

Don't forget about getting your **feed** and **manure** samples tested this summer!

Digestible Organic Matter Index (DOMI) – What's the Value?

This winter Ag Health Labs introduced Digestible Organic Matter Index (DOMI; equation developed by Cumberland Valley Analytical Services) as an improved tool for ranking forages compared to traditional indexes, such as, RFV. Please refer to the February 2014 newsletter article for a detailed explanation of DOMI. The take home messages from the previous article include:

Take home message:

1. DOMI is an index that can be used to rank forages (except for corn silage) based on nutritional quality
2. DOMI estimates the pounds of digestible organic matter in a ton of feed on an as-fed basis
3. DOMI corrects for ash content and estimates the amount of indigestible NDF present in the forage (which the RFV equation **does not** account for)
4. DOMI is an effective tool to help with pricing forages that should be considered by management teams on dairies
5. *Ag Health Labs is currently reporting DOMI values on both NIR and wet chemistry results*

Factors that effect DOMI:

- High ash = Lower DOMI
- High NDF concentration (% DM) = Lower DOMI
- Lower NDF digestibility = Lower DOMI
- Increased moisture = Lower DOMI



Now offering Hops Testing at Ag Health Labs!!

Hops Testing services including

Total Oils (% oil content)

Dry Matter Analysis (Moisture)

Acid Analysis Package (Alpha, Beta and Hops Storage Index)

**All Analysis can be done on Fresh Leaf, Baled Hops and Hops Pellets*

Figure 1. Alfalfa Hay Quality Guidelines

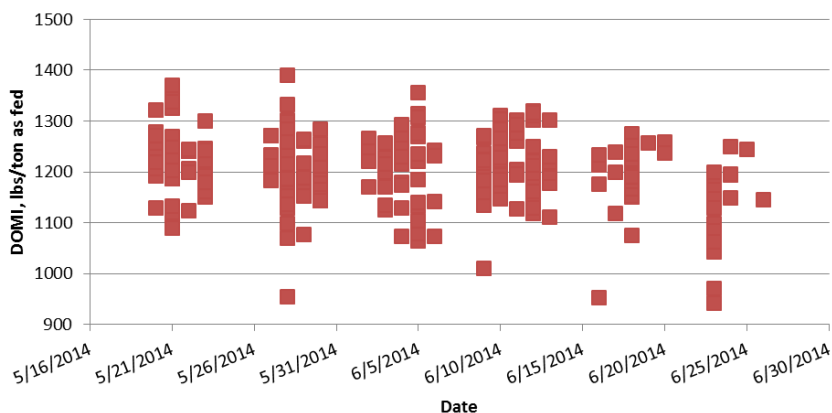
	DOMI lbs/ton as fed	CP % DM	ADF % DM	NDF % DM	RFV	Ash % DM	30 h NDF Dig % NDF	DM %
Supreme	>1250	>22	<28	<34	>185	<9%	>44%	90-92%
Premium	1201-1250	21-22	28-29	34-36	171-185	9-10%	43-44%	90-92%
Good	1151-1200	19-20	30-33	37-40	151-170	10-11%	42%	88-89%
Fair	1100-1150	18-19	34-35	41-44	130-150	12-13%	41%	86-87%
Utility	<1100	<18	>35	>44	<130	>13%	<41%	<86%

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Figure 1 is a guideline to help rank alfalfa hay according to quality that includes digestible organic matter index (DOMI) as a ranking tool. For example, alfalfa hay samples that have a DOMI above 1250 are considered to be of supreme quality. Other nutrient parameters are also listed in Figure 1 to use as guidelines when determining the quality of alfalfa hay.

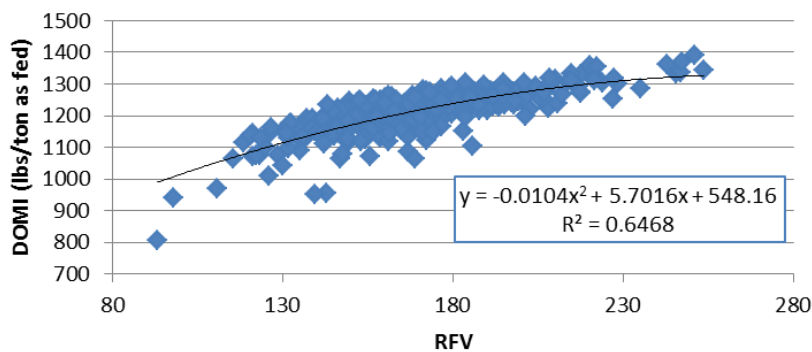
The Digestible Organic Matter Index (DOMI) Values for 2014 1st cutting alfalfa hay samples submitted to Ag Health Labs are shown in Figure 2. The DOMI averaged 1209 lbs/ton on an as fed basis. It is averaging ~22 points higher on DOMI than 2013 1st cutting alfalfa hay samples (average DOMI = 1187 lbs/ton as fed). The 2014 1st cutting alfalfa hay is ranking in the premium category, on average, while 2013 1st cutting alfalfa hay is ranking in the good quality.

**Figure 2. 2014 Alfalfa Hay 1st Cut
Digestible Organic Matter Index (DOMI)**



The average DOMI, on a weekly basis, tended to decrease from May 20, 2014 (about the time 1st cutting samples started arriving at the lab) to Jun 23, 2014. The weekly averages are a rough indicator that quality of 1st cutting alfalfa hay declines the longer that the alfalfa stands in the field prior to harvest. Please refer to the Alfalfa Quality Guidelines (Figure 1) for ranges of DOMI that help determine quality. The hay samples for the week of 5/20/14 had an average DOMI of 1228 which gave the hays an average ranking of premium quality. The hay samples for the week of 6/23/14 had an average DOMI of 1114 which gave the hays an average ranking of fair quality. With that being said, the quality guidelines are just guidelines. The equation used to calculate DOMI is completely different than the equation used to calculate RFV. There can be a wide range in DOMI values at a given RFV (Figure 3). Therefore, an alfalfa hay analysis may come back with an RFV of 170 which would rank the forage as good quality. However, the DOMI may be 1283 which ranks it as supreme quality. The DOMI equation is different from the RFV equation in that it removes some of the fractions in hay that are known to have no nutritional value (ash and indigestible fiber). Therefore, it is estimating the fraction of the hay that has nutritional value to livestock. Relative Feed Value (RFV) differs from DOMI in that RFV is estimated strictly from ADF and NDF concentrations and doesn't take into account other nutrients or the digestibility of the fiber in each individual alfalfa hay sample, which are major factors contributing to the nutritional value of forage.

**Figure 3. 2014 1st Cutting Alfalfa Hay
RFV vs DOMI (lbs/ton as Fed)**



It appears that the proportion of indigestible NDF present in the hay sample is a major factor influencing DOMI. The greater the amount of indigestible NDF, the lower the DOMI. Ash concentrations also influence DOMI. The higher the ash concentration, the lower the DOMI.

Throughout the growing season, we will continue to post updates about DOMI to the Ag Health Labs website (www.aghealthlabs.com) and via Facebook. Please feel free to call Ag Health Labs at 509-836-2020 or email Ivanwieringen@aghealthlabs.com with questions or comments.