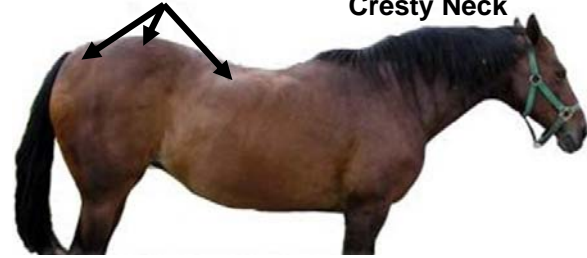


SOME COMMON EMS CONDITIONS

Abnormal Fatty Deposits

Cresty Neck



Obesity



Severe EMS Condition

4.0 What is considered a safe level of NSC in horse feed?

- ❖ The level of NSC intake that can pose a risk of developing an EQUINE METABOLIC SYNDROME (EMS) in a healthy animal or aggravating an existing case of EMS has NOT been conclusively determined.
- ❖ The risk depends on both daily intake of the feed and its content of total NSC & its components.
- ❖ At present, the normal ranges provided on the previous page may be used as reference to determine if a feed is high or low in NSC.

5.0 What is the cost of this new test?

- ❖ The testing fee is \$60 per sample

Note: This is a new test for 2010. It is not included in our 2009 Fee Schedule. To submit a sample, fill out the NSC form available here:

<http://aesl.ces.uga.edu/forms/index.html>



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NEW TEST FOR PARTITIONING NONSTRUCTURAL CARBOHYDRATES (NSC) AT UGA'S FEED LABORATORY



1.0 What are the benefits of this test?

The NSCs of your forages/feeds can be compared with their corresponding normal ranges so that feed/forage rations may be adjusted to promote healthy and productive animals.

- ❖ Horse owners should submit their feed and/or forage for this test if a horse has been diagnosed, suspected of, or desired to be protected from EQUINE METABOLIC SYNDROME (EMS). EMS conditions include:
 - Obesity
 - Cresty neck
 - Regional fat deposits such as tailhead behind the shoulder, or over the loin
 - Lethargy
 - Insulin Resistance
 - Hypertriglyceridemia, and
 - Hyperleptinemia
- ❖ Hay producers should submit samples from their hay because this test will assist them in marketing the hay to horse owners
- ❖ Dairy producers should submit samples from their forage or pasture, because NSCs are highly related to digestibility and milk production.

2.0 What are the components of NSC?

- NSC in feeds and forages is the sum of:
- ❖ Ethanol Soluble Carbohydrates (ESC: simple sugars: mainly glucose, fructose & sucrose)
 - ❖ Water Soluble Carbohydrates (WSC: ESC + Fructans) and
 - ❖ Starch

Each of these three components of NSC has special significance in managing feeds and feeding

[Further Details Inside](#)

3.0 Normal ranges of various components of NSC in different feeds/forages

Feed/Forage	%NSC	%Starch	%ESC	%WSC
A. DRY FORAGE				
ALFALFA CUBES	7.2-12.3	0.66-3.01	4.67-7.73	6.22- 9.78
ALFALFA PELLETS	6.93-13.4	0.14-5.42	4.21-8.54	5.47-9.47
BARLEY HAY	12.1-26.3	0.41-9.90	5.21-16.8	7.79-23.4
BERMUDA GRASS HAY	9.1-17.3	2.8-8.8	4.7-9.9	5.5-9.3
GRASS CUBES	6.81-15.0	0.02-4.44	4.03-7.99	6.03-12.2
GRASS HAY	8.0-17.7	0.9-3.7	4.6-10.2	6.5-15.1
GRASS PELLETS	7.84-18.7	0.00-8.70	4.38-9.60	6.12-12.6
LEGUME HAY	8.8-13.3	0.99-3.1	5.7-8.7	7.2-10.8
MILLET HAY	6.53-13.1	0.75- 5.49	0.65-9.23	3.61-11.6
MIXED MAINLY GRASS HAY	8.2-16.4	1.0-3.8	4.7-9.7	6.6-13.7
MIXED MAINLY LEGUME HAY	8.2-13.8	1.2-3.5	5.1-8.7	6.6-10.9
OAT HAY	14.9-29.3	1.59-8.76	6.84-17.2	9.09-24.7
PEANUT HAY	9.8-20.4	1.5-8.6	5.2-11.7	6.3-13.9
PEAVINE HAY	13.04-28.3	3.19-10.6	9.31-17.5	9.11-20.6
SOYBEAN HAY	10.9-19.2	2.92-7.09	3.97-8.19	6.83-12.9
STRAW	2.62-14.8	0.00-5.52	0.23-7.03	1.21-12.2
TRITICALE HAY	14.9-28.7	0.31-5.40	3.27-12.8	7.60-22.8
WHEAT HAY	10.5-24.8	0.49-8.05	7.51-18.1	8.29-24.2
B. PASTURE FORAGE				
MIXED MAINLY GRASS PASTURE	7.9-17.8	0.61-4.7	6.7-15.4	6.3-15.2
GRASS PASTURE	6.1-20.1	0.04-5.3	3.97-11.6	4.4-16.9
C. GRAINS				
CANOLA MEAL, DRY	10.7-16.4	0.00-3.85	5.69 12.6	9.97-13.2
CORN GERM MEAL , DRY	11.5-36.9	11.1-29.9	1.41-1.42	2.13-7.38
DISTILLERS GRAINS	3.59-17.2	1.02-9.83	4.19-8.66	2.35-7.25
BARLEY, Dry	51.9-67.0	46.2-63.5	0.75-3.51	0.75-13.0
GRAIN SCREENINGS, Dry	17.0-63.3	16.3-58.4	1.67-6.51	1.47- 8.12
CANOLA MEAL, DRY	10.7-16.4	0.00-4.00	6.60-13.8	9.90-13.2
MILLET, DRY	NA	31.2-49.2	0-4.1	NA
DRY OAT	37.2-60.1	34.5-53.9	0.81-4.25	1.06-5.22
DRY SOYBEAN	6.4-24.2	0.0-12.5	9.3-9.3	8.4-13.4
DRY WHEAT	58.3-75.1	53.9-71.4	0.6-3.2	2.8-8.2
EAR CORN	50.6-50.6	54.0-67.5	0.83-0.83	7.28-7.28
SHELLED CORN	68.6-77.6	65.1-75.5	0.43-4.40	1.78-4.57
D. OTHERS				
BEET PULP, DRY	3.94-19.7	0.00-2.66	3.39-12.40	3.10-17.57
BEET PULP, WET	0.73-9.66	0.00-6.15	0.22-4.48	0.94-4.23
BREWERS GRAINS	2.28-15.9	1.02-9.23	1.05-6.53	0.42-7.62
BREWERS GRAINS, WET	13.2-26.4	0.00-14.5	0.22-11.3	0.31-7.19
CARROTS, WET	43.7-43.7	0.11-7.0	3.7-42.4	8.99-51.5
CITRUS PULP, DRY	18.6-35.2	0.00-6.7	11.2-29.4	15.4-32.2
CITRUS PULP, WET	8.52-34.5	0.00-3.01	15.6-15.6	5.9-28.1
CORN GLUTEN FEED	15.9-30.9	8.88- 20.9	1.43-6.11	2.91-9.07
CORN GLUTEN MEAL	13.5-21.1	11.8-19.1	0.63-6.68	0.62-2.59
RICE BRAN, DRY	16.4-33.8	10.4-28.4	3.39-6.61	3.83-10.69
SNACK FOOD, DRY	29.8-53.7	24.9-56.4	0.49-4.21	0.69-13.9
HOMINY FEED, DRY	44.2-63.8	43.8-65.4	1.53-4.39	3.64- 6.75
LINSEED MEAL, DRY	6.54-13.4	0.65-6.09	4.61-4.61	4.67-7.56
MALT SPROUTS, DRY	17.0-28.4	2.47-12.3	6.18-12.9	11.2-18.7
OAT HULLS, DRY	14.9-14.9	9.62-22.0	4.62-4.62	0.66-2.78
SOYBEAN HULLS, DRY	2.05-8.11	0.23-2.81	0.51-4.51	1.27-5.67
SOYBEAN MEAL, DRY	12.2-17.9	0.44-3.44	7.33-13.74	10.7-15.6
WHEAT BRAN, DRY	21.7-37.9	15.2-29.1	2.97-7.70	6.26-10.30
WHEAT MIDDS, DRY	22.1-43.7	16.4-36.7	2.63-6.85	4.89-11.15

Abbreviations: NSC= Non-structural Carbohydrates; WSC= Water-soluble Carbohydrates (Simple Sugars plus Fructans); ESC= Ethanol soluble Carbohydrates (Simple Sugars).

Source: Equine Analytical Laboratories, Dairy One, Ithaca, New York
<http://www.equi-analytical.com/CommonFeedProfiles/disclaimer.asp>