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Summary only

SALINE DRINKING WATER FOR SHEEP:
SOME ASPECTS OF THE INGESTION OF SODIUM
CHLORIDE SOLUTIONS

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WHEN KEPT under the same environmental conditions and eating the same amounts of dry feed (in these experiments, usually chaffed or pelleted lucerne hay), sheep given saline water (SW — 1.3% NaCl in rainwater) to drink consume approximately twice the volume drunk by sheep given plain rainwater (RW). As a result, the turnover of body water in SW animals is about twice as fast as in RW animals: in one experiment involving two groups of 4 sheep, the half-turnover times as indicated by the use of tritiated water were 2.2 and 4.5 days, respectively. The flow of water through the reticulo-rumen is increased in SW animals as a consequence of the increased water intake and, probably, an increased recycling of body water as saliva and/or trans-epithelial flux. The activity of microorganisms in the reticulo-rumen appears to be reduced or modified by the ingestion of SW, indicated by reduced production of microbial DNA, microbial polysaccharide and vitamin B₁₂ and by reduction in the degree of saturation of dietary fats in SW animals. Changes in carcass composition are also associated with SW ingestion: compared with carcasses from RW sheep, those from SW sheep tend to contain less fat and more water and protein.