



NUTBAL USEr Training

Grazingland Animal Nutrition Lab April 2016

Grazing Animal Nutrition Lab

"NIRS technologies supporting management and research of natural resources"

GANLAB Personnel

Jay Angerer – Associate Professor

- Principal Investigator for GANLAB
- Coordinates and conducts research with domestic and international collaborators

Jennifer Childers – Research Assistant

- Manages daily operations of laboratory
- Reviews/Runs NUTBAL reports and writes advisories
- Quality Control

Tony Owen – Research Associate

- Customer Service
- Quality Control

Kimberly Sanchez – Business Assistant

- Invoicing
- Account Reconciliation

GANLAB Location

Texas A&M AgriLife Research
Blackland Research and
Extension Center
720 E. Blackland Road
Temple, Texas 76502
254-774-6134

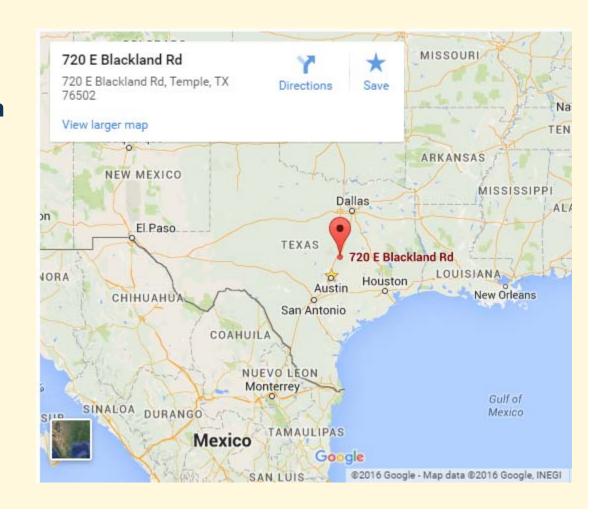


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- 2. Setting up NUTBAL account
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 - Basic nutrition requirement Info
 - Body condition score(BCS)
 - Feeds
- 7. Filling out paper sample sheet
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- 9. Results interpretation



10.Invoicing and payment

The Need for Nutritional Monitoring

- Monitoring livestock nutrition to meet management objectives (e.g. gain and reproduction) poses a challenge:
 - 1. For free-ranging livestock, it can be hard to determine the forage quality
 - 2. If the quality were known, knowing how much to supplement to meet goals would optimize feeding and animal performance
 - 3. Texas A&M University, in collaboration with NRCS and other universities and organizations, has developed tools and techniques for improving livestock nutrition management

Tools and Techniques Developed by Texas A&M

- 1. Fecal Near Infrared Reflectance Spectroscopy (FNIRS) to assess diet quality of free ranging herbivores
- 2. Nutritional Balance Analyzer Simulation Model (NUTBAL) to assess animal performance based on diet quality and provide recommendations for supplemental feeding to meet performance goals

The Fecal NIRS/ NUTBAL Pro System

- Combining the Nutritional Profiling capabilities of Forage Quality Analysis with a simulation model to evaluate nutritional well being of livestock
- Evaluate how current nutrition will influence body condition and performance in the next 30 days



 Can be used to design optimal supplemental feed strategies

Forage Quality **Analysis Using** Fecal Near Infrared Spectroscopy (NIRS)

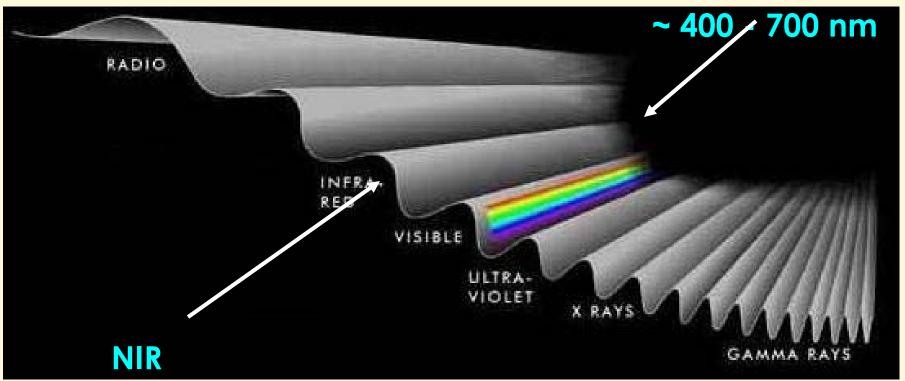
Near Infrared Reflectance Spectroscopy (NIRS)

What is Near Infrared Reflectance Spectroscopy?

A technology that examines the interactions between matter (or substances) and electromagnetic radiation in the near-infrared wavelengths

The Electromagnetic Spectrum

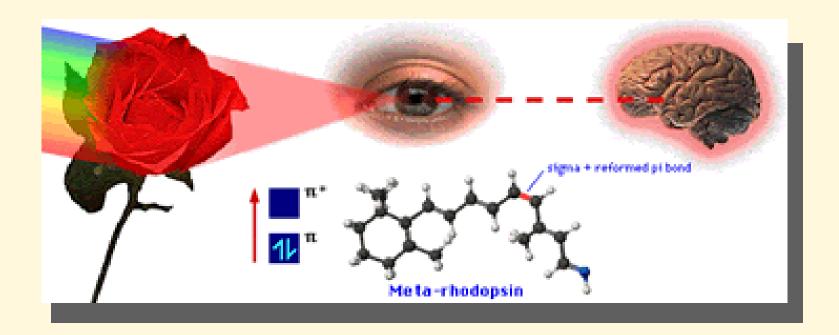
Visible



~ 1100- 2500 nm

NIR wavelengths are longer and not visible to the human eye.

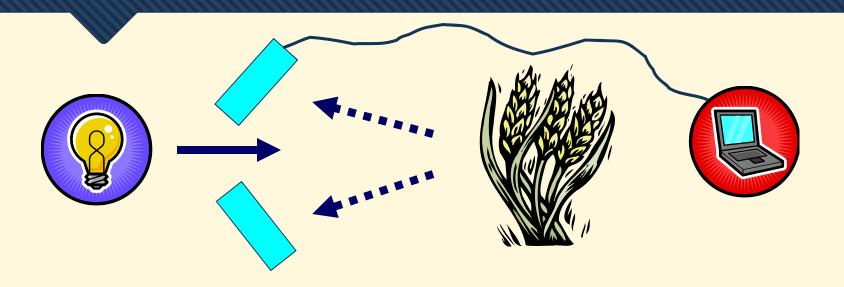
Human Color Vision



Light waves reflect or become absorbed.

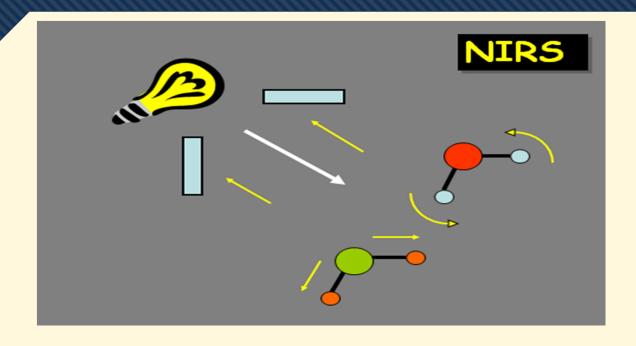
The color wave that is reflected is what we see.

Reflectance



- When a light source is used to illuminate a material, such as plant, grains, manure, etc, light is reflected from the material in both the visible and infrared regions of the electromagnetic spectrum.
- The reflected light can be measured using special instruments

Radiating the Sample



- When the light radiates the sample, the molecules contained within it twist, bend, and vibrate at different wavelengths. Some of the light is absorbed, similar to how the rose absorbed light, and some is reflected.
- The light that is reflected is "caught" by the detectors. Through mathematical equations, the amount of light that was absorbed can be calculated.

Traditional NIRS Calibration



NIR Spectrum

Material of interest



 $\mathbf{Y} = \boldsymbol{\beta}_0 + \boldsymbol{\beta}_{1x} + \boldsymbol{\varepsilon}$

Equation Developed for NIRS Instrument



Wet Chemistry from Forage Lab

Rapid prediction from NIRS scan

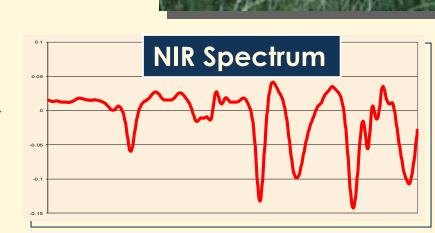
Fecal Chemistry

Carbon **Oxygen Nitrogen** Hydrogen



Diet Quality

Crude Protein Dig. Org. Matter





Wet Chemistry from Forage Lab

Predicted Diet

Crude Protein



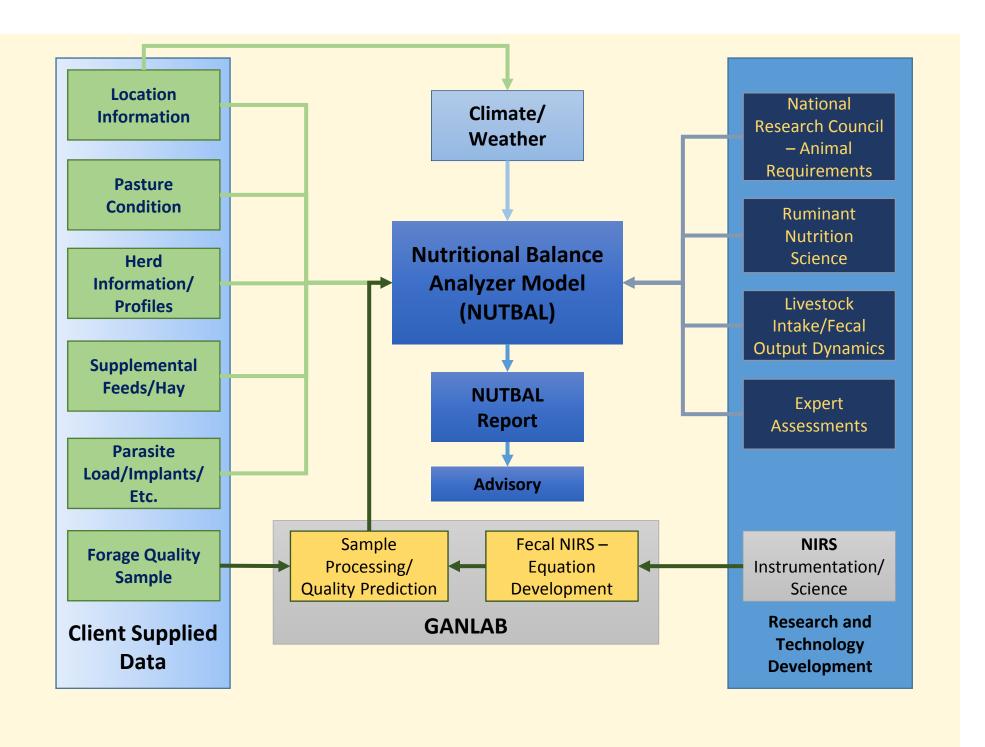
$$Y = \beta_0 + \beta_{1x} + \varepsilon$$



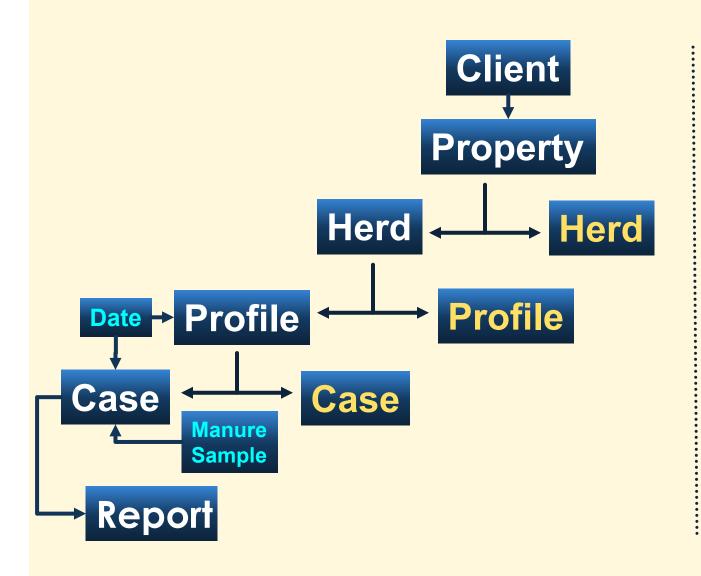
Digestible Organic Matter

NUTBAL – Nutritional Balance Analyzer

- NUTBAL is a simulation model and decision support system that translates diet quality predictions from the NIRS system to assess the current nutritional status of the animal and estimated gain/loss over the next 30 days
- Information on herd profiles, environmental conditions and feed/metabolic modifiers inputs provided by the producer are used to parameterize the model
- Producer inputs are very important to allow us to provide a more accurate assessment of your local conditions and animal performance



NUTBAL Online – Information Organization



Client / Organization

Ranch/Location

Group of animals sampled by pasture

Age / Breed / Repro...

Diet / Weather / Feed...

Nutritional Balance
Milk Production
Fecal Output/ Intake

Bottom Line

- Nutrition today will influence livestock condition in the future
 - Animal Health
 - Reproductive Capacity
 - Ultimately, producer costs/profits



TAES, Vernon

NUTBAL Parameterization

- To effectively use the fecal profiling information in conjunction with NUTBAL, the user must:
 - characterize the breed, class, age, physiological stage and body/coat condition of the animal.
 - Pasture conditions slope, water distance, estimate of available forage standing crop
 - Climate conditions maximum air temperature and wind speed



NUTBAL Parameterization

- Additional Parameters
 - Feedstuffs and supplemental feeds used
 - Implants applied and feed additives
 - Diet Quality Results of the Fecal NIRS Analysis
- The producer should include a performance goal (+,0,-) for the animals in question that will be used for the nutritional requirements calculations.



Introduction to NUTBAL Online

Setting Up NUTBAL Account

NUTBAL Account

1. NUTBAL Online

- Set up NUTBAL Online account by going to <u>http://cnrit.tamu.edu/ganlab/</u> (tends to work better with Chrome or Firefox)
 - Under main menu click NUTBAL Online

NUTBAL Online

Nutrition Balance Analyzer

About Us Sample Form Tutorial

NUTBAL's primary purpose is to provide the livestock industry the means to monitor the nutrient concentration in the animal's diet and determine if the current diet is sufficient to meet performance goals set by the producer. NUTBAL is a decision support system which models crude protein and net energy status of cattle, sheep and goats. This computerized decision aide lets the user enter their herd, environmental conditions, and establish weight performance targets. The information is then coupled with NIRS fecal analysis results from the Grazingland Animal Nutrition Lab, (GAN Lab), to produce an animal performance report and a least cost nutrition management plan.

Attention CSP Customers: The CSP Animal Nutrition Monitoring program was developed to allow producers to send in samples over the course of the year to receive relevant information on the quality of the forage being grazed by your livestock. We encourage you to work with your NRCS agent to devise an annual schedule for collecting and sending in samples, so that you do not send in all six of your samples at one time, especially near the end of the contract deadline. This will assist our lab in getting your sample information back in a timely manner for making management decisions. If you have questions about developing a sampling schedule, sample collection, or sample processing, please contact us. Thank you for your business.



http://cnrit.tamu.edu/nutbal_online

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contract deadline. This will assist our la questions about developing a sampling

Project Name: Choose One First Name: Last Name: Email: Re-type Email: Username: Password:
Last Name: Email: Re-type Email: Username:
Email: Re-type Email: Username:
Re-type Email: Username:
Username:
Password:
Re-type Password:
A confirmation email will be sent immediately if you have received reports from the lab but are unable to login, do not create a new account. Duplicate accounts will be deleted! Use the forgot credentials link or call the lab.

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questions about developing a sampling

Choose Client or **Technical Advisor**

Duplicate accounts will be removed! Account Type: Client Project Name: Choose One First Name: Last Name: Email: Re-type Email: Username: Password: Re-type Password: A confirmation email will be sent immediately If you have received reports from the lab but are unable to login, do not create a new account. Duplicate accounts will be deleted! Use the forgot credentials link or call the lab.

Create Account Cancel

NUTBAL Online

Nutrition Balance Analyzer

About Us Sample Form Tutorial

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Create Account Cancel

Are you enrolled in CSP?
If not, you may click
None or Other.

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Create Account Cancel

Enter first and last name for person responsible to the samples

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Create New Account

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Project Name:	Choose One ▼
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Password:	
Re-type Password:	
A confirmati	on email will be sent immediately
If you have received rep	ports from the lab but are unable to login, do pount . Duplicate accounts will be deleted! Use credentials link or call the lab.
	Create Account Cancel

Valid **Email**

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Password (6-15

characters)

Create New Account Duplicate accounts will be removed! Account Type: Client Project Name: Choose One • First Name: Last Name: Email: Re-type Email: Username: Password: Re-type Password: A confirmation email will be sent immediately If you have received reports from the lab but are unable to login, do not create a new account. Duplicate accounts will be deleted! Use the forgot credentials link or call the lab. Create Account Cancel

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Click Create Account

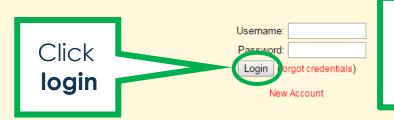
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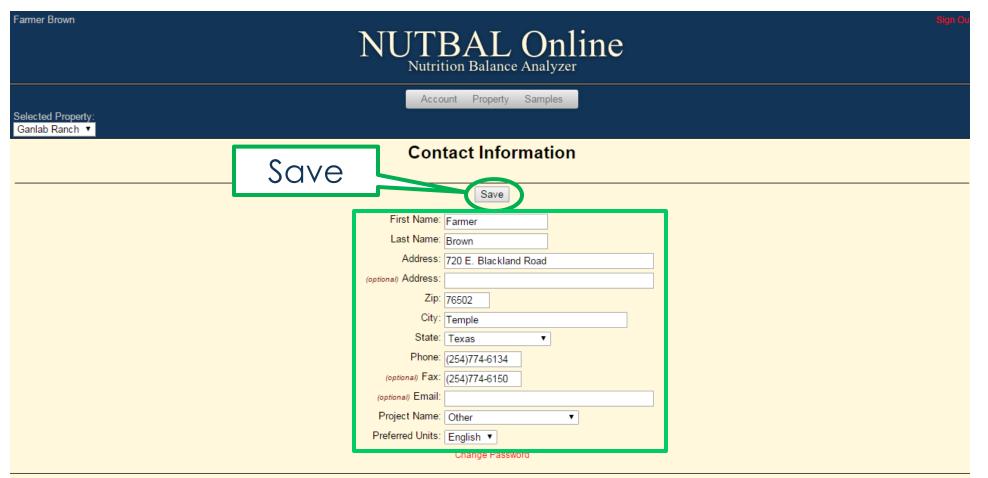
Type your
Username and
Password in the
boxes provided.

Contact Information





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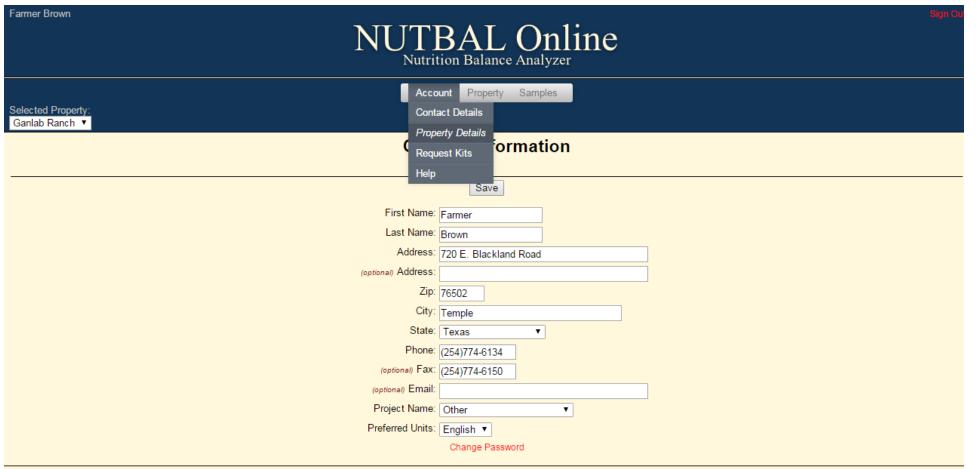
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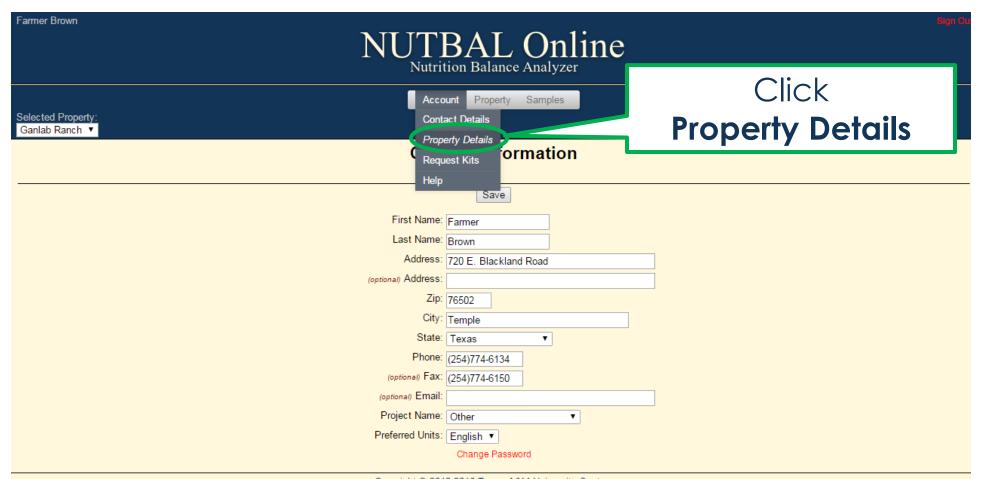
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Property Details

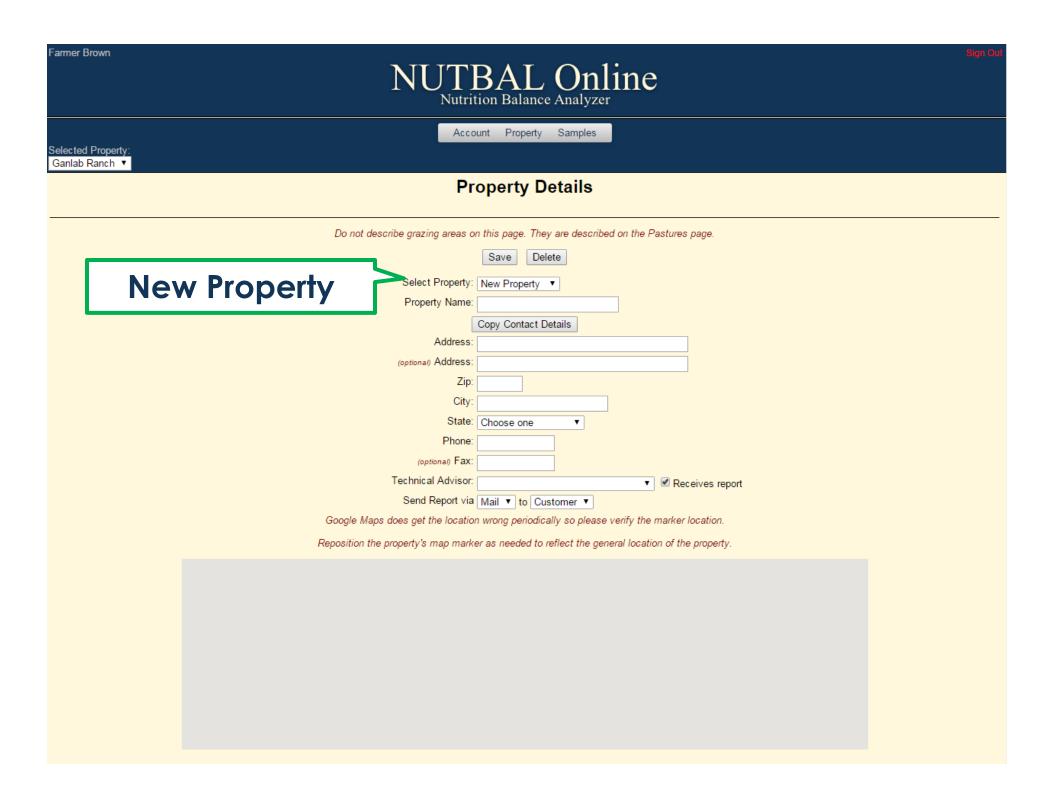
- If you have multiple ranches, you will be able to specify each one.
 - System can accommodate large operations that may have ranches in other states.
 - This comes in handy when we send you kits and reports. For example, if you
 have cattle being tested in Oklahoma, it would be easier to send kits there
 rather than sending them to your home or office in Kansas.
- If you have a single ranch or have your cattle out on pasture without a mailing address, you will be able to select "Same as the Customer Contact Info."
- If no ranches are specified, you will not be able to put in any other information about your pastures or sample description.



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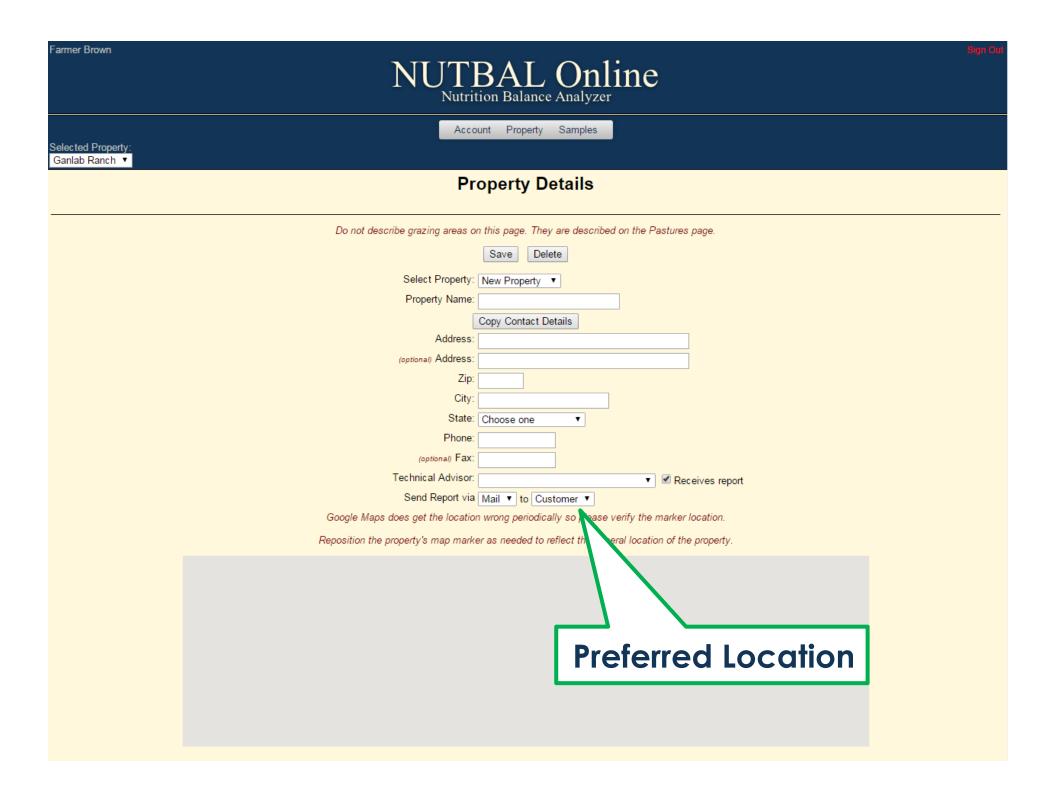


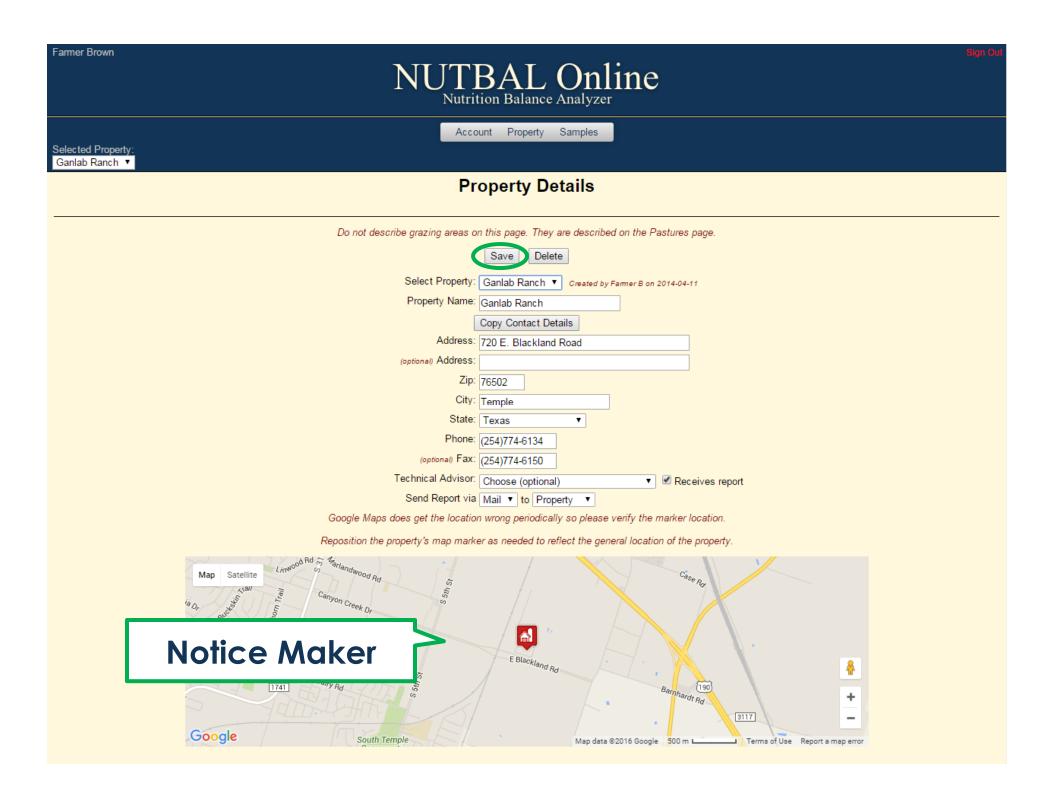












Forgot Username/ Password

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Nutrition Balance Analyzer

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Request Login Credentials



You must call the lab if you did not provide an email address or the address provided is no longer valid.

First Name: Farmer

Last Name: Brown

Email: FarmerBrown@farmerbrown.com

This action will change your password!

Credentials will be sent to listed email address. Check your spam folder if you do not receive an email within a couple minutes.

Send Reminder

Cancel

Ordering kits and sampling scheduling

Kit Details

- Each kit includes:
 - 1 small Styrofoam cooler of size 7"x7"x8"
 - 1 freezer gel pack
 - 1 cardboard shipping box of size 9"x9"x9"
 - A zip-top bag with blanks to fill out to help identify your sample
 - Plain zip top bag
 - Disposable gloves
 - Disposable spoon
 - Labels for shipping



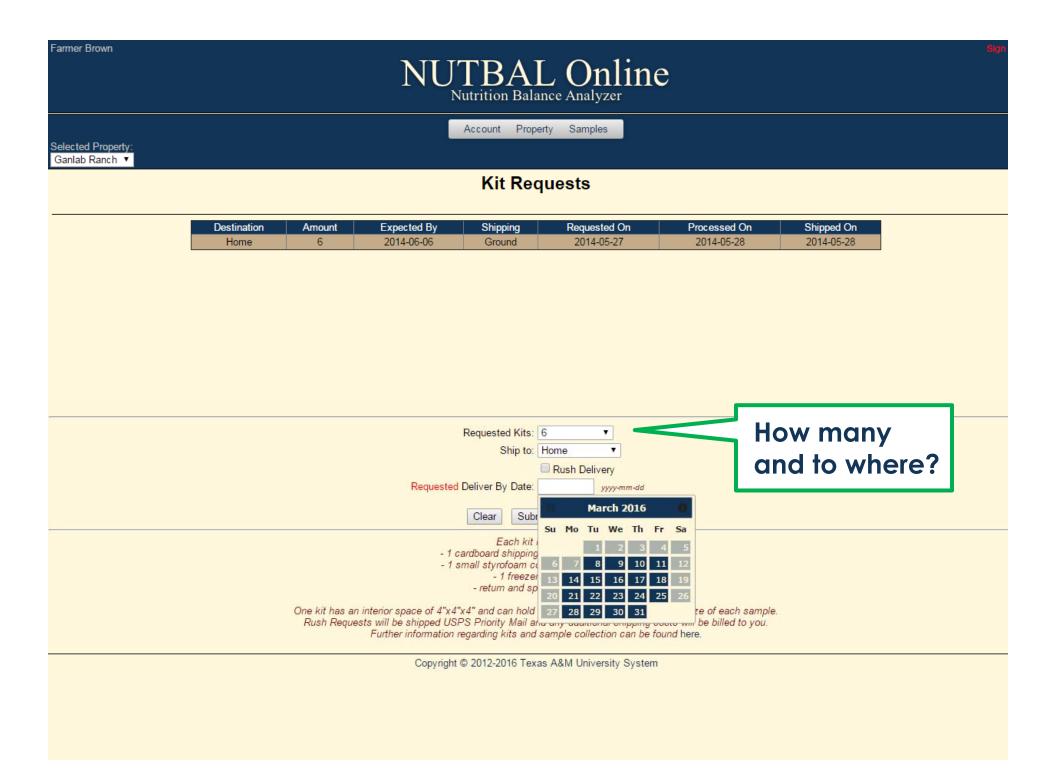
Kit Details

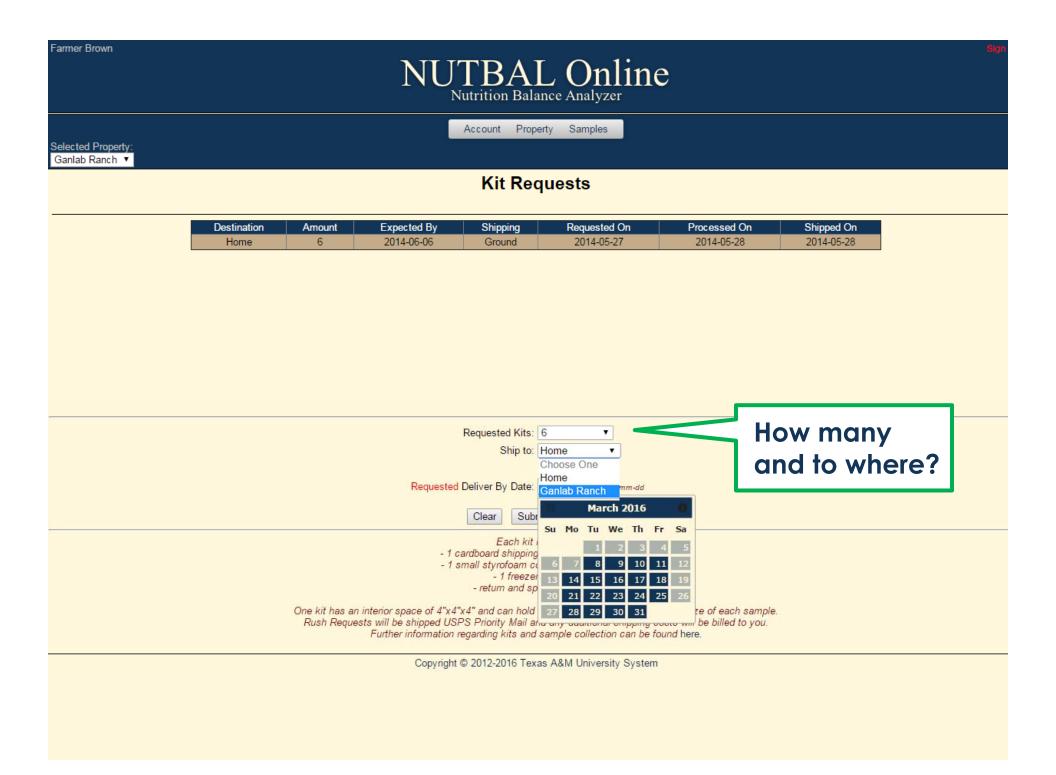
- Each cooler has an interior space of 4"x4"x4" and can hold 1 to 3 samples depending on the size of each sample.
- We can process Rush Requests for kits.
 These will be shipped via USPS Priority Mail.
 Additional shipping costs for rush service will be billed to you.

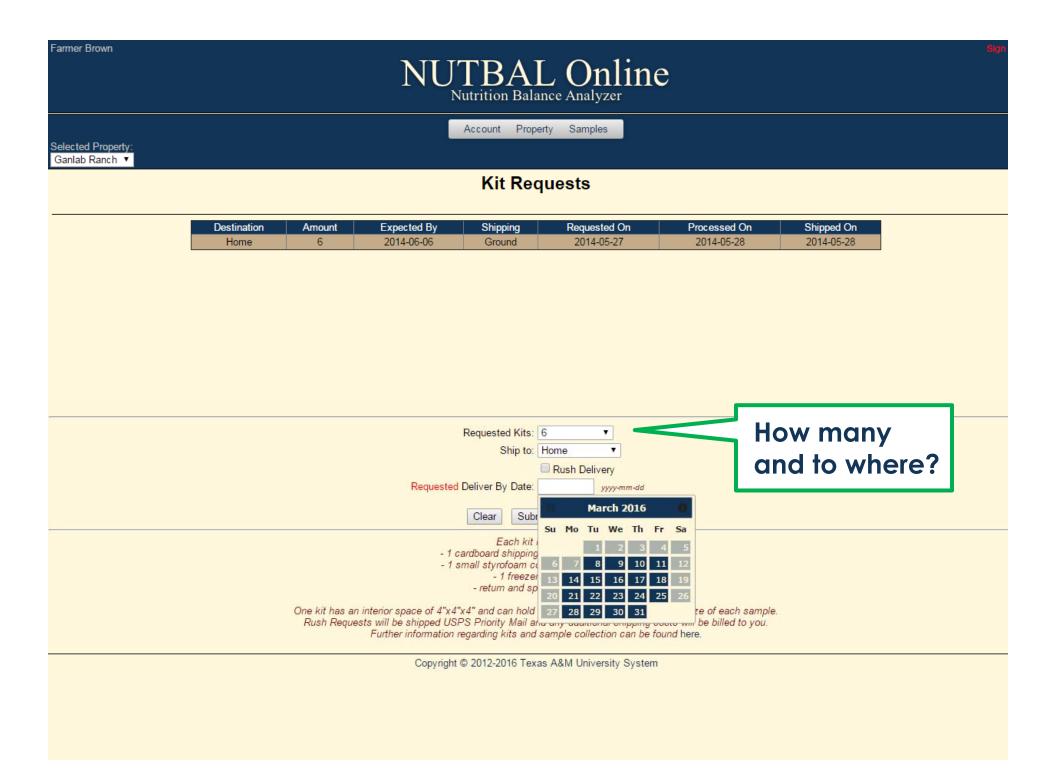




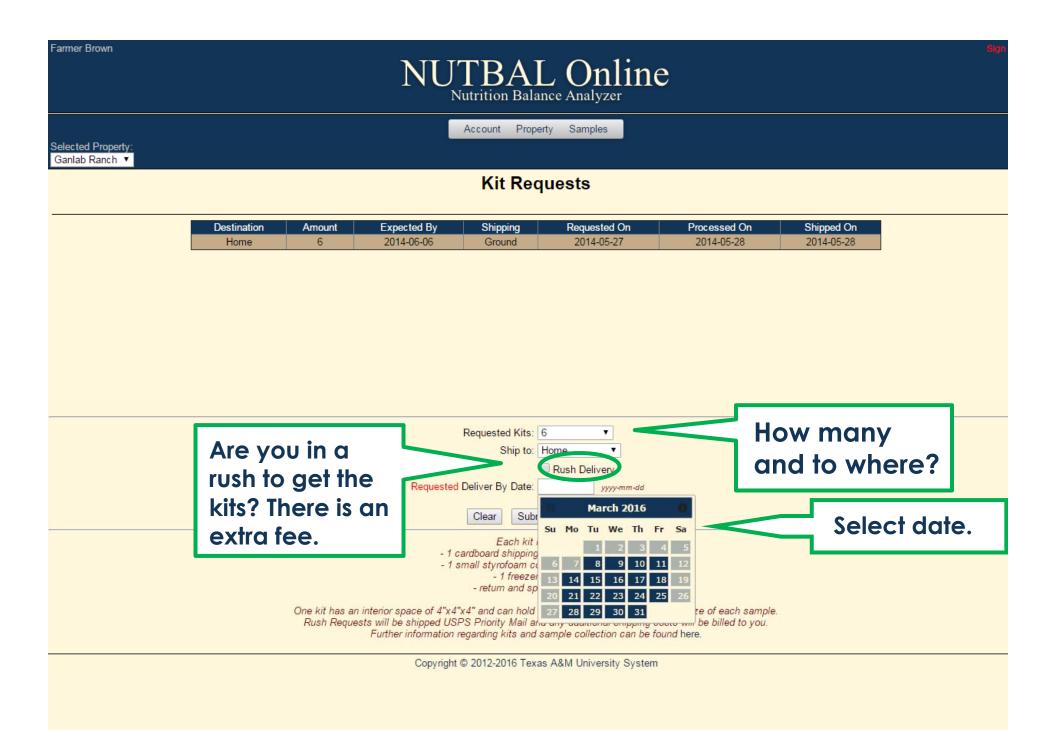












Account Property Samples

Selected Property: Ganlab Ranch ▼

Kit Requests

Destination	Amount	Expected By	Shipping	Requested On	Processed On	Shipped On
Home	6	2016-03-08	Ground	2016-02-26		
Home	6	2014-06-06	Ground	2014-05-27	2014-05-28	2014-05-28



Requested Kits: Choose One ▼ Ship to: Choose One ▼ Rush Delivery

Requested Deliver By Date: yyyy-mm-dd

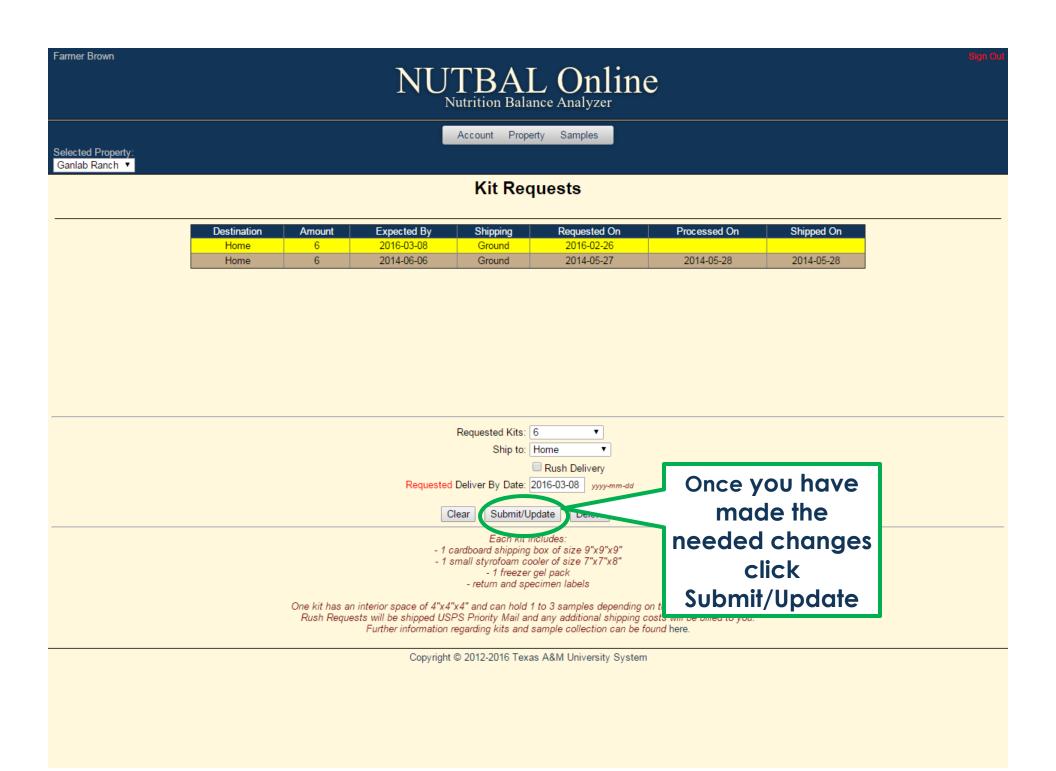
> Clear Submit/Update

> > Each kit includes:

- 1 cardboard shipping box of size 9"x9"x9"
- 1 small styrofoam cooler of size 7"x7"x8"
 - 1 freezer gel pack
 - return and specimen labels

One kit has an interior space of 4"x4"x4" and can hold 1 to 3 samples depending on the size of each sample. Rush Requests will be shipped USPS Priority Mail and any additional shipping costs will be billed to you. Further information regarding kits and sample collection can be found here.

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Sample Collecting and Shipping

Sampling Schedule

Six samples a year are required for the CSP contract (Not to be sent all at once)

- 1. Establish a sampling schedule or collect samples according to changes in grazing rotation, season or drought.
 - You could sample every two months

OR

 As you rotate pastures

OR

 As the seasons change or during weather events that affect forage quality such as drought.

Sampling Schedule

Six samples a year are required for the CSP contract (Not to be sent all at once)

- Animals should be in the pasture for at least 48 hours prior to collecting the sample.
- 3. You should also suspend supplementation of the animals 48 hours prior to sample collection to ensure that the sample is reflective of the forage quality in the pasture



Collecting

- Protect your hands with disposable gloves provided or extra plastic bags. Please don't use the provided custom bags as hand protection.
- Locate 5 to 10 fresh manure piles.
 - DO NOT select manure piles from calves that are still nursing.
 - It is preferable that you see the actual defecation to ensure that the sample is as fresh as possible.
 - If this is not possible, collect manure from piles that are still moist and shows **NO** evidence of insects or bird scratching.



Collecting (continued)

- Using a disposable spoon, skim away the top layer of manure.
 (Remember: manure must be as fresh as possible.)
- Collect a heaping spoonful from each manure pile. There should be enough manure to fill half of a quart-size freezer bag.
- The sample should be put into provided plain zip top bag. Avoid picking up soil, rocks, excess plant material, or other containments when collecting the sample.
- Place the closed bag of fecal matter in to a second customized freezer bag and seal.

Collecting (continued)

- On the custom bag provided by lab, use a permanent marker to write your herd id, date collected and pasture name in the appropriate spaces on the bag.
- If you logged in your sample, on NUTBAL please include the lab number generated.
- Complete the paper sample sheet, unless logging in your sample on NUTBAL.

- If you have not logged in your sample online, it is important to place the completed GANLAB samples sheet in pocket of bag, especially if sending more than one sample per box.
- Place the sample(s) into the Styrofoam cooler with a gel pack and freeze overnight.

Collecting and Shipping



Shipping

- Remove the fecal sample and Styrofoam cooler from freezer.
- Place the lid on cooler and then wrap packing tape around the cooler and lid seam to ensure that the lid is attached securely. (**Do not** tape across the top of the lid or use scotch tape.)
- Place cooler into cardboard box and securely tape box closed. Make sure box is labeled with the shipping and "Exempt Animal Specimen" labels provided with your kit.
- Send the box to the GAN Lab using two-day priority mail via USPS, FedEx or UPS.

Entering Pasture and **Animal Profiles** into NUTBAL

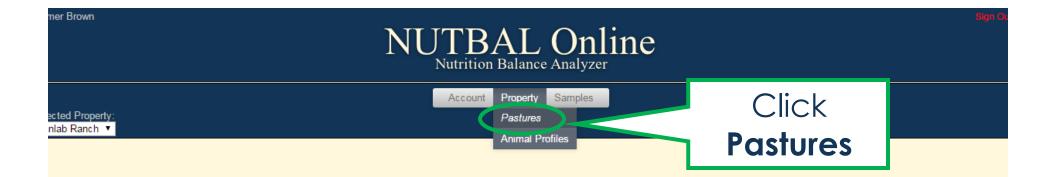
Pastures

Pastures and Animal Profiles are specific to ranch and are reusable.



These do not have to be entered each time you collect a sample.





Selected Property: Ganlab Ranch ▼

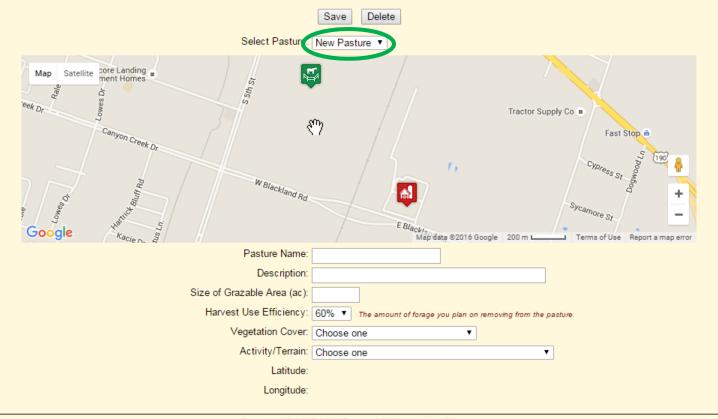
Pastures

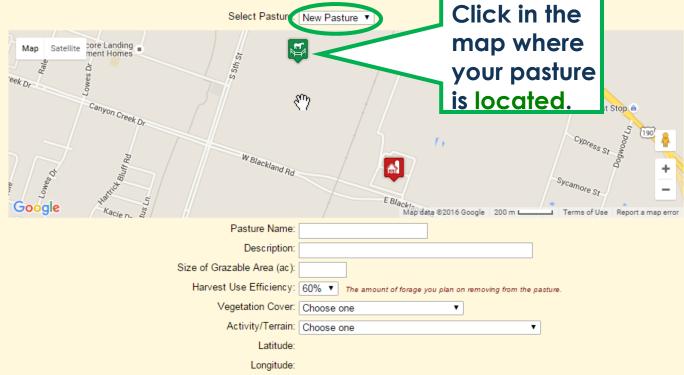
Pastures are designed to be re-used. Multiple pastures may be added to any property.

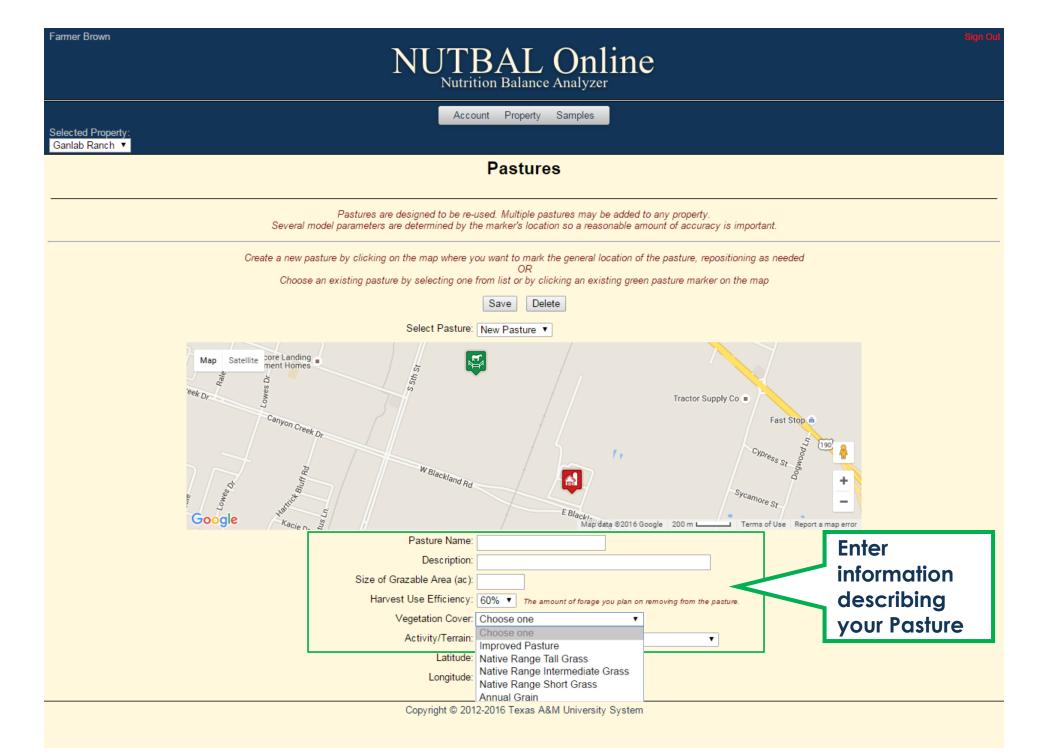
Several model parameters are determined by the marker's location so a reasonable amount of accuracy is important.

Create a new pasture by clicking on the map where you want to mark the general location of the pasture, repositioning as needed

Choose an existing pasture by selecting one from list or by clicking an existing green pasture marker on the map







Nutrition Balance Analyzer

Account Property Samples

Selected Property: Ganlab Ranch ▼

Google

Pastures

Pastures are designed to be re-used. Multiple pastures may be added to any property.

Several model parameters are determined by the marker's location so a reasonable amount of accuracy is important.

Create a new pasture by clicking on the map where you want to mark the general location of the pasture, repositioning as needed

Choose an existing pasture by selecting one from list or by clicking an existing green pasture marker on the map

Save Delete Select Pasture: New Pasture ▼ core Landing F Мар Satellite S 5th St ment Homes Choose one eek Dr Confinement, <2 A (1 Ha) y Co I Adequately Watered Pasture, <= 15% Slope Canyon Creek Dr Adequately Watered Pasture, >15% Slope Fast Stop @ Poorly Watered Pasture, <=15% Slope

Marsh
Deep Snow
Herding Water Every Other Day 3-6 Km, 1.5-3.5 Mi
Herding Water Every Other Day > 6 Km OR 3.5 Mi
Light Work / Breeding
Medium Work / Breeding
Very Rocky / Rough

Description:

Intense Work / Breeding

Herding Daily Watering < 3 Km Or 1.5 Mi

Herding Daily Watering 3-6 Km Or 1.5-3.5 Mi

Herding Water Every Three Days > 6 Km Or 3.5 Mi

Harvest Use Efficiency:

Walk, Milk Parlor to Field < .5Mi (.3Km) 2X/D

Poorly Watered Pasture, >15% Slope

Vegetation Cover: Walk, Milk Parlor to Field .5-1Mi (.3-.6Km) 2X/D Walk, Milk Parlor to Field > 1 Mi (.6 Km) 2X/D Activity/Terrain: Choose one

Latitude:

Longitude

Terms of Use Report a map error

sture

Longitude:

Selected Property: Ganlab Ranch ▼

Pastures

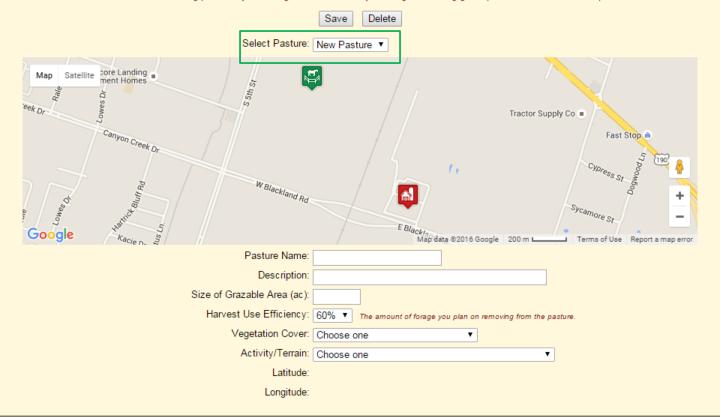
Account Property Samples

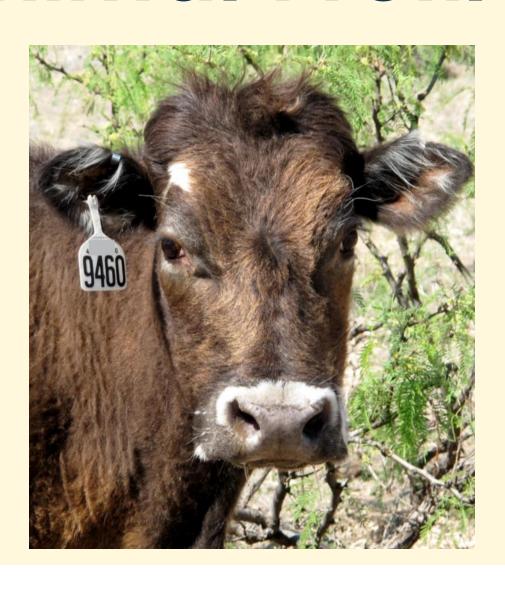
Pastures are designed to be re-used. Multiple pastures may be added to any property.

Several model parameters are determined by the marker's location so a reasonable amount of accuracy is important.

Create a new pasture by clicking on the map where you want to mark the general location of the pasture, repositioning as needed

Choose an existing pasture by selecting one from list or by clicking an existing green pasture marker on the map





- Animal profiles allow you to enter specific information about your livestock herd composition.
 - What Breed?
 - What Age?
 - Cows, Bulls, Heifers, Steers, or Calves?
 - Are cows lactating?
- Each of these are need in order to assess how much forage the animal will eat and how to partition the nutrition to maintaining weight, gaining weight, and/or milk production
- Profiles are designed to be re-used, enabling you to track the progress of your animals over time.

- Animal profiles allow you to enter specific information about your livestock herd composition.
 - What Breed?
 - What Age?
 - Cows, Bulls, Heifers, Steers, or Calves?
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- Each of these are need in order to assess how much forage the animal will eat and how to partition the nutrition to maintaining weight, gaining weight, and/or milk production
- Profiles are designed to be re-used, enabling you to track the progress of your animals over time.

- To provide more accurate results, a profile should be of a single breed, type (male, female, castrated, spayed), and their ages should span no more than 12 months. Multiple profiles can be added to a sample description.
- In the profile description, you can list information on how to identify the herd. This is information that is not necessary for the lab but will help you identify your herd. Ex. Todd's cows
- Changes to a profile will affect all samples (past, present, and future) that use that profile. You will need to create new profiles if following same animals over time

Account Property Samples

Selected Property: Ganlab Ranch ▼

Animal Profiles

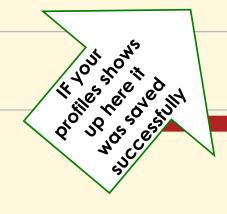
Profiles are designed to be re-used, enabling you to track their progress over time.

A profile should be of a single breed, type (male, female, castrated, spayed), and their ages should span no more than 12 months.

Multiple profiles can be added to a sample description. Number of head can be altered on the sample description.

Changes to a profile may affect any samples that use that profile and may void existing reports.

Kind	Profile (Gender Breed DOB UniqueID)	Age (months)
Cattle	Female Angus 2009-04 10647	82
Cattle	Female Hereford -Med Frame 2010-04 10648	70
Cattle	Female Texas Longhorn 2010-08 20874	66



Select from the list above to edit or remove the existing details

OR

Select an available profile from the drop menu below and add

Save Profile Delete Profile Clear Fields

Created:
Profile Name: New Profile

(optional) Description:

Animal Kind: Choose one ▼

Animal Gender: Choose one ▼

Animal Breed: Choose one ▼

Average Birthdate of Animals: Year ▼ Month ▼

Age at time of sampling may be different than age shown

BCS System: ▼

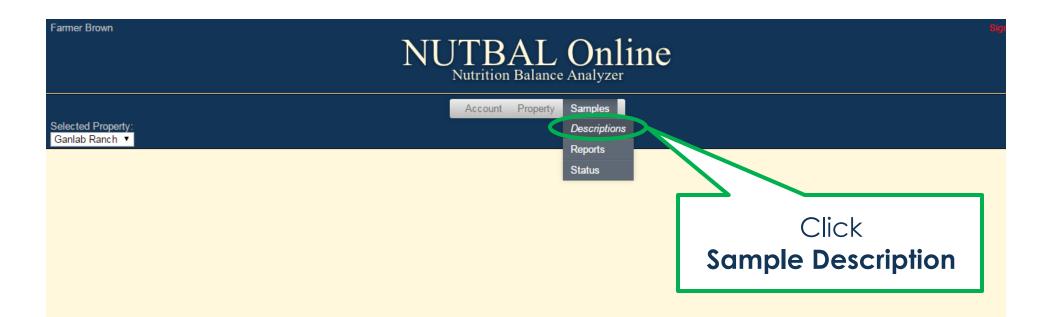
Number of Head:

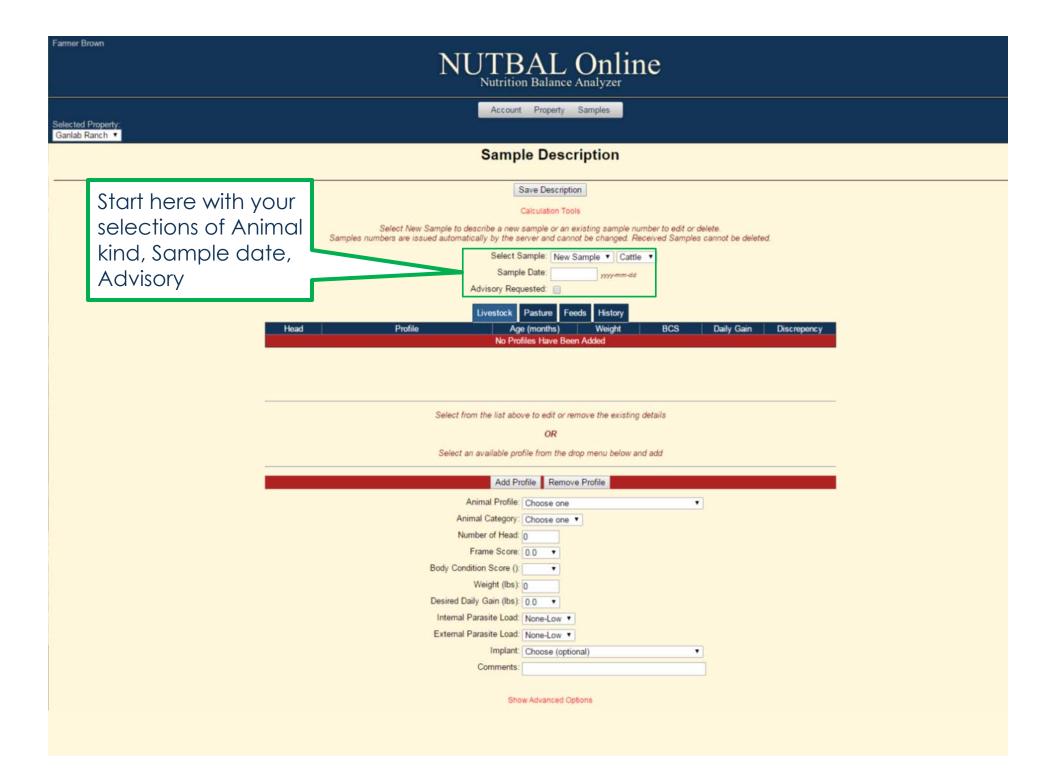
Show Advanced Options

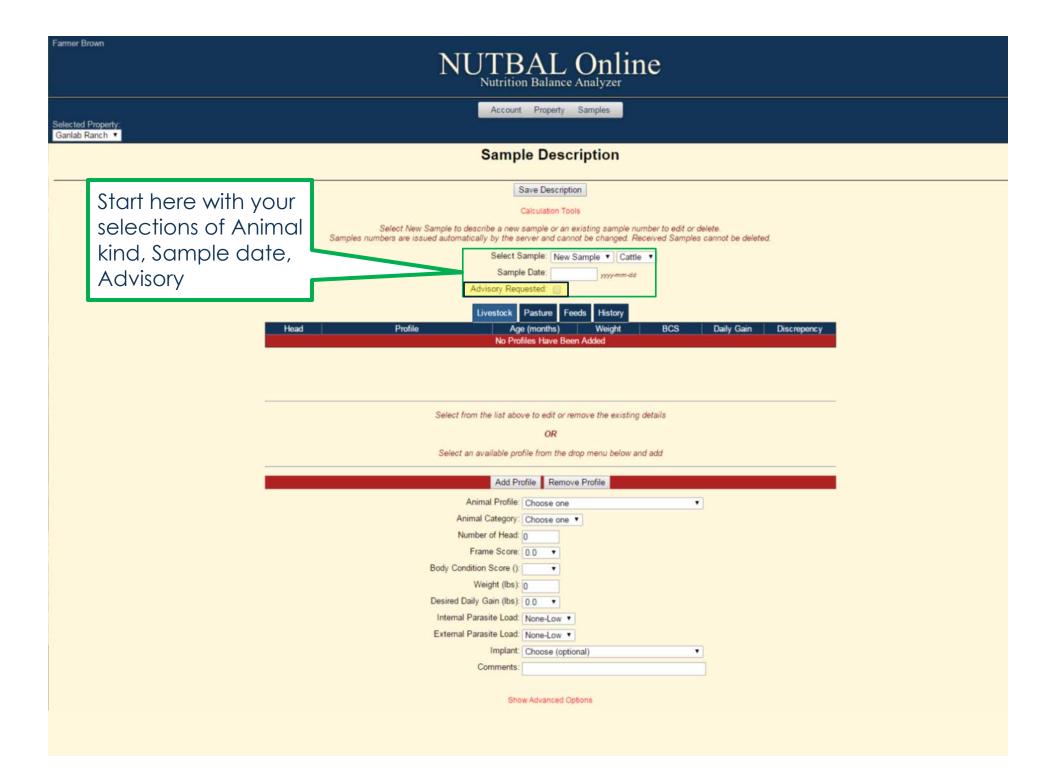
Entering Individual Sample Info into NUTBAL

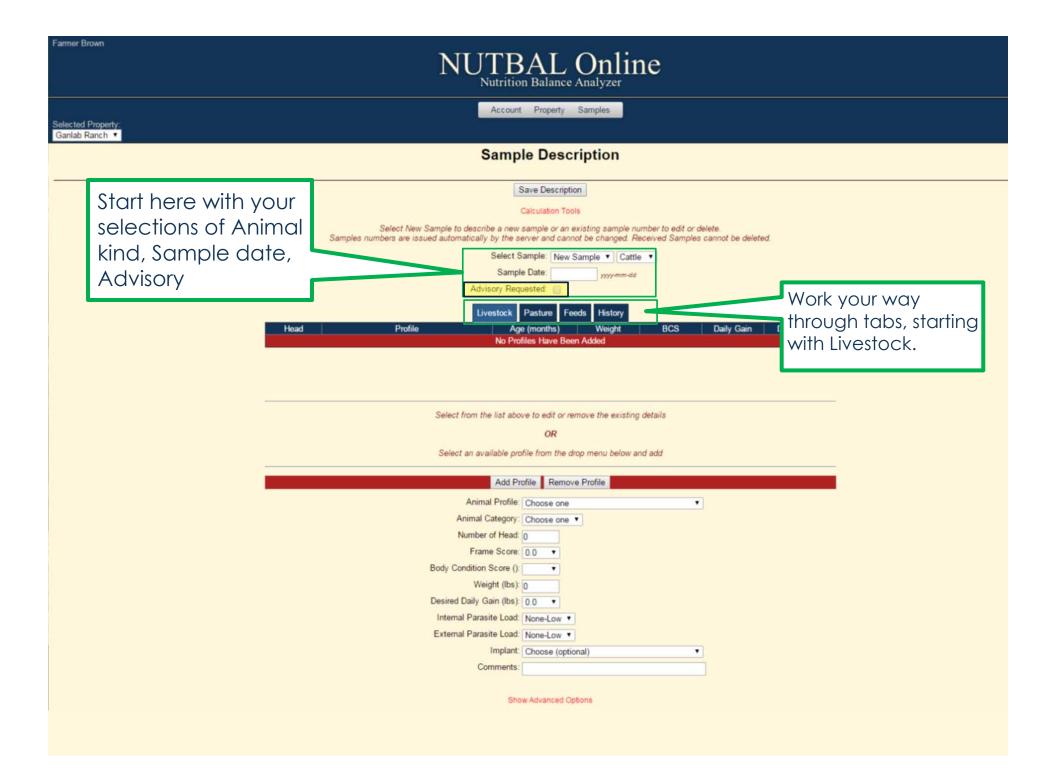
Sample Description

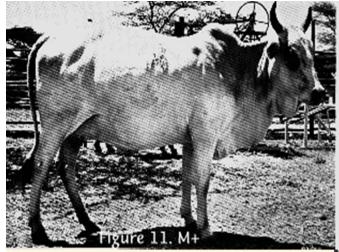












Body Condition

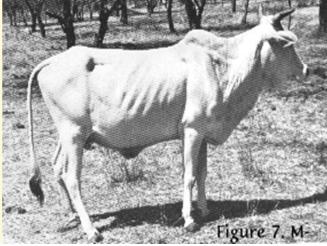
Figure 9. M

TREND ?

...85-98 lb per BCS (1-9 system)

... a reflection of past nutrition

...critical for goal setting



Entering Individual Sample Info

- Effects on Nutrition
 Requirement
 - Age: Young vs Mature
 - Gestation: heavy bred or Peak Lactation vs Open and Dry
 - Breed: Tropical vs Continental
- Body Condition Scoring
 - Long Version:
 http://cnrit.tamu.edu/ganlab/ pagesmith/10
 - Short version

↑	1	Very Emaciated
Caution	2	Emaciated
\rightarrow	3	Very Thin
↑	4	Thin
Optimal	5	Moderate
→	6	Good
↑	7	Fat
Caution	8	Obese
\downarrow	9	Very Obese

SYSTEMATIC WAY TO LEARN BODY CONDITION SCORING OF BEEF COWS

(Cows need to be at a normal stance)

STEP 1

LOOK AT THE LAST TWO RIBS (12TH & 13TH RIB) IF YOU SEE THE 12TH & 13TH RIB, IT IS BELOW **5**. IF YOU DO NOT SEE THE 12TH & 13TH IT IS **5** OR ABOVE.

STEP 2

IF YOU SEE THE TRANSVERSE PROCESS (SHORT RIB), IT IS 3 OR LESS.

STEP 3

IF YOU SEE A VERY STRONG V, IT IS A 1 OR 2.

STEP 4

LOOK BETWEEN THE HOOK AND PINS:



3.5

4.5

IF A 4, HAS V SHAPE

(IF 12TH & 13TH RIB IS SHOWING, THE FORRIBS ARE NOT NOTICABLE AND THE TRANSVERSE PROCESS, OR THE SHORT RIBS ARE NOT NOTICABLE.)

IF A 3, HAS A STRONG V

1 - 5 (Dairy)

IF A 2, HAS A VERY STRONG V

(WHERE THE TRANSVERSE PROCESSES ARE SLIGHTLY NOTICABLE)

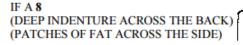
 Score System
 Condition Score

 1 - 9 (Beef)
 1
 2
 3
 4
 5
 6
 7
 8
 9

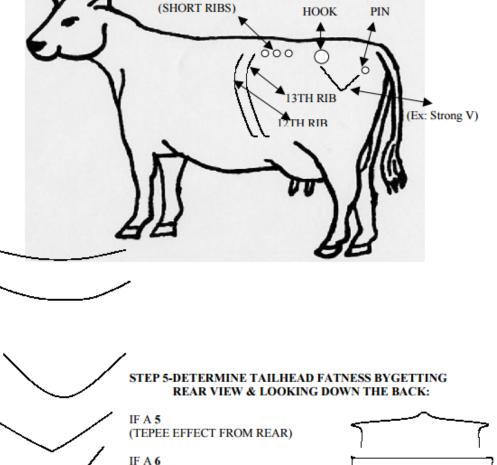
2.5

(FLAT ACROSS THE BACK)

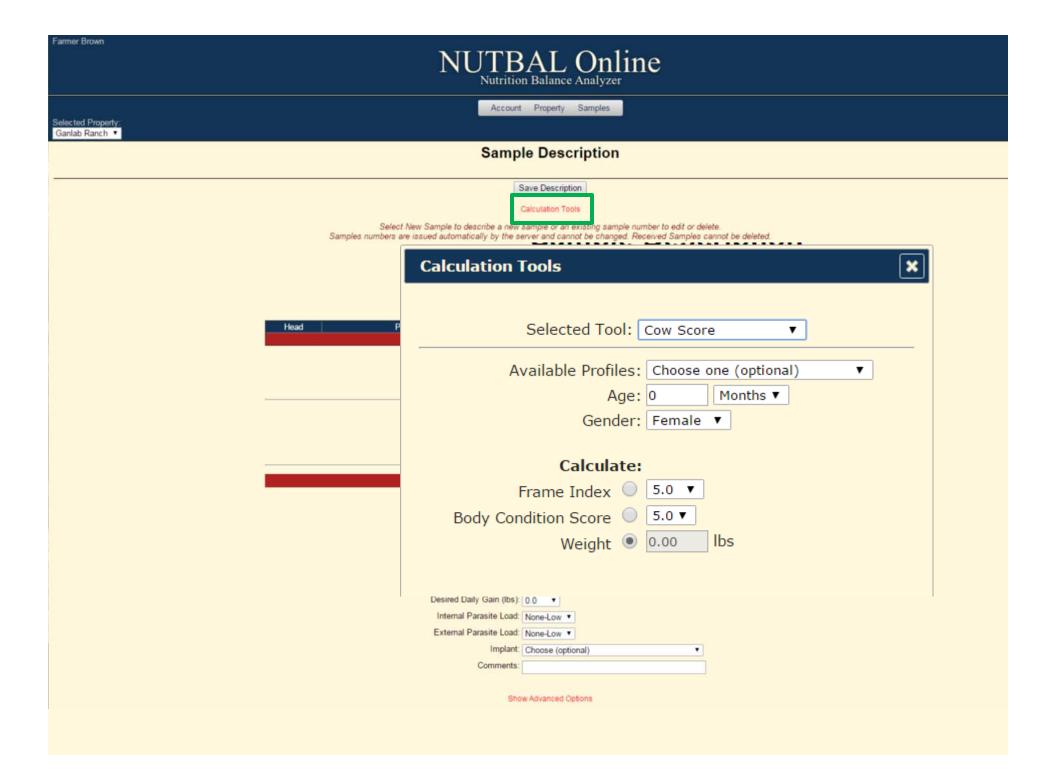
IF A 7 (INDENTURE ACROSS THE BACK)

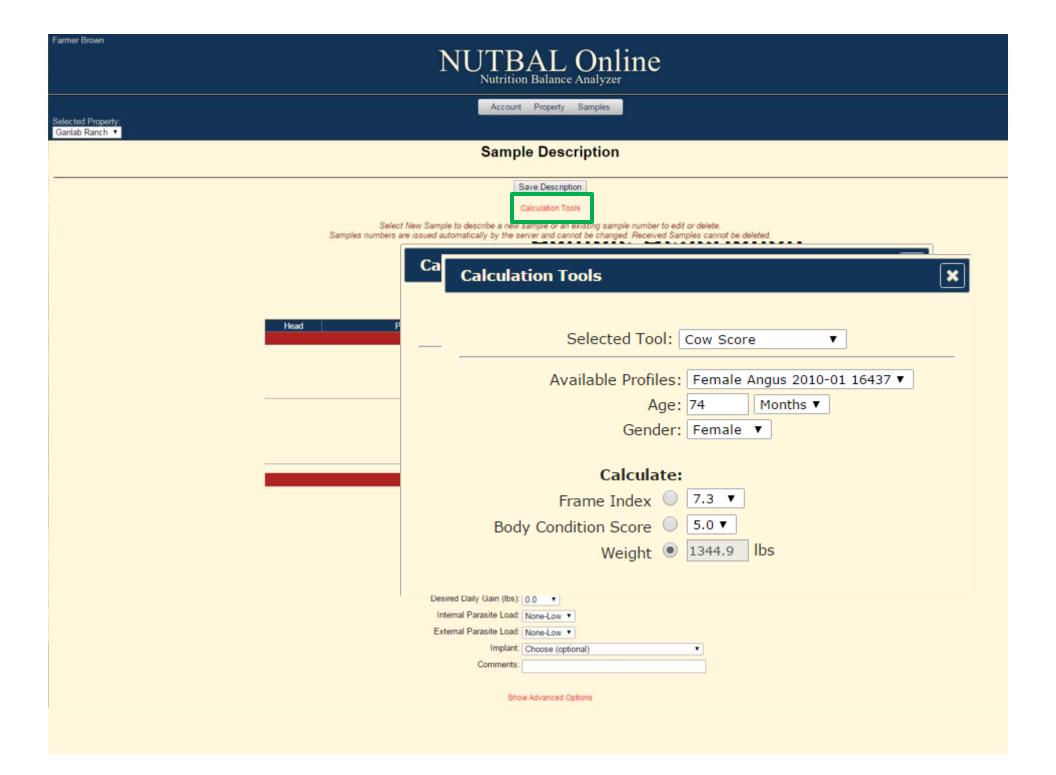


IF A 9 (EXTRA FAT, TROUBLE WALKING)



TRANSVERSE PROCESS

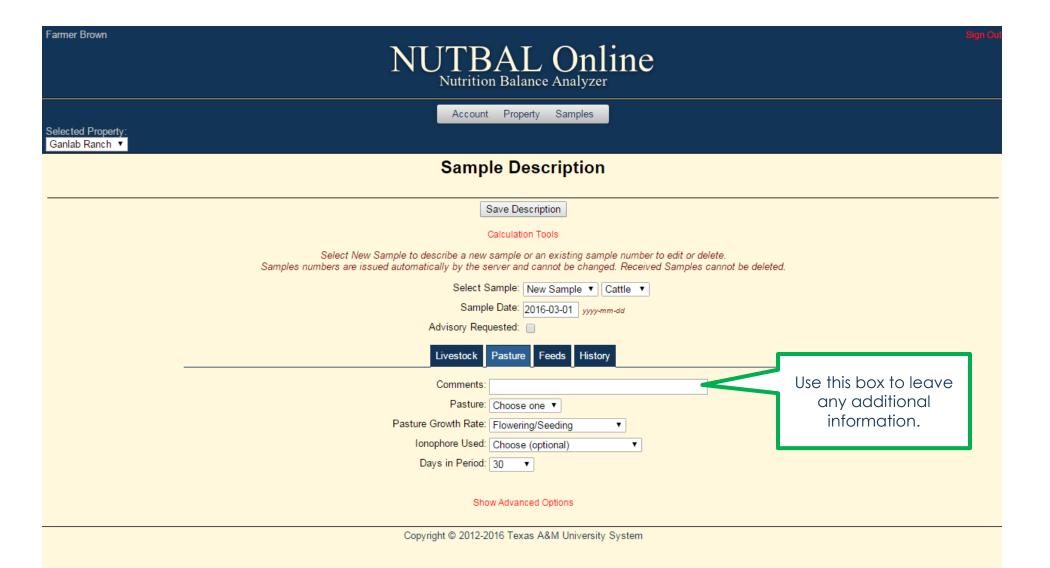


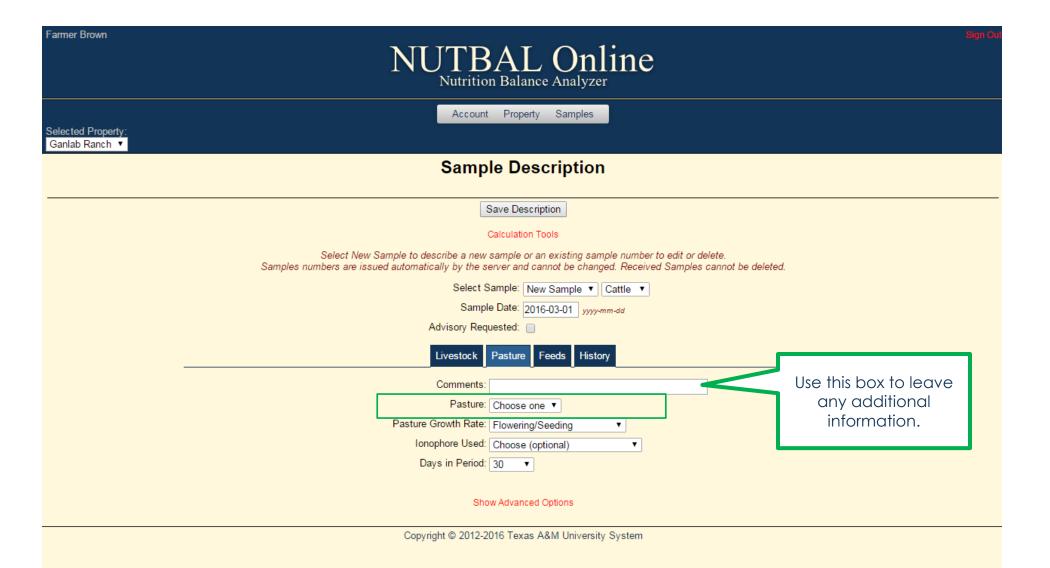


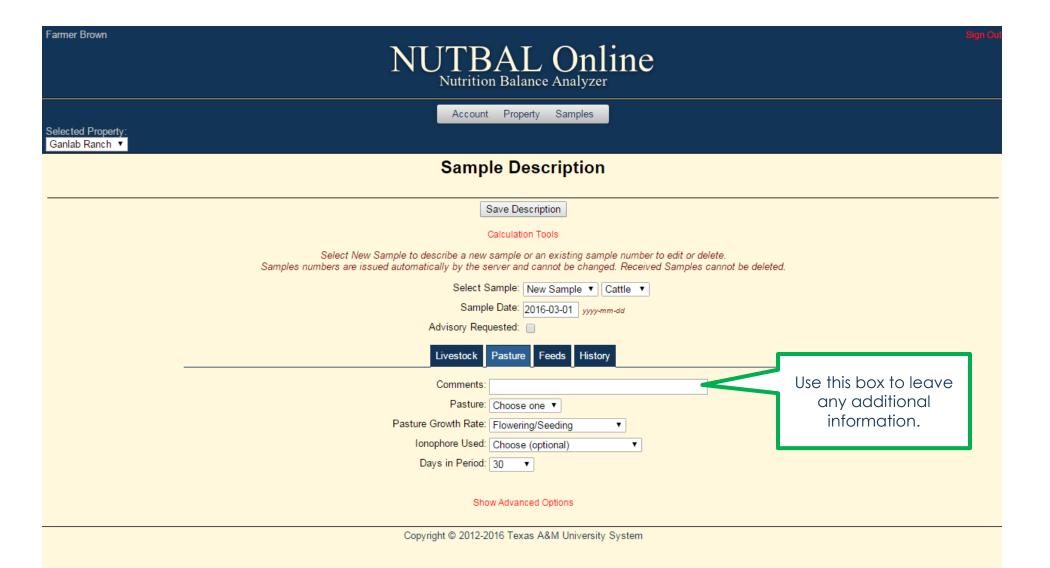
Farmer Brown
NUTBAL Online
Nutrition Balance Analyzer
Selected Property: Selected Property:
Ganlab Ranch ▼
Sample Description
Save Description
Calculation Tools
Select New Sample to describe a new sample or an existing sample number to edit or delete. Samples numbers are issued automatically by the server and cannot be changed. Received Samples cannot be deleted.
Select Sample: New Sample ▼ Cattle ▼
Sample Date: yyyy-mm-dd
Advisory Requested:
Livestock Pasture Feeds History
Head Profile Age (months) Weight BCS Daily Gain Discrepency
No Profiles Have Been Added
Select from the list above to edit or remove the existing details
OR .
Select an available profile from the drop menu below and add
Add Profile Re nove Profile
Animal Prome. Female Angus 2009-04 10647 ▼ 83 months old
Animal Category: Mature ▼ Number of Head: 50
Frame Score: 4.0 ▼
Body Condition Score (1-9): 5.0 ▼
Weight (lbs): 1102.3 Standard Reference Weight = 1102 lbs
Days Lactating: 0 ▼
Days Pregnant: 0 ▼
Desired Daily Gain (lbs): 0.0 to los/day required to maintain BCS
Internal Parasite Load: None-Low ▼
External Parasite Load: None-Low ▼
Implant: Choose (optional) ▼
Comments:

NUTBAL Online Nutrition Balance Analyzer				
Account Property: Ganlab Ranch ▼				
Sample Description				
Save Description Calculation Tools Select New Sample to describe a new sample or an existing sample number to edit or delete. Samples numbers are issued automatically by the server and cannot be changed. Received Samples cannot be deleted. Select Sample: New Sample Cattle Sample Date: Sample Date: Advisory Requested: Advisory Requested:				
LivestockPastureFeedsHistoryHeadProfileAge (months)WeightBCSDaily GainDiscrepency50Female Angus 2009-04 10647831102 lbs5.00.0 lbs				
Select from the list above to edit or remove the existing details OR Select an available profile from the drop menu below and add				
Add Profile Remove Profile				
Select from the list above to edit or remove the existing details OR Select an available profile from the drop menu below and add Add Profile Remove Profile Animal Profile: Choose one Animal Category: Choose one Animal Category: Choose one Number of Head: 0 Frame Score: 0.0 Body Condition Score 0: Weight (lbs): 0 Desired Daily Gain (lbs): 0.0 Internal Parasite Load: None-Low External Parasite Load: None-Low Implant: Choose (optional) Comments: Show Advanced Options				

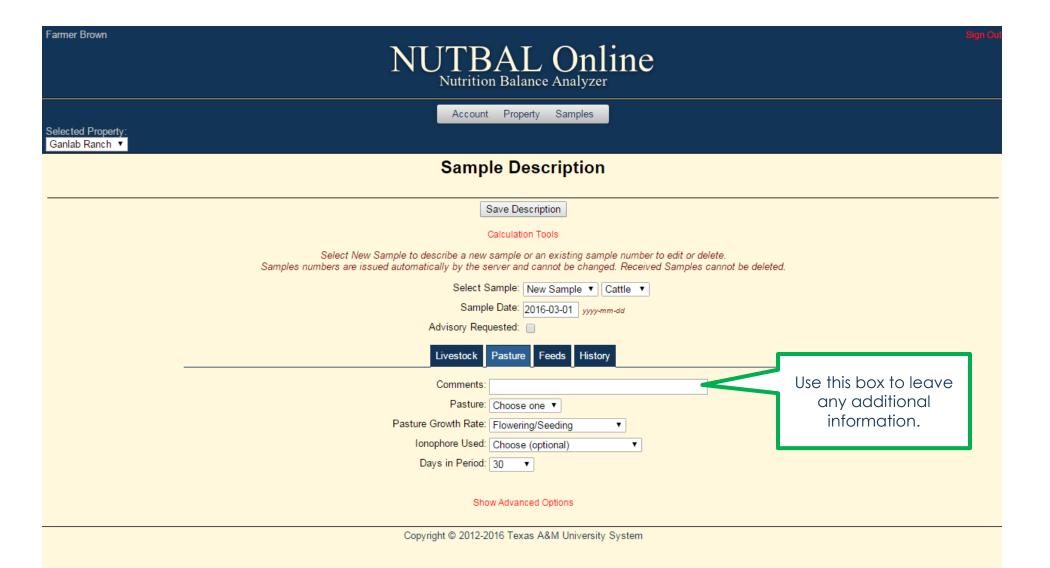
NUTBAL Online Nutrition Balance Analyzer				
Selected Property: Ganlab Ranch Account	nt Property Samples			
Sample Description				
	Save Description			
	Calculation Tools			
	v sample or an existing sample number to edit or delete. server and cannot be changed. Received Samples cannot be deleted.			
Select	Sample: New Sample ▼ Cattle ▼			
	ple Date: yyyy-mm-dd			
Advisory Re	quested:			
Livestc :k	Pasture Fe ds History			
Head Profile A 50 Female Angus 2009-04 10647	ge (ITONINIS) Weight BCS Daily Gain Discrepency 83 1102 lbs 5.0 0.0 lbs			
Select from the list ab	ove to edit or remove the existing details			
	OR			
Select an available profile from the drop menu below and add				
Add F	Profile Remove Profile			
Animal Profile	Choose one			
Animal Category	Choose one ▼			
Number of Head	0			
Frame Score	8 0.0 ▼			
Body Condition Score (
Weight (lbs				
Desired Daily Gain (lbs Internal Parasite Load				
External Parasite Load				
	Choose (optional)			
Comments				
St.	ow Advanced Options			

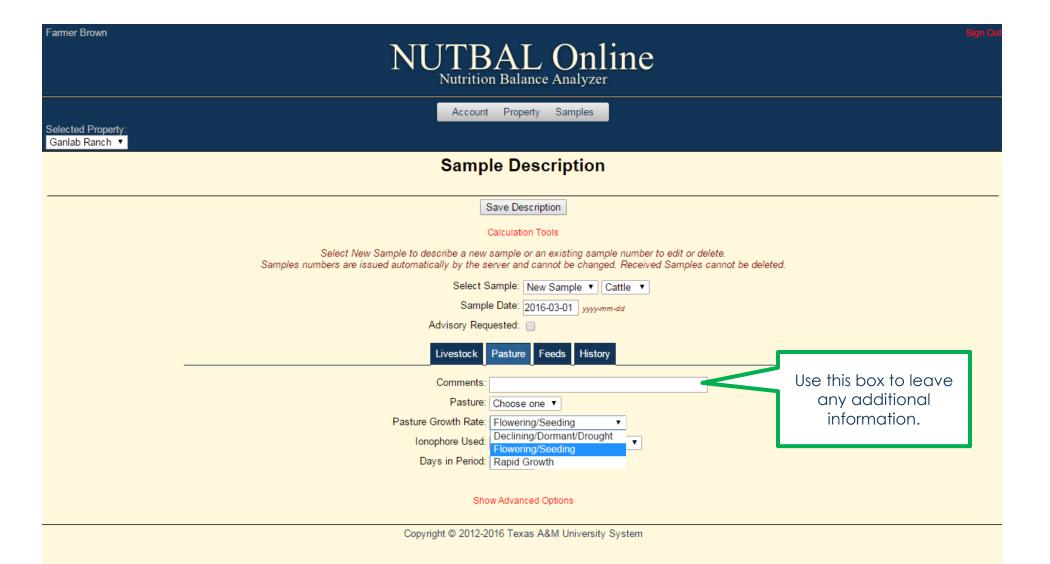


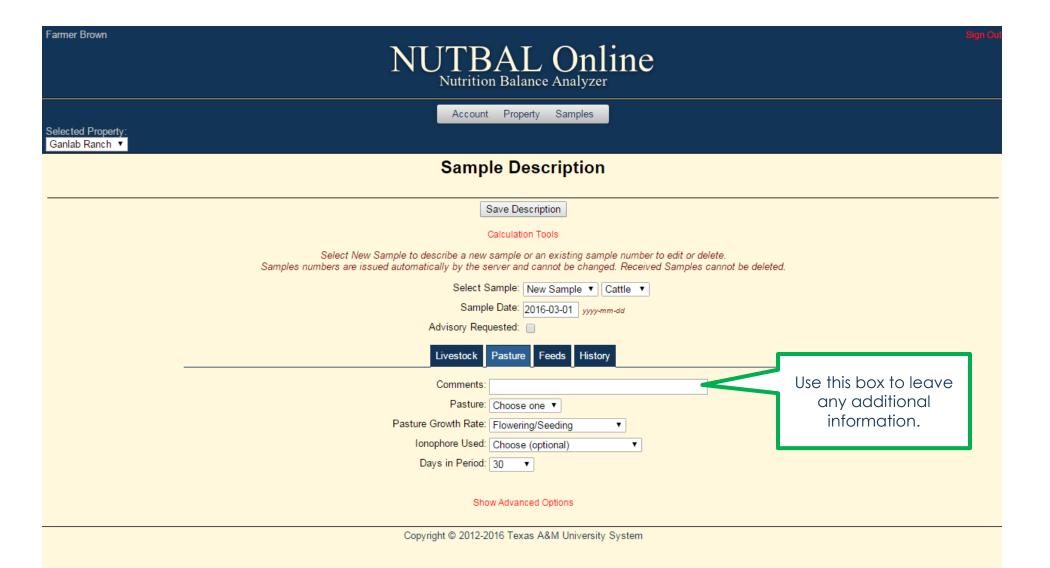


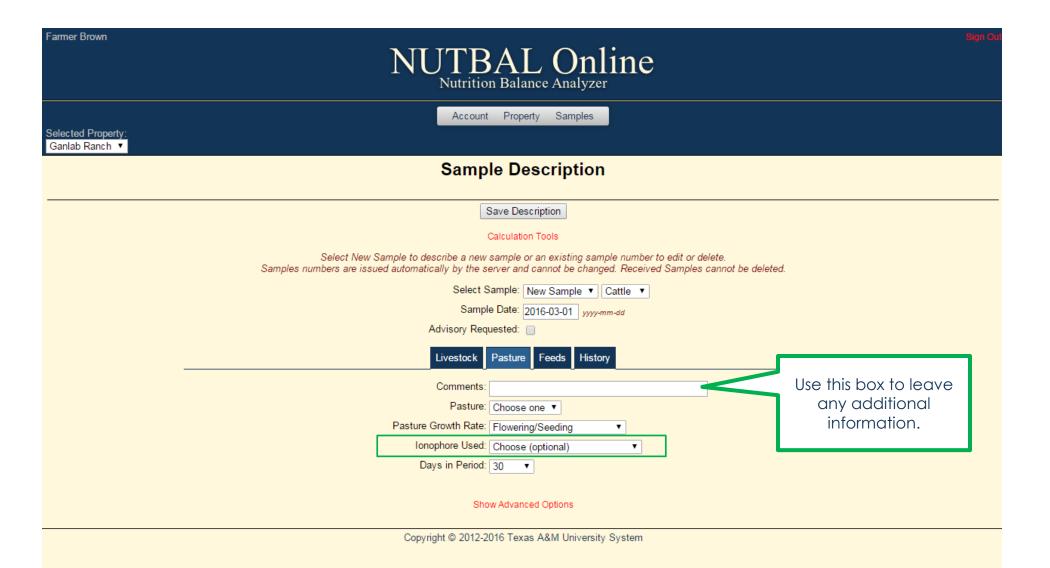


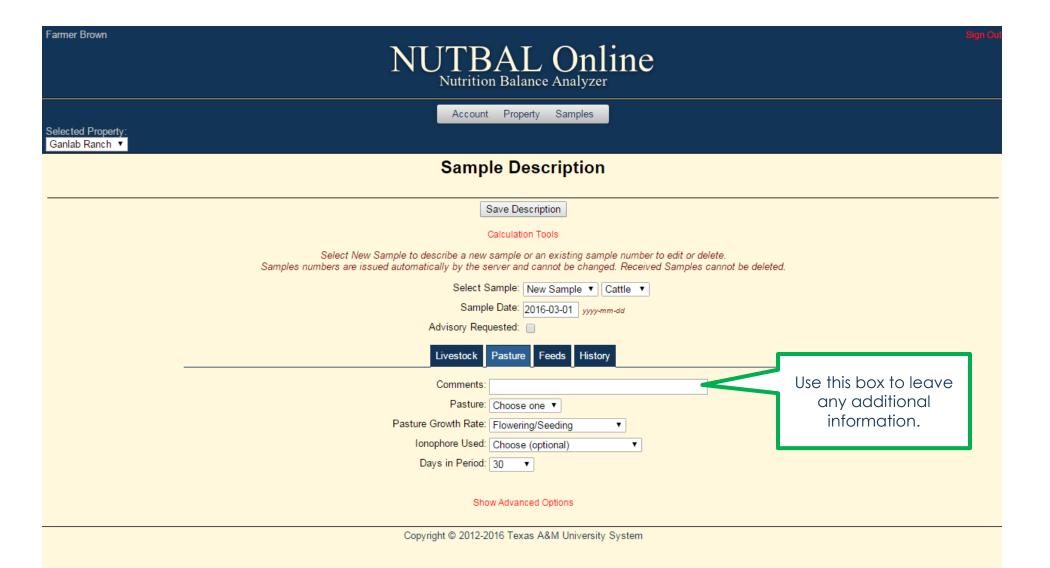






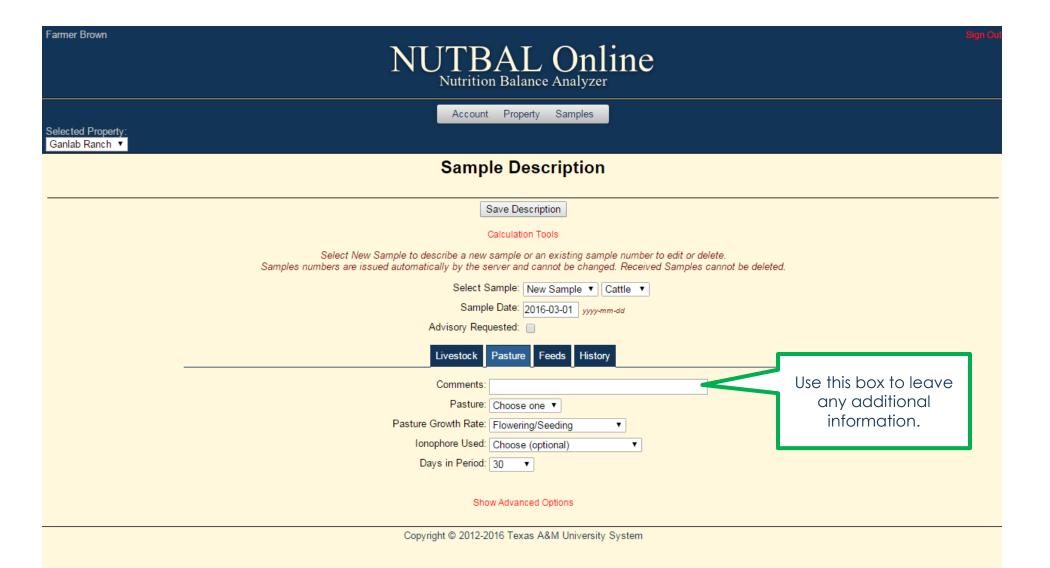


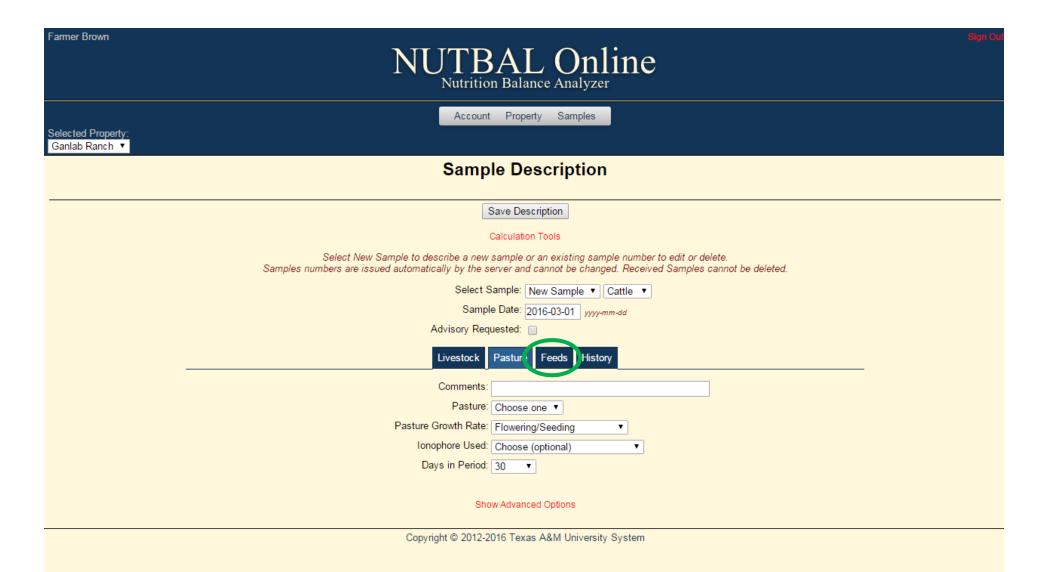






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Entering Information on Supplemental Feeds

- Only the Livestock tab and the Pasture tabs have to be filled out in order to successfully save the Sample Description.
- If supplemental feeds are being used, add information for each feed being used. Click add feed after each feed is added.
- Only include supplemental feeds that were being fed prior to sampling and that will continue to be fed over the next 30 days. Feed needs to be discontinued 48hrs before sampling.

What feed to enter

 Supplements with Protein should always be entered here. If unsure about what to enter, send a copy of feed tag with your sample.

 Vitamin and Mineral supplements do not need to be entered into NUTBAL.



From: http://www.redchainfeeds.com/ cattle.html

From: http://www.countrymax.com/Crack ed-Corn-50-Lb./



What feed to enter

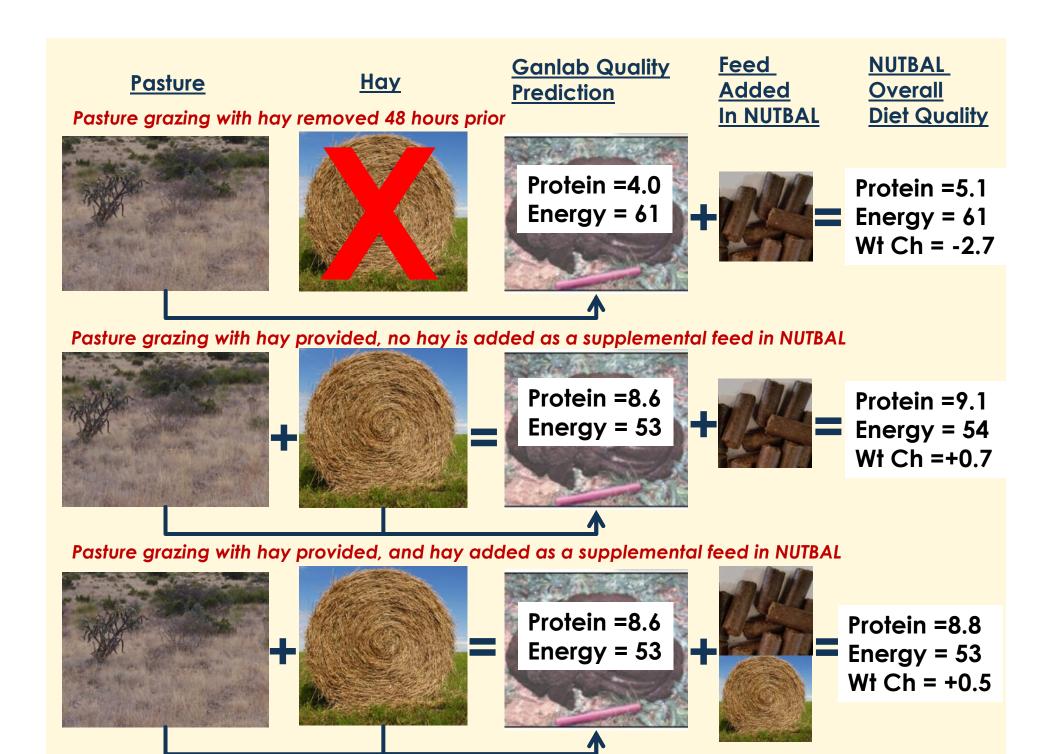
- HAY or roughage supplements are unique. Hay has protein and therefore it is important that the lab be made aware that hay is being fed.
- We recommended that hay not be entered into the system as a "feed". It is best to leave a note in the sample description indicating that hay is being fed.
- If you are feeding hay and do not remove the hay 48
 hours before taking your sample, then the diet quality as
 measured in the manure will include the contribution of
 the hay to the overall forage quality

What feed to enter

- So, if the hay is then entered as a feed in NUTBAL, this will result in an over-estimation of protein, because feed protein is added to the protein measured in the sample you sent to the lab. We will talk more about this when we look at the report
- To get the diet quality value for pasture feed, you can remove hay from animals 48 hours prior to sample collection (if this is possible).



From: http://www.corralpanels.org/corralpanels/bale-feeders.html



Farmer Brown Ganlab Ranch 720 E. Blackland Road Temple TX, 76502 Phone: (254)774-6134 Fax: (254)774-6150

Pasture grazing with hay removed 48 hours prior

Generated: 2016-4-20 6:37

Standard Report

Sample: 58152 Profile Name: Female Angus 2009-04 21370

Date Collected: 2016-03-01 Animal Kind: Cattle

Report Date: 2016-04-20 Animal Breed: Angus

Pasture Name: Pasture 1 Gender: Female

Vegetation Type: Native Range Intermediate Grass

Comments: Animals Removed from Hay for 48 hours

Current Animal Condition

Standard Ref. Wt.: 1102 lbs

Weight: 1102 lbs

Body Condition: 5.0 (1-9)

Description: mama cows

Average Age: 6.9 Years

Duration Pregnant: 0 days

Duration Lactating: 0 days

Performance

Weight Change Goal: 0.0 lbs/day
Predicted Weight Change: -2.71 lbs/day
Performance Limited by: Crude Protein

Weight in 30 Days: 1020 lbs Body Condition in 30 Days: 4.0 (1-9)

Feeds Applied

Name:	Amount:	Crude Protein:	<u>Total Digestible</u> <u>Nutrients:</u>
20% Cubes, All Natural CP	1.0 lbs daily	21.1%	70.0%

Daily Nutritional Status

	Crude Protein	<u>NEm</u>	NEg
Intake:	0.73 lbs	9.437 Mcal	0.471 Mcal
Requirement:	1.31 lbs	8.686 Mcal	0.0 Mcal
Balance:	-0.58 lbs	0.75 Mcal	0.47 Mcal

Daily Dry Matter Intake

	<u>Intake</u>	Percent of Std. Ref. Wt.	AUE
Concentrates:	0.94 lbs	0.09%	0.04
Roughage:	0.0 lbs	0.0%	0.0
Forage:	13.35 lbs	1.21%	0.51
Total:	14.29 lbs	1.3%	0.55

Diet Quality

CP Consumption: DOM Consumption: DOM / CP Ratio: Overall 5.13% 61.41% 11.97 Forage 4.0% 61.0% 15.3 Farmer Brown Ganlab Ranch 720 E. Blackland Road Temple TX, 76502 Phone: (254)774-6134 Fax: (254)774-6150

Pasture grazing with hay provided, no hay is added as a supplemental feed in NUTBAL

Generated: 2016-4-20 6:43

Standard Report

Sample: 58152 Profile Name: Female Angus 2009-04 21370

Date Collected: 2016-03-01 Animal Kind: Cattle

Report Date: 2016-04-20 Animal Breed: Angus

Pasture Name: Pasture 1 Gender: Female

Vegetation Type: Native Range Intermediate Grass

Comments: Hay is being Fed

Current Animal Condition

Standard Ref. Wt.: 1102 lbs

Weight: 1102 lbs

Body Condition: 5.0 (1-9)

Description: mama cows

Average Age: 6.9 Years

Duration Pregnant: 0 days

Duration Lactating: 0 days

Performance

Weight Change Goal: 0.0 lbs/day
Predicted Weight Change: 0.68 lbs/day
Performance Limited by: Energy

Weight in 30 Days: 1122 lbs Body Condition in 30 Days: 5.3 (1-9)

Feeds Applied

Name:	Amount:	Crude Protein:	<u>Total Digestible</u> <u>Nutrients:</u>
20% Cubes, All Natural CP	1.0 lbs daily	21.1%	70.0%

Daily Nutritional Status

	<u>Crude Protein</u>	<u>NEm</u>	<u>NEg</u>
Intake:	2.04 lbs	12.001 Mcal	1.793 Mcal
Requirement:	1.31 lbs	8.686 Mcal	0.0 Mcal
Balance:	0.73 lbs	3.31 Mcal	1.79 Mcal

Daily Dry Matter Intake

	<u>Intake</u>	Percent of Std. Ref. Wt.	AUE
Concentrates:	0.94 lbs	0.09%	0.04
Roughage:	0.0 lbs	0.0%	0.0
Forage:	21.42 lbs	1.94%	0.82
Total:	22.36 lbs	2.03%	0.86

Diet Quality

CP Consumption: DOM Consumption: DOM / CP Ratio: Overall 9.13% 53.59% 5.87 Forage 8.6% 53.0% 6.2 Farmer Brown Ganlab Ranch 720 E. Blackland Road Temple TX, 76502 Phone: (254)774-6134 Fax: (254)774-6150

Pasture grazing with hay provided, and hay added as a supplemental feed in NUTBAL

Animal Kind: Cattle

Gender: Female

Animal Breed: Anaus

Standard Report

Sample: 58152

Date Collected: 2016-03-01

Report Date: 2016-04-20

Pasture Name: Pasture 1

Vegetation Type: Native Range Intermediate Grass

Comments: Hay is being fed, and added as a feed

Current Animal Condition

Standard Ref. Wt.: 1102 lbs

Weight: 1102 lbs

Body Condition: 5.0 (1-9)

Description: mama cows

Average Age: 6.9 Years

Profile Name: Female Angus 2009-04 21370

Duration Pregnant: 0 days

Duration Lactating: 0 days

Performance

Weight Change Goal: 0.0 lbs/day

Predicted Weight Change 0.55 lbs/day

Performance Limited by: Energy

Weight in 30 Days: 1118 lbs

Body Condition in 30 Days: 5.2 (1-9)

Feeds Applied

<u>Name:</u>	Amount:	Crude Protein:	Total Digestible Nutrients:
20% Cubes, All Natural CP	1.0 lbs daily	21.1%	70.0%
Bermudagrass, Coastal Hay S-C	15.0 lbs daily	8.0%	54.0%

Daily Nutritional Status

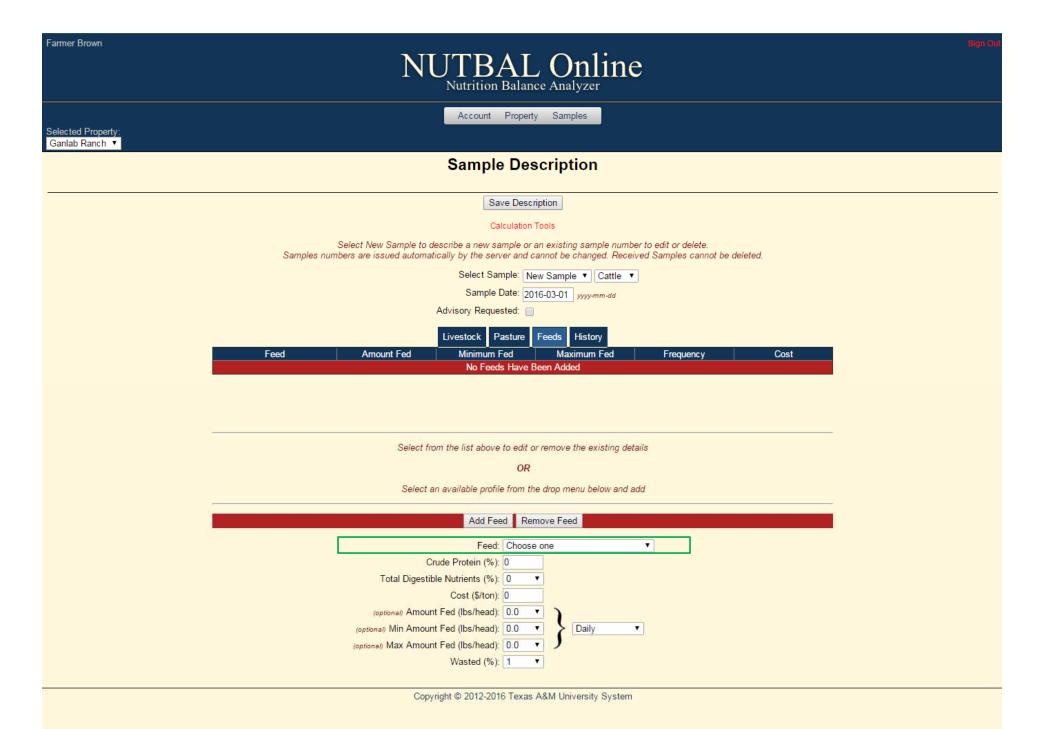
	<u>Crude Protein</u>	<u>NEm</u>	<u>NEg</u>
Intake:	1.92 lbs	11.39 Mcal	1.44 Mcal
Requirement:	1.3 lbs	8.69 Mcal	0.0 Mcal
Balance:	0.62 lbs	2.7 Mcal	1.44 Mcal

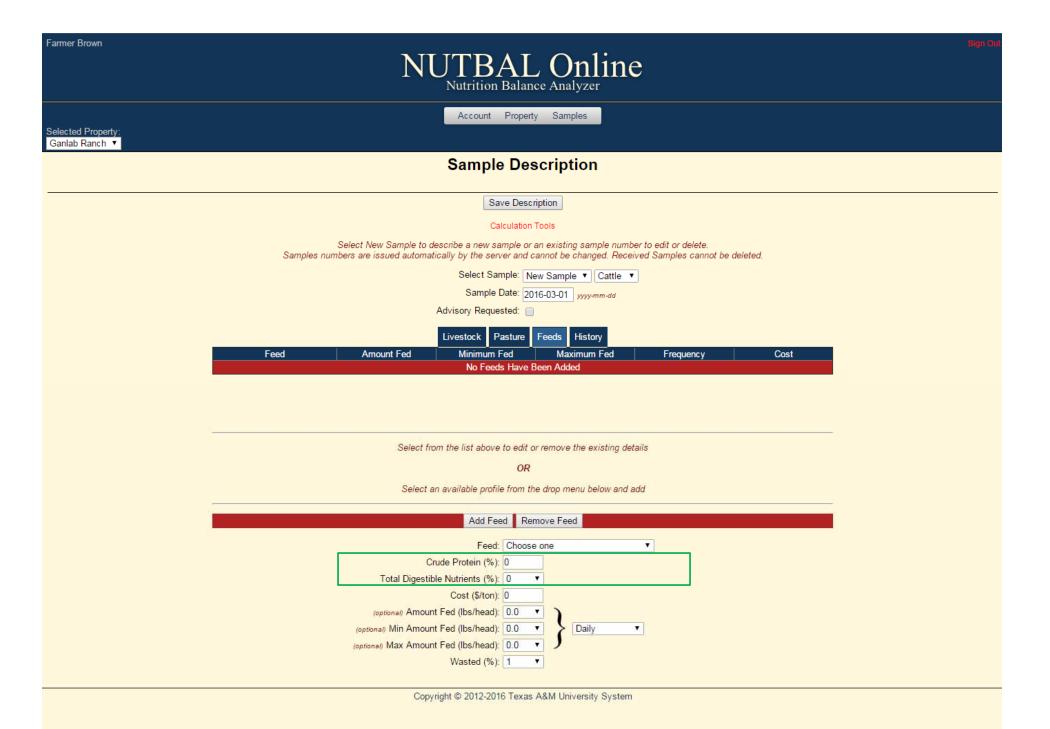
Daily Dry Matter Intake

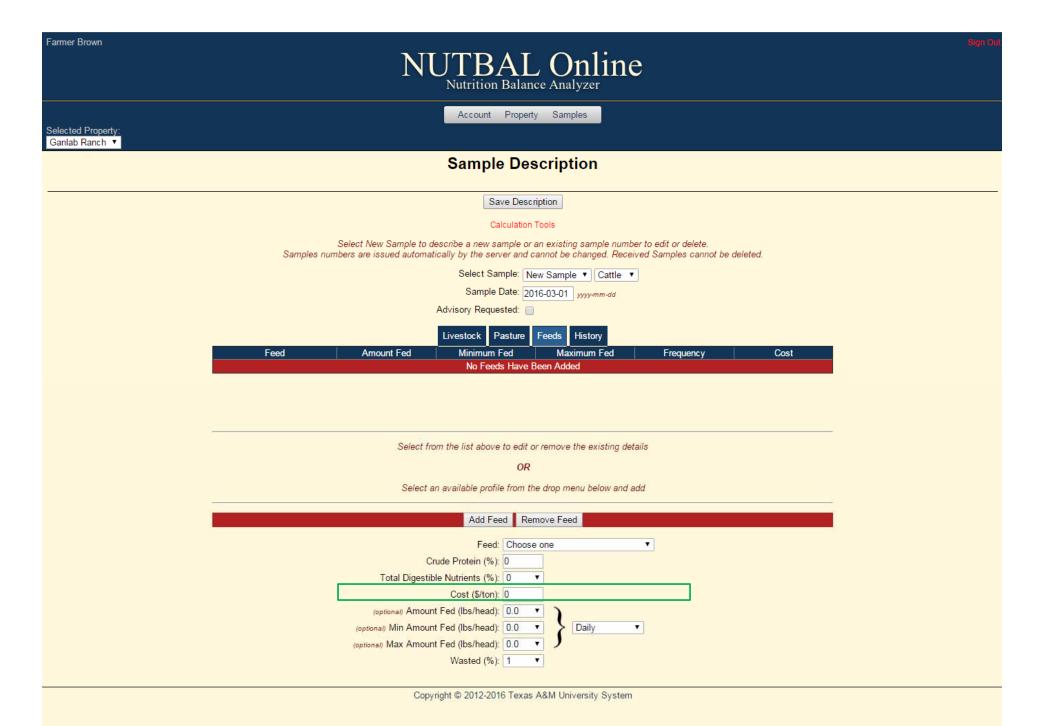
	<u>Intake</u>	Percent of Std. Ret. Wt.	<u>AUE</u>
Concentrates:	0.95 lbs	0.09%	0.04
Roughage:	13.49 lbs	1.22%	0.52
Forage:	7.43 lbs	0.67%	0.29
Total:	21.87 lbs	1.98%	0.84

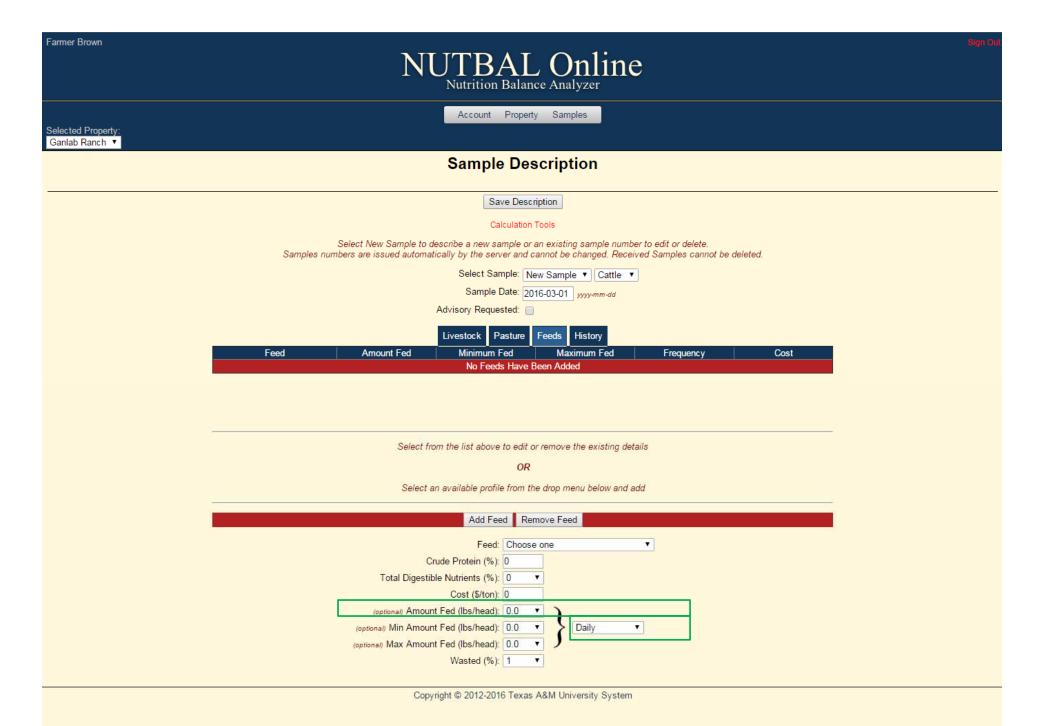
Diet Quality

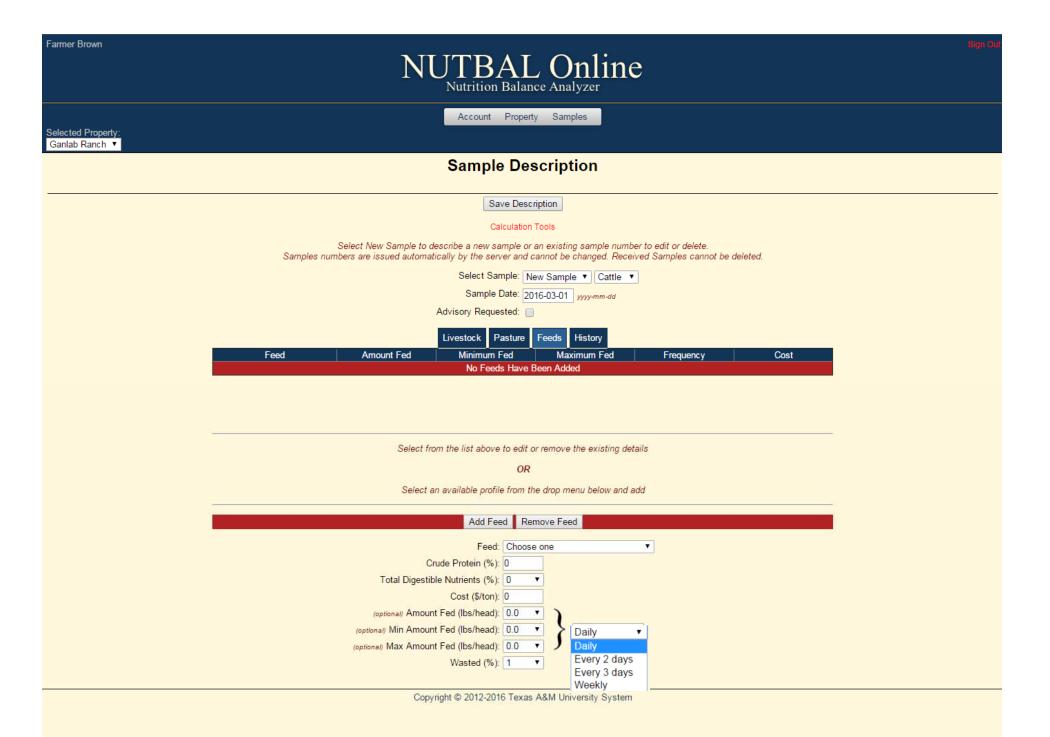
CP Consumption: DOM Consumption: DOM / CP Ratio: Overall 8.77% 52.62% 6.0 Forage 8.6% 53.0% 6.2

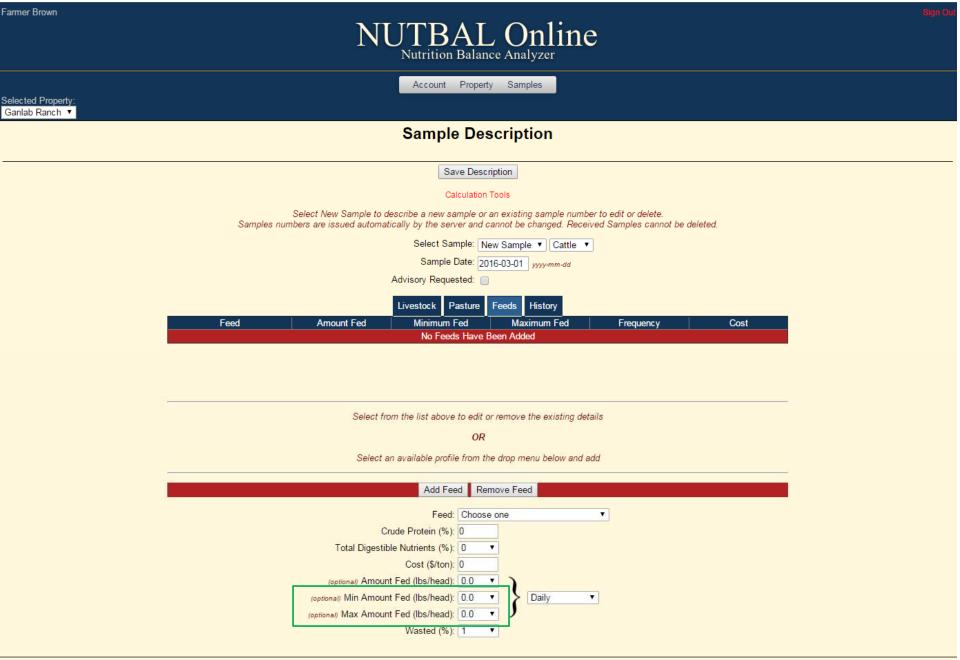


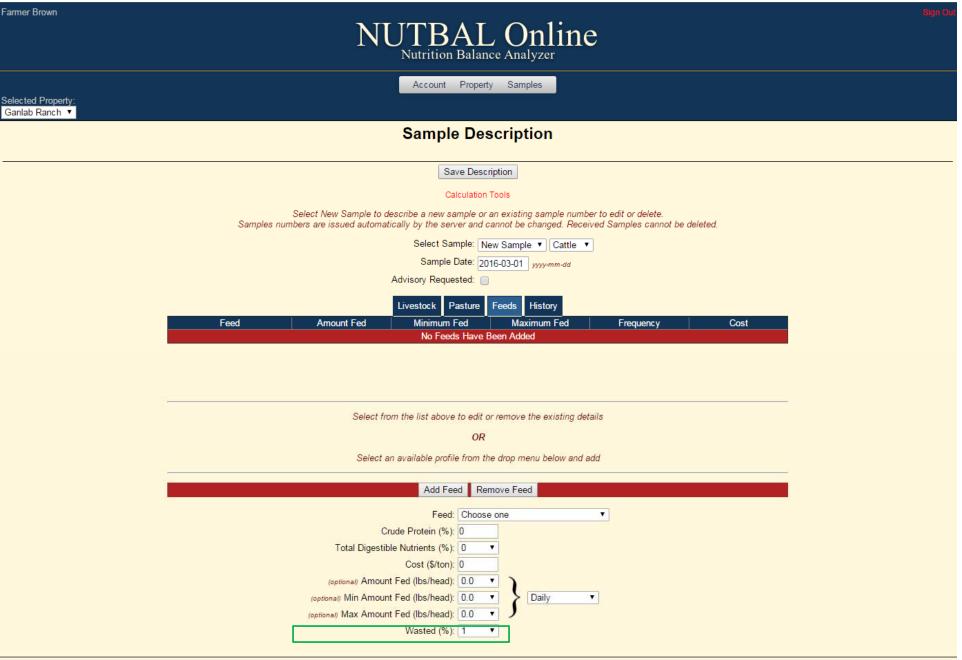


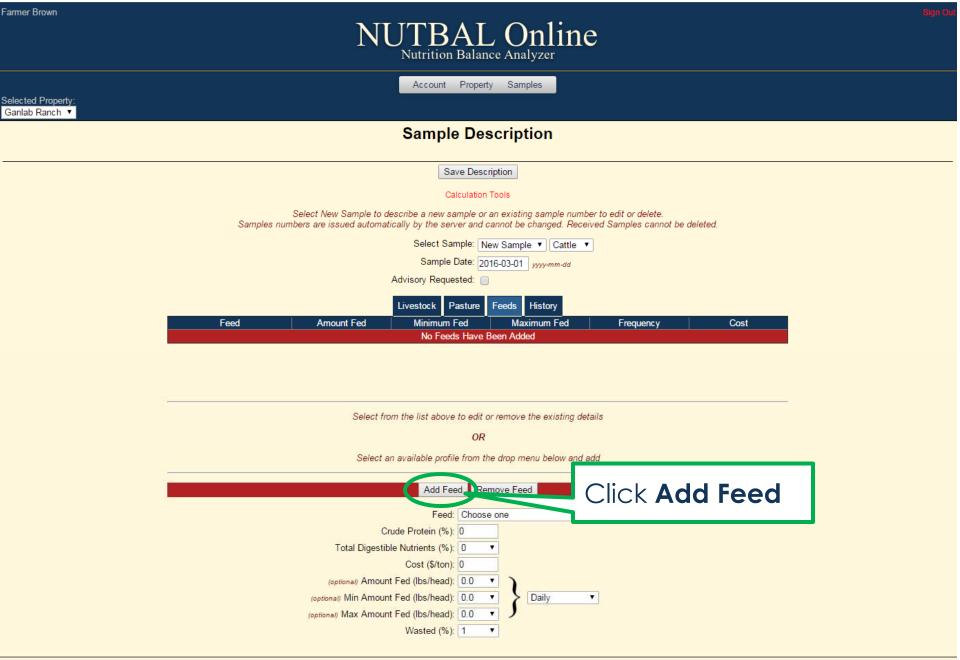


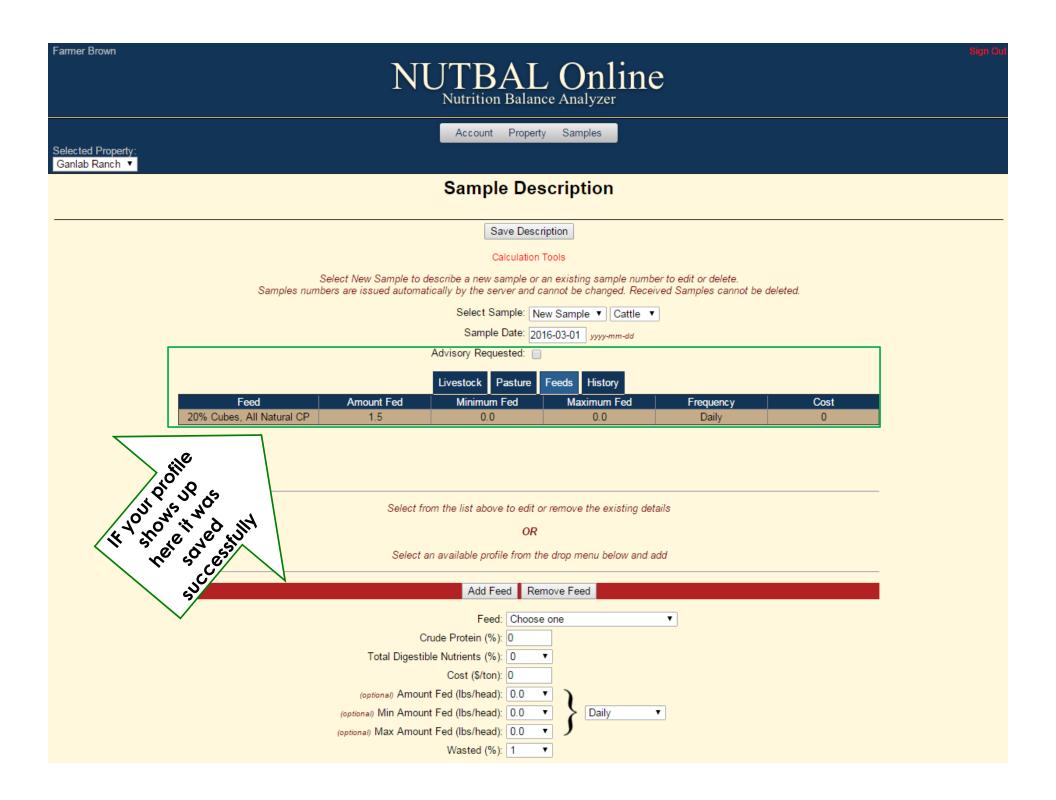


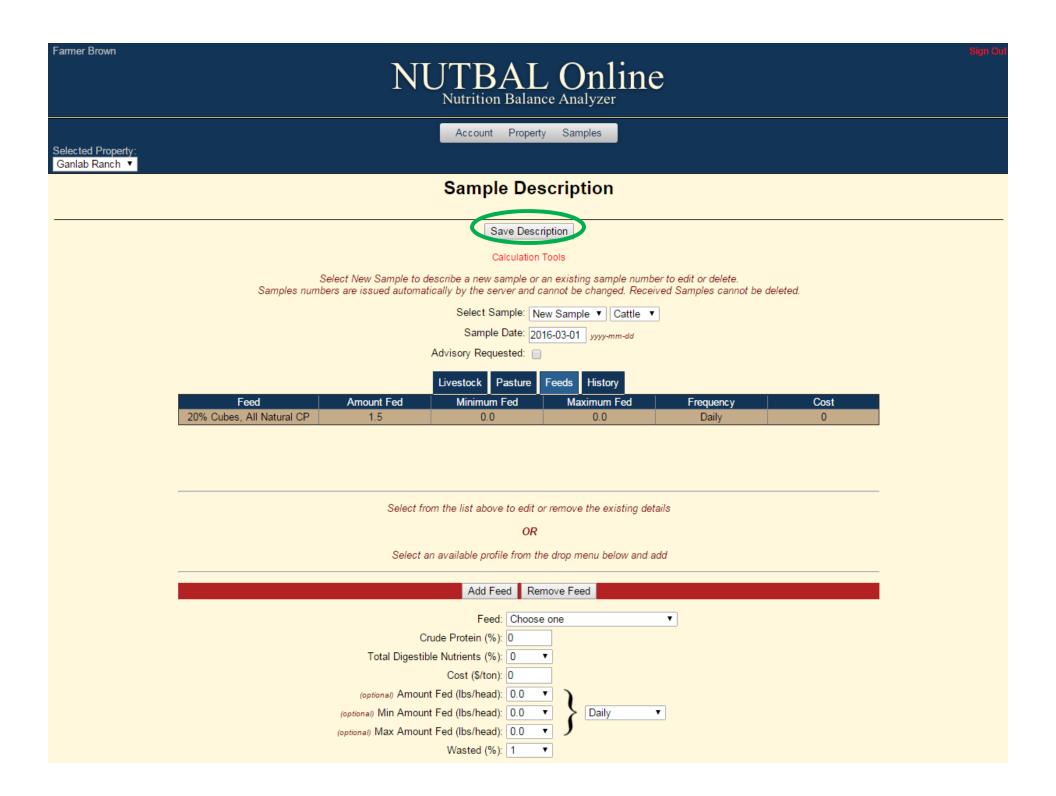


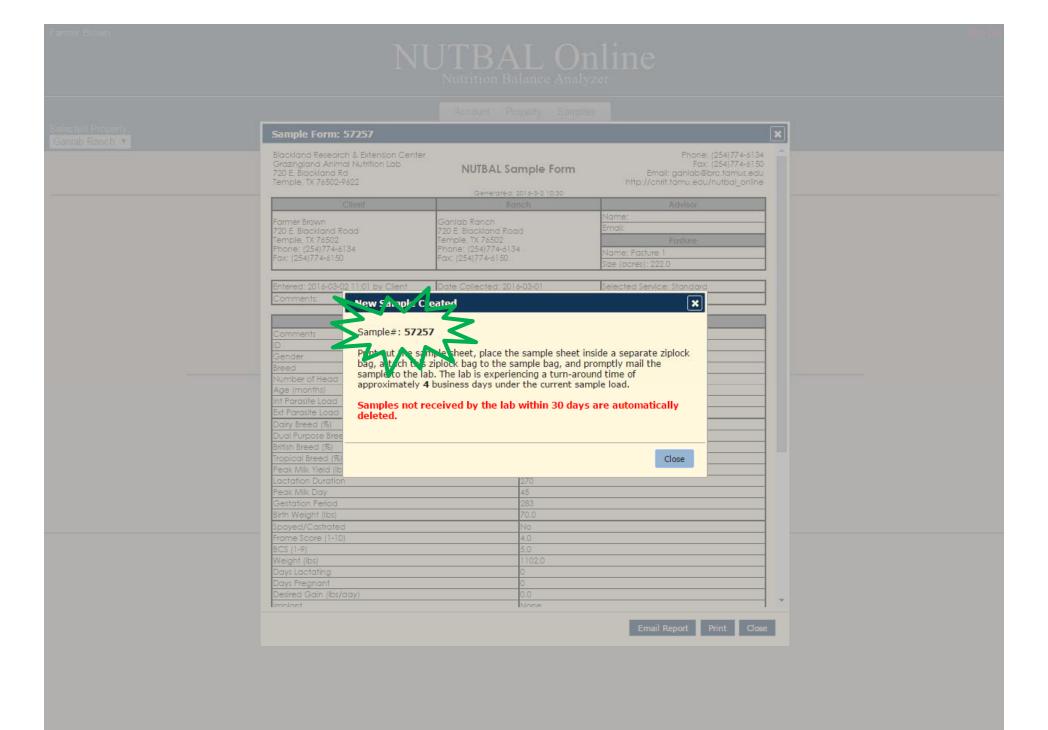


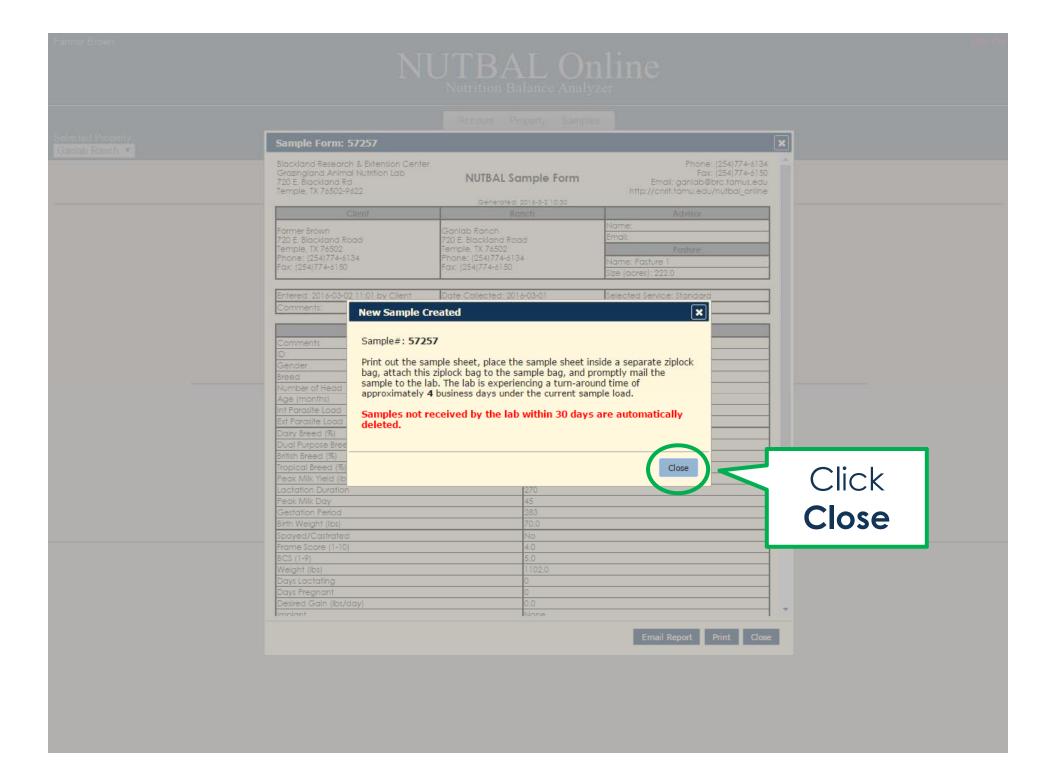














Filling out Paper Sample Sheets

Grazingland Animal Nutrition Lab

Client			Ranch		NRCS Agent or Technical	Advisor	Select	Service
Name (First & Last):		Name:			Name:		[] Standard: \$3	35. Includes NIRS
Address:		Address:			E-mail:		report & animal p	erformance report
City: State:	Zip:	City:	State:	Zip:	30300000000000000000000000000000000000		C	R
Phone: Fax:		Phone:	Fax:		Program		[] Advisory: \$70.	Includes Standard
Email:					[] CSP [] Education [] Oth	or []None	& sample reco	mmendations.
Contact Method (choose one): [] Email	[]Mail []Fax	Date Collected:			[]CSP []Education []Oth	ler [] None	Add \$10 for each	profile past 3rd.
						2.5		
Animal Attributes	Example	Profile 1	Profile 2	Profile 3	Feeds Used	Example	Feed 1	Feed 2
Herd ID	Cows 2010				Feed Type	Tub		
Species (Required)	Cattle				% Crude Protein	22		
Gender (Required)	Female				% Total Digestible Nutrients	83		
Breed (Required)	Angus				Cost per Ton (\$)	400		
Number of Head	50				Amount Fed (lbs/head)	0.7		
Average Age (Required)	05/2010				Frequency of Feedings	Daily		
Optional Breed Information					Feed Mitigation			
% Dairy Breed	0				Minimum Amount Fed (lbs/head)	0.5		
% Dual Purpose Breed	0				Maximum Amount Fed (lbs/head)	1		
% British or Continental Breed	100%							
% Tropical Breed	0					Comments	•	
Current Condition								Ť
Spayed/Castrated (Y or N)	N							
Body Condition Score (1-9)	5							
Weight (lbs)	1102							
Days Lactating (Required)	150							
Days Pregnant (Required)	90							
Desired Average Daily Gain (lbs)	0							
Implant	None							
Internal Parasite Load (L M H)	L							
External Parasite Load (L M H)	L							
Pasture		Pasture	Pasture Co	omments				
Pasture Name	Field 1							
Size (acres)	200							
% of forage allowed to be depleted	60							
Predominant Forage Type	Native Intermediate					Lab Use Onl	у)
Adequately or Poorly Watered	Adequately Watered				Sample #			
Slope (≤ 15° or > 15°)	< 15 Degree Slope				NIR File:			
Pasture Growth Rate (L M H)	M				Invoice #		Page	000
Ionophore	None				Check #		Bare	003
Days in Grazing Period	30				Notes:			
% Unrestricted Grazing	100							

Grazingland Animal Nutrition Lab

Client			Ranch		NRCS Agent or Technical	Advisor	Select	Service
Name (First & Last):		Name:			Name:		[] Standard: \$	35. Includes NIRS
Address:		Address:			E-mail:		report & animal ;	performance report
City: State:	Zip:	City:	State:	Zip:			(OR
Phone: Fax:		Phone:	Fax:		Program		[] Advisory: \$70	. Includes Standard
Email:					[] COD [] Education [] Oth	f 11000	& sample rec	ommendations.
Contact Method (choose one): [] Email	[]Mail []Fax	Date Collected:			[] CSP [] Education [] Other	er [] None	Add \$10 for eac	h profile past 3rd.
Animal Attributes	Example	Profile 1	Profile 2	Profile 3	Feeds Used	Example	Feed 1	Feed 2
Herd ID	Cows 2010				Feed Type	Tub		
Species (Required)	Cattle				% Crude Protein	22		
Gender (Required)	Female				% Total Digestible Nutrients	83		
Breed (Required)	Angus				Cost per Ton (\$)	400		
Number of Head	50				Amount Fed (lbs/head)	0.7		
Average Age (Required)	05/2010				Frequency of Feedings	Daily		
Optional Breed Information					Feed Mitigation			
% Dairy Breed	0				Minimum Amount Fed (lbs/head)	0.5		
% Dual Purpose Breed	0				Maximum Amount Fed (lbs/head)	1		
% British or Continental Breed	100%							
% Tropical Breed	0					Comments	5	
Current Condition								
Spayed/Castrated (Y or N)	N				i I			
Body Condition Score (1-9)	5				i I			
Weight (lbs)	1102				i I			
Days Lactating (Required)	150				i I			
Days Pregnant (Required)	90				i I			
Desired Average Daily Gain (lbs)	0				i I			
Implant	None				i I			
Internal Parasite Load (L M H)	L				i I			
External Parasite Load (L M H)	L				i I			
Pasture		Pasture	Pasture Co	omments	i I			
Pasture Name	Field 1				i I			
Size (acres)	200							
% of forage allowed to be depleted	60							
Predominant Forage Type	Native Intermediate					Lab Use Onl	ly	
Adequately or Poorly Watered	Adequately Watered				Sample #			
Slope (≤ 15° or > 15°)	< 15 Degree Slope				NIR File:			
Pasture Growth Rate (L M H)	М				Invoice #		Page	ada .
Ionophore	None				Check#		Bare	(0)013
Days in Grazing Period	30				Notes:			
% Unrestricted Grazing	100							

Grazingland Animal Nutrition Lab

Client			Ranch		NRCS Agent or Technical	Advisor	Select	Service
Name (First & Last):		Name:			Name:		[] Standard: \$3	35. Includes NIRS
Address:		Address:			E-mail:		report & animal p	erformance report
City: State:	Zip:	City:	State:	Zip:			C	R
Phone: Fax:		Phone:	Fax:		Program		[] Advisory: \$70.	Includes Standard
Email:					[] CSP [] Education [] Oth	or []None	& sample reco	ommendations.
Contact Method (choose one): [] Email	[]Mail []Fax	Date Collected:			[]GP []Education []Oth	lei [] None	Add \$10 for each	profile past 3rd.
Animal Attributes	Example	Profile 1	Profile 2	Profile 3	Feeds Used	Example	Feed 1	Feed 2
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Number of Head	50				Amount Fed (lbs/head)	0.7		
Average Age (Required)	05/2010				Frequency of Feedings	Daily		
Optional Breed Information					Feed Mitigation			
% Dairy Breed	0				Minimum Amount Fed (lbs/head)	0.5		
% Dual Purpose Breed	0				Maximum Amount Fed (lbs/head)	1		
% British or Continental Breed	100%							
% Tropical Breed	0					Comments	i i	Ì
Current Condition								
Spayed/Castrated (Y or N)	N							
Body Condition Score (1-9)	5							
Weight (lbs)	1102							
Days Lactating (Required)	150							
Days Pregnant (Required)	90							
Desired Average Daily Gain (lbs)	0							
Implant	None							
Internal Parasite Load (L M H)	L							
External Parasite Load (L M H)	L							
Pasture		Pasture	Pasture Co	omments				
Pasture Name	Field 1							
Size (acres)	200							
% of forage allowed to be depleted	60							
Predominant Forage Type	Native Intermediate					Lab Use Onl	ly	
Adequately or Poorly Watered	Adequately Watered				Sample #			
Slope (≤ 15° or > 15°)	< 15 Degree Slope				NIR File:			
Pasture Growth Rate (L M H)	M				Invoice #		Page	
Ionophore	None				Check #		Barc	
Days in Grazing Period	30				Notes:			
% Unrestricted Grazing	100							

Grazingland Animal Nutrition Lab

Client			Ranch		NRCS Agent or Technical	Advisor	Select	Service
Name (First & Last):		Name:			Name:		[] Standard: \$	35. Includes NIRS
Address:		Address:			E-mail:		report & animal p	erformance report
City: State:	Zip:	City:	State:	Zip:			C	OR
Phone: Fax:		Phone:	Fax:		Program		[] Advisory: \$70	. Includes Standard
Email:					[]CSP []Education []Oth	er [] None	& sample reco	ommendations.
Contact Method (choose one): [] Email [[]Mail []Fax	Date Collected:			[]Cor []Eddcation []Oth	er [] None	Add \$10 for eac	h profile past 3rd.
				TO COMPLETE THE CO				
Animal Attributes	Example	Profile 1	Profile 2	Profile 3	Feeds Used	Example	Feed 1	Feed 2
Herd ID	Cows 2010				Feed Type	Tub		
Species (Required)	Cattle				% Crude Protein	22		
Gender (Required)	Female				% Total Digestible Nutrients	83		
Breed (Required)	Angus				Cost per Ton (\$)	400		
Number of Head	50				Amount Fed (lbs/head)	0.7		
Average Age (Required)	05/2010				Frequency of Feedings	Daily		
Optional Breed Information					Feed Mitigation			
% Dairy Breed	0				Minimum Amount Fed (lbs/head)	0.5		
% Dual Purpose Breed	0				Maximum Amount Fed (lbs/head)	1		
% British or Continental Breed	100%							
% Tropical Breed	0					Comments		
Current Condition								
Spayed/Castrated (Y or N)	N							
Body Condition Score (1-9)	5							
Weight (lbs)	1102							
Days Lactating (Required)	150							
Days Pregnant (Required)	90							
Desired Average Daily Gain (lbs)	0							
Implant	None							
Internal Parasite Load (L M H)	L							
External Parasite Load (L M H)	L							
Pasture		Pasture	Pasture Co	omments				
Pasture Name	Field 1							
Size (acres)	200							
% of forage allowed to be depleted	60							
Predominant Forage Type	Native Intermediate					Lab Use Only	1	
Adequately or Poorly Watered	Adequately Watered				Sample #			
Slope (≤ 15° or > 15°)	< 15 Degree Slope				NIR File:			
Pasture Growth Rate (L M H)	М				Invoice #		Page	000
Ionophore	None				Check #		Bare	U.E.
Days in Grazing Period	30				Notes:			
% Unrestricted Grazing	100							

Grazingland Animal Nutrition Lab

Client		J.	Ranch		NRCS Agent or Technical A	Advisor	Select	Service
Name (First & Last):		Name:			Name:		[] Standard: \$35. Includes NIRS	
Address:		Address:			E-mail:		report & animal p	erformance report
City: State:	Zip:	City:	State:	Zip:			C)R
Phone: Fax:		Phone:	Fax:		Program		[] Advisory: \$70.	Includes Standard
Email:					[]CSP []Education []Othe	er [] None	& sample reco	ommendations.
Contact Method (choose one): [] Email [[] Mail [] Fax	Date Collected:			[] Cor [] Education [] Other	i [] None	Add \$10 for each	profile past 3rd.
MERINETS DOTERNETS DO	*******************************		*************************	***************************************				
Animal Attributes	Example	Profile 1	Profile 2	Profile 3	Feeds Used	Example	Feed 1	Feed 2
Herd ID	Cows 2010				Feed Type	Tub		
Species (Required)	Cattle				% Crude Protein	22		
Gender (Required)	Female				% Total Digestible Nutrients	83		
Breed (Required)	Angus				Cost per Ton (\$)	400		
Number of Head	50				Amount Fed (lbs/head)	0.7		
Average Age (Required)	05/2010				Frequency of Feedings	Daily		
Optional Breed Information					Feed Mitigation			
% Dairy Breed	0				Minimum Amount Fed (lbs/head)	0.5		
% Dual Purpose Breed	0				Maximum Amount Fed (lbs/head)	1		
% British or Continental Breed	100%							
% Tropical Breed	0					Comments		ì
Current Condition								
Spayed/Castrated (Y or N)	N							
Body Condition Score (1-9)	5							
Weight (lbs)	1102							
Days Lactating (Required)	150							
Days Pregnant (Required)	90							
Desired Average Daily Gain (lbs)	0							
Implant	None							
Internal Parasite Load (L M H)	L							
External Parasite Load (L M H)	L							
Pasture		Pasture	Pasture C	Comments				
Pasture Name	Field 1							
Size (acres)	200							
% of forage allowed to be depleted	60				-			
Predominant Forage Type	Native Intermediate					Lab Use Only	1	
Adequately or Poorly Watered	Adequately Watered				Sample #			
Slope (≤ 15° or > 15°)	< 15 Degree Slope				NIR File:			
Pasture Growth Rate (L M H)	М				Invoice #		Para	ada .
lonophore	None				Check #		Bare	005
Days in Grazing Period	30				Notes:			
% Unrestricted Grazing	100							

Grazingland Animal Nutrition Lab

Client		j	Ranch		NRCS Agent or Technical	Advisor	Select	Service
Name (First & Last):		Name:			Name:		[] Standard: \$	35. Includes NIRS
Address:		Address:			E-mail:		report & animal p	performance report
City: State:	Zip:	City:	State:	Zip:			(OR
Phone: Fax:		Phone:	Fax:		Program		[] Advisory: \$70	. Includes Standard
Email:					[] COD [] Education [] Oth		& sample reco	ommendations.
Contact Method (choose one): [] Email	[]Mail []Fax	Date Collected:			[] CSP [] Education [] Oth	er [] None	Add \$10 for each	h profile past 3rd.
Animal Attributes	Example	Profile 1	Profile 2	Profile 3	Feeds Used	Example	Feed 1	Feed 2
Herd ID	Cows 2010	Trome 1		Tromes	Feed Type	Tub	10002	recuz
Species (Required)	Cattle				% Crude Protein	22		
Gender (Required)	Female				% Total Digestible Nutrients	83		
Breed (Required)	Angus				Cost per Ton (\$)	400		
Number of Head	50				Amount Fed (lbs/head)	0.7		
Average Age (Required)	05/2010				Frequency of Feedings	Daily		
Optional Breed Information					Feed Mitigation			
% Dairy Breed	0				Minimum Amount Fed (lbs/head)	0.5		
% Dual Purpose Breed	0				Maximum Amount Fed (lbs/head)	1		
% British or Continental Breed	100%							
% Tropical Breed 0		1				Comments	-	
Current Condition				1				
Spayed/Castrated (Y or N)	N				<mark>4</mark> 1			
Body Condition Score (1-9)	5				<mark>4</mark> 1			
Weight (lbs)	1102				<mark>4</mark> 1			
Days Lactating (Required)	150				<mark>4</mark> 1			
Days Pregnant (Required)	90				<mark>4</mark> 1			
Desired Average Daily Gain (lbs)	0				<mark>4</mark> 1			
Implant	None				<mark>4</mark> 1			
Internal Parasite Load (L M H)	L				<u> </u>			
External Parasite Load (L M H)	L				<mark>4</mark> 1			
TRANSPORTED THE		SECTION OF THE PROPERTY OF THE		A REPORT FOR THE PARTY OF THE P	<u> </u>			
Pasture Name	Field 1				<i>i</i> I			
Size (acres)	200							
% of forage allowed to be depleted	60							
Predominant Forage Type	Native Intermediate					Lab Use Onl	у	
Adequately or Poorly Watered	Adequately Watered				Sample #			
Slope (≤ 15° or > 15°)	< 15 Degree Slope				NIR File:			
Pasture Growth Rate (L M H)	M				Invoice #		Page	200
Ionophore	None				Check #		Bare	CUE
Days in Grazing Period	30				Notes:			
% Unrestricted Grazing	100							

Grazingland Animal Nutrition Lab

Client			Ranch			NRCS Agent or Technical	Advisor		Select	Service
Name (First & Last):		Name:			Na	me:			[] Standard: \$	35. Includes NIRS
Address:		Address:			E-r	mail:			report & animal p	erformance report
City: State:	Zip:	City:	State:	Zip:					(DR
Phone: Fax:		Phone:	Fax:			Program			[] Advisory: \$70. Includes Standard	
Email:					_	[] CSP [] Education [] Oth	er []No	one	& sample recommendations.	
Contact Method (choose one): [] Email	[] Mail [] Fax	Date Collected:			⅃┖	1700 (7000000 1700			Add \$10 for eac	h profile past 3rd.
Animal Attributes	F	2 (1)	D			51-111	F		- 1.	5 15
Animal Attributes	Example Cows 2010	Profile 1	Profile 2	Profile 3	11	Feeds Used	_	mple ub	Feed 1	Feed 2
Herd ID	Cattle					ed Type	1000	22		
Species (Required)	Female				76 (Crude Protein	- 4	22		
Gender (Required) Breed (Required)	Angus				1 1	•	- 1	11		-:
Number of Head	50				18			V	ery Ema	clatea
Average Age (Required)	05/2010				1 1		_			
Optional Breed Information	05/2020				1 H	Caution	2	l En	naciate	4
% Dairy Breed	0				1 1	Caonon	_		idelate	·
% Dual Purpose Breed	0				1 1	-			T1 ·	
% British or Continental Breed	100%				11		3	V	ery Thin	
% Tropical Breed	0			1	1 [-	▼			,	
Current Condition					П	^	4	Th	in	
Spayed/Castrated (Y or N)	N						4	1111	11 1	
Body Condition Score (1-9)	5						_			
Weight (lbs)	1102					Optimal	5	I M	oderate	9
Days Lactating (Required)	150					- p				
Days Pregnant (Required)	90					1	/			
Desired Average Daily Gain (lbs)	0					1	6		boc	
Implant	None				. II -	·				
Internal Parasite Load (L M H)	L					↑	7	Fo	ıt	
External Parasite Load (L M H)	L			<u> </u>	. IL	I	<u> </u>	10	''	
Pasture Name	Field 1				ا ا ۲	Caution	8		oese	
Size (acres)	200					Catholi	0		7G2G	
% of forage allowed to be depleted	60				I۳					
Predominant Forage Type	Native Intermediate				IП		9	$V \in$	ery Obe	se
Adequately or Poorly Watered	Adequately Watered								, , ,	
Slope (≤ 15° or > 15°)	< 15 Degree Slope				NII	R File:				
Pasture Growth Rate (L M H)	M				Invoice #			200		
Ionophore	None				Invoice # Check #			008		
Days in Grazing Period	30				No	ites:				
% Unrestricted Grazing	100									

Grazingland Animal Nutrition Lab

Client			Ranch		NRCS Agent or Technical	Advisor	Select	Service
Name (First & Last):		Name:			Name:		[] Standard: \$	35. Includes NIRS
Address:		Address:			E-mail:		report & animal p	performance report
City: State:	Zip:	City:	State:	Zip:			(OR
Phone: Fax:		Phone:	Fax:	100.4	Program		[] Advisory: \$70	. Includes Standard
Email:					CONTRACTOR OF THE CONTRACTOR O		& sample rec	ommendations.
Contact Method (choose one): [] Email	[]Mail []Fax	Date Collected:			[]CSP []Education []Other	er [] None	Add \$10 for eac	h profile past 3rd.
Animal Attributes	Example	Profile 1	Profile 2	Profile 3	Feeds Used	Example	Feed 1	Feed 2
Herd ID	Cows 2010				Feed Type	Tub		
Species (Required)	Cattle				% Crude Protein	22		
Gender (Required)	Female				% Total Digestible Nutrients	83		
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Number of Head	50				Amount Fed (lbs/head)	0.7		
Average Age (Required)	05/2010				Frequency of Feedings	Daily		
Optional Breed Information					Feed Mitigation			
% Dairy Breed	0				Minimum Amount Fed (lbs/head)	0.5		
% Dual Purpose Breed	0				Maximum Amount Fed (lbs/head)	1		
% British or Continental Breed	100%				· · · · · · · · · · · · · · · · · · ·			•
% Tropical Breed	0					Comments		
Current Condition								
Spayed/Castrated (Y or N)	N				11			
Body Condition Score (1-9)	5				11			
Weight (lbs)	1102				11			
Days Lactating (Required)	150				11			
Days Pregnant (Required)	90				11			
Desired Average Daily Gain (lbs)	0				11			
Implant	None				11			
Internal Parasite Load (L M H)	L				11			
External Parasite Load (L M H)	L				11			
Pasture		Pasture	Pasture C	omments				
Pasture Name	Field 1							
Size (acres)	200							
% of forage allowed to be depleted	60							
Predominant Forage Type	Native Intermediate					Lab Use Only	У	
Adequately or Poorly Watered	Adequately Watered				Sample #			
Slope (≤ 15° or > 15°)	< 15 Degree Slope				NIR File:			
Pasture Growth Rate (L M H)	M				Invoice #		Page	200
lonophore	None				Check #			ode -
Days in Grazing Period	30				Notes:			
W Managhalahad Caralan	100							

Grazingland Animal Nutrition Lab

Client		Į.	Ranch		NRCS Agent or Technical A	Advisor	Select	Service
Name (First & Last):		Name:			Name:		[] Standard: \$3	35. Includes NIRS
Address:		Address:			E-mail:		report & animal p	erformance report
City: State:	Zip:	City:	State:	Zip:			C	OR
Phone: Fax:		Phone:	Fax:		Program		[] Advisory: \$70	Includes Standard
Email:					[]CSP []Education []Othe	r [] None	& sample reco	ommendations.
Contact Method (choose one): [] Email	[]Mail []Fax	Date Collected:			[]CSF []Education []Other	I [] None	Add \$10 for each	h profile past 3rd.
							CERT 2000 CERT 2	
Animal Attributes	Example	Profile 1	Profile 2	Profile 3	Feeds Used	Example	Feed 1	Feed 2
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% British or Continental Breed	100%							
% Tropical Breed	0)	
Current Condition								
Spayed/Castrated (Y or N)	N							
Body Condition Score (1-9)	5							
Weight (lbs)	1102							
Days Lactating (Required)	150							
Days Pregnant (Required)	90							
Desired Average Daily Gain (lbs)	0							
Implant	None							
Internal Parasite Load (L M H)	L							
External Parasite Load (L M H)	L							
Pasture		Pasture	Pasture Co	omments				
Pasture Name	Field 1							
Size (acres)	200							
% of forage allowed to be depleted	60							
Predominant Forage Type	Native Intermediate					Lab Use On	ly	
Adequately or Poorly Watered	Adequately Watered				Sample #			
Slope (≤ 15° or > 15°)	< 15 Degree Slope		1		NIR File:			
Pasture Growth Rate (L M H)	M				Invoice #		Page	000
Ionophore	None		1		Check#		Bare	003
Days in Grazing Period	30				Notes:			
% Unrestricted Grazing	100							

Lab Processing and NIR



Sample Arrives and is assigned #



Sample is unboxed, And emptied into drying trays



Fresh feces placed in oven overnight



Dried feces is ground 36 hrs later

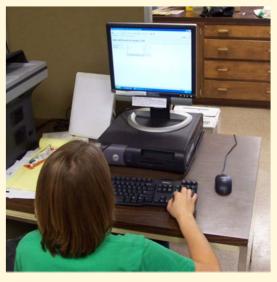
NIRS Fecal Profiling Laboratory Procedures



sample cups are prepared



Sample scanned with NIR spectrophotometer



NUTBAL is run and results sent to producer

Accessing Sample Status and Results



Selected Property: Ganlab Ranch ▼

Jennifer Childers

Account Property Samples Administrator

Selected Client: Remove Farmer Brow

Sample Status

Sam	ple#	Pasture	Created By	Progress	Collected	Created	Received	Report Sent
285	90	Pasture 1	Cameron A	Finished	2014-05-21	2014-05-28	2014-05-28	2014-05-28
285	88	Pasture 1	Client	Finished	2014-04-01	2014-05-27	2014-05-28	2014-05-28
282	256	Pasture 1	Client	Finished	2014-04-01	2014-04-22	2014-04-21	2014-04-24

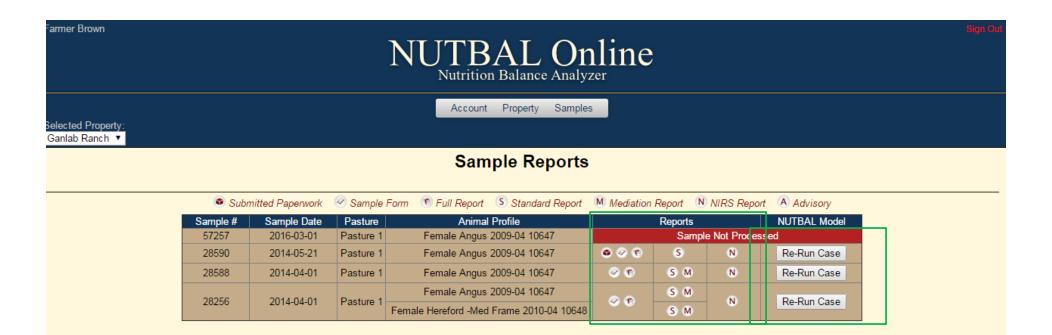
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Subr	mitted Paperwork	Sample F	orm 🕦 Full Report 🕓 Standard Report	M Mediation	Report N	NIRS Repo	rt A Advisory
Sample #	Sample Date	Pasture	Animal Profile		Reports		NUTBAL Model
57257	2016-03-01	Pasture 1	Female Angus 2009-04 10647		Sample	e Not Proces	sed
28590	2014-05-21	Pasture 1	Female Angus 2009-04 10647	⊕ ⊗ €	S	N	Re-Run Case
28588	2014-04-01	Pasture 1	Female Angus 2009-04 10647	⊘ 🕫	S M	N	Re-Run Case
28256	2014-04-01	Pasture 1	Female Angus 2009-04 10647	Ø €	S M	N	Re-Run Case
20250	2014-04-01	Fasture	Female Hereford -Med Frame 2010-04 10648		S M		Re-Ruil Case

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Interpreting Reports



Farmer Brown Ganlab Ranch 720 E. Blackland Road Temple TX, 76502 Phone: (254)774-6134 Fax: (254)774-6150

Generated: 2016-3-10 15:01

Standard Report

Sample: 28256

Date Collected: 2014-04-01

Report Date: 2014-04-24

Pasture Name: Pasture 1

Vegetation Type: Native Range Intermediate Grass

Profile Name: Female Angus 2009-04 10647

Animal Kind: Cattle

Animal Breed: Angus

Gender: Female

Current Animal Condition

Standard Ref. Wt.: 1165 lbs

Weight: 1165 lbs

Body Condition: 5.0 (1-9)

Average Age: 5.0 Years

Duration Pregnant: 30 days

Duration Lactating: 120 days

Current Weight and BCS based on Sample information provided

Performance

Weight Change Goal: 0.3 lbs/day

Predicted Weight Change: 1.9 lbs/day

Performance Limited by: Energy

Weight in 30 Days: 1222 lbs

Body Condition in 30 Days: 5.5 (1-9)

Feeds Applied

<u>Name:</u> 20% Cubes, All Plant CP

Amount: 1.0 lbs daily <u>Crude Protein:</u>

Total Digestible Nutrients: 84.2%

21.1%

Performance Goal given by Producer

Performance

Weight Change Goal: 0.3 lbs/day

Predicted Weight Change: 1.9 lbs/day

Performance Limited by: Energy

Weight in 30 Days: 1222 lbs

Body Condition in 30 Days: 5.5 (1-9)

Limiting Nutrient Influencing Performance

Feeds Applied

NUTBAL Estimate of Predicted Weight Change based on Diet Quality and Feeds Fed

Name:

20% Cubes, All Plant CP

Amount:

1.0 lbs daily

Crude Protein:

<u>Total Digestible Nutrients:</u>

21.1%

84.2%

Performance Goal given by Producer

Performance

Weight Change Goal: 0.3 lbs/day

Predicted Weight Change: 1.9 lbs/day

Performance Limited by: Energy

Limiting Nutrient Influencing Performance

Feeds Applied

Name:

20% Cubes, All Plant CP

Amount:

1.0 lbs daily

Predicted Weight and BCS in 30 days

NUTBAL Estimate of

Weight in 30 Days: 1222 lbs

Body Condition in 30 Days: 5.5 (1-9)

NUTBAL Estimate of Predicted Weight Change based on Diet Quality and Feeds Fed

<u>Crude Protein:</u>

<u>Total Digestible Nutrients:</u>

21.1%

84.2%

Daily Nutritional Status

	<u>Crude Protein</u>	<u>NEm</u>	<u>NEg</u>
Intake:	4.67 lbs	24.64 Mcal	4.99 Mcal
Requirement:	2.36 lbs	16.47 Mcal	0.0 Mcal
Balance:	2.31 lbs	8.17 Mcal	4.99 Mcal

Daily Dry Matter Intake

	<u>Intake</u>	Percent of Std. Ret. Wt.	AUE
Concentrates:	0.95 lbs	0.08%	0.04
Roughage:	0.0 lbs	0.0%	0.0
Forage:	35.19 lbs	3.02%	1.35
Calf DM/d:	6.08 lbs	-	0.23
Total:	42.22 lbs	3.1%	1.62

Protein Intake based on Diet Quality Sample and Supplemental Feeds Fed

Intake Requirement based on Animal Profile

<u>Crude Protein</u>

2.36 lbs

Intake: 4.67 lbs

Requirement:

Balance: 2.31 lbs

NEm

24.64 Mcal

16.47 Mcal

8.17 Mcal

NEg

4.99 Mcal

0.0 Mcal

4.99 Mcal

Daily Dry Matter Intake

Surplus or Deficit Protein

Concentrates:

Roughage: Forage:

Calf DM/d:

Total:

0.0 lbs 35.19 lbs

0.95 lbs

Intake

6.08 lbs -----42.22 lbs 0.08% 0.0% 3.02%

3.1%

AUE

0.04

1.35

0.23

1.62

NUTBAL Online

Nutrition Balance Analyzer

Net Energy for Maintenance (Nem) Intake based on Diet Quality Sample and Feeds Fed Net Energy is divided into that needed for maintenance and that available for gain

Daily Nutritional Status

Crude Protein

2.36 lbs

Intake: 4.67 lbs

Requirement:

Balance: 2.31 lbs

NEm

24.64 Mcal

16.47 Mcal

8.17 Mcal

NEg

4.99 Mcal

0.0 Mcal

4.99 Mcal

Daily Dry Matter Intake

	<u>Intake</u>	Percent of Std. Ref. Wt.	<u>AUE</u>
Concentrates:	0.95 lbs	0.08%	0.04
Roughage:	0.0 lbs	0.0%	0.0
Forage:	35.19 lbs	3.02%	1.35
Calf DM/d:	6.08 lbs	-	0.23
Total:	42.22 lbs	3.1%	1.62

NUTBAL Online

Nutrition Balance Analyzer

Daily Nutritional Status

Net Energy for Maintenance (Nem) Intake based on Diet **Quality Sample and** Feeds Fed

NEm requirement based on Animal **Profile**

d at

Crude Protein

Intake: 4.67 lbs 2.36 lbs

Balance: 2.31 lbs

Requirement:

NEm 24.64 Mcai 16.47 Mcc

8.17 Mca

Percent of Std. R

NEg

4.99 Mcal

0.0 Mcal

4.99 Mcal

Daily Dry Matter Intake

Intake Concentrates: 0.95 lbs 0.0 lbs Roughage: 35.19 lbs Forage: Calf DM/d: 6.08 lbs Total: 42.22 lbs Surplus or Deficit NEm -Need a Surplus here to have energy for gain

0.08%	0.04
0.0%	0.0
3.02%	1.35
-	0.23
3.1%	1.62

Daily Nutritional Status

Crude Protein
Intake: 4.67 lbs

NEm 24.64 Mcal <u>NEa</u> 4.99.Mcal

Requirement:

2.36 lbs

16.47 Mcal

3.1%

0.0 (cal

Balance:

Net Energy for Gain (NEg). Amount available based on Diet Quality sample and feeds fed

4

Not all of the NEm

Daily Dry Matter Intake

Intake	O.95 lbs
Roughage:	O.0 lbs
Forage:	35.19 lbs
Calf DM/d:	6.08 lbs
Total:	42.22 lbs

Surplus is available for gain due to inefficiencies such a heat loss, methane production, etc

0.23

Daily Nutritional Status

	<u>Crude Protein</u>	<u>NEm</u>	<u>NEg</u>
Intake:	4.67 lbs	24.64 Mcal	4.99 Mcal
Requirement:	2.36 lbs	16.47 Mcal	0.0 Mcal

Balance: 2.31 lbs

Contributions of
Pasture Forage, Hay,
Supplemental Feeds,
and the amount eaten
by the calf to the total
intake per day

Daily Dry Matter Intake	
-------------------------	--

	HIGKE
Concentrates:	0.95 lbs
Roughage:	0.0 lbs
Forage:	35.19 lbs
Calf DM/d:	6.08 lbs
Total:	42.22 lbs

	7.102
3/0	0.04
0.0%	0.0
3.02%	1.35
-	0.23
3.1%	1.62

1.99 Mcal

ALIF

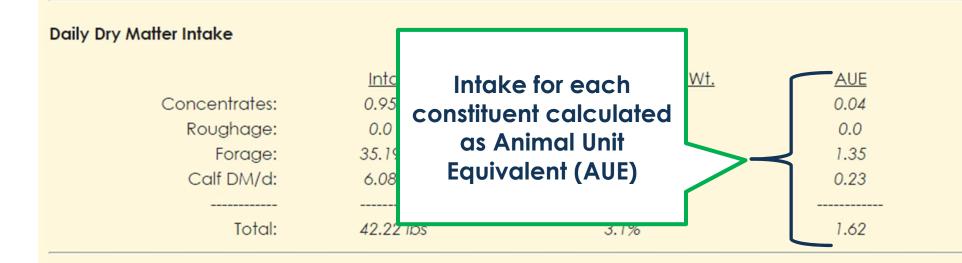
Daily Nutritional Status

	<u>Crude Protein</u>	<u>NEm</u>	<u>NEg</u>
Intake:	4.67 lbs	24.64 Mcal	4.99 Mcal
Requirement:	2.36 lbs	16.47 Mcal	0.0 Mcal
Balance:	2.31 lbs	8.17 Mcal	4.99 Mcal

Percent of total Daily Dry Matter Intake intake by each Percent of Std. Ref. Wt. Intake component Concentrates: 0.95 lbs 0.08% corrected to 0.0% Roughage: 0.0 lbs standard body 3.02% 35.19 lbs Forage: weight Calf DM/d: 6.08 lbs Total: 42.22 lbs 3.1% 1.62

Daily Nutritional Status

	<u>Crude Protein</u>	<u>NEm</u>	<u>NEg</u>
Intake:	4.67 lbs	24.64 Mcal	4.99 Mcal
Requirement:	2.36 lbs	16.47 Mcal	0.0 Mcal
Balance:	2.31 lbs	8.17 Mcal	4.99 Mcal



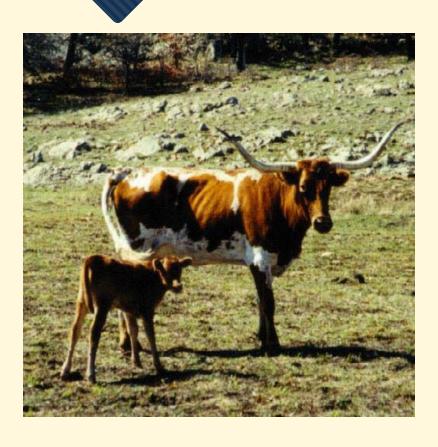
Daily Nutritional Status

	<u>Crude Protein</u>	<u>NEm</u>	<u>NEg</u>
Intake:	4.67 lbs	24.64 Mcal	4.99 Mcal
Requirement:	2.36 lbs	16.47 Mcal	0.0 Mcal
Balance:	2.31 lbs	8.17 Mcal	4.99 Mcal

Daily Dry Matter Intake

	<u>Intake</u>	Percent of Std. Ref. Wt.	AUE
Concentrates:	0.95 lbs	0.08%	0.04
Roughage:	0.0 lbs	0.0%	0.0
Forage:	35.19 lbs	3.02%	1.35
Calf DM/d:	6.08 lbs	-	0.23
Total:	42.22 lbs	3.1%	1.62

Nutritional Requirements



- Maintenance
- Reproduction
- Lactation
- Growth
- Work (e.g.,draft animals)
- Fiber production

Contribution to Diet
Quality from the
Forage Sample
(Fecal NIRS Analysis)

Diet Quality

<u>Overall</u> 12.93%

4.9

DOM Consumption: 63.36%

DOM / CP Ratio:

CP Consumption:

<u>Forage</u>

12.71%

62.32%

4.9

Daily Milk Production

Potential: 14.46 lbs

Actual: 14.46 lbs

Consumption of Energy For All Constituents (Forage, Hay, and Concentrates)

Daily Fecal Output

Total: 12.32 lbs

Phosphorus: 0.07 lbs

Nitrogen: 0.15 lbs



Nutritional Mediation Report

Sample: 28256

Pasture: Pasture 1

Date Collected: 2014-04-01

Report Date: 2014-04-24

Period Duration: 30 days

Profile Name: Female Angus 2009-04 10647

Animal Kind: Cattle

Animal Breed: Angus

Gender: Female

Profile Size: 50 head

Sensitivity Analysis

As Fed Basis

Current Cost per ton

Required Cost/ton to be selected

20% Cubes, All Plant CP

\$100.00

\$0.00

Diet Nutrients Per Day Per Animal

100% Dry Matter Basis

	Crude Protein	NEm	NEg
Intake	4.67 lbs	24.64 Mcals	4.99 Mcals
Requirement	2.36 lbs	16.47 Mcals	0.0 Mcals
Balance	2.31 lbs	8.17 Mcals	4.99 Mcals



Model Weather

	Temp Max	Temp Min	<u>Humidity</u>	Wind	<u>Daylight</u>
7 day Average:	69° F	40° F	57%	8 mph	10.6 hrs
30 day Average:	61° F	37° F	69%	-	-

Invoicing and Payment

- Once the lab has completed the processing and report is generated, it will be sent to you via your selected contact method.
- It is strongly recommended to send payment after receiving invoice, not with the sample. Checks can get lost in the packing or become ruined by leaking samples



Farmer Brown 720 E. Blackkand Raod Temple, TX 76502 Please remit payment with your invoice number above written on your check/money order to ensure proper account credit. Please do not tape, paper clip, staple or fold your check/money order. We appreciate your business. Thank you!

				Net 30		
Quantity	Description			Rate		Amount
1	NIRS results plus NUTBAL report (accessible online) for Sample#(s):2830	6		35.00	35.00
				Total		\$35.00
case, you should o	ou ou are not the intended recipient, you may not use, copy, di destroy this invoice, and notify us immediately. If you have stely by e-mail or telephone and destroy.	stribute or deliver. In su e received in error, pleas	ich ie	Balance	e Du	ie \$35.00

Thank you for your attention!



Contact Information

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