

EVALUATION OF SOME TECHNIQUES FOR
THE ENRICHMENT OF RICE STRAW.

By

V.R. KUMARASUNTHARAM, B.V.Sc.(Ceylon)

Thesis

Submitted in partial fulfilment of the requirements
for the degree of

MASTER OF PHILOSOPHY

in the

POSTGRADUATE INSTITUTE OF AGRICULTURE

of the

UNIVERSITY OF PERADENIYA

SRI LANKA.

29-10-1986

C 636.085
K75



390226

AGRICULTURE LIBRARY
UNIVERSITY OF PERADENIYA

Approved:

Supervisor

M. N. M. Ibrahim

Dr. M.N.M. Ibrahim

Examiner

A. S. B. Rajaguru

Prof. A.S.B. Rajaguru

Examiner

J. A. de S. Siriwardena

Dr. J.A.de S.Siriwardena

Examination Committee

March, 1986.

Abstract

This thesis comprises of five chapters.

The chemical composition and the methods of improving the nutritive value of fibrous residues are reviewed in chapter 1.

Chapter 2 presents the experimental work on the methods of storage of urea-treated straw. The assessments were based on the live weight responses of bull calves. Open and closed methods of storage for 9 and 3 days were compared with 27 days closed system. An external source of urease (8½% soya bean powder) was used in the 3 days treatment. Untreated straw with 8½% soya bean powder, given at the time of feeding, served as the control. Growth rates of 336 g/day and 307 g/day were obtained with the 3 and 9 days closed systems respectively. Open method of 9 days was found to be as good as the 27 days closed system (213 and 207 g/day, respectively).

Chapter 3 reports on the effect on In Vitro digestibility of different levels of supplementation of morlac plus and rice bran on treated and untreated straw. Treated straw with morlac plus has shown a beneficial catalytic effect up to 40% level of supplementation. In Vivo digestibility studies reported in chapter 4 with 0, 13, 23 and 33% levels of supplementation of morlac plus with treated

straw compare closely with the results reported in chapter 3. Organic matter digestibility of straw was increased from 45 to 63% and the total dry matter intake from 2.9 to 4.1 kg/animal/day.

It is concluded that 9 days closed method would be an efficient method for storage of treated straw. The effect was better when it was supplemented with morlac plus up to 30-40% level in the diet.

29-10-1960