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Willem A. van Niekerk
University of Pretoria, South Africa

Abubeker Hassen
University of Pretoria, South Africa

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Nitrogen intake and utilisation pattern in the digestive tract of sheep grazing four subtropical foggages

W .A van Niekerk and Abubeker Hassen

Department of Animal and Wildlife Sciences , University of Pretoria , Pretoria 0002 , South Africa , E-mail : willem .vaniekerk@up.ac.za

Key words : *anthephora pubescens* , *chloris gayana* , *digitaria eriantha* , foggage , *panicum maximum*

Introduction Winter poses a critical problem in the fodder flow in many parts of South Africa due to poor nutritive value of the veld . Conservation of feed in the form of hay or silage is necessary . Alternatively excess forage can be utilised in the form of foggage . This study compares the intake and utilisation pattern of nitrogen in sheep grazing four subtropical grass foggages .

Materials and methods Four tropical grass pastures (*Panicum maximum* , *Anthephora pubescens* , *Digitaria eriantha* and *Chloris gayana*) were established each in an area of 0 .4ha paddock size . The pasture was not replicated . Sixteen mature wethers equipped with ruminal and abomasal cannulae were randomly allocated to four pasture treatments . Oesophageal samples were collected from 4 wethers randomly allocated to each pasture treatments . The wethers were fitted with faecal collection bags to determine voluntary intake . The double marker technique , with continuous infusion and sampling at pre-determined times were used to determine the partial digestibility of the grass .

Results

Table 1 The N intake and N utilisation of sheep grazing four subtropical grass foggages .

Parameters	Foggage type				SE
	<i>P. maximum</i>	<i>A. pubescens</i>	<i>D. eriantha</i>	<i>C. gayana</i>	
N intake (g/d)	27 .0 ^a	14 .2 ^b	15 .1 ^b	6 .9 ^c	0 .7
Abomasum					
Digesta flow (l/d)	13 .9 ^a	10 .1 ^b	8 .6 ^c	8 .1 ^c	0 .4
Total N flow (g/d)	19 .4 ^a	9 .9 ^b	11 .3 ^b	5 .2 ^c	0 .7
NH ₃ -N flow (g/d)	3 .0 ^a	1 .2 ^d	2 .9 ^b	1 .6 ^c	0 .04
NAN flow (g/d)	16 .4 ^a	8 .7 ^b	8 .4 ^b	3 .6 ^c	0 .7
NAN flow/N intake	0 .61 ^a	0 .61 ^a	0 .56 ^{ab}	0 .52 ^b	0 .03
Ileum					
Digesta flow (l/d)	7 .6 ^a	6 .4 ^b	5 .5 ^b	5 .6 ^b	0 .3
Total N flow (g/d)	6 .8 ^a	3 .4 ^b	3 .4 ^b	1 .7 ^c	0 .5
NH ₃ -N flow (g/d)	1 .6 ^a	0 .9 ^b	1 .0 ^b	0 .8 ^c	0 .02
NAN flow (g/d)	5 .2 ^a	2 .5 ^b	2 .4 ^b	0 .9 ^c	0 .5
NAN disappearance (g/d)	11 .2 ^a	6 .2 ^b	6 .0 ^b	2 .7 ^c	0 .6
NAN disappearance (% N intake)	41 ^{ab}	44 ^a	40 ^{ab}	39 ^b	0 .6
NAN digestibility	68	71	71	75	2 .3
Faecal NDF-N (g/d)	4 .1 ^a	2 .2 ^b	2 .4 ^b	1 .4 ^c	0 .2

Conclusion The foggage from *P. maximum* , *A. pubescens* and *D. eriantha* seemed to have the capacity to meet the N requirement of the lambs for production purpose .