

Manure Evaluation For Reading Your Cows: It Doesn't Just Happen!

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The Cows Are Always Right LLC



I-29 Moo University 9/16/2025





**“Normal” is what
you get used to.**

How do we
evaluate whether it
is really what we
want?



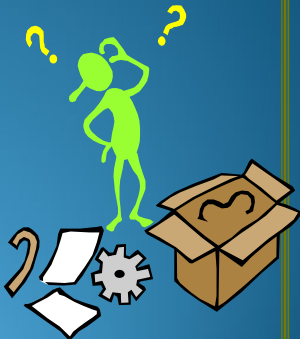
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Get enough information in context from enough different angles to make sense of the situation.



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Evaluating a Herd

- ☀ Cows: BCS, coat, lameness, rumination...
- ☀ Feed: Mold/dust, analysis, consistency, mixing, existence....
- ☀ Bunk: Mold, clean, fresh, heating, mixed, weigh back...
- ☀ Water: Clean, fresh, available...
- ☀ Facilities: Comfortable, clean, ventilated....
- ☀ Employees.....



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**Evaluate this, too.
It doesn't just happen.**



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**In context,
manure gives
insights into the
interaction
between the cow
and her diet.**

**The cows are
always right.**



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Physically Effective Form

- Enhances rumen function
- Increases rumination
- Rumen retention & passage
- Reduces digestive upset risk
- Allows rations to work



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Fine



Medium



Coarse



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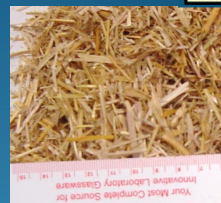
Physical Form



Alfalfa silage



Corn silage

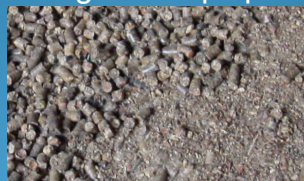


Wheat straw

Byproducts



Sugar beet pulp



Ground corn



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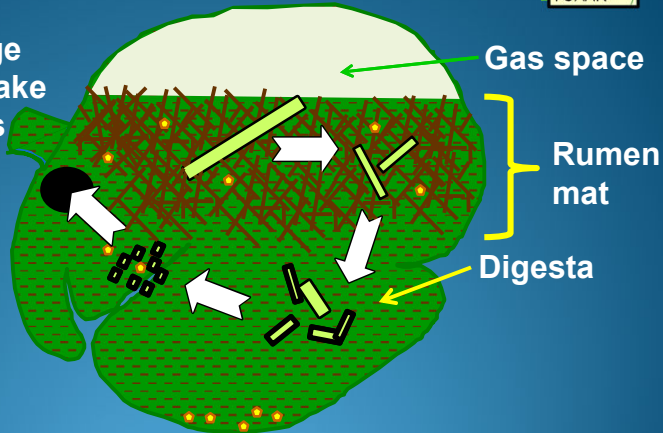
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Physical Form In The Rumen



The larger forage particles can make a mat that holds feeds in the rumen.



Longer time in the rumen gives more time for rumination and fermentation to digest feeds and break down particles. This affects the size of particles we see in manure. pH?

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Where Does Feed Digest?



Rumen (Fermentation)

Crude Protein
Carbohydrates
(NDF & NFC)

Small Intestine (Enzymic)

True Protein
Starch
Lipids

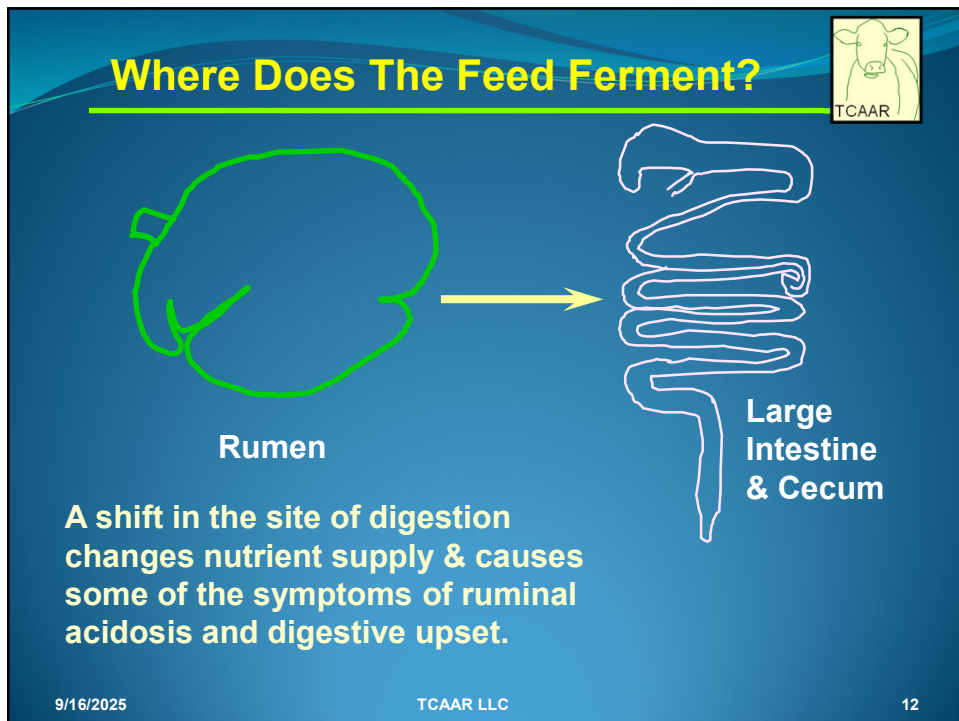
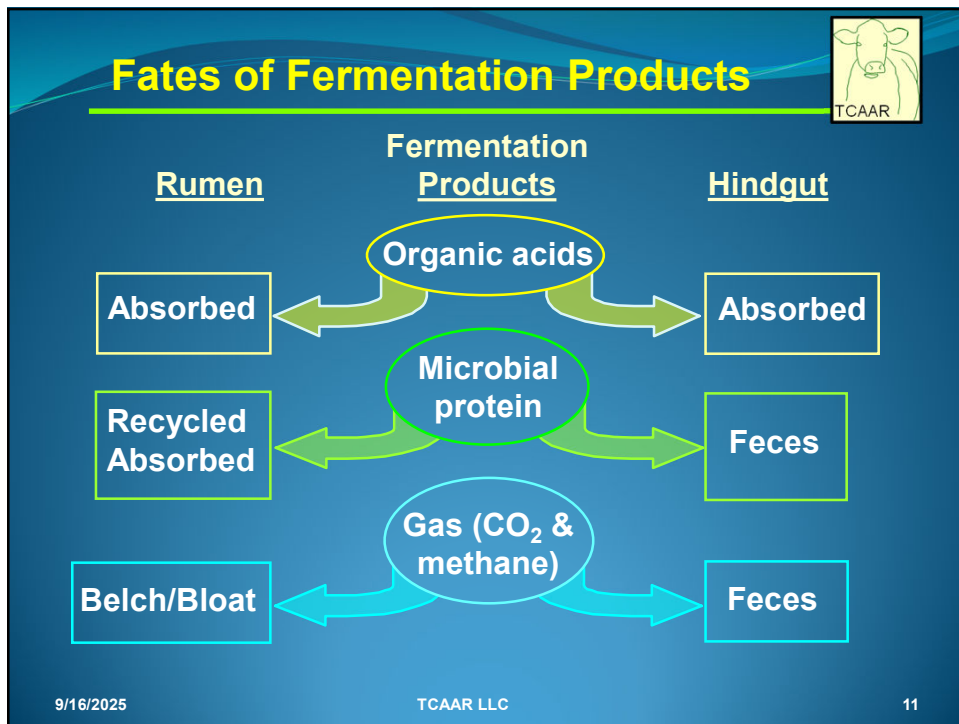
Cecum & Large Intestine (Fermentation)

Crude Protein
Carbohydrates
(NDF & NFC)

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Consistency: The Good Stuff



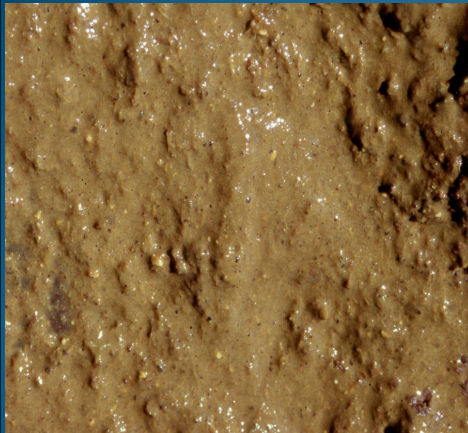
For lactating cows, soft, but forms up.

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Not Normal: Foamy



Excess fermentation in the hindgut created acid & gas.
Feed didn't digest where it should have.

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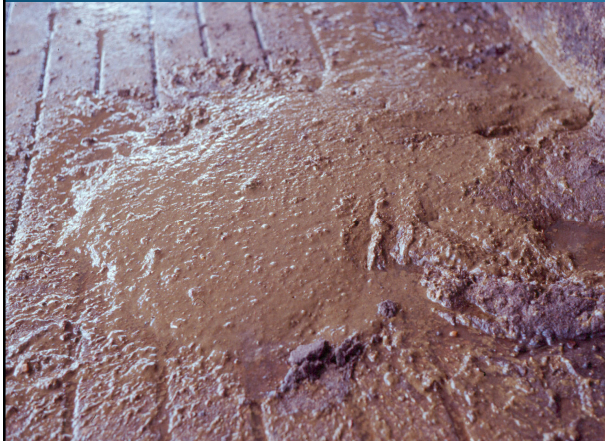
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Not Normal: Diarrhea



A sign of ruminal acidosis/digestive upset or eating spoiled feed.
Can be caused by disease, as well.



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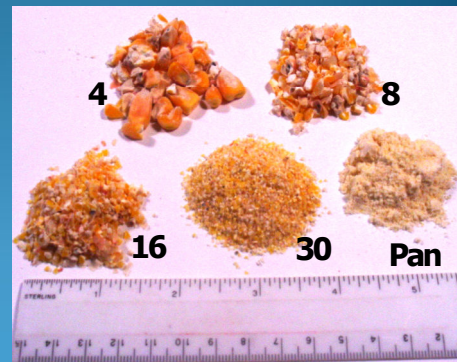
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Not Normal: Undigested Feed



Eaten does not mean digested.
Need a finer grind?
Is forage feeding / particle size adequate?
Slug feeding?



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Not Normal: Obviously Undigested



You're not supposed to be able to ID feed that's in the manure...whole linted cottonseed, citrus pulp,

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Not Normal



Pasty



Splattered



Dry

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Not Normal: Lots of Variation



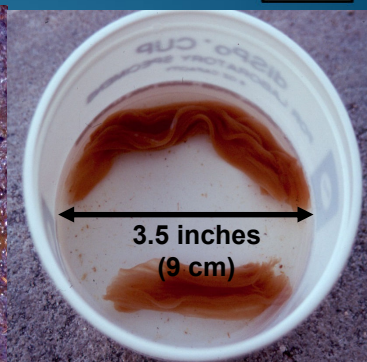
Except for maybe 5% of the cows, cows eating the same diet should have similar manure. If not, are they sorting their feed? Overcrowded & slug feeding? Go look.

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Not Normal: Mucin Casts

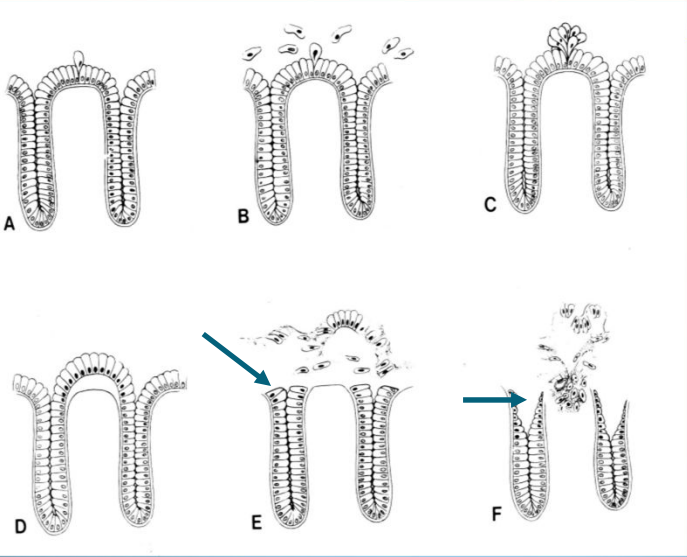


Sign of past damage to the large intestine. Can be brown, gray, or almost black.

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Damaging the lining of the large intestine creates mucin casts.

This can happen due to too much hindgut fermentation.

Henrikson et al., 1989. Laboratory Investigation 60:72-87
 Figure reproduced with permission, ©Nature, <http://www.nature.com/>

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Not Normal: Fibrin Casts

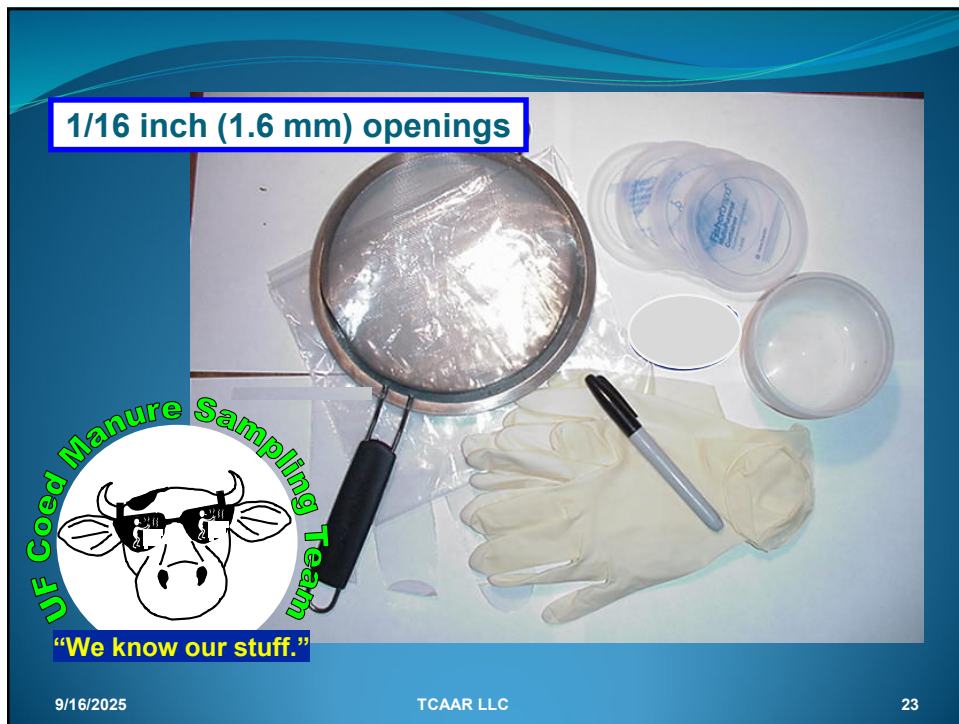


These are a lot tougher in texture than mucin casts, and rarer.

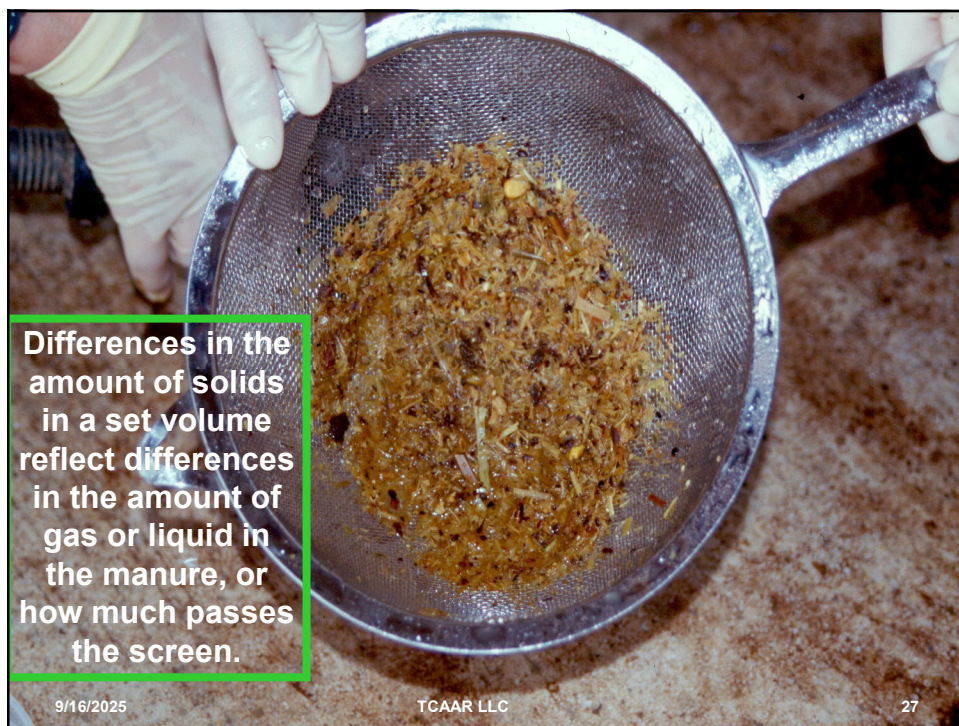
Still a sign of past damage to the large intestine.

Courtesy of Dr. Sheila McGuirk, UW School of Vet. Med.

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Fecal Particle Size



Good ruminal retention
= better digestion,
smaller particles



Reduced ruminal
retention = less digestion,
larger particles

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Coarse, undigested feed 1



19 mm
0.75"

33.5% roughage:
19% corn silage
5.5% ctsd hulls
9% alfalfa hay

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Coarse, undigested feed 2



Found in a pool of bubbly diarrhea.

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Coarse, undigested feed 3



Before corn processors were popular..... Milk production increased when ground corn was added to the ration.

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Walking the cows



- ☀ Get an idea of the variation
 - In groups
 - Between groups
 - Between rations
- ☀ Sample 4-6 pies/group for particle size
- ☀ ~5% of manure will not look like the rest.

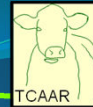


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Qualitative Not Quantitative



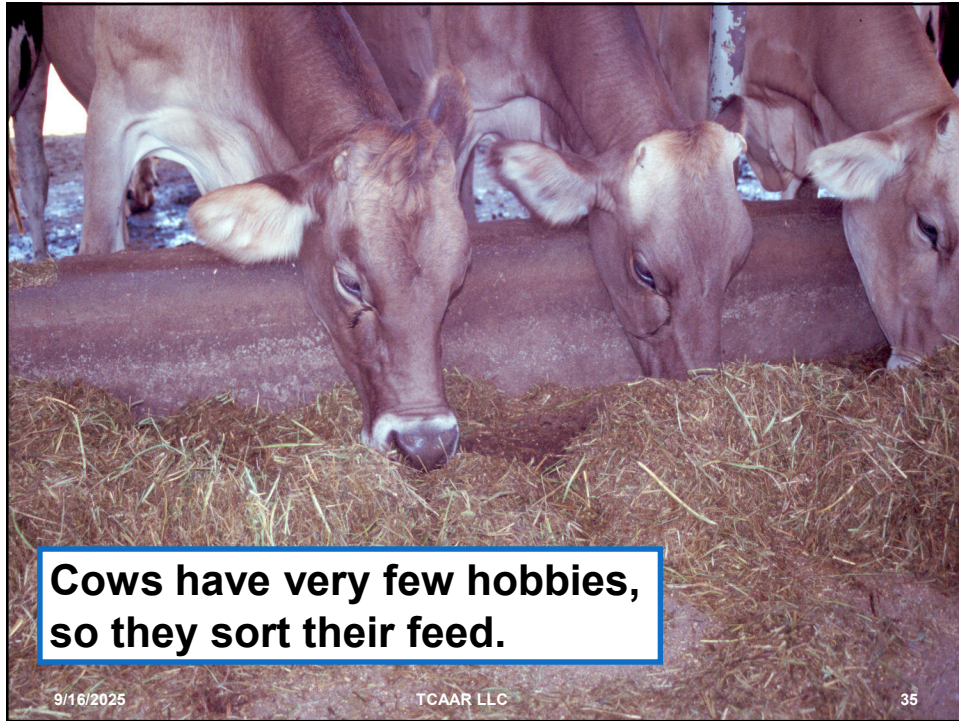
- ☀ Manure probably varies somewhat over 24 h.
- ☀ No way to know amount produced to precisely quantify what you sampled.

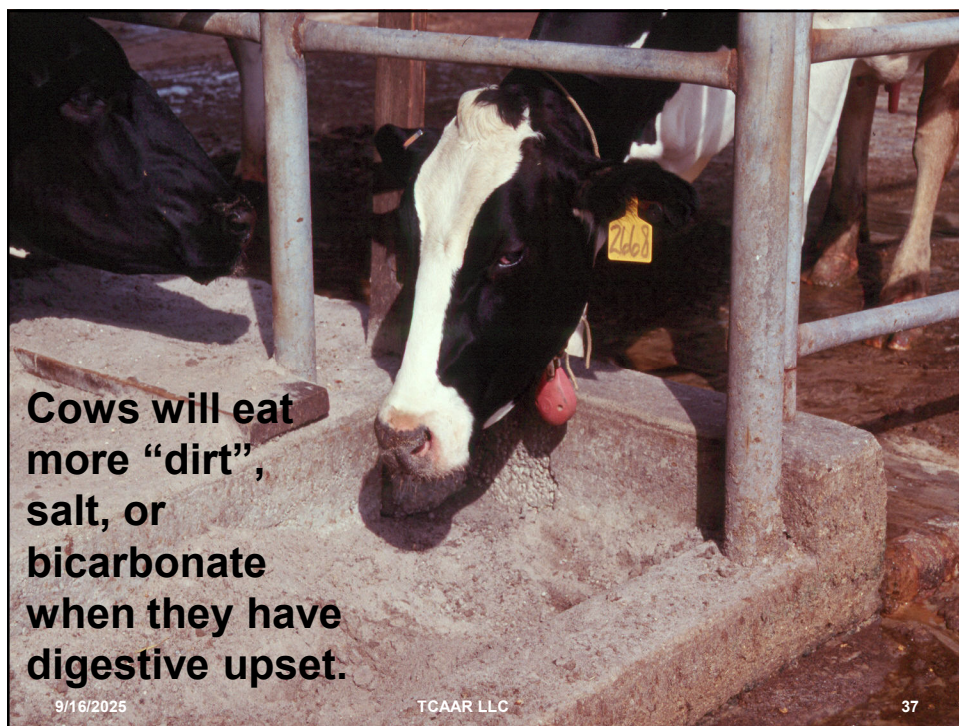


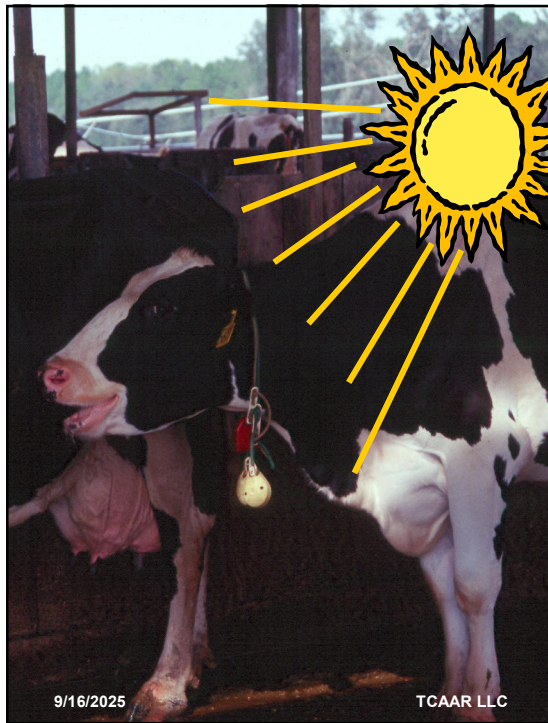
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Heat Stress causes digestive upset.

- ☀ Panting
- ☀ Decreased rumination
- ☀ Drooling
- ☀ Slug feeding
- ☀ Sorting

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In Context

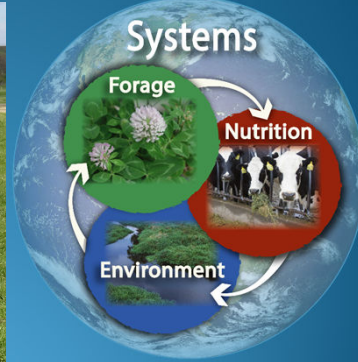


☀ Manure appearance	☀ Animal health
☀ Fecal particle size	☀ Production
☀ Undigested feed	☀ Environment
☀ % Rumination	☀ Management
☀ Eating behavior	☀

➤ Use these together to build a case as to what ration or management changes are needed.

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Questions?



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