

Herbage attributes, diet preference and pasture management

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One of the principal aims of pasture management is to provide ample herbage of high nutritive value to grazing animals. Insight into which plants and plant components animals prefer to eat and for what reasons could guide the stockman in what to strive for.

TABLE 1. Components in diet and selection index [(component in diet / remainder of components in diet) / component in pasture / remainder of components in pasture]] by cattle on four pastures.**

Component	Summer grazed 11/77 - 3/78			Winter grazed 6/78 - 10/78		
	High clover - pangola (HC) % components in	Low clover pangola (LC) % components in	SI	Pangola only (PO) % components in	Narok only (NO) % components in	SI
White clover	4	10	2.5	1	3	8.4
Green grass leaf	25	57	4.1	20	64	7.1
Green grass stem	29	26	0.9	36	25	0.6
Non green herbage	42	7	0.1	43	8	0.1

Oesophageally fistulated cattle grazing two 112-day duration experiments ingested green grass leaves and green clover (when available) in preference to both green grass stems and non-green herbage (but still attached).

TABLE 2. Nutritive value parameters (nitrogen % D.M.-N; crude protein % D.M.-CP; cell wall % D.M.-CW; metabolizable energy M.J. kg⁻¹ % D.M.-ME; in vivo dry matter digestibility hr -DMD) in forage components on offer to cattle from four pastures, mean of eight intervals of 14 days each.

	Nutritive parameter and treatment																			
	N				CP				CW				ME				DMD			
	HC	LC	PO	NO	HC	LC	PO	NO	HC	LC	PO	NO	HC	LC	PO	NO	HC	LC	PO	NO
WC	3.5	3.4	-	-	25	25	-	-	33	30	-	-	12	12	-	-	87	89	-	-
GL	1.6	1.6	1.7	1.9	14	13	14	6	62	63	61	66	10	10	10	9	77	76	77	74
GS	0.7	0.7	0.6	1.0	8	8	11	6	69	67	68	75	9	9	9	8	69	69	64	65
NG	0.9	0.7	0.7	0.8	-	-	-	-	-	-	-	-	-	-	-	-	50	50	43	42

Whatever sensory mechanisms operate when forage is prehended, cattle prefer herbage which are low in cell wall and high in crude protein, digestibility, nitrogen and metabolizable energy. Our current programme aims at developing predictors of animal performance based on pasture attributes. Such predictors must account for animal preference (Table 1) and variation in quality of selected components (Table 2).

Ready access to preferred components, extended growth, a vigorous legume, green leafy grass and little stem and little non-green material appear to be management components for ensuring rapid animal gain.

** Randomness assumed in distribution of both components and of prehension.