

ABSTRACT

EFFECT OF ENERGY AND PROTEIN SUPPLEMENTATION ON THE
UTILISATION OF UREA-TREATED RICE (*Oryza sativa*) STRAW
BY LAMBS.

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Two experiments were conducted over 80-day periods with lambs to investigate the nutritive value of urea-treated (50 g/kg DM) rice (*Oryza sativa*) straw supplemented with molasses, rice bran (B), fish meal (F) and a mixture of rice bran and fish meal (B+F). In Experiment 1, the urea-treated straw was ensiled with molasses at levels of 100, 200, 300 and 400 g per kg straw DM and fed *ad lib* to lambs (5 per treatment) housed individually. In Experiment 2, urea-treated straw ensiled with molasses (ME) was compared to urea-treated straw with molasses added at feeding time (MA). The diets in Experiment 2 were supplemented with rice bran, fish meal or a mixture of rice bran and fish meal, using a 2x4 factorial arrangement with 7 lambs per diet.

In Experiment 1, increasing levels of molasses had no significant ($P>0.05$) effects on apparent dry matter digestibility (DMD) and organic matter digestibility (OMD), but significantly reduced ($P<0.01$) the digestibilities of neutral detergent fibre (NDF), acid detergent fibre (ADF), cellulose and hemicellulose. The average daily gain (ADG) varied from 50 to 71 g and together with voluntary feed intake (VFI) and feed conversion efficiency (FC) were not significantly ($P>0.05$) influenced by dietary treatments. In Experiment 2, VFI was significantly ($P<0.01$) higher in MA than ME diets, and supplementation increased total dry matter intake (DMI) when compared with the control for all diets, except ME-F. With the exception of the

digestibilities of ADF, cellulose and total ash, apparent nutrient digestibilities were significantly ($P < .01$) higher for MA than for ME diets. Apparent crude protein digestibility (CPD) was significantly ($P < .001$) increased by F supplementation. Significantly ($P < .001$) higher ADG and FC were obtained for MA than for ME diets.

It is concluded that diets containing urea-treated rice straw ensiled with molasses have reduced VFI, nutrient digestibility and animal performance. The addition of molasses to the urea-treated straw at feeding time is more beneficial. Low level supplementation with protein and energy ingredients (e.g. rice bran) which are partially undegraded in the rumen can improve the utilization of urea-treated rice straw by growing lambs.