

A person wearing a red, blue, and white plaid shirt is feeding a brown horse from a green bucket. The horse is wearing a black halter and is eating hay from the bucket. The background is slightly blurred, showing a concrete surface.

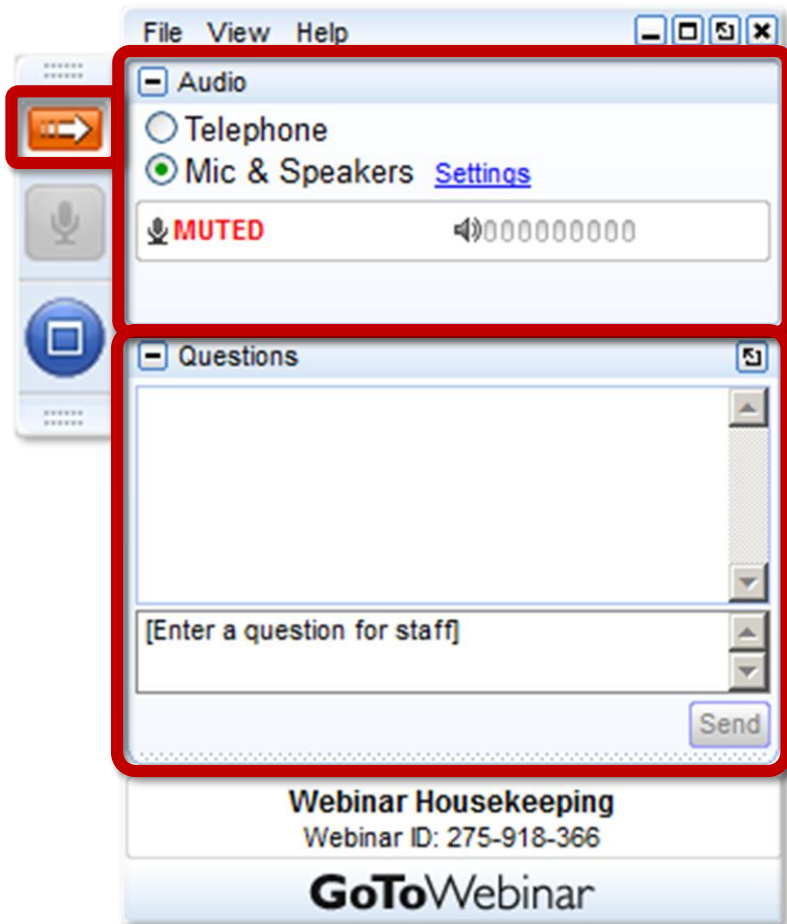
# Meeting the Right Requirements – What Do I Need to Know About Balancing My Horse's Diet?



**Standlee**  
PREMIUM WESTERN FORAGE®

**PHN**  
PERFORMANCE HORSE NUTRITION

“Nutrition is the key to success”



## Your Participation

Open and close your control panel

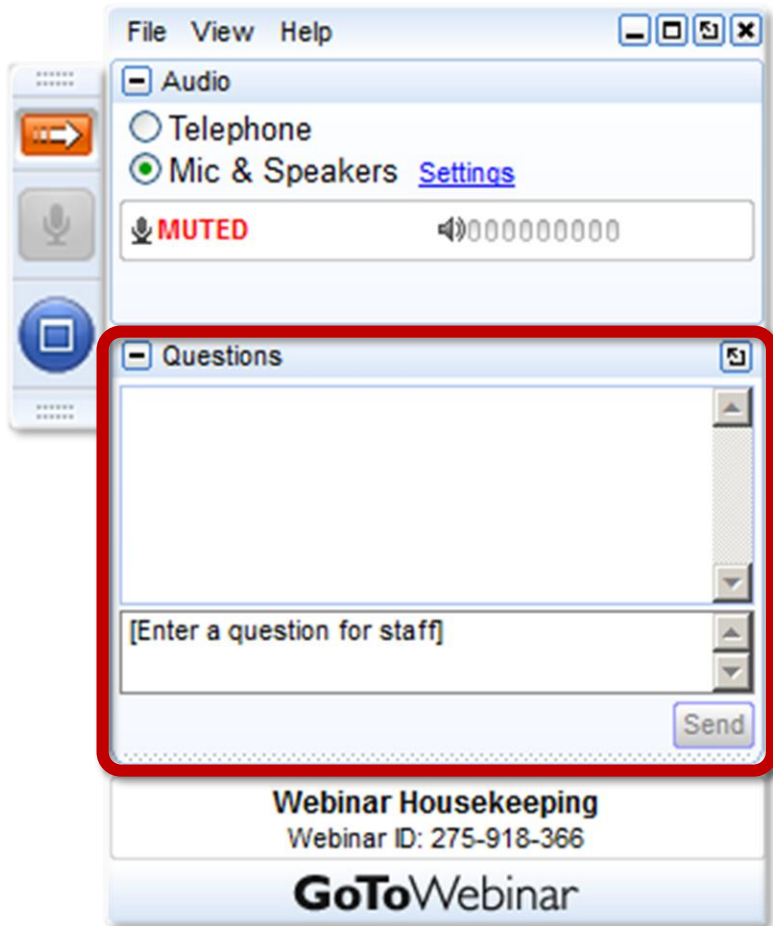
Join audio:

- Choose **Mic & Speakers** to use VoIP
- Choose **Telephone** and dial using the information provided

Submit questions and comments via the Questions panel

**Note:** Today's presentation is being recorded and will be provided within 48 hours.

“Nutrition is the key to success”



## Your Participation

- Please continue to submit your text questions and comments using the Questions panel

For more information, please contact [training@standleeforage.com](mailto:training@standleeforage.com).

**Note:** Today's presentation is being recorded and will be provided within 48 hours.

# NUTRITIONAL RESOURCES



“Nutrition is the key to success”

[standleeforage.com](http://standleeforage.com)

HOME

PRODUCTS

NUTRITION

- Why Premium Western Forage
- Nutrition Overview
- Forage Finder
- Feed Calculator
- Feeding Instructions
- Nutritional Resources**

COUPONS

BLOG

COMPANY

RESOURCES

[FIND A STORE](#) [FORAGE FINDER](#) [FEED CALCULATOR](#) [READ THE BLOG](#)

Search

## NUTRITIONAL RESOURCES

Standlee Premium Western Forage® creates and maintains a wealth of nutritional resources to help you maintain the nutrition of your horses. You can find those resources here.

### Nutritional Webinars

- ▶ How to Decrease Your Horse's Risk of Colic with Nutrition Management ([Watch Video Recording Now](#))
- ▶ Winter Feeding ([Watch Video Recording Now](#))
- ▶ Gastric Ulcers in Horses ([Watch Video Recording Now](#))
- ▶ Metabolic Disease Prevention and Management ([Watch Video Recording Now](#))
- ▶ What Do I Need to Know About Raising Chicks? ([Watch Video Recording Now](#))
- ▶ When Quality Hay Is In Short Supply, What Can I Feed My Horse? ([Watch Video Recording Now](#))
- ▶ Beet Pulp – What Is It and Why Do Horses Need It? ([Watch Video Recording Now](#))



What Do I Need to Know About Balancing My Horse's Diet?

# Meeting the Right Requirements – What Do I Need to Know About Balancing My Horse's Diet?

---



**DR. TANIA CUBITT**  
**PERFORMANCE HORSE NUTRITION**



# OUTLINE

“Nutrition is the key to success”

---

- What Horses Need to Be Healthy
- Optimizing a Horse’s Diet with Forage
- Balanced Horse Feed Program Examples
- Can We “Fix It with Forage?”
- Forage Availability



# What Horses Need to Be Healthy

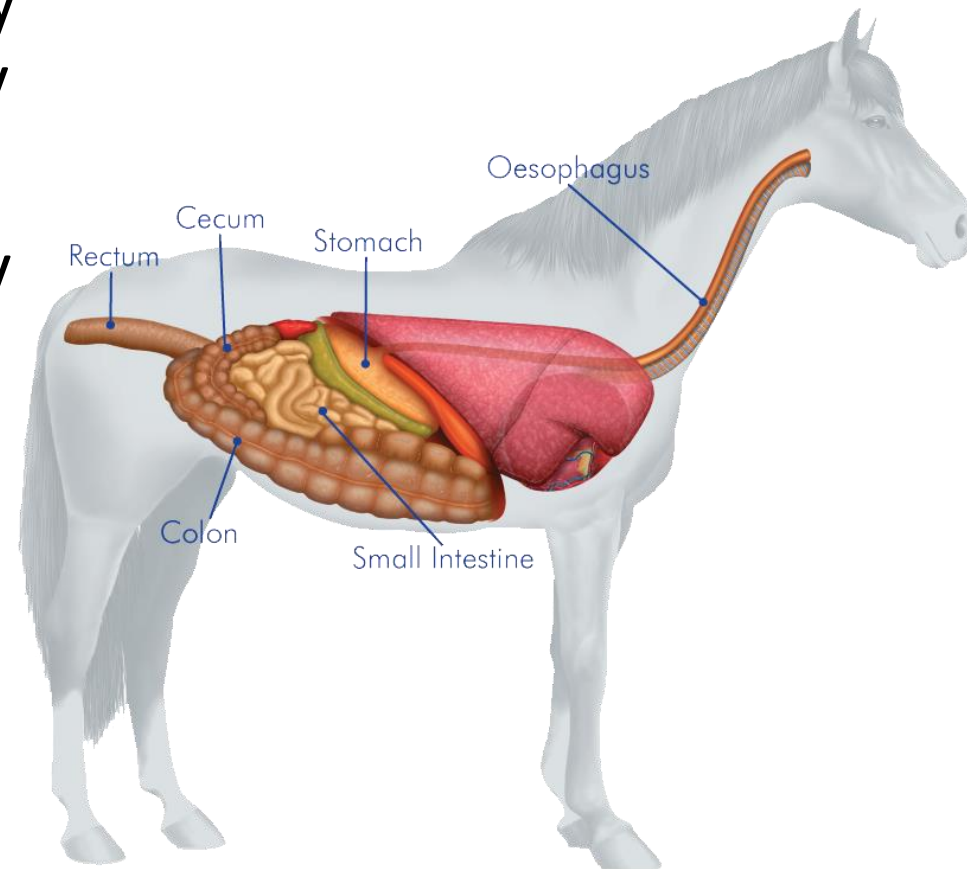


**Standlee**  
PREMIUM WESTERN FORAGE®

# BENEFITS OF FORAGE

“Nutrition is the key to success”

- Fiber from pasture or hay is necessary for a healthy digestive system
  - Horses are anatomically designed to digest and utilize fiber - 65% of digestive capacity dedicated to fiber digestion





# BENEFITS OF FORAGE

“Nutrition is the key to success”

- Pasture provides opportunity for exercise
  - 24 hours = 8-9.5 miles
  - 7 hours = 2.5-3 miles
  - Behavior?
- Pasture provides socialization
  - Manners



# BENEFITS OF FORAGE

“Nutrition is the key to success”

---

- Horses will comfortably consume 2-2.5% of body weight (BW) per day in dry forage
  - 1000 lb horse = 20-25 lbs/day
- Spring pasture is up to 80% moisture



# HOWEVER.....

“Nutrition is the key to success”

## Most Important Dietary Ingredient

- Forage and pasture
- Pasture is unreliable
  - Drought
  - Seasonality
  - Availability
- **FORAGE IS CRITICAL**



# Optimizing a Horse's Diet with Forage



**Standlee**  
PREMIUM WESTERN FORAGE®

# FORAGE AMOUNT

“Nutrition is the key to success”

- **Absolute Minimum** = 1% of BW  
1000 lb horse = 10 lbs forage –  
as dry matter (DM)
- **Weight Loss** = 1.2% of BW  
1000 lb horse = 12 lbs forage (DM)
- **Recommended Minimum** =  
1.5% of BW 1000 lb horse = 15  
lbs forage (DM)
- **Normal Forage Intake** = 1.8 to  
2.5% of BW (DM)
- **Maximum Intake** = 3 to 3.5% of  
BW (DM)



# Poll Question

“Nutrition is the key to success”

---



# FORAGE MANAGEMENT: HAY

“Nutrition is the key to success”

- Important to mimic grazing behavior
- **Hay** – Extend meal time



# Balanced Horse Feed Program Examples



**Standlee**  
PREMIUM WESTERN FORAGE®



# INFORMATION NEEDED

“Nutrition is the key to success”

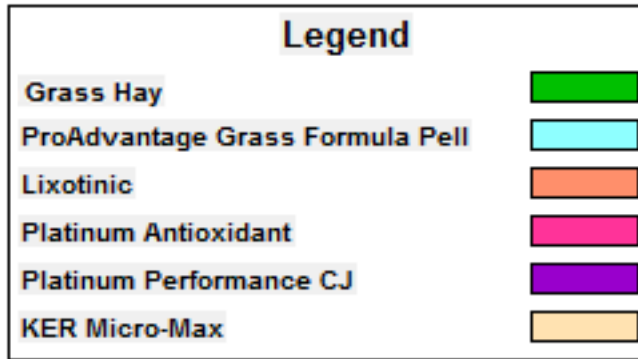
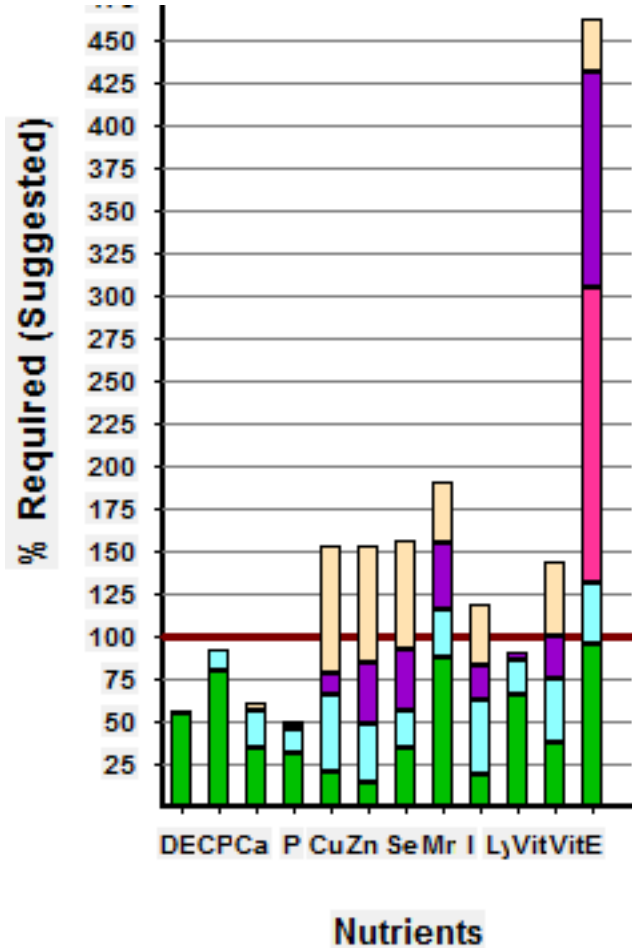
- Age
- Activity level
- Body condition
- Current feed
  - Hay
  - Grain
  - Supplements
  - In pounds, not scoops ;)
- Special needs
- Allergies
- Goals



# SAMPLE DIET



“Nutrition is the key to success”



- Body Weight 700lbs
- BCS 3
- Moderate Exercise – 3 to 5 hours per week
- Poor Quality Hay – 11lb
- Balancer Grass Pellet – 0.5lb
- Lixotinic - 1oz
- Platinum Antioxidant – 17g
- Platinum CJ – 156g
- KER Micro-Max – 60g

“Nutrition is the key to success”

Analysis performed by:



730 Warren Road  
Ithaca, NY 14850  
1-877-819-4110  
www.equi-analytical.com

Lab Sample No: 23775090

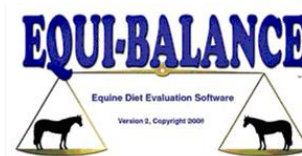
Page 1 of 1

Lab Desc: 103  
Date Sampled: 05/24/2017  
Date Received: 06/02/2017  
Date Printed: 06/06/2017  
Description 1: 1ST CUTTING  
Description 2:  
Statement ID: ORCHARD GRASS

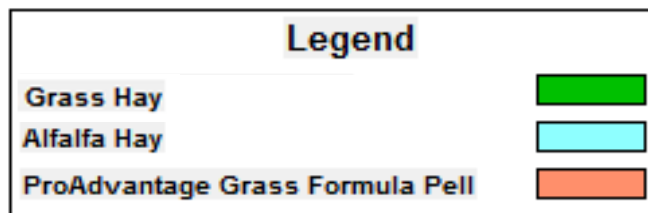
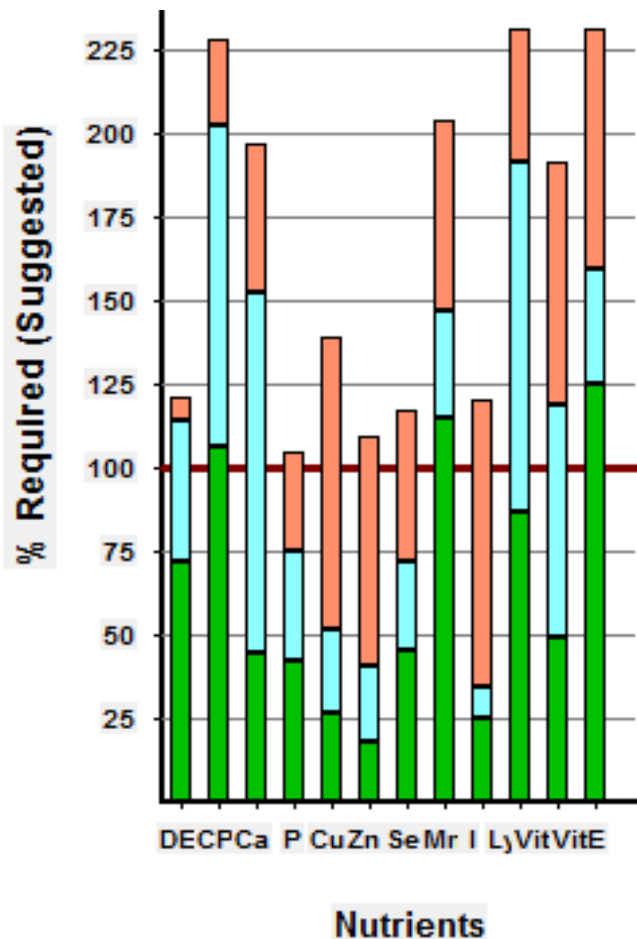
Visit our website [www.equi-analytical.com](http://www.equi-analytical.com) for information on interpreting and using your results.

Results				
% Moisture	7.3			
% Dry Matter	92.7			
	As Sampled		Dry Matter	
Digestible Energy (DE), Mcal/lb		.75		.81
	%	g/lb.	%	g/lb.
Crude Protein	8.0	36.3	8.6	39.2
Estimated Lysine	.28	1.3	.30	1.4
Acid Detergent Fiber (ADF)	41.0	185.8	44.2	200.4
Neutral Detergent Fiber (aNDF)	69.2	313.9	74.7	338.6
WSC (Water Sol. Carbs.)	4.9	22.2	5.3	23.9
ESC (Simple Sugars)	3.3	15.0	3.6	16.2
Starch	.2	.8	.2	.9
Non Fiber Carb. (NFC)	7.0	31.6	7.5	34.1
	%	g/lb.	%	g/lb.
Calcium	.20	.92	.22	1.00
Phosphorus	.13	.60	.14	.65
Magnesium	.12	.54	.13	.58
Potassium	2.44	11.06	2.63	11.93
Sodium	.008	.037	.009	.040
	ppm	mg/lb.	ppm	mg/lb.
Iron	73	33	78	36
Zinc	9	4	10	4
Copper	4	2	5	2
Manganese	56	25	60	27
Molybdenum	.7	.3	.8	.4
	As Fed		100% Dry	
RFV			68	

# SAMPLE DIET



“Nutrition is the key to success”



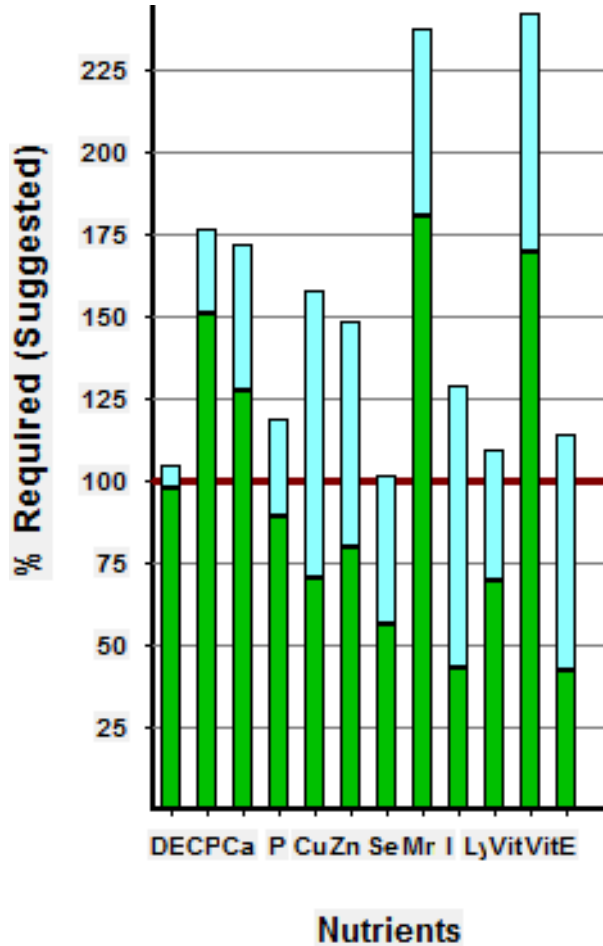
Can't change current hay source

- Ideal Body Weight 750lbs
- Moderate Exercise – 3 to 5 hours per week
- Grass Hay – 15lb
- Alfalfa – 6lb
- Grass Balancer Pellet – 1lb

# SAMPLE DIET

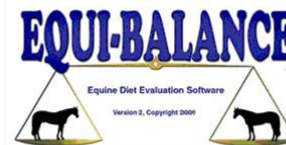


“Nutrition is the key to success”

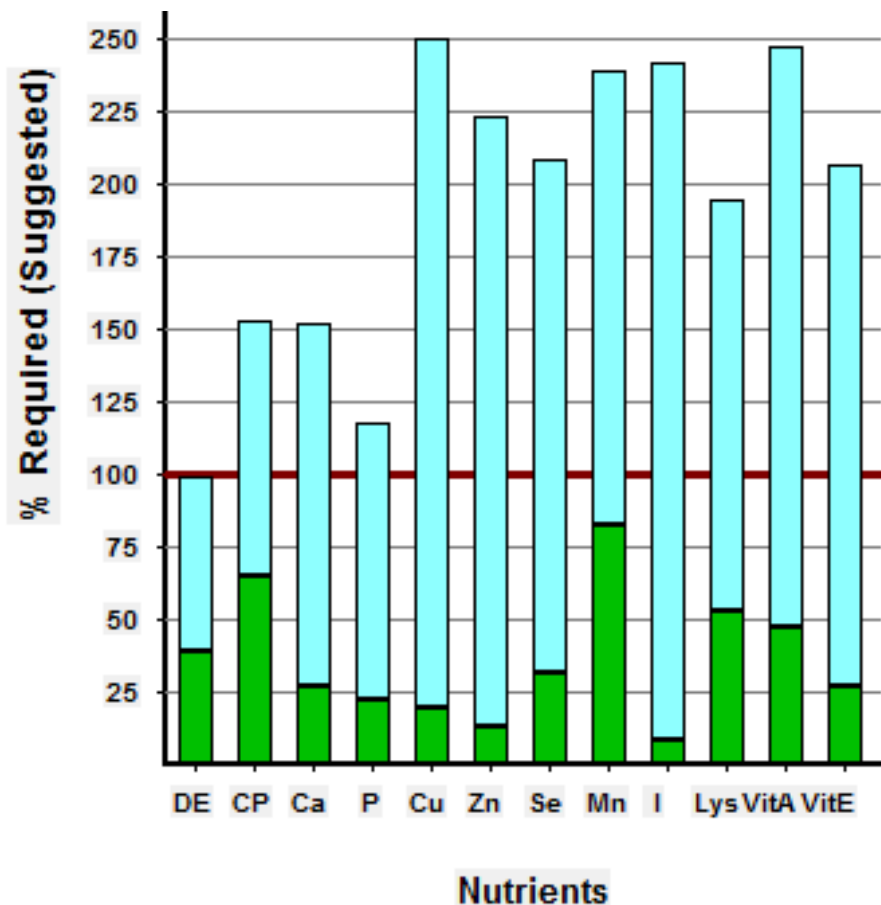


- Ideal Body Weight 750lbs
- Moderate Exercise – 3 to 5 hours per week
- Standlee Premium Timothy Hay – 15 to 20lb
- Grass Balancer Pellet – 1lb

# SAMPLE DIET



“Nutrition is the key to success”

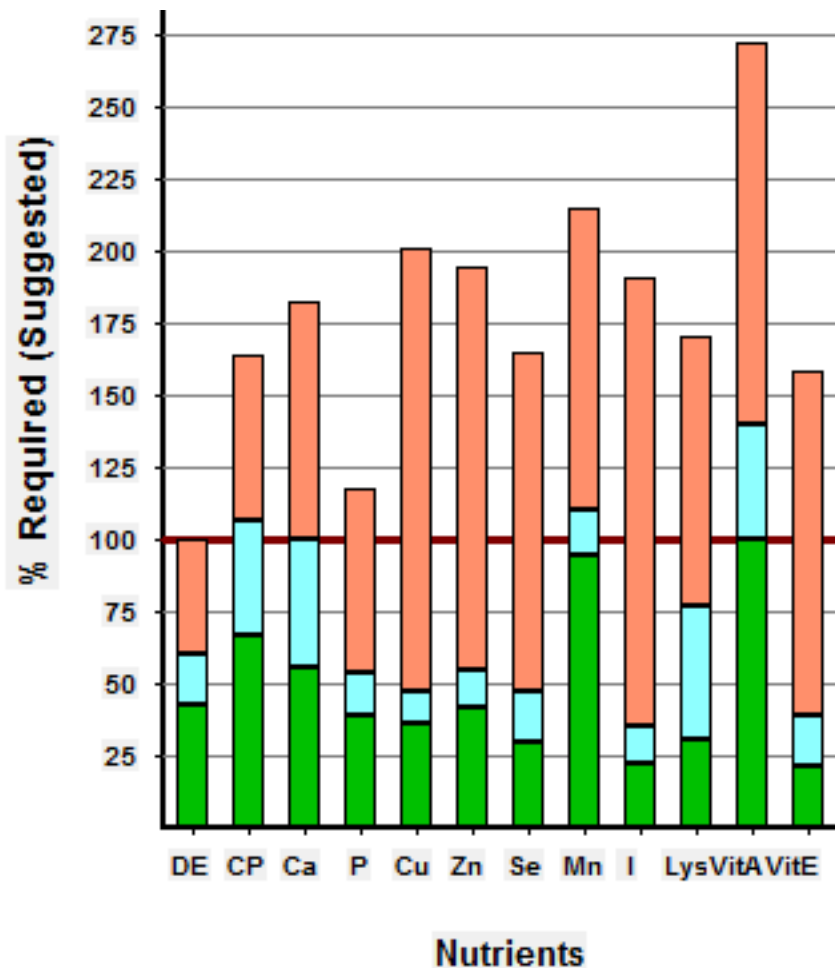


- Standardbred
- Body Weight 1100lbs
- Intense Exercise – exercise done at high speed
- Poor Quality Hay – 20lbs
- EP East Coast Race – 15lbs

# SAMPLE DIET



“Nutrition is the key to success”

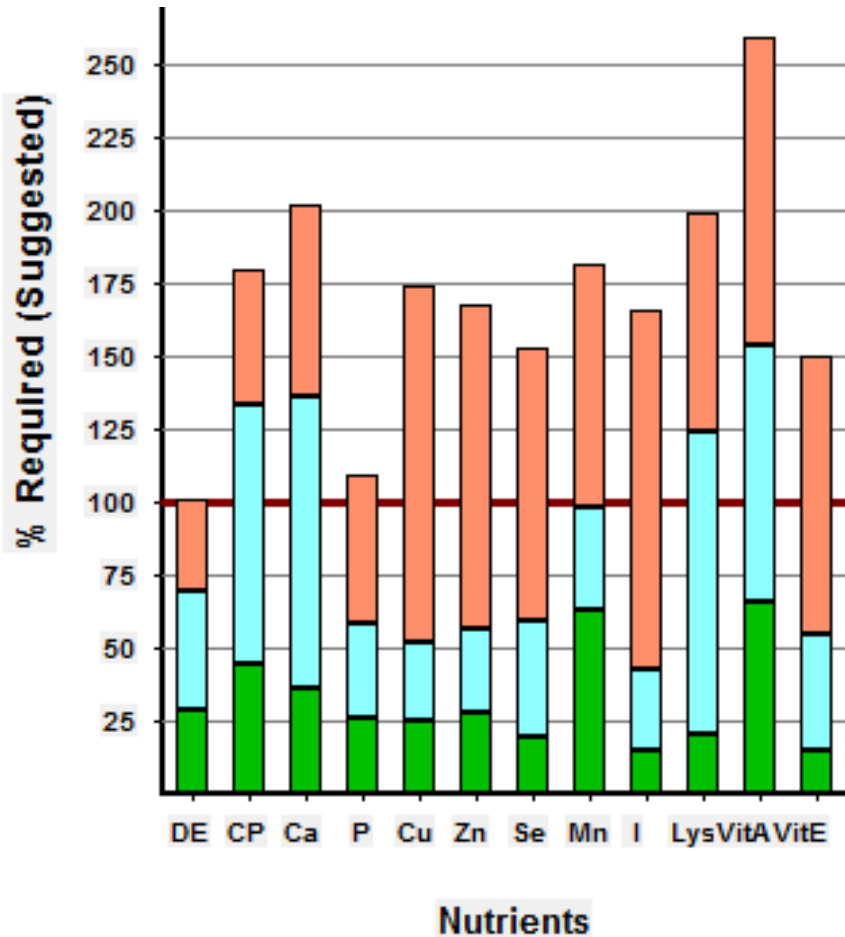


- Standardbred
- Body Weight 1100lbs
- Intense Exercise – exercise done at high speed
- Standlee Premium Orchard Hay – 15lbs
- SPWF Alfalfa – 5lbs
- EP East Coast Race – 10lbs
- ~1kg total starch – ideally fed over 4 meals

# SAMPLE DIET



“Nutrition is the key to success”



46%  
reduction in  
Grain

- Standardbred
- Body Weight 1100lbs
- Intense Exercise – exercise done at high speed
- SPWF Orchard Hay – 10lbs
- SPWF Alfalfa – 10lbs
- EP East Coast Race – 8lbs
- ~822g total starch – ideally fed over 4 meals



# HISTORICALLY

“Nutrition is the key to success”

## Energy demands of working horses:

- Too high
- Time too short

## To be met by forage alone:

- Forage quality poor
- Grazing limited
- Difficult to transport
- Oats, barley, beans, root vegetables used in diets  
(Stewart, 1838)



**You can't feed a forage only diet to an intensely exercising horse, can you???**

## **Growth, training response and health in Standardbred yearlings fed a forage-only diet.** Ringmark et al., 2013. Animal. 7:5 pp 746-753

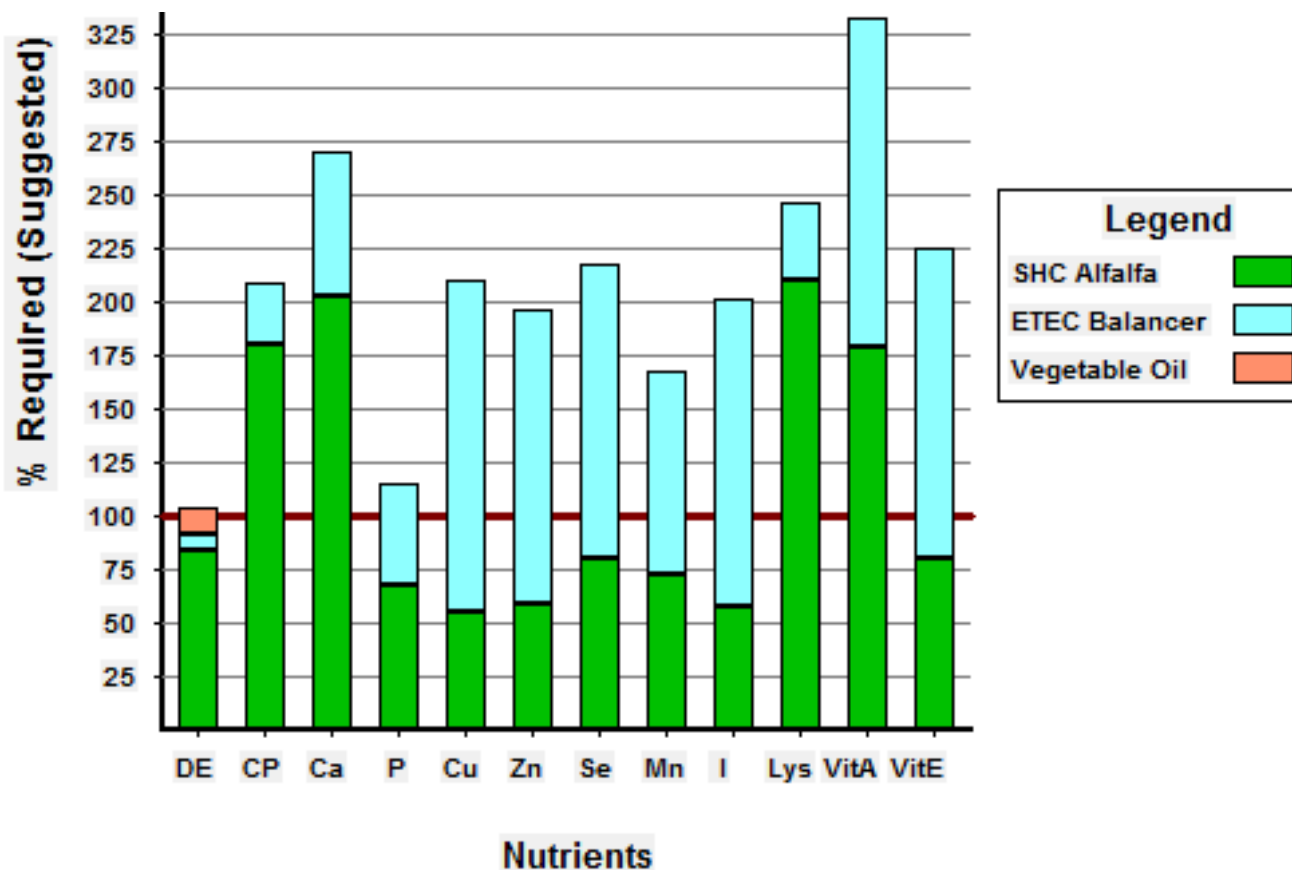
- 16 Standardbred colts – breaking to training
- High energy forage ad-lib (1.3Mcal/lb; 14% CP; average DMI 2.7% BW)
- Trained to 5-7 km (3.1-4.3 mi) @ ~5.6m/s
- Results
  - Grow as well as literature on yearlings fed grain
  - BCS and muscle glycogen within normal range of athletic horses
  - Reduced exercise HR response

**Effects of training distance on feed intake, growth, body condition and muscle glycogen content in young Standardbred horses fed a forage-only diet.** Ringmark et al., 2017. Animal. Epub ahead of print.

- Horses from previous study now at 2 & 3
- Haylage (ad lib), pelleted alfalfa, minerals (to meet req’s) (1.3Mcal/lb; 14% CP; average DMI 1.7 to 2.67% BW)
- Results
  - Did not prohibit muscle glycogen storage
  - Did not alter BCS (~5) or BW – were not “big bellied”
  - Author noted “when fed an early cut, high-energy forage, horses have shown a decreased plasma lactate response to submaximal exercise”

# SAMPLE DIET

“Nutrition is the key to success”



- Standardbred
- Body Weight 1100lbs
- Intense Exercise – exercise done at high speed
- SPWF Alfalfa (DE 1.3Mcal/lb; 18% CP) – 22lbs
- ETEC Balancer - 2.5lbs
- 2 cups Vegetable Oil
- ~200g total starch

# Poll Question

“Nutrition is the key to success”

---



# Vet Care is Expensive – Can We “Fix it with Forage?”



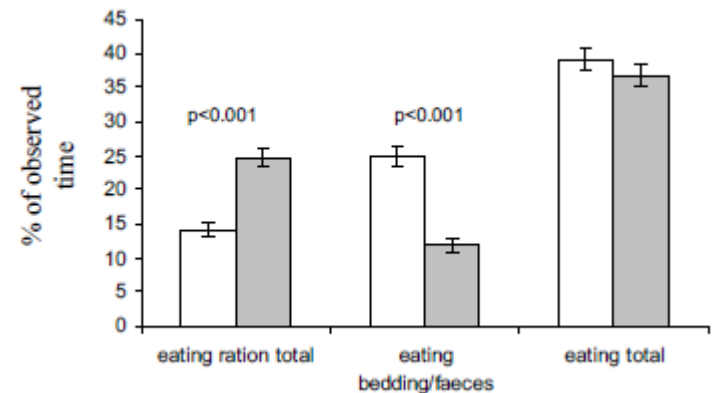
**Standlee**  
PREMIUM WESTERN FORAGE®

# LOW FORAGE

“Nutrition is the key to success”

*Ellis, A. D., Visser, C. K., Van Reenen, C.G. (2006) The effect of a high fibre versus low fibre diet on behaviour and welfare in horses, Proceedings of the 40th International Congress of the ISAE, University of Bristol, p. 42*

- 36, 3 yr old horses
- HF (conc:haylage = 1:4)
- LF (conc:haylage = 4:1)
- LF horses spent 56% less time on ration eating than HF horses and 44% more time eating bedding material and feces
- LF horses showed significantly more walking activity in the boxes compared to HF horses
- Two LF horses were observed to develop recurring crib-biting behavior
- In the horse walker and on the treadmill, LF horses were more excited and less manageable than HF horses



# FORAGE CHOICE



“Nutrition is the key to success”

---

- Goodwin studied forage preferences and noted:
  - Horses consumed less-preferred forages with their preferred forage during multiple forage sessions
  - This suggests that horses were motivated to ingest multiple forage sources and reflects the findings of earlier researchers (Archer, 1971 & 1973)
  - Supplying multiple forages significantly and positively affected the behavior of stabled horses, promoted natural foraging behavior patterns, reduced foraging behavior directed towards straw

Goodwin, D. et al., 2002. Foraging enrichment for stabled horses: effects on behaviour and selection. Equine vet. J. (2002) 34 (7) 686-691



# FORAGE AMOUNT

“Nutrition is the key to success”

- Fiber digestibility decreases with low intake levels
- Fed ponies at 4 levels of hay intake:

- 2% BW
- 1.5% BW
- 1.0% BW
- 0.5% BW

Intake level	DM apparent digestibility %
2%	48 ± 2 <sup>a</sup>
1.5%	50 ± 3 <sup>a</sup>
1.0%	49 ± 2 <sup>a</sup>
0.5%	34 ± 5 <sup>b</sup>

- Below a certain food intake, the major digestive constraint is not fermentation time but absolute nutrient supply to gut bacteria

Clauss, et al., (2014). The effect of very low food intake on digestive physiology and forage digestibility in horses. J. Anim. Phys. & Anim. Nutr. 98: 107-118

# FIX IT WITH FORAGE



“Nutrition is the key to success”

---

[PLoS One](#). 2014; 9(2): e87424.

PMCID: PMC3913607

Published online 2014 Feb 4. doi: [10.1371/journal.pone.0087424](https://doi.org/10.1371/journal.pone.0087424)

PMID: [24504261](https://pubmed.ncbi.nlm.nih.gov/24504261/)

## Characterisation of the Faecal Bacterial Community in Adult and Elderly Horses Fed a High Fibre, High Oil or High Starch Diet Using 454 Pyrosequencing

[Kirsty Dougal](#),<sup>1</sup> [Gabriel de la Fuente](#),<sup>1</sup> [Patricia A. Harris](#),<sup>2</sup> [Susan E. Girdwood](#),<sup>1</sup> [Eric Pinloche](#),<sup>1</sup>  
[Raymond J. Geor](#),<sup>3</sup> [Brian D. Nielsen](#),<sup>3</sup> [Harold C. Schott, II](#),<sup>3</sup> [Sarah Elzinga](#),<sup>3</sup> and [C. Jamie Newbold](#)<sup>1, \*</sup>

# FIX IT WITH FORAGE

“Nutrition is the key to success”

- 17 horses (2 different groups - Adult vs. Elderly)
  - 8 in the 5-12 year range
  - 9 in the 19-28 year range
- 3 different diets
  - Hay (NSC – 11%; Fat – 4%)
  - Hay + CHO (NSC - 42%; Fat – 5%)
  - Hay + Fat (NSC – 13%; Fat – 8.5%)



# FIX IT WITH FORAGE

“Nutrition is the key to success”

- Core Community -
  - HAY diet 15.9%
  - OIL diet 10.3%
  - CHO 5.4%
- *Lachnospiraceae* being the most abundant in the core community
  - *Lachnospiraceae* are known butyrate producers and butyrate is known to have a protective function on colonocytes in the gut wall
- When hindgut upset occurs, use a forage based approach



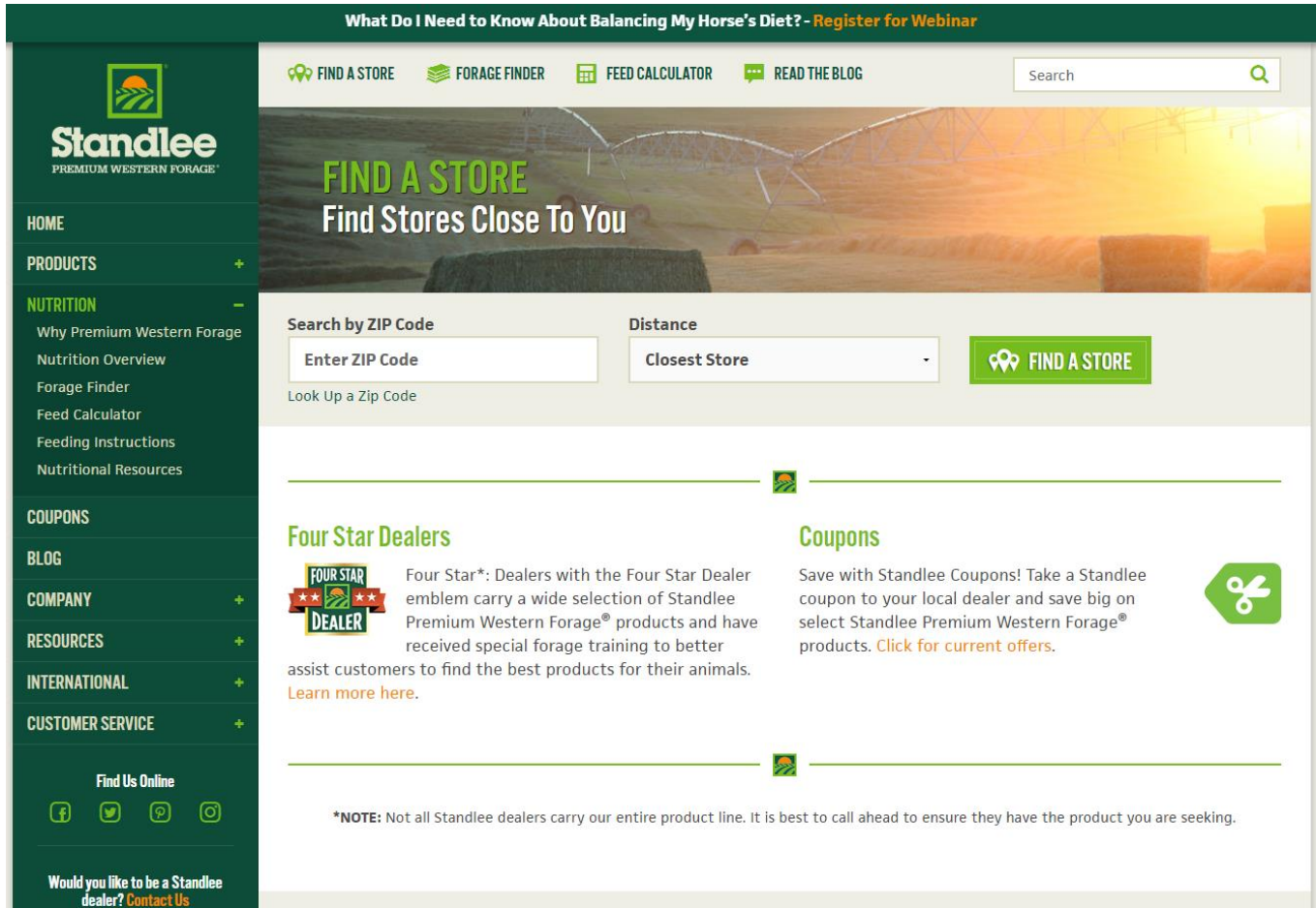
# Forage Availability – Where Can You Find Consistent, Quality Forage?



**Standlee**  
PREMIUM WESTERN FORAGE®

# FIND A STORE

“Nutrition is the key to success”



The screenshot shows the 'Find a Store' page on the Standlee website. At the top, there is a green banner with the text 'What Do I Need to Know About Balancing My Horse's Diet? - Register for Webinar'. Below this, a navigation bar contains links for 'FIND A STORE', 'FORAGE FINDER', 'FEED CALCULATOR', and 'READ THE BLOG', along with a search bar. The main content area features a large image of a horse field with the heading 'FIND A STORE Find Stores Close To You'. Below the image is a search form with 'Search by ZIP Code' and 'Distance' sections, each with an input field and a dropdown menu. A green 'FIND A STORE' button is positioned to the right of the distance dropdown. Below the search form, there are two columns of content: 'Four Star Dealers' and 'Coupons'. The 'Four Star Dealers' section includes a 'FOUR STAR DEALER' logo and text explaining that these dealers carry a wide selection of Standlee products and have received special forage training. The 'Coupons' section includes a green coupon icon and text encouraging users to save with Standlee coupons. At the bottom of the page, a note states: '\*NOTE: Not all Standlee dealers carry our entire product line. It is best to call ahead to ensure they have the product you are seeking.' The left sidebar contains a menu with categories like HOME, PRODUCTS, NUTRITION, COUPONS, BLOG, COMPANY, RESOURCES, INTERNATIONAL, and CUSTOMER SERVICE, along with social media icons and a 'Find Us Online' section.

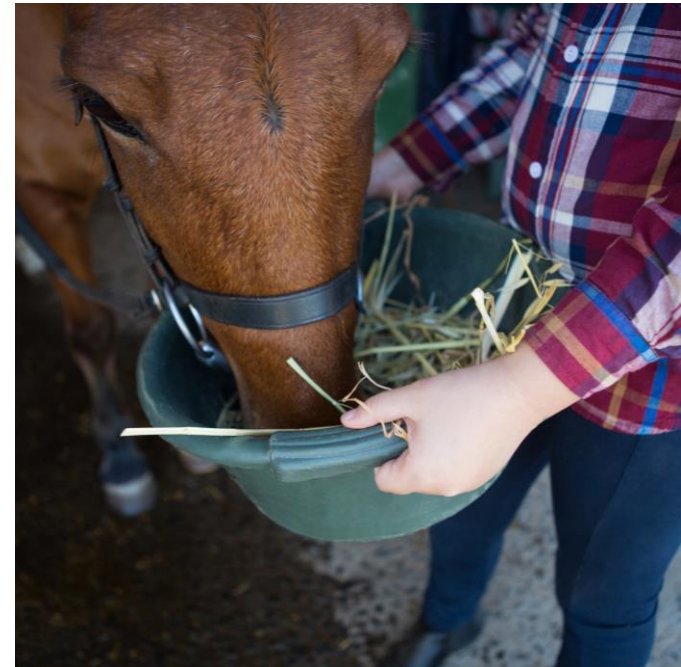


**One of our company’s key non-negotiables is ‘Assured Supply.’ Assured supply means that our customers and consumers must be able to access our products ‘wherever’ and ‘whenever’ desired.**

# SUMMARY

“Nutrition is the key to success”

- What Horses Need to Be Healthy
  - Forage
- Optimizing a Horse’s Diet with Forage
  - Feed enough
- Balanced Horse Feed Program Examples
  - Using better quality hay can reduce grain intake
- Can We “Fix It with Forage?”
  - Improves health
- Forage Availability
  - Standlee assurance





# Q & A Session



**Standlee**  
PREMIUM WESTERN FORAGE®

# Thank you for joining us!

**For follow-up questions, please contact our customer relations:**

1-800-398-0819

[customerservice@standleeforage.com](mailto:customerservice@standleeforage.com)

For more past webinars, Nutritional White Papers, Standlee Forage Finder®, Standlee Feed Calculator™ or our Store Locator, visit:

[standleeforage.com](http://standleeforage.com)

Follow us on Facebook @Standlee.Forage and on Instagram @StandleeForage for more nutritional tips and some feel good animal posts!