www.sdklabs.com

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1.877.464.0623

FORMERLY PETERSON LABORATORIES


SDK
Laboratories
1000 COREY


DANGER
ACID
DANGER
DANGER
CAUSTIC


EXIT


VWR
VWR

Lab Capabilities

- Feed/Forage/Fat Analysis
- Vitamins
- Trace Minerals
- Liver Biopsies
- Pesticide Screens
- Microbiological Screens
- Manure/Lagoon/Fertilizer
- Water
  - Drinking/Livestock/Irrigation
- Waste Water
- Accredited by:

NFTA, AOAC, NIRSC, AOCS & KDHE

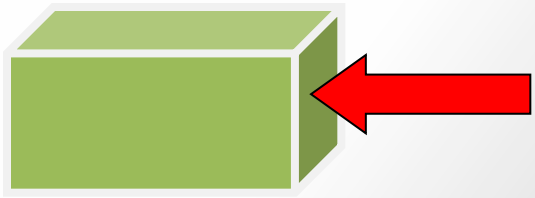
New this year…


SDK
ADIP
ADIP

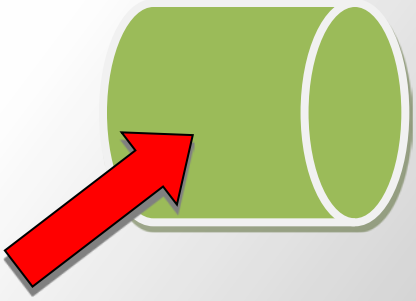
FORAGE SAMPLING

- NFTA recommends probing a minimum of 10%
- Hay probe is essential for best sampling practices
- No probe? Best alternative is to cut the bale and collect multiple “slices” or “flakes”
- Worst scenario is to “grab” a handful of sample. This may result in lower protein, higher fibers & lower RFV/RFQ

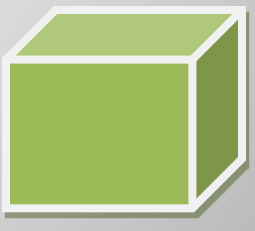
Rectangular Bales



Big Round Bales



Square Bales



Sample 90° to grain

1000 Corey Road
P.O. Box 886
Other I.D.
ANALYSIS
Moisture/Dry Matter
Aflatoxin
Ash
Calcium
Phosphorus
Fat
Crude Fiber
ADF
Non Protein Nitrogen-NPN
Protein, Crude
Protein, Soluble
Nitrates

SDK Laboratories

1000 Corey Road
P.O. Box 886
Hutchinson, KS 67504-0886
620-665-5661
FAX: 620-665-0559
TOLL FREE: 877-464-0623
www.sdklabs.com

Sample # 41155
Sample: Alfalfa
Other ID: NIR 5th Cut 46 Bales

Date Received: 10/03/2011
Date Reported: 10/05/2011
Total Fee: $ 12.00

4 Example Feed Yard
1000 Corey Road
Hutchinson, KS
67501

ANALYSIS

	Dry Basis	As Received	
Moisture		11.28	%
Dry Matter		88.72	%
Protein, Crude	21.97	19.49	%
ADF-Acid Detergent Fiber	24.68	21.90	%
aNDF - Neutral Detergent Fiber	28.94	25.68	%
NEL: Net Energy-Lactation	0.74	0.66	Mcal/lb
NEG: Net Energy-Gain	0.48	0.43	Mcal/lb
NEM: Net Energy-Maintenance	0.81	0.72	Mcal/lb
TDN: Total Digestible Nutrients	71.54	63.47	%
Calcium	1.35	1.20	%
Phosphorus	0.32	0.28	%
Potassium	2.87	2.55	%
Magnesium	0.26	0.23	%
RFV- Relative Feed Value	224		s.u.

RFQ/RFV	Grade	Quality
Over 185	Supreme	Excellent Dairy Hay
170 - 185	Premium	Dairy Hay
150 - 170	Good	Good Hay
130 - 150	Fair	Average Hay
Under 130	Utility	Poor Hay

Approved By: M. A. Apa

Copies:

ANALYTICAL RESULTS APPLY ONLY TO THE SUBMITTED SAMPLE AND MAY NOT REFLECT RESULTS OF SEEMINGLY IDENTICAL MATERIAL OR PRODUCTS.

NITRATE (NO_3)

- Reported as NO_3 & NO_3-N
- Conversions:
  - NO_3-N X 4.42 = NO_3
  - NO_3 ÷ 4.42 = NO_3-N
- Be careful not to confuse the two as the danger thresholds are different

All values on DMB

NO_3	NO_3-N	Comments
< 4,500 ppm	< 1,000 ppm	Safe to feed under all conditions
4,500 – 6,500 ppm	1,000 – 1,500 ppm	Safe to feed to non-pregnant animals. If pregnant, limit to 50% of DM ration
6,500 – 9,000 ppm	1,500 – 2,000 ppm	Safely fed if limited to 50% of DM ration. If pregnant, limit to 25% of DM ration
9,000 – 15,500 ppm	2,000 – 3,500 ppm	Limit feed to 35-40% of DM ration. Feed >9,000 should NOT be fed to pregnant animals
15,500 – 18,000 ppm	3,500 – 4,000 ppm	Limit feed to 25% DM ration. Do not feed pregnant animals
>18,000 ppm	> 4,000 ppm	Do not feed. Potentially toxic

Symptoms

Chronic

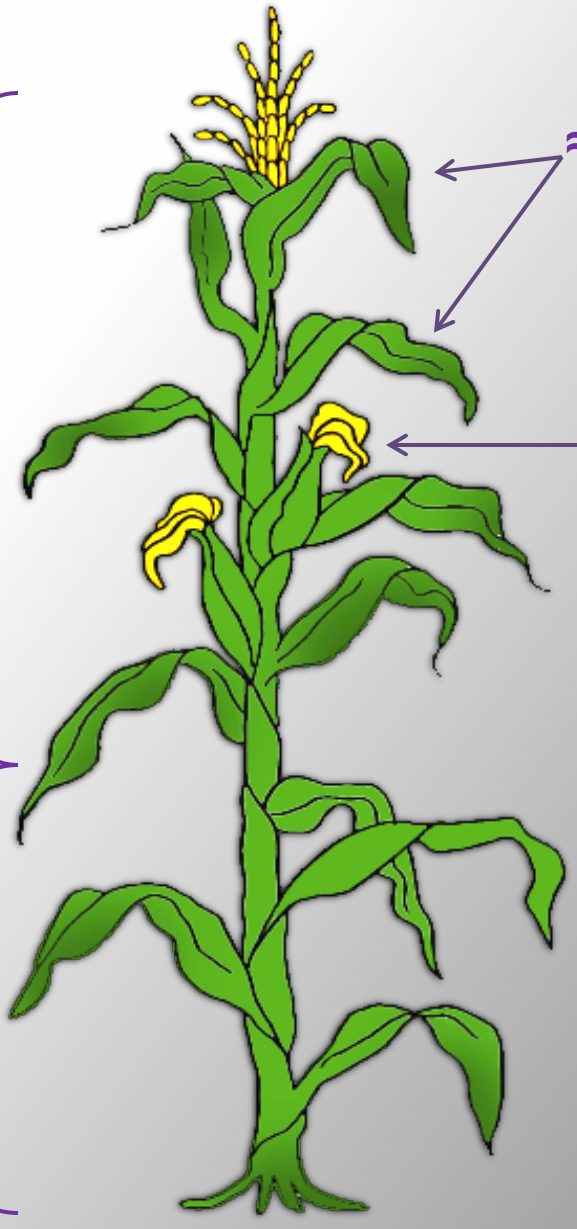
- Reduced appetite
- Diarrhea
- Runny eyes
- Weight loss
- Abortions

Acute

- Cyanosis
- Labored breathing
- Convulsions, staggering
- Collapse, coma, death

Symptoms dependant upon age, BCS, pregnancy, nutritional status

Nitrate Concentration



Remaining ≈30% of NO3 is spread across upper 2/3 of plant

≈ 70% of NO3 is in lower third of plant

≈ 2% in leaf

≈ 1% in corn

Options

- Ensile
  - Reduce NO_3 Level 30 – 50 %
- Dilute
  - Mix with low NO3 hay; top dress with starch source, i.e. grain
- Utilize propionicbacteria
  - Condition for 10 days prior to feeding
- Don’t turn out hungry cattle
- Don’t overstock
- Provide fresh, low NO3 water
- Poor health/nutritional status increases risk

Prussic Acid (HCN)

- Constantly run into clients who confuse NO3 & HCN
  - Unlike HCN, NO3 will not dissipate after a hard freeze
- HCN poses a threat to grazing animals especially after a drought-ending rain or in regrowth
- Can kill an animal within minutes after exposure whereas NO3 can take days or weeks

Prussic Acid Symptoms

By the time symptoms are recognized it may be too late to treat the animal

HCN Symptoms

HCN toxicity acts more rapidly than NO_3 toxicity.

- Excessive salivation
- Labored breathing
- Staggering
- Convulsions → coma → death

HCN Levels

Level	Comments
< 600 ppm	Acceptable
600 – 1,000 ppm	Caution, may be toxic
> 1,000 ppm	Considered toxic. Do not feed

All values on DMB

RFV vs RFQ

- Scale developed by hay brokers to market & sell dairy hay
- RFV is calculated from the ADF & NDF and is based on the intake of digestible energy
- RFQ is calculated from ADF, NDF, Protein, Fatty Acids, & NDFd . The key is the digestible NDF (NDFd)

RFQ/RFV Scale

RFQ/RFV	GRADE	QUALITY
> 180	Supreme	Excellent Dairy Hay
170 – 180	Premium	Dairy Hay
150 – 170	Good	Good Hay
130 – 150	Fair	Average hay
< 130	Utility	Poor Hay

NIRS vs Wet Chem

- Wet chemistry uses chemicals to digest the sample prior to analysis
- NIRS = Near Infrared Spectroscopy
- NIRS is a useful tool but has limitations – high ash (dirt) levels, heat damage can affect results
- Use on alfalfa, alfalfa haylage, corn silage, grass hay (mixed/unknown), whole corn/milo, soybean hay
- NIRS, a.k.a. “Ring Test”