

*"Everything you ever wanted to know about pasture management, hay analysis, and cow (and horse) nutrition crammed into 60 minutes!" ☺*



Kelcey Swyers, PhD, PAS  
Owner / Private Nutritionist  
Nutrition Consulting  
Hay Day, Summer 2017

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### Most Common Mistakes

- Overgrazing Pastures
- Overstocking the ranch, such that a "purge" is necessary during drought years
- Feeding hay that is WAY TOO GOOD
- Spending money in the wrong places on mineral program (or no mineral program)
- Spending money in the wrong way on winter protein supplementation
- Buying whatever the "feed sales rep convinces them of" and not what they *really* need
- Reading too much "stuff" on the internet

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Cows will tell on you if you cut too many corners...

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### Bad vs Good Nutrition



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What is typical BW for a mature beef cow?

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Rule of Thumb:



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### Correct Body Condition



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### Wrong Body Condition



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## Wrong Body Condition




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## Pones




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## Do you have enough forage to maintain her?

### Winter and Mid - Late Gestation

- DMI ~1.5% BW
- 1400 lb bred cow x 0.02 = 28 lbs DMI
- Hay is ~90% DM
- 28 lbs DMI / 0.90 = ~31 lbs as-fed
- ~10-11% Protein and ~55% TDN
- Protein supplementation often increases DMI

### Spring & Summer Peak Lactation and Rebreeding

- DMI ~2.0% BW
- 1300 lb open cow x 0.025 = 32.5 lbs DMI
- Grass is ~30% DM
- 32.5 lbs DMI / 0.30 = ~108 lbs as-fed
- ~11-12% Protein and ~60-64% TDN
- Cows should reach top BCS for breeding = FLUSH

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## Plant Maturity

"Diet Hay"	Average	"Rich!"
1 <sup>st</sup> Cutting	2 <sup>nd</sup> Cutting	3 <sup>rd</sup> Cutting
Late Bloom (mature)	Mid-Bloom	Early Bloom (younger plants)
Stemmy (sharp)	Avg stem to leaf ratio	Leafy (soft)
Hot temps and lots of water	Warm temps and mild precip.	Cool temp or drought
↓ADF, ↓RFV, ↓TDN, ↓CP, ↓DE (calories)	↓ADF, ↑RFV, ↑TDN, ↓CP, ↓DE (calories)	↓ADF, ↑RFV, ↑TDN, ↑CP, ↑DE (calories)



Stem:Leaf Ratio

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Dairy One			
Sampled	Recvd	Printed	ST/CO
06/15/17	06/16/17		

Sample Description	FarmCode	Sample
LEGUME HAY	1100	123810410
LOCAL 1ST ALF		

Analysis Results			
Components	As Fed	DM	
% Moisture	11.5		
% Dry Matter	88.6		
% Crude Protein	20.4	23.0	
% Adjusted Crude Protein	20.4	23.0	
% ADF	26.9	30.4	
% ANDF	34.1	38.6	
% NFC	23.4	26.4	
% TDN	53	60	
NEL, Mcal/Lb	.56	.63	
NEM, Mcal/Lb	.52	.58	
NEN, Mcal/Lb	.29	.32	
Relative Feed Value		157	
Horse DE, Mcal/Lb	.99	1.12	

ENERGY TABLE - NRC 2001			
	Mcal/Lb	Mcal/Kg	
DE, 1X	1.28	2.82	
ME, 1X	1.09	2.40	
NEL, 3X	0.62	1.37	
NEM, 3X	0.65	1.44	
NEN, 3X	0.39	0.86	
TDNIX, %	60		

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## What about Horses?

- Horses should have forage-based diet
- Goal: maximize forage intake
  - Dry matter intake (DMI) requirement:
    - Maintenance: 1.5-2% of BW
    - Lactating Mares: 2.5 to 3% of BW
    - Ex: for a typical 1100 lb (500kg) horse
      - > 1100 x .015% = 16.5 lbs of forage (dry matter)
      - > = 18 lbs as-fed of hay (30-40% of a typical small square)
      - > = 55 lbs as-fed of green pasture

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Analyzed for:  HAY CO LLC SUZANNE BURLAGE 430 BEACON LT RD STE 105 MONUMENT, CO 80132	Lab Desc:	103	
	Date Sampled:	04/13/2016	
	Date Received:	04/18/2016	
	Date Printed:	04/18/2016	
	Description 1:	1ST CUTTING	
	Description 2:	ORCHARD	
Statement ID: ORCHARD  Visit our website <a href="http://www.aqqa-analytical.com">www.aqqa-analytical.com</a> for information on interpreting and using your results.			
<b>Results</b>			
% Moisture	7.4		
% Dry Matter	92.6		
Digestible Energy (DE), Mcal/lb	As Sampled		Dry Matter
		88	95
	%	g/lb.	%
Crude Protein	10.0	45.3	10.8
Estimated Lysine	.35	1.6	.38
Acid Detergent Fiber (ADF)	34.9	158.3	37.7
Neutral Detergent Fiber (aNDF)	58.0	263.3	62.7
WSC (Water Sol. Carbs.)	10.4	47.1	11.2
ESC (Simple Sugars)	6.0	27.1	6.5
Starch	.2	.8	.2
Non Fiber Carb. (NFC)	16.0	72.8	17.3
	%	g/lb.	%
Calcium	.32	1.47	.35
Phosphorus	.29	1.30	.31
	As Fed		100% Dry
RFV			88

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## How Many Tons/Acre?



~100 lbs/acre

\*Lactating cow needs ~100 lbs of grass during lactation + calf???

\*Each acre would last 1 cow 10 days



~3000 lbs/acre

\*Average mature horse needs 55 lbs of grass

\*Each acre would last 1 horse 54 days

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Pastures are our most VALUABLE resource...  
...don't cross over-grazing stress with drought stress!

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Rotate: Allow for "Rest"  
During Growing Season



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### Fat Cow, Mineral Deficient



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### How the pasture changes...



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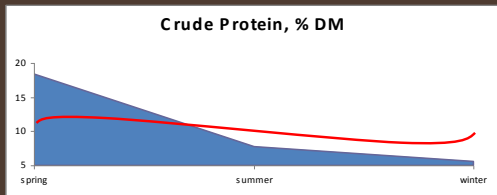
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### Case Study



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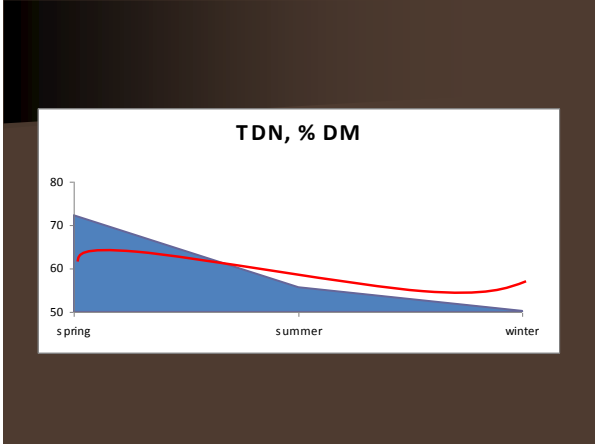
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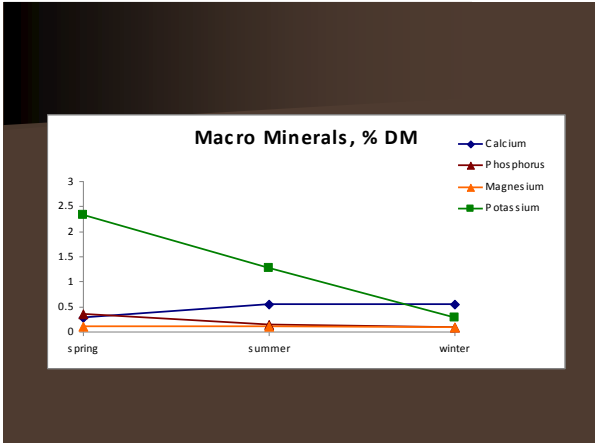
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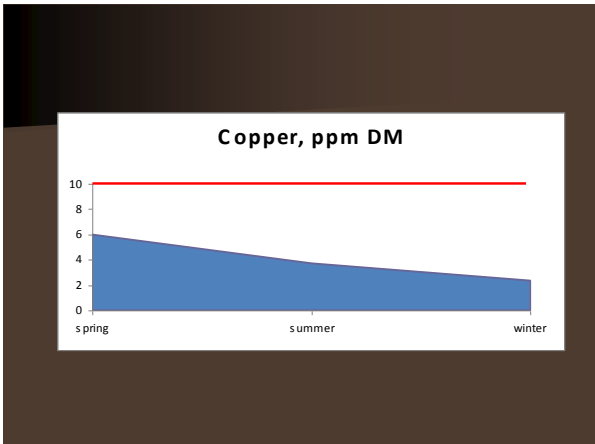
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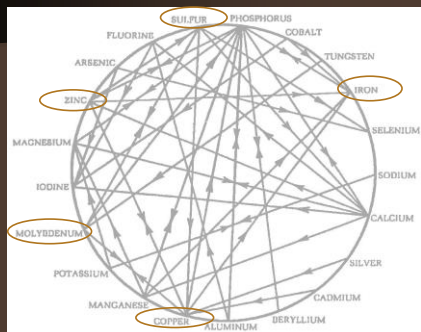
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## Mineral Antagonism




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## Summer Pasture

Balance with Summer 12-6 Mineral w/ Mag

Dry-matter	Lactating Cow MINIMUM Requirement	Early Summer Pasture (early maturity)	Summer Pasture + 12-6 Mineral w/ Mag
CP %	11.0-12.0	14.0	14.0
TDN %	60-64	62	62
Ca %	0.40	0.58	0.68
Phos %	0.20	0.27	0.32
<b>Ca : Phos</b>	<b>2 : 1</b>	<b>2 : 1</b>	<b>2 : 1</b>
Mag %	0.15	0.12	0.20
K %	0.60	2.36	2.36
Zn ppm	45	22	60
Cu ppm	15	5	20

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## Winter Pasture

Balance with Winter 12-12 Mineral

What are we still short on?

Dry-matter	Last 1/3 Gestation Cow Requirement	Winter Pasture (dormant)	Winter Pasture + 12-12 Mineral
CP %	10.0	5.5	5.5
TDN %	55	50	50
Ca %	0.40	0.50	0.60
Phos %	0.20	0.10	0.20
<b>Ca : Phos</b>	<b>2 : 1</b>	<b>5 : 1</b>	<b>3 : 1</b>
Mag %	0.12	0.08	0.15
K %	0.60	0.28	0.85
Zn ppm	45	13	60
Cu ppm	15	2	20

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## Questions?



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