RATE OF PASSAGE OF ALKALI-TREATED WHEAT STRAW THROUGH THE DIGESTIVE TRACT OF SHEEP

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INTRODUCTION

In tropical and subtropical countries cereal supplies are frequently insufficient to meet the needs of the human population and surpluses are rarely available for use in ruminant fattening rations. Under such conditions production of meat, milk, and wool often depends upon energy derived from poor quality grazing, field crop by-products, and fibrous wastes. But the problems which limit the use of these roughage materials are the low rate of passage through the digestive tract and the degree of digestion which limit the net energy available for production (Capper et al., 1977). A proportion of protein needs of ruminants can be met by microbial synthesis in the rumen from inexpensive nonprotein nitrogen sources if an adequate supply of energy is available.

Improvement in the tropical and subtropical countries will require increased efforts to improve the digestibility and energy density in the diet, both to increase the supply of net energy per se and to increase the use of nonprotein nitrogen. Methods to improve animal production using other systems independent of cereal as dietary sources have been developed using molasses and cassava.
Another approach discovered recently is the improvement of digestibility of fibrous materials using alkali. The yearly production of roughages potentially suitable for alkali treatment in developing countries has been estimated to be about 616.9 million metric tons (FAO, 1974).

The purposes of this study were: (1) to determine the effect of treatment of wheat straw with sodium hydroxide on the rate of ingesta passage; (2) to compare the rate of passage of wheat straw treated or untreated with or without corn; and (3) to determine the effect of quantity of water intake on the rate of ingesta passage.