



What is the Ideal Hay for Horses?



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The five “C”s....

- ▶ **Cleanliness**
- ▶ **Consistency**
- ▶ **Convenience**
- ▶ **Composition**
- ▶ **Cost-effectiveness**



Cleanliness

- ▶ Free from toxic/injurious plants
- ▶ Free from non-forage contaminants
 - String/twine/wire
 - Plastic
 - Dead animals, insects
- ▶ Free from dust and mold



Problems associated with moldy hay

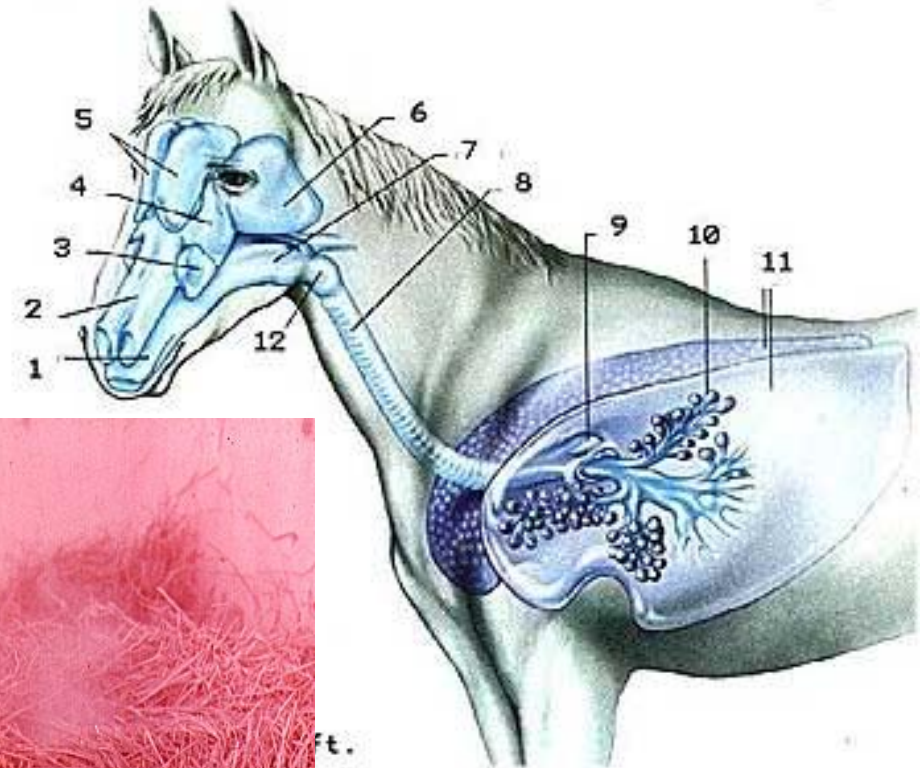


Digestive upset?



Impaired breathing!!

Respiratory System



Susceptible to
irritation,
inflammation



Respiratory Function is Very Important to Equine Athletes



Effect of Preservative on Dust and Mold

Seguin et al. (2012)

- Baling at 15% moisture vs. 25% reduced breathable dust and mold
- Propionic preservative on hay baled at 25% moisture reduced breathable dust and mold to same level as hay baled at 15%

Consumption of Preservative Treated Hay by Horses

	% H2O at Baling	Temp	Preference	VDMI (kg)
Wet Hay	~30%	~ 38 (C)	-----	-----
Dry Hay	~20%	< 30(C)	0.77 kg	10.0 kg
Treated Hay	~30%	< 30 (C)	0.27 kg*	10.5 kg

*P < 0.05

Consistency

- ▶ Minimize digestive disturbances
 - Reduce risk of colic
- ▶ Provide steady nutrition
 - Prevent underfeeding
 - Prevent overfeeding



Consistency



- ▶ Colic accounts for 15% of deaths
 - Most colics are not fatal but can still incur high veterinary costs
- ▶ Review of dietary factors affecting colic risk (Durham, 2013)
 - *“Change in hay” had a higher colic risk than change in concentrate*

Consistency



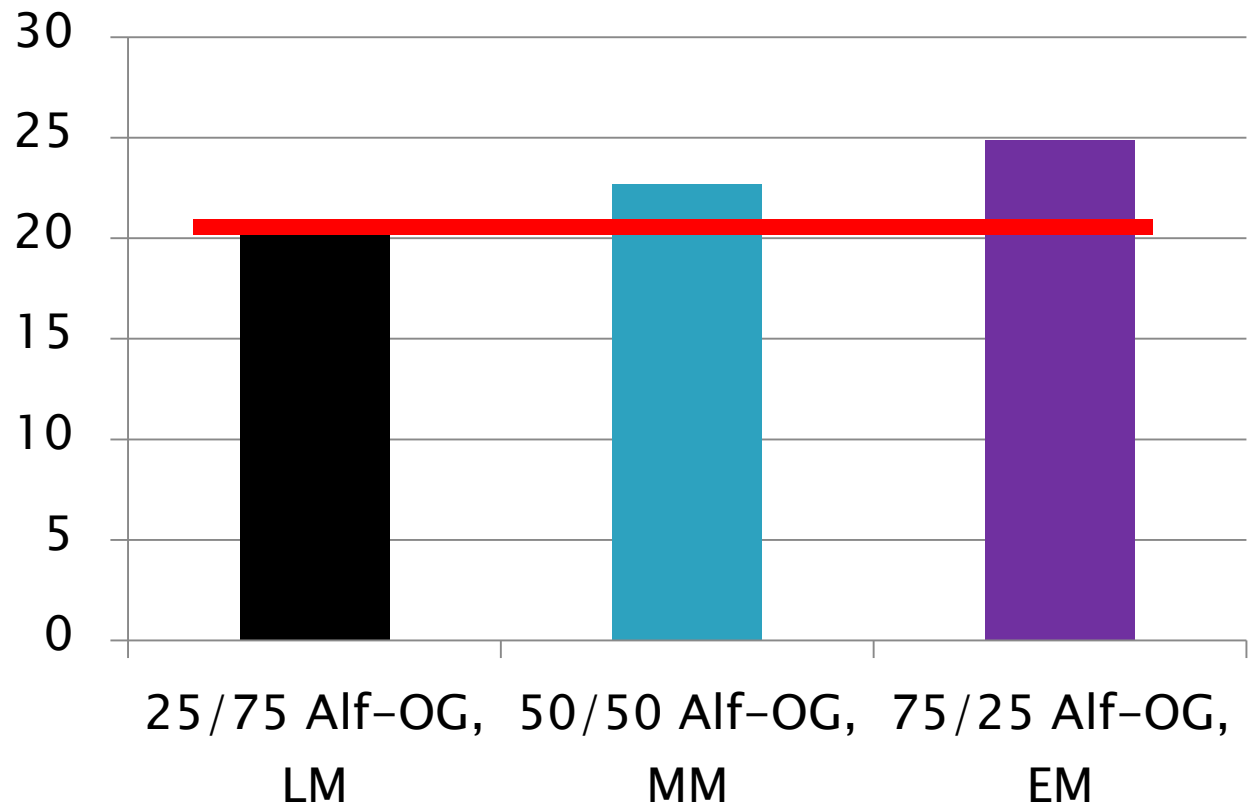
- ▶ Inconsistent hay = variable nutrients
- ▶ Example: Gelding, light work
 - 6 lb commercial grain mix
 - 15 lb alfalfa/orchardgrass mix
 - 25 / 75 Alfalfa-OG, late maturity
 - 50 / 50 Alfalfa-OG, mid maturity
 - 75 / 25 Alfalfa-OG, early maturity

Consistency



- ▶ Inconsistent hay = variable nutrients

Daily digestible
calorie intake
(Mcal) from hay
and grain mix



Consistency

- ▶ Inconsistent hay = variable nutrients
- ▶ Does overfeeding matter?



Convenience

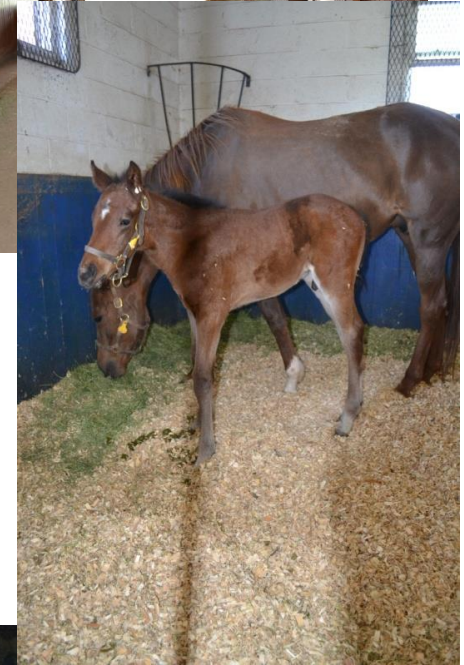
- ▶ Operation constraints
 - Storage capacity
 - Available equipment
 - Horse housing/management
- ▶ Bale size



Convenience

▶ Bale size

- “Small squares”
 - 2 – 3 string; 50 – 150 lb
 - Minimal equipment needs
 - Can be moved by 1–2 people
 - Suitable portion sizes for feeding horses in stalls



Convenience

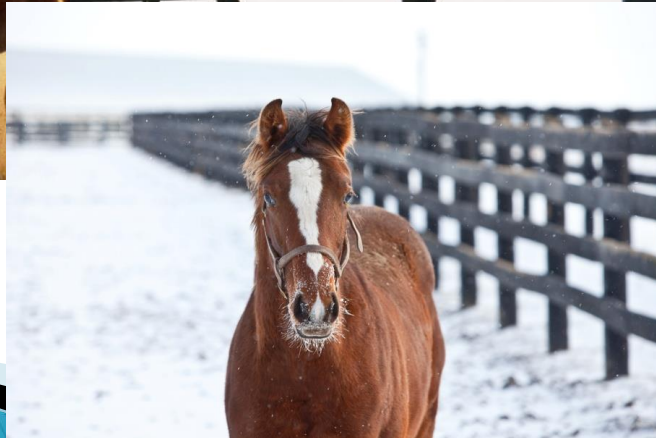
▶ Bale size

- “Large bales”
 - Round or rectangular
 - Greater equipment needs
 - Effective for large groups of horses
 - Waste high unless fed in feeder



Composition

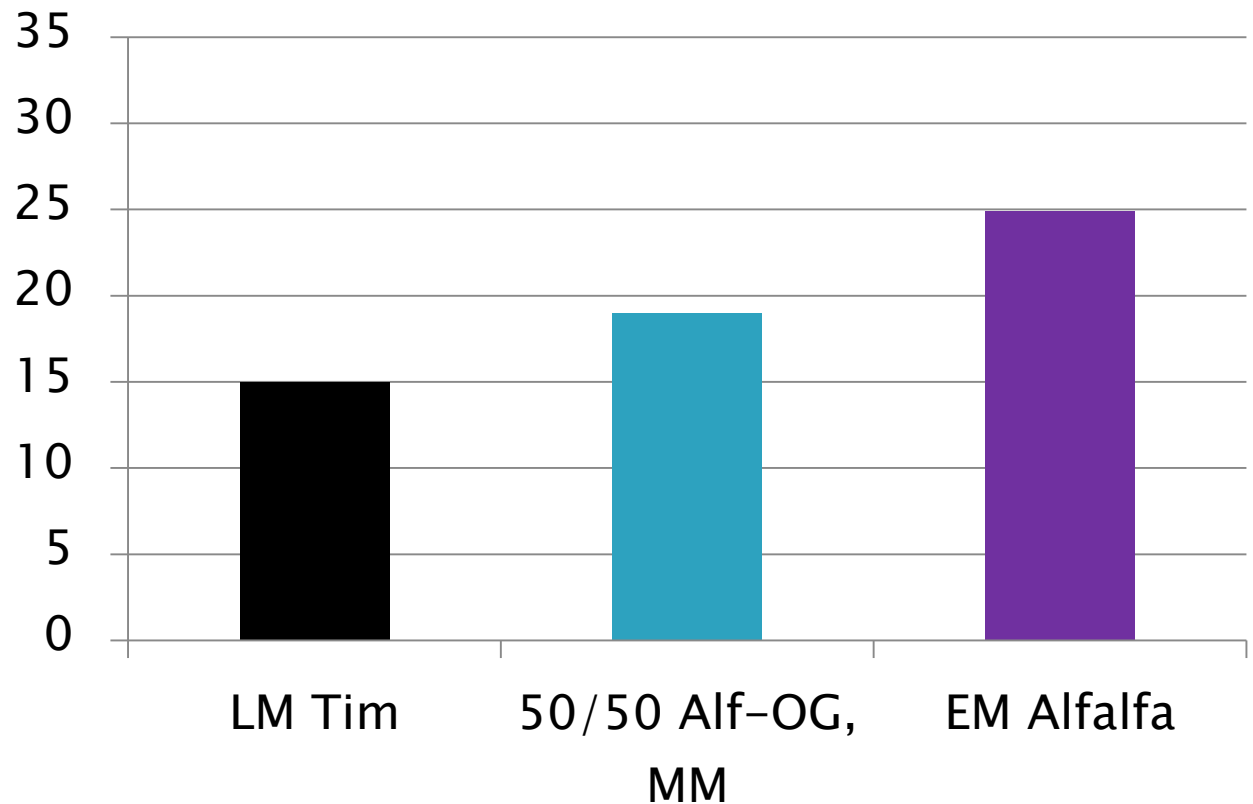
- ▶ Goal: Match hay nutrient composition to horse nutrient needs



Composition

- ▶ Goal: Match hay composition to horse needs

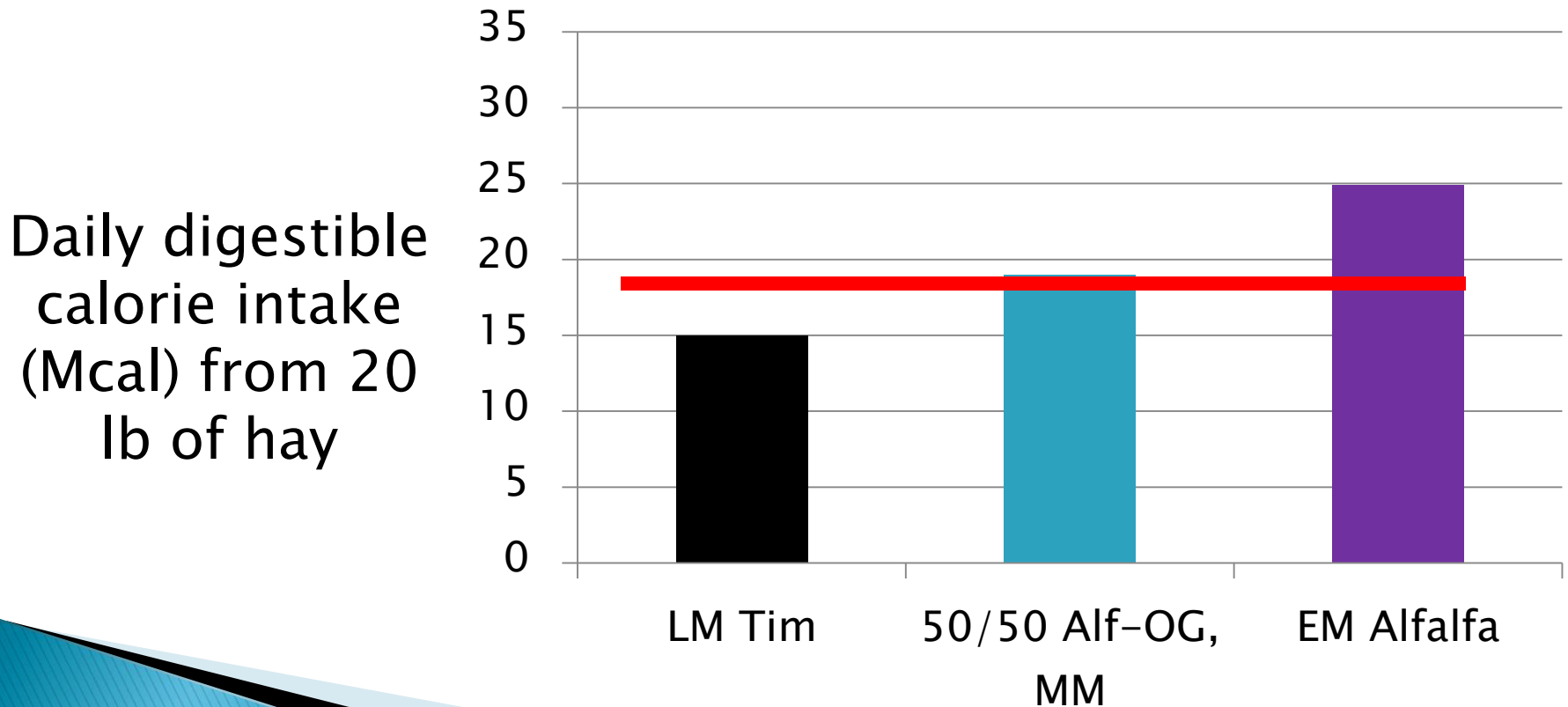
Daily digestible
calorie intake
(Mcal) from 20
lb of hay



Composition



- ▶ Goal: Match hay composition to horse needs



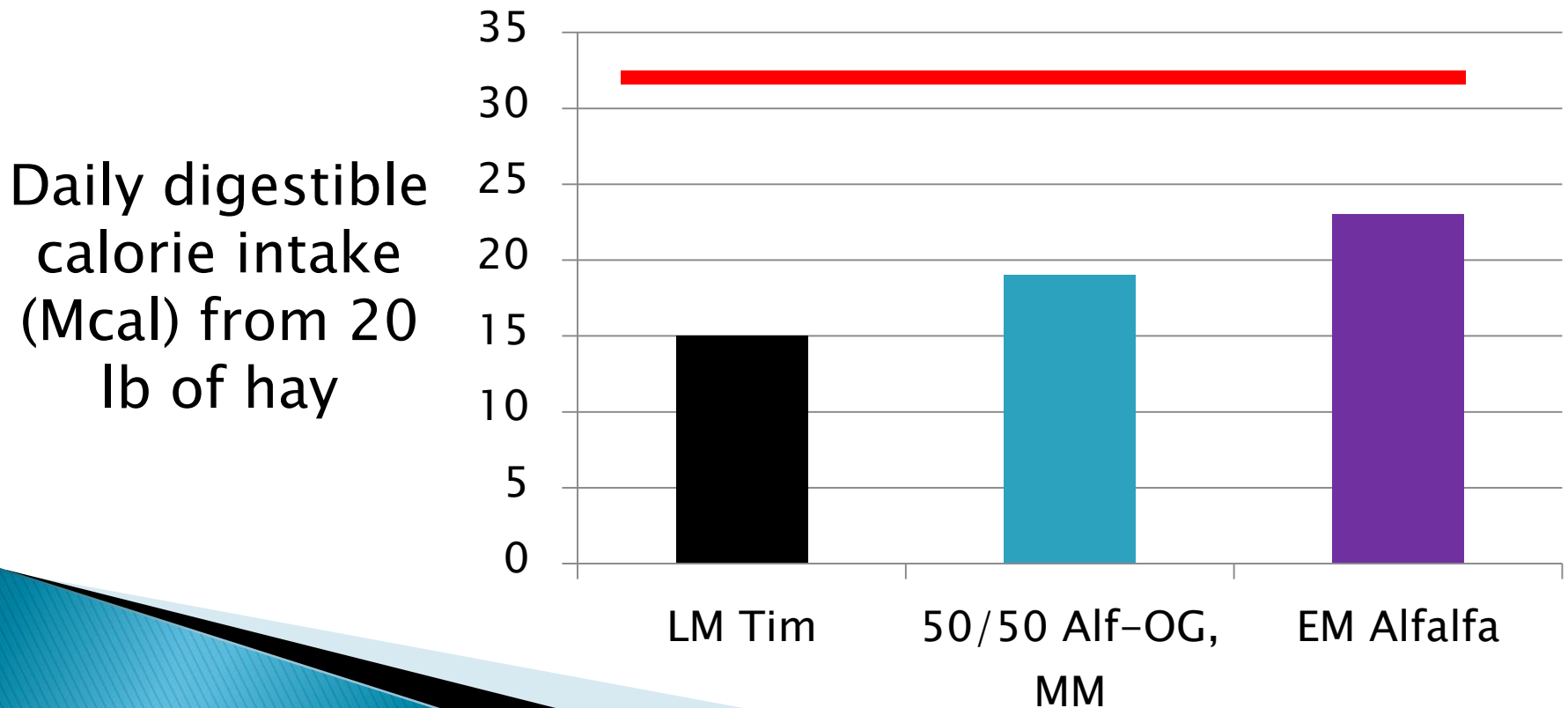
You could just feed less of the early alfalfa, but should you?



Composition



- ▶ Goal: Match hay composition to horse needs



Nutritional needs



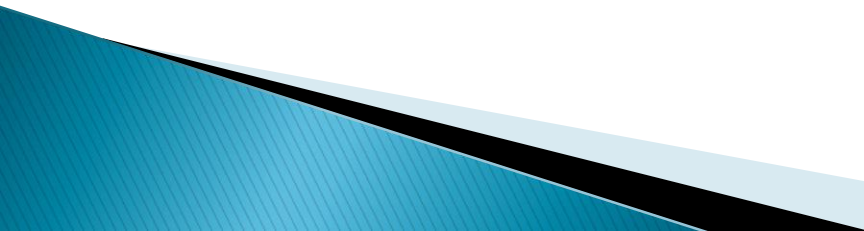
Higher

Lower

Other Compositional Considerations

- ▶ Protein
- ▶ Calcium:phosphorus ratio
- ▶ “Sugar”
- ▶ Non-traditional forages
- ▶ Others.....
 - (not enough time)!

Cost-Effectiveness

- ▶ Lower quality hay costs less per ton but waste may be higher.....must feed more to meet needs
 - ▶ May need more supplementation....
 - ▶ **Cost of the total diet, not just cost per ton!**
- 

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A few words about horse owners.....

- Many < 5 yrs experience
- Veterinarian is primary source of information

Education of horse owners

and veterinarians is key to optimizing forage utilization in equine diets



Thank you for your attention!

