

THE EFFECTS OF DIFFERENT SOURCES OF CRUDE PROTEIN ON THE
VOLUNTARY INTAKES AND DIGESTIBILITY OF CHOPPED WHOLE
SUGARCANE BY SHEEP

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ABSTRACT

Using 16 male Criollo sheep in a completely randomised design, the effects of protein supplements: soya bean meal (SBM), meat renderings (MR), poultry by-product meal (PBM) and feather meal (FM), on the voluntary food intake and digestibility of chopped whole sugarcane, were studied. All diets were iso-nitrogenous (132g crude protein per kg dry matter), and supplemented with mineral-vitamin-mix. Digestibility was measured at a restricted level of 38g dry matter per kg W^{0.75}.

There were highly significant ($P < .001$) differences among protein supplements in voluntary food intakes and digestibilities of nutrients. The mean daily dry matter and organic matter intakes (g/kg W^{0.75}) were 83 and 80 (SBM), 54 and 48 (MR), 46 and 43 (PBM) and 46 and 44 (FM); these intakes were a little above maintenance level for MR, PBM and FM diets.

Means of coefficient of apparent digestibility of dry matter, organic matter and organic matter in the dry matter were 0.686, 0.709 and 0.672 (SBM), 0.579, 0.602 and 0.555 (MR),

0.574, 0.604 and 0.576 (PBM) and 0.652, 0.675 and 0.643 (FM).

The diets' crude protein coefficients of digestibility were in the order SBM (0.776) > FM (0.727) > PBM (0.690) > MR (0.600); the low value for MR may be due to heat damage in product processing.

The means of crude fibre digestibility of SBM and FM diets (0.440 and 0.418) were higher ($P < .001$) than those of MR and PBM diets (0.295 and 0.299). These results may explain the low organic matter digestibility of MR and PBM diets.

The total digestible nutrients (TDN) of SBM and FM diets (0.683 and 0.653) were higher ($P < .001$) than TDN values of MR and PBM (0.616 and 0.604).

We concluded that the three animal protein supplements when combined with chopped sugarcane as ruminant feeds, would neither promote optimum animal production nor yield economical returns.

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