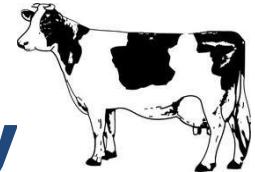


University of California
Agriculture and Natural Resources

Making a Difference for California

**California Dairy
Management Seminars**



What is Dry Matter?

Why do I need to measure it?

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Merced, Stanislaus & San Joaquin Counties

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Outline

- **What is Dry Matter (DM)?**
- **When is DM important?**
- **Why is DM important?**
- **Determining DM**

What is DM?

DM is what remains when water (moisture) is removed from a feed.

- Example: In the corn silage report, **DM = 36%**
- For every 100 pounds of silage fed, 64 pounds of that is water.

CHEMISTRY ANALYSIS RESULTS		
Dry Matter	35.9	
Moisture	64.1	
PROTEINS	% DM	% CP
Crude Protein	7.7	
Adjusted Protein	7.7	
Soluble Protein	5.07	66.2
Ammonia (NPN)		
ADF Protein (ADICP)	0.79	10.3
NDF Protein (NDICP)	1.11	14.5
Rumen Degr. Protein	6.368	83.1
Rumen Deg. CP (Strep.G)		
FIBER	% DM	% NDF
ADF	29.19	68.2
NDF	42.80	
aNDFom		
NDR (NDF w/o sulfite)		
peNDF		
Crude Fiber		
Lignin	3.44	8.04
NDF Digestibility (12 hr)		
NDF Digestibility (24 hr)		
NDF Digestibility (30 hr)		
NDF Digestibility (48 hr)		
NDF Digestibility (240 hr)		
Indigestible NDF 120 HR		

When is DM important?

- » Buying/selling forages
- » Comparing feedstuffs
- » Formulating rations
- » **Ration mixing/feeding**



Why is DM important?

Water *does not* contain energy and energy intake is essential for milk production.



Why is DM important?

Let's look at an example:

Your nutritionist formulates a ration that calls for **6,000 lbs** of corn silage to be added to the mixer wagon.

The last DM shows the corn is @
35% DM (or 65% Moisture)

How many lbs of DM is that?

$$6,000 \text{ lbs} \times 0.35 = \mathbf{2,100 \text{ lbs DM}}$$

Why is DM important?

What if the DM is actually 30% DM?

$$6,000 \text{ lbs} \times 0.30 = \mathbf{1,800 \text{ lbs DM}}$$

We've cheated the ration of 300 lbs of corn silage.

At 30% DM, the amount of silage going into the mixer wagon should have been:

$$2,100 \text{ lbs DM} \div 0.30 \text{ DM} = \mathbf{7,000 \text{ lbs of corn silage}}$$

How often do you check DM?

Wet feedstuffs, such as silage, are more likely to fluctuate in DM.

Audience Poll:

How often are you checking DM of your corn silage?

Weekly?

Every other week?

Monthly?

Less than that?

How often do you check DM?

In a 2013 California survey, DM was determined:

- 1 to 3 times per week (27.9%),
- 1 to 3 times per month (57.8%), and
- 1 to 6 times per year (14.3%).

How do you check DM?

2013 Survey Results:

49.3% checked DM on-farm.

50.7% sent samples to a lab.

On-farm DM evaluations were done using:

- » koster tester (76.4%),
- » microwave (20.6%) and
- » a food dehydrator (3.0%).

How is DM determined in the lab?

OVEN DM



Advantage: standard method

Disadvantage: cost (shipping) & turn around time

How is DM determined on farm?

KOSTER TESTER



Advantage: time, cost, “set and forget”

Disadvantage: equipment/user errors

How is DM determined on farm?

MICROWAVE



Advantage: turn-around time, cost

Disadvantage: requires constant monitoring

How is DM determined on farm?

PORTABLE NIR



Advantage: instant feedback
Disadvantage: cost

Troubleshooting Tips

What if a result doesn't make sense?

- Do you have a good sample?

Do you have a good sample?

- Is your sample representative of what you'll be feeding?



Do you have a good sample?

- Is your sample representative of what you'll be feeding?



- How was your sample handled?



Troubleshooting Tips

What if a result doesn't make sense?

- Do you have a good sample?
- Is your scale working properly?

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Neewer 205 Gram Precision Steel Balance Scale Calibration Weight Kit Set with Tweezers, Class M2 -Suitable for Digital Jewellery Scale, General Laboratory, Commercial, and Educational use

 21 customer reviews

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Troubleshooting Tips

What if a result doesn't make sense?

- Do you have a good sample?
- Is your scale working properly?
- When in doubt – compare!
- Train, train and re-train!



Questions?

Reynolds



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