EFFECTS OF ALFALFA HAY PARTICLE SIZE ON SHEEP INTAKE AND DIGESTIBILITY

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Introduction/ Justification

Grinding and pelleting hay reduces wastage and sorting.
However, particle size reduction associated with grinding can increase intake and decrease digestibility (Jaster et al., 1983; LeLibolux et al., 1998; Tafaj et al., 2001).

Objective

Evaluate the effects of chopping alfalfa hay to pass a 2.54 cm screen on measurements of intake and digestibility in 5 month old lambs.

Composition of Alfalfa Hay Treatments

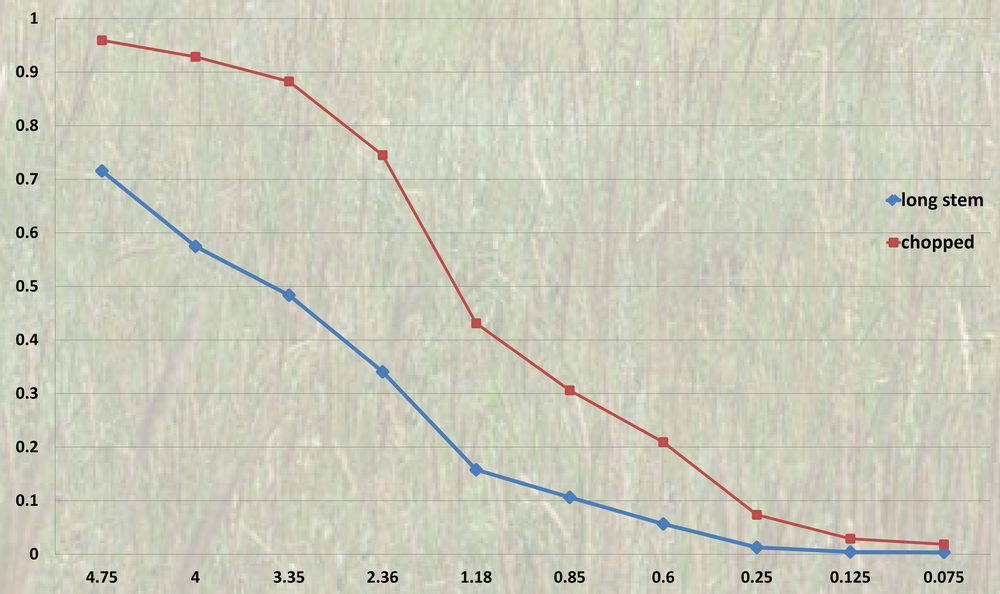
Item	CH	LS
OM %	90.6	89.8
CP%	13.5	14.0
NDF%	63.6	62.6
ADF%	51.5	47.8
In Situ Digestibility%	58.9	58.1
Mean particle size, mm	1.7	3.5

Results

Average measurements alfalfa hay in long stem and chopped forms

Treatment				
Item	CH	LS	SE	P-value
DMI, kg•lamb^{-1}•d^{-1}	1.97	1.85	0.104	0.43
OM intake, kg•lamb^{-1}•d^{-1}	1.80	1.64	0.093	0.26
DM digestibility, %	47.23	46.56	0.011	0.68
NDF, digestibility,%	39.94	36.70	0.017	0.20
OM digestibility,%	49.39	47.99	0.011	0.37

The percentage of hay particle sizes passing through each sieve size (mm).



Materials and Methods

- 21 day trial
  - -7 day adaption to diet
  - -7 day adaption to metabolism crates
  - -7 day collection period
- Twelve 5 month old smut face lambs (33 ± 3.9 kg BW)
- Two alfalfa hay treatments
  - -long stem small square bale (LS)
  - -chopped to pass through a 2.54 cm screen (CH)
- Samples collected
  - -Hay samples,
  - -Refusals
  - -Fecal samples

Results

Intake

- No difference between CH and LS treatments on measures of intake (P>0.25).

Digestibility

- No difference between CH and LS treatments on measures of digestibility (P>0.20).

Implications

- Chopping alfalfa hay to pass a 2.54 cm screen with a resulting mean particle size of 1.7 mm does not impact intake or digestibility.