



# Equi-Analytical Laboratories

## Fall 2014 Newsletter

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Click here to take  
the  
Equi-Analytical  
Facebook Survey

It contains 5 questions  
to help us get to know  
you & your horse.

Answer by  
**Wednesday,  
November 26th** to be  
entered in a drawing  
for one **free forage  
sample!**

[FACEBOOK SURVEY](#)

### What is Grass Hay?

In the survey in our first newsletter in August, 90% of the participants answered that they feed their horses grass hay. But what is grass hay? Is it really only grass? What type of grass is in the hay? How do horses use different grasses? What are legumes and how can you identify them?



Click on the following link to take a survey about this picture. <http://survey.constantcontact.com/survey>

#### What type of grass is it?

Grass species that are commonly grown for forage production (dry hay, silage, or pasture) are orchard grass, reedcanary grass, timothy, smooth brome grass, tall fescue, meadow fescue, Kentucky blue grass, perennial rye, Italian rye, festoliums, bermudagrass and wheat. It is hard to know what species are the most common in horse hay, but orchardgrass, timothy, bermudagrass, tall fescue, and wheat are the most common to be recommended for horse hay.

## How does grass type influence quality?

In general, all forages are digested the same in the horse: sugars in the gut and some fermentation of fiber in the intestines for additional energy. The nutrient value of the hay will differ among grass types. This is partly due to the differences in the genetics, and partly due to differences in the rate of maturity and response to cutting of each grass. The tables below summarize data from the Dairy One forage lab (the parent lab of Equi-Analytical); they highlight 2 important points of forage analysis.

1. Correctly identifying your sample - as you see we have a general grass hay category, a specific Bermudagrass hay, and wheat hay samples. You will get the best information for comparing your hay to the average values when it is correctly identified.
2. Variability of samples - even in the general grass hay category, with 3 to 5 times more samples analyzed, the range of sample values is quite large and just using the "book value" for a feed rather than having it tested can result in a very different feed for the horse than you planned.

General grass hay and bermudagrass hay are quite similar on average, with bermudagrass hay slightly lower in WSC. However, while wheat hay is similar in crude protein, NDF and ADF, it is quite a bit higher in WSC and ESC. So for example, if you are looking for a low WSC and ESC hay, it is important to ask if it is wheat hay or if there is any wheat hay in the mix.

**Table 1.** Summary of Grass Hay submitted to Dairy One from 5/1/2000 to 4/30/2014

Item	Number of Samples	Average	Normal Average		Standard Deviation (±)
Crude Protein, % DM	72,753	10.8	7.0	14.6	3.8
NDF, % DM	72,276	62.7	55.6	69.8	7.1
ADF, % DM	71,906	39.0	34.2	43.9	4.9
WSC, % DM	54,983	11.6	7.0	16.1	4.6
ESC, % DM	38,196	7.3	4.6	9.9	2.6

**Table 2.** Summary of Bermudagrass Hay submitted to Dairy One from 5/1/2000 to 4/30/2014

Item	Number of Samples	Average	Normal Average		Standard Deviation (±)
Crude Protein, % DM	15,431	10.9	8.2	13.6	2.7
NDF, % DM	15,375	66.7	61.9	71.4	4.8
ADF, % DM	15,369	35.5	31.7	39.4	3.9
WSC, % DM	10,946	7.7	5.8	9.6	1.9
ESC, % DM	7,667	6.5	4.3	8.8	2.3

**Table 3.** Summary of Wheat Hay submitted to Dairy One from 5/1/2000 to 4/30/2014

Item	Number of Samples	Average	Normal Average		Standard Deviation (±)
Crude Protein, % DM	3,356	10.5	6.8	14.3	3.7
NDF, % DM	3,342	59.0	51.5	66.6	7.5
ADF, % DM	3,326	36.9	30.8	42.9	6.1
WSC, % DM	1,855	16.5	9.0	24.0	7.5
ESC, % DM	1,322	11.3	6.2	16.3	5.0

## What else could be in there?

When a seller or buyer does not take the time to examine hay before selling or buying, you could be getting lots that you don't want. Some of this could be weeds and some of it may be legumes. We would all say weeds are bad. Common weeds in hay are lambsquarter, horsetail, ragweed, barnyard grass, crabgrass, fox tail, dandelion, and milkweed. Some of these are very obvious, but the grass species are

hard to find if they do not have seed heads. Additionally, some of these are a problem to feed (milkweed and horsetail) and others are just a loss of quality and efficiency (crabgrass and dandelion). There are many great resources for weed identification; the NC State guide has some good pictures and is available at <http://harnett.ces.ncsu.edu/>

Legumes are plants that fix nitrogen through the relationship of nitrogen fixing bacteria in nodules on the roots. Legumes include alfalfa, clovers, vetch, soybeans, and peas. All but soybeans could be easily found in hay. Legumes in a hay will generally increase the crude protein and may also increase the NDF and ADF depending on the legume and the stage of maturity. Legumes generally have trifoliate leaves and more rigid stems than grasses. The University of Vermont has a nice guide to identifying legumes <http://www.uvm.edu/>

It is important to open and examine the content of at least one bale from a lot of hay to know what you are getting. Just because hay is labeled as grass hay doesn't mean that it is truly grass hay. Knowing the actual content is an important place to start when managing hay.

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