have successfully completed Nutbal Pro 201.