



Equine Forage Analysis

Elk River Forage Lab- 10383 165th Ave NW, Elk River, MN 55330 US_Lab_Service@Cargill.com

Consultant: **Julia Locklear** Phone:
 Client Name: **The Stock Market**
 Lab Number: **4911810** Vet:
 Sample ID : **Heavy Michigan Timothy**
 Date Received : **10/27/2023** Cutting: **1** Year: **2023**
 Forage Type: **Hay - Grass**

		Typical Range for Forage Type(DM BASIS)			RESULTS FOR YOUR HAY	
Method	PARAMETER	UNITS	LOW	HIGH	DM BASIS	As Is
C	Moisture	%	8.0	- 13.0	0.00	12.66
W	Dry Matter	%	87.00	- 92.00	100.00	87.34
N	Crude Protein	%	7.0	- 14.0	6.94	6.07
N	Heat Damaged Protein (ADICP)	%	0.70	- 1.40	1.09	0.95
C	Available Protein	%	6.30	12.60	5.85	5.11
C	Est. Lysine	%	0.24	- 0.48	0.34	0.29
N	Fat	%	2.0	- 2.4	1.74	1.52
N	Ash	%	7.0	- 8.6	3.84	3.35
N	ADF	%	31.0	- 41.0	36.19	31.61
N	NDF	%	50.0	- 65.0	54.68	47.76
C	RFV (Industry)		87.0	- 103.0	103.27	90.20
	RFV GRADE		See Page 2		2	
N	Calcium	%	0.3	- 0.8	0.45	0.40
N	Phosphorus	%	0.20	- 0.30	0.14	0.13
C	Ca/P Ratio		1:1	- 2.5:1	3.14	3.14
N	Potassium	%	0.80	- 1.50	1.13	0.99
N	Magnesium	%	0.2	- 0.3	0.13	0.12
N	Sodium	%	0.07	- 0.19	0.02	0.02
N	Chloride	%	0.1	- 0.8	0.19	0.16
N	Sulfur	%	0.15	- 0.30	0.12	0.11
C	*Est. Copper	ppm	2.00	- 10.00	6.00	5.24
C	*Est. Zinc	ppm	12.0	- 26.0	19.00	16.60
N	Starch	%			1.41	1.23
N	WSC + Starch	%	*** See Below		19.22	16.79
N	ESC + Starch	%	*** See Below		9.84	8.59
C	DE (Horse)**	Mcal/kg	1.80	- 2.09	2.44	2.13
C	DE (Horse)**	kcal/lb	820.0	- 950.0	1109.55	969.09

* Indicates nutrient is an outlier and will be re-run by wet chemistry

** Energy values from NRC equations.

***Non Structural Carbohydrates (NSC) can be WSC+Starch or ESC+Starch depending on if we are looking at a horse w/ laminitis or Special Needs

***WSC (includes fructans) + Starch =<12 best for horses with, or prone to 'Laminitis'.

***ESC + Starch =<10 best for 'Insulin Resistance' horses; <12 best for 'Special Needs'; => 15 for 'High End Performance Horses'

Special Needs = PPID "Cushings", EMS, PSSM, etc.

LAB COMMENTS

- <= 15% moisture - minimal chance of mold
- 16-18% moisture - moderate chance of mold
- > 19% moisture - hay will likely mold

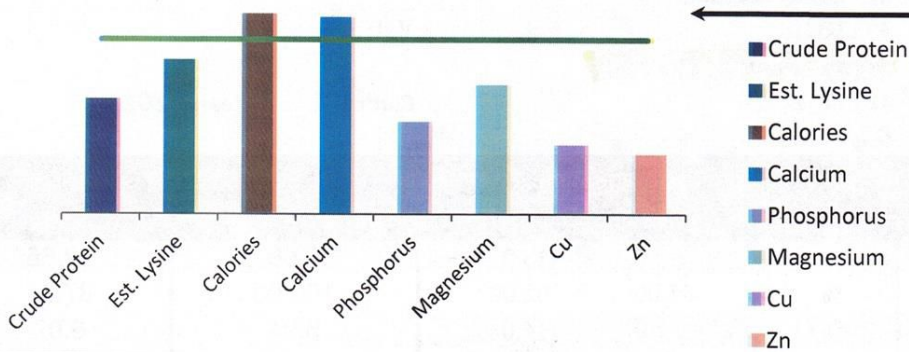
Method: N = NIR, W = Wet Chemistry, C = Calculation

10/28/2023

*Cu & *Zn are average values for this type of forage and do not represent the exact Cu & Zn values of this forage.

If you have a pregnant or growing horse, please resubmit sample & request the Advanced analysis package.

Nutrient requirements for an 1100# horse in Light Work (Recommended Allowances) eating 2% bwt DM basis.



All bars at or above the **GREEN LINE** show the forage will meet that nutrient. Any bars below the **GREEN LINE** will require a diet balancer or a horse feed to supply the inadequate nutrients.

The GRADE, based on the hays Relative Feed Value (RFV), provides you with one number indicating the forage's overall digestibility, calories/pound, etc. Use it to help select the best HAY to compliment your horses needs:

- Grade 1 (RFV > 125):** Ideal for **Heavy to Very Heavy Work (over 3 hours of work/day)** and Lactation, Sucklings, Weanlings.
- Grade 2 (RFV 103-124):** Ideal for **Moderate Work (1 to 3 hours of work/day)** and Growing (Yearlings, 2 yr olds), Pregnancy, Breeding Stallions.
- Grade 3 (RFV (87-102):** Ideal for **Light Work (less than 1 hour of work/day)** and 'Special Needs', Laminitis, Over-Weight.
- Grade 4 (RFV 75-86):** Ideal for the 'lowest calorie' needs: 'Easy-Keepers', 'Special Needs', Laminitis and Over-Weight.
- Grade 5 (RFV < 74):** **Special Attention:** Because this hay is very mature, feed a 'High Fiber Horse Feed' with it, according to its feeding directions and desired body weight per day, along with free choice Hay.

General Recommendations:

- 1) Forage in the Diet - Forage (hay and pasture equivalent) should be provided to mature horses at a "minimum" of 2% of their body weight, per day (i.e.: 22 lbs. or more per day to a 1,100 lb. horse).**
- 2) Balancing the Diet for Protein, Calories, Minerals & Vitamins - All hay(s) & pasture(s) needs to be balanced with a good quality fortified Diet Balancer or Horse Feed. Please reference each product's feeding directions to ensure your horse is fed at least the 'minimum' lbs recommended for their Age, Reproductive Status and Activity Level. Feed according to desired Body Weight, Body Condition Score (BCS) and Topline (Muscle) Evaluation Score (TES).**
- 3) Free Choice: a) White Salt, b) Grass Mineral to complement Grass or Mixed Forages; or Alfalfa Mineral to complement Alfalfa Forages c) Access to clean, fresh water.**

With forages below RFV 75, we recommend multiplying our minimum recommended number of pounds per day by 1.25, to make up for that forage's nutrient unavailability.

Current Calories from Forage vs. Requirement:		2007 NRC Daily Calorie Requirement (kcal/day) for 1100# Horse		
Horse's Current Weight:	1,100	Class of Horse:	Required:	Difference (when fed at "Lbs/day" listed)
Forage Lbs/day needed to equal 2% bwt DM intake*	25	Maintenance	16,700	7,709
Forage Calorie Content (kcal/lb as fed):	969.09	Light Work	20,000	4,409
Total Calories from Forage (kcal/day):	24,409	Moderate Work	23,300	1,109
		Heavy Work	26,600	(2,191)
		Very Heavy Work	34,500	(10,091)
		Gestation	17,400	7,009
		Early Lactation - 1st 3 months	31,700	(7,291)
		Late Lactation - 4 - 6 months	29,400	(4,990)

*Note: Horses may not consume this much if the RFV Grade is High

If number in the "Difference" column to the right is **BLACK**, recommend a diet balancer. If number is **RED**, this forage will require additional calories, recommend a performance feed or add a high fat supplement with the diet balancer. *Calorie values are averages. Horses are individuals and have different metabolic rates, feed accordingly.

Notes: