Supplement Selection Based on Forage Test Results



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UF-NFREC
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UF IFAS
UNIVERSITY of FLORIDA

Wakeboarding
A new sport (at least for me)

“Wakeboarding” by the Argentinean gauchos

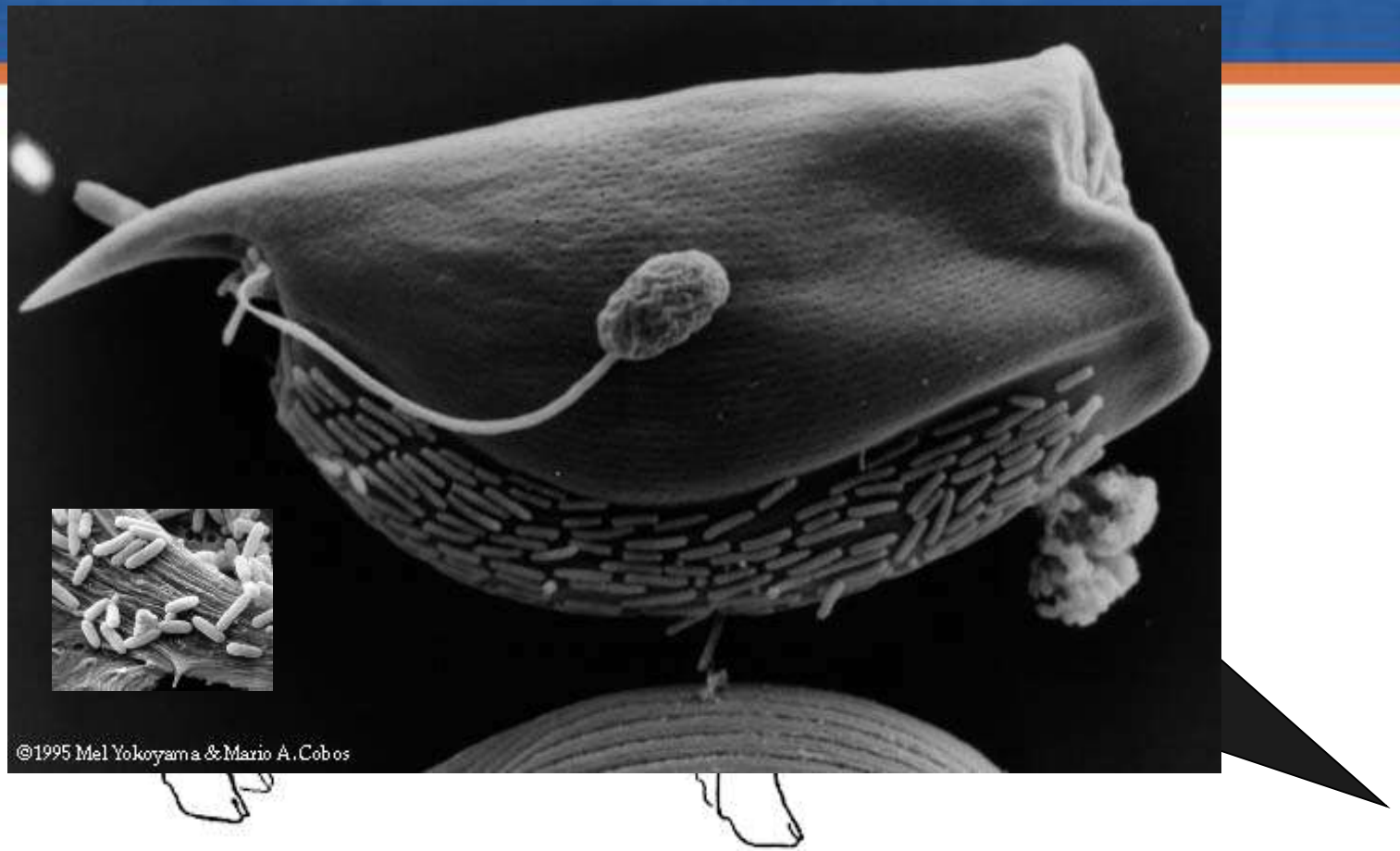
Outline

- **Hay alone may not always meet requirements**
- **Understanding a hay test**
- **Cow/calf: needs for supplementation**
  - ✓ **Hay intake?**
- **Florida's diverse ag industries are a blessing**
  - ✓ **What options we have available?**
- **Introducing "The UF Hay Balancer", a decision-aid tool (smart phone app coming soon)**
- **Take home messages**

Supplementation in the cow/calf sector

Supplementation:

Feeding two animals at the same time



Florida's blessings in terms of cattle feeding opportunities

- **Citrus (166 million boxes/yr)**
- **Cotton (191,200 bales/yr)**
- **Peanuts (380 million lbs/yr)**
- **Sugar cane (28 million tons/yr)**
- **Vegetables**
- ***Brassica carinata*?**

Corn gluten feed (CGF)

- Corn byproduct
  - Wet milled corn for starch or ethanol production
- Widely utilized in US
- Relatively high in CP and energy (22% CP and 80% TDN)
- Can be high in S and can be variable in nutrient content

feedipedia.com and agutd.com

Distillers grains

- Corn byproduct
  - Dry milled corn for ethanol production
- Widely utilized in US, especially the Midwest
- Relatively high in CP (29%) and a great energy source (99% TDN), mostly from fat
- For every 100 lb of corn processed, about 33 lb of distillers is produced

feedipedia.com and Beef magazine

Soybean hulls (SH)

- Byproduct of soybean meal or oil production
- Replace portions of hay during winter
- High-energy fiber source (77% TDN and 12% CP)
- Effective fiber is limited due to small particle size of soybean hulls

http://www.wvu.edu/~agexten/forglvst/soybenhu.htm

Other feeds

- Cottonseed meal
- Molasses
- Soybean meal
- Whole cottonseed
- Commercial supplements (pellets, meals, etc.)
- Glycerol?
- Carinata meal?

Storage capacity

Storage capacity

Hay intake

- **More than ever supplementation strategies need to be cost effective**
- **How can I design a cost effective supplementation without an idea of the hay/forage intake?**

Photo credit: Tessa Schulmeister, NFREC

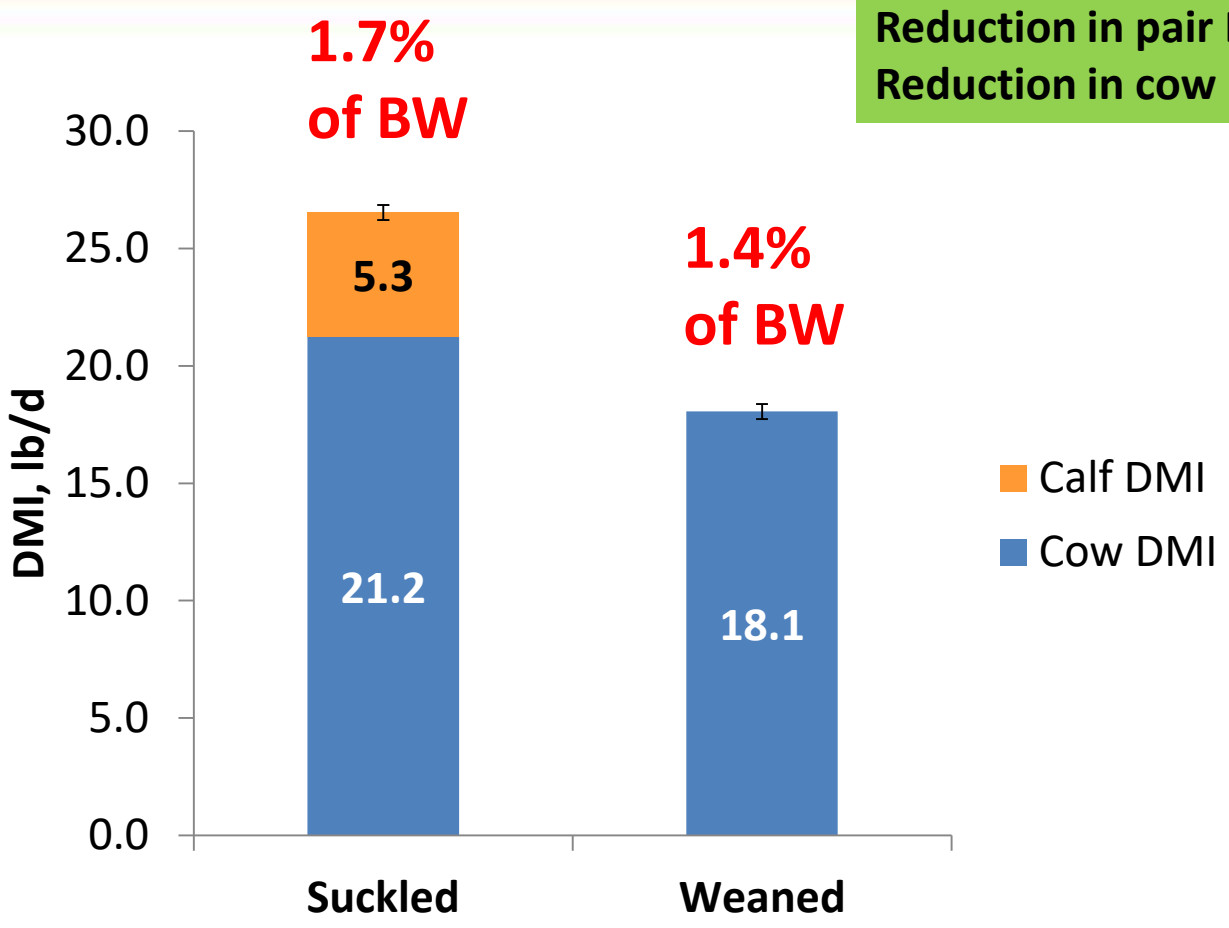
Cow hay intake study

56 d fed T85 BG hay (10.5% CP, 67% TDN)

How much hay does a cow eat?

T85 hay fed over 56 d at the NFREC-FEF

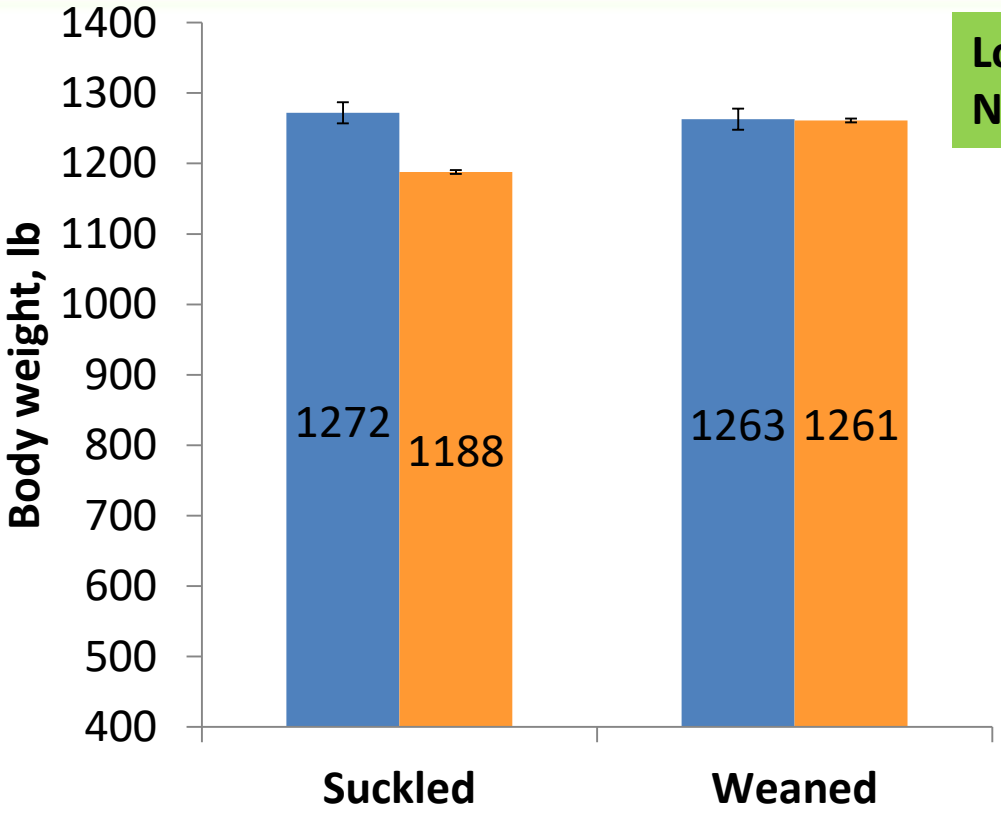
Reduction in pair DMI by weaning = 32%
Reduction in cow DMI by weaning = 15%



Suckled vs. weaned Cow DMI, $P < 0.01$

Change in body weight in lactating vs. weaned cows

Over 56 d hay feeding



Loss of BW in suckled = 84 lb
No change in BW for weaned

Day 0, suckled vs. weaned, *P* = 0.86
Day 56, suckled vs. weaned, *P* < 0.01

Taking a proper hay sample

University of Florida IFAS Extension — Solutions for Your Life

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PANHANDLE AG EXTENSION TEAM

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« George Fisher Honored as Washington County Agricultural Innovator|Incoming UF President Fuchs is Positive for Agriculture »

SUBSCRIBE

Upcoming Events

- Northwest Florida Beef Conference & Trade Show – February 14
- Southwest Alabama Crop Production Meetings – February 15 or 16, 27 or 28
- Fruit & Vegetable Grower Food Safety Training – February 16
- Panhandle Fruit & Vegetable Conference – February 19 & 20
- AgSave$ Workshop to be held in Okaloosa County – February 21
- Application of Advanced Genetic Technology in Beef Cattle Conference – February 22-23
- Escambia County Beef Cattle & Forage Bootcamp – February 24
- Panhandle Satsuma Workshop – February 27
- 2018 Panhandle Row Crop Short Course – March 1
- Mandatory Dicamba Resistant Crop Training – March 16

Understanding Your Forage Test Report

Baleage, Beef Cattle, Beekeeping, Dairy, Forage & Pasture, Goats, hay, Horse, Livestock, Sheep

by Doug Mayo | October 24, 2014

Understanding the hay test

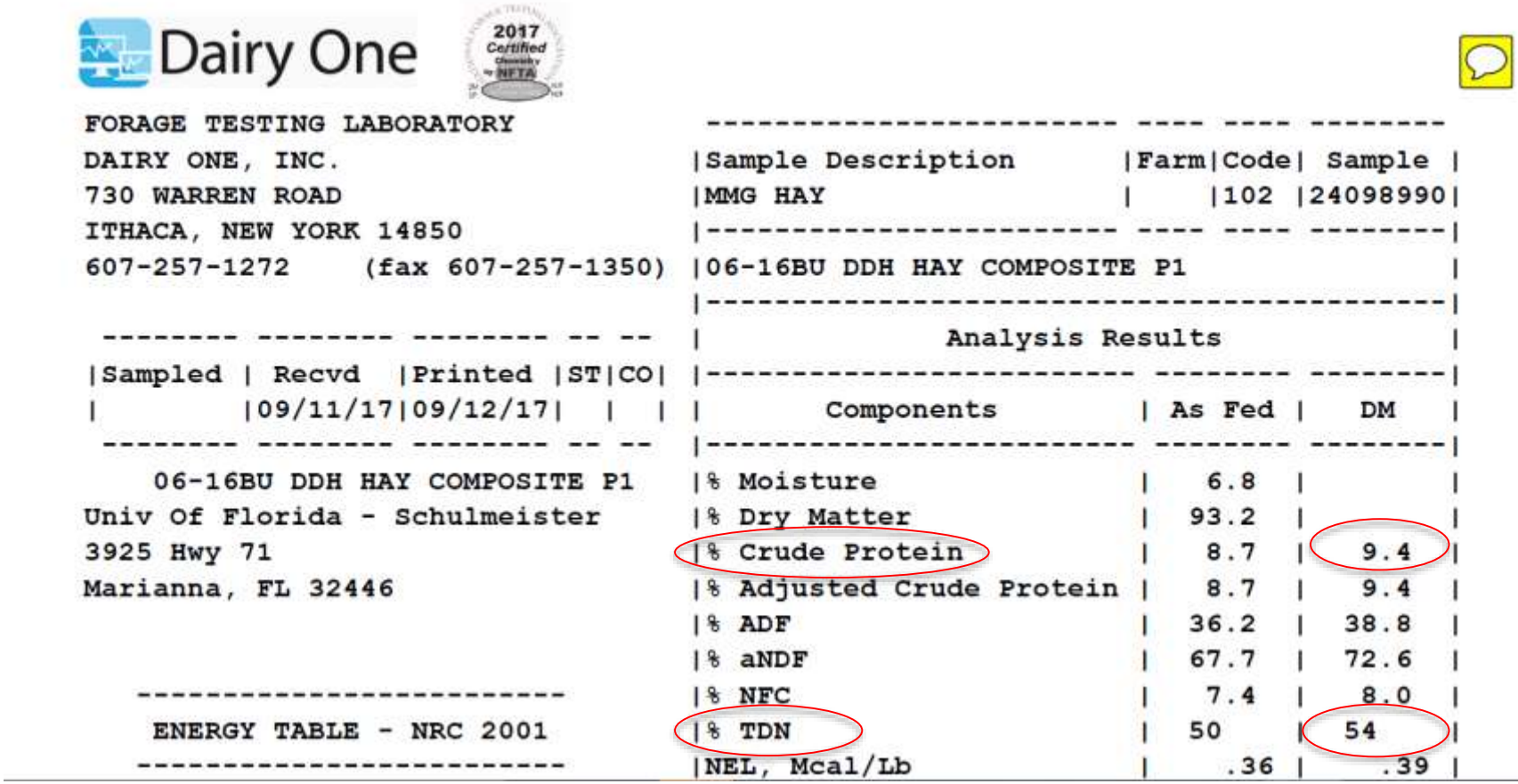
Crop: BERMUDAGRASS	Variety: Coastal
Use: Hay	Relative Forage Quality (RFQ): 89.7
Species: BEEF	Dry Matter Intake (DMI): 2.19% Live Body Weight
Class/Weight: LACTATING COWS	Ration Formulation: No

Near Infrared Reflectance (NIR) Analysis

	As-Sampled	Dry-Matter
Crude Protein	7.4 %	9.1 %
Crude Fiber (Estimated)	26.6 %	32.6 %
Neutral Detergent Fiber	58.9 %	72.3 %
Acid Detergent Fiber	30.86 %	37.92 %
Lignin	4.30 %	5.29 %
Non-fibrous Carbohydrates	13.75 %	16.89 %

	As-Sampled	Dry-Matter
Total Digestible Nutrients	41.1 %	50.4 %
Net Energy of Lactation	0.412 MC/lb	0.507 MC/lb
Net Energy of Maintenance	0.433 MC/lb	0.532 MC/lb
Net Energy of Gain	0.167 MC/lb	0.206 MC/lb
Metabolizable Energy	775 KC/lb	952 KC/lb
Moisture	18.6 %	0 %
Dry Matter	81.4 %	100 %

Understanding the hay test



Dairy One

2017 Certified by NFTA

FORAGE TESTING LABORATORY
DAIRY ONE, INC.
730 WARREN ROAD
ITHACA, NEW YORK 14850
607-257-1272 (fax 607-257-1350)

Sampled	Recvd	Printed	ST	CO
	09/11/17	09/12/17		

06-16BU DDH HAY COMPOSITE P1
Univ Of Florida - Schulmeister
3925 Hwy 71
Marianna, FL 32446

ENERGY TABLE - NRC 2001

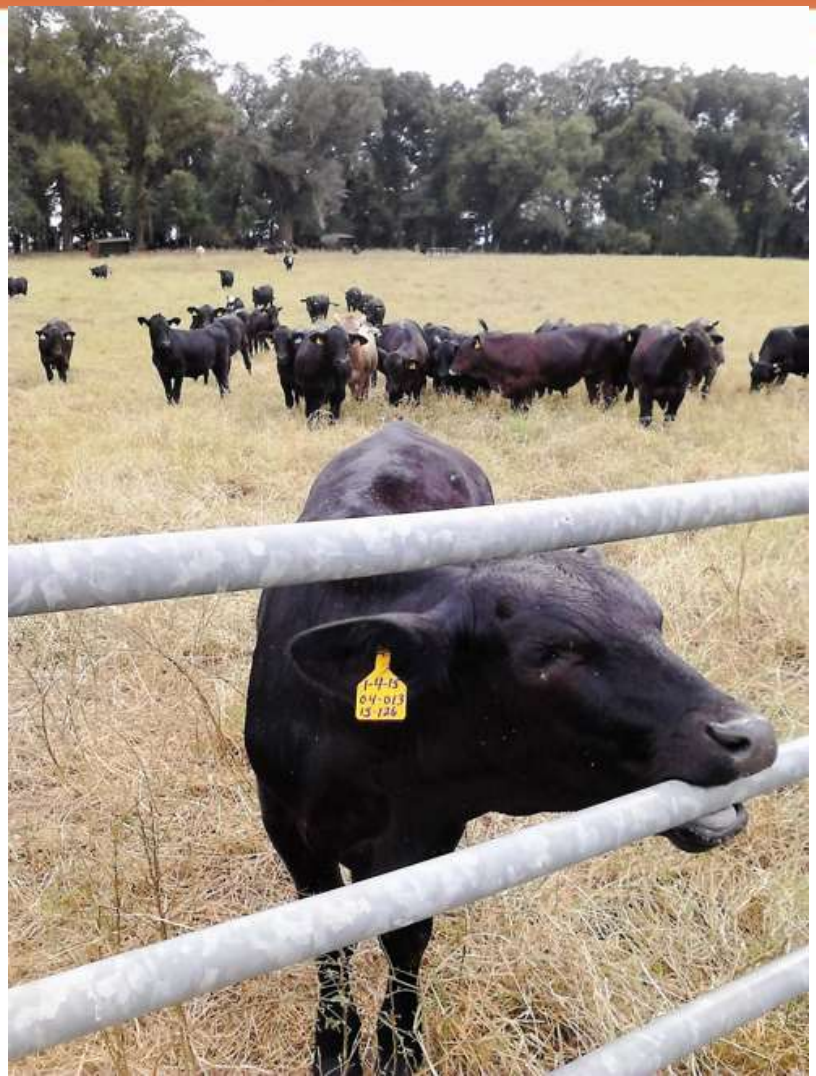
Sample Description	Farm	Code	Sample
MMG HAY		102	24098990

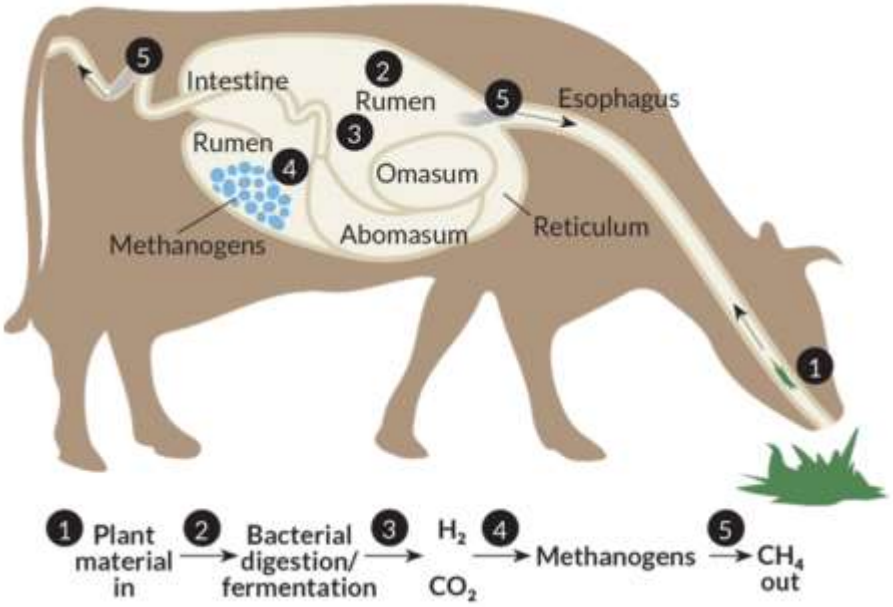
06-16BU DDH HAY COMPOSITE P1

Analysis Results

Components	As Fed	DM
% Moisture	6.8	
% Dry Matter	93.2	
% Crude Protein	8.7	9.4
% Adjusted Crude Protein	8.7	9.4
% ADF	36.2	38.8
% aNDF	67.7	72.6
% NFC	7.4	8.0
% TDN	50	54
NEL, Mcal/Lb	.36	.39

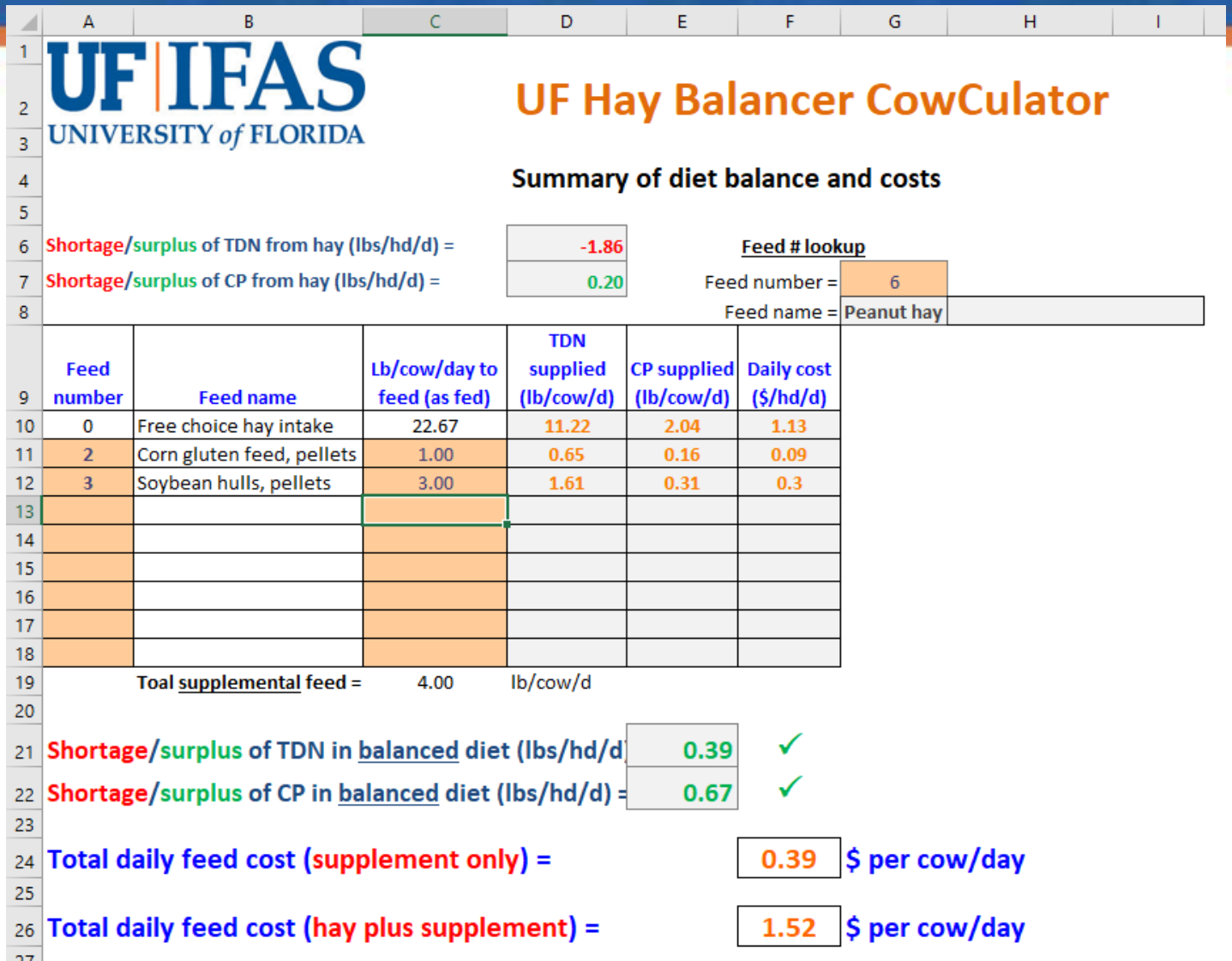
Matching energy (TDN) and protein (CP) to maximize performance





Source: (https://www.sciencenews.org/sites/default/files/sn-2015/112815_cow_digestion_730_free.png)

Introducing
The UF Hay Balancer



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UF Hay Balancer CowCulator

Summary of diet balance and costs

Shortage/surplus of TDN from hay (lbs/hd/d) =	-1.86
Shortage/surplus of CP from hay (lbs/hd/d) =	0.20

Feed # lookup

Feed number = 6

Feed name = Peanut hay

Feed number	Feed name	Lb/cow/day to feed (as fed)	TDN supplied (lb/cow/d)	CP supplied (lb/cow/d)	Daily cost ($/hd/d)
0	Free choice hay intake	22.67	11.22	2.04	1.13
2	Corn gluten feed, pellets	1.00	0.65	0.16	0.09
3	Soybean hulls, pellets	3.00	1.61	0.31	0.3
	Toal supplemental feed =	4.00	lb/cow/d		

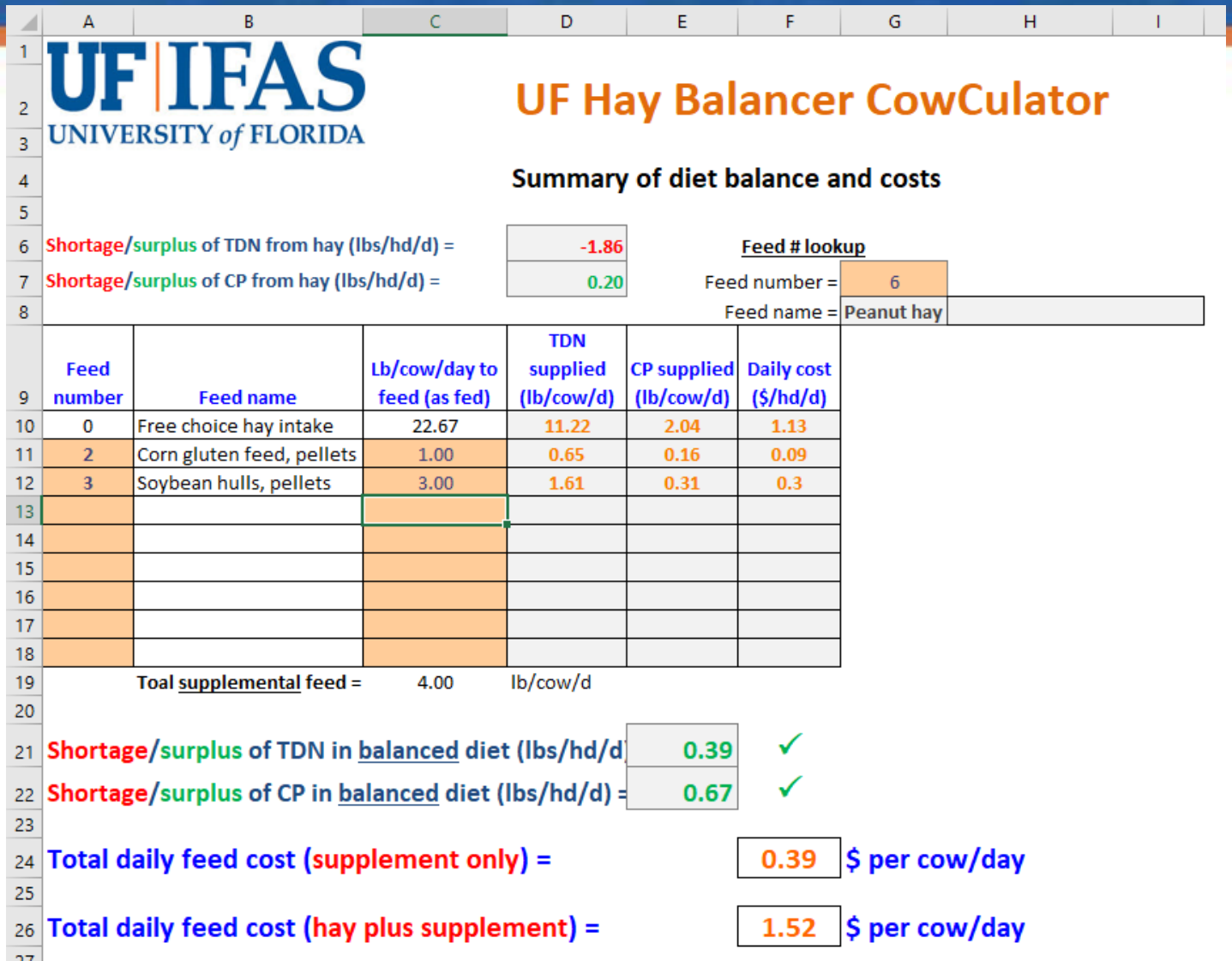
Shortage/surplus of TDN in balanced diet (lbs/hd/d)	0.39	✓
Shortage/surplus of CP in balanced diet (lbs/hd/d) =	0.67	✓

Total daily feed cost (supplement only) = 0.39 $ per cow/day

Total daily feed cost (hay plus supplement) = 1.52 $ per cow/day

The UF Hay Balancer
Preventing this!!

Introducing
The UF Hay Balancer



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Take home message 1

- **Labor is a big point to consider when deciding a supplementation strategy**

Take home message 2

- **Take advantage of the availability of byproduct feeds**
- **Check our newest decision-aid tools to enhance the productivity in the cow herd**

Take home message 3

If considering increasing storage capacity: plan accordingly!!

Thanks!

Here's a photo of Dr. Walker that I took during our last hunting trip in MN