

Dairy Heifer Preference for Temperate Perennial Grasses and Relationships with Sward and Plant Characteristics



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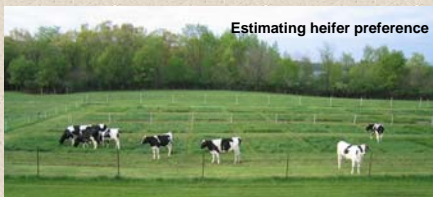
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Perspective

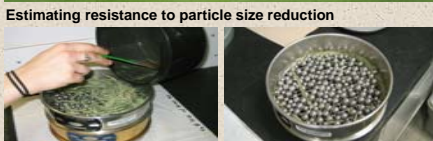
A range of factors influence the utilization of temperate grasses by grazing livestock. We determined the preference of dairy heifers for temperate perennial pasture grasses, and relationships among preference, consumption, forage availability and quality, and resistance to particle size reduction.

Methods

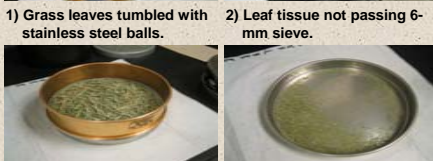
- 8 Holstein heifers (320 kg mean body wt.) grazed plots (3.0- by 6.0-m) of 12 grasses (25 to 30 cm height) for 8 hr in May, July, and September.
- DM measured before and after grazing (10-cm stubble).
- Neutral detergent fiber (NDF), NDF digestibility (NDFD) of pre-graze herbage measured.
- Dry, intact leaves (5.0 g) of each grass tumbled with stainless steel balls for 30 s and sieved through 6.0- and 1.0-mm sieves for 60 s.



Estimating heifer preference

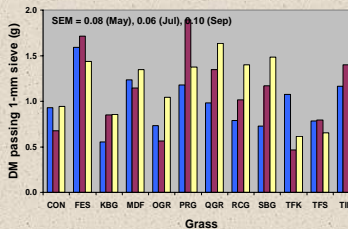


Estimating resistance to particle size reduction



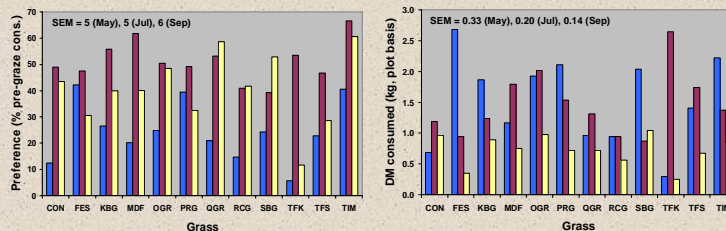
1) Grass leaves tumbled with stainless steel balls. 2) Leaf tissue not passing 6-mm sieve. 3) Leaf tissue passing 6-mm sieve. 4) Leaf tissue passing 1-mm sieve.

Grass	Abbreviation	Scientific name
Control	CON	perennial grass-forage mixture
Festulolium	FES	<i>Festulobium truncatum</i> (Huds.) P. Fourm.
Kentucky bluegrass	KBG	<i>Poa pratensis</i> L.
Meadow fescue	MDF	<i>Festuca pratensis</i> Huds.
Orchardgrass	OGR	<i>Dactylis glomerata</i> L.
Perennial ryegrass	PRG	<i>Lolium perenne</i> L.
Quackgrass	QGR	<i>Elymus repens</i> (L.) Gould
Reed canarygrass	RCG	<i>Phalaris arundinacea</i> L.
Smooth bromegrass	SBG	<i>Bromus inermis</i> Leyss.
Tall fescue (CF-free)	TFK	<i>Festuca arundinacea</i> Schreb.
Tall fescue (soft-leaf)	TFS	<i>Festuca arundinacea</i> Schreb.
Timothy	TIM	<i>Phleum pratense</i> L.



Results

Grazing period: May (blue), July (purple), September (yellow)



	Correlation coefficients and probability between forage characteristics and heifer consumption.								
	May			July			September		
	Yield	NDF	Pass 1-mm	Yield	NDF	Pass 1-mm	Yield	NDF	Pass 1-mm
Preference (% of pre-graze cons.)	0.22	-0.36	0.11	-0.31	-0.32	0.06	-0.03	0.15	0.30
	0.127	0.043	0.472	0.031	0.028	0.672	0.817	0.312	0.040
Consumed (kg, plot basis)	0.45	-0.19	0.01	0.47	0.01	-0.23	0.40	0.34	0.06
	0.001	0.30	0.984	0.001	0.966	0.115	0.006	0.020	0.658
NDF	0.55	----	-0.66	0.39	----	-0.43	0.51	----	-0.24
	0.001		0.001	0.006		0.002	0.001		0.097

Summary:

- The period in which grasses were grazed significantly influenced preference and consumption.
- Although grasses exhibited significant variation for resistance to particle size reduction, this trait (DM passing a 1-mm screen) was positively associated with preference only in September; it was negatively associated with NDF in May and July.
- Preference was negatively associated with grass NDF in May and July, while DM consumed by heifers was positively associated with plot DM yield at all grazing periods.