

UREA AND ELECTROLYTE EXCRETION BY SHEEP

by

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DECLARATION

I declare that this thesis is my own composition, and is a report of my own research, not having been presented in any previous application for a degree. All sources of information have been indicated in the text and help given by others has been acknowledged.



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SPECIAL NOTES

Measured parameters in this thesis are expressed in SI units with the exception of nitrogen, which is expressed in grams or as a percentage in convention with the current literature.

Figures and tables associated with the experimental section of this thesis are located either within the text or at the ends of each chapter.

Statistical differences between means were not considered significant unless $P < 0.05$.

All animal experiments were approved by and conducted within the guidelines of the University of New England's Animal Welfare Committee.

The following papers arose wholly or in part from the studies reported in this thesis. Copies of available reprints are included in the appendices.

- Godwin, I.R. and Williams, V.J. (1981) Effects of continuous intraruminal infusions of urea on the excretion of urea and electrolytes in sheep. *Proc. Aust. Physiol. Pharmacol. Soc.* **12**, 123P
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- Godwin, I.R. and Chaffey, G.A. A simple rapid method of rumen cannulation for sheep. *Aust. Vet. J.* (in press)

ABBREVIATIONS

ADH	antidiuretic hormone
ATP	adenosine triphosphate
BW	body weight
d	day
DPG	2,3-diphosphoglycerate
ECV	extracellular fluid volume
EDTA	ethylene diamine tetra acetate
ERPF	effective renal plasma flow
FE (<i>with element or compound as subscript</i>)	fractional excretion
FF	filtration fraction
GFR	glomerular filtration rate
HCO₃	bicarbonate
Na-K-ATPase	sodium-potassium-dependent adenosine triphosphatase
NH₃	ammonia
P (<i>with element or compound as subscript</i>)	plasma concentration
PAH	para-aminohippuric acid
pCO₂	partial pressure of carbon dioxide
PCV	packed cell volume
Pi	inorganic phosphate
PTH	parathyroid hormone
RBC (<i>with element or compound as subscript</i>)	red blood cell concentration
SNGFR	single nephron glomerular filtration rate
TCA	trichloroacetic acid
U (<i>with element or compound as subscript</i>)	urine excretion
UFR	urine flow rate
URAL	uric acid plus allantoin
VFA	volatile fatty acids