The effect of cutting interval on yield and nutrient composition of different plant fractions of Moringa oleifera tree

Abstract

An experiment was carried out to evaluate the effect of cutting interval on biomass yield and chemical composition of different plant fractions of Moringa oleifera. In a completely randomized block design experiment, an established Moringa plot was divided into 12 equal plots and subjected to three cutting intervals of 4, 6 and 8 weeks, each with four replications. The highest fresh and dry matter (DM) yields (t ha⁻¹ cut⁻¹) of total foliage, leaf and stem were obtained at the 8 weeks cutting interval followed by 6 and 4 weeks cutting interval. Effect of leaf to stem ratio was not significant (P>0.05) among harvesting intervals. The CP content of total foliage, leaf and stem was not different (P>0.05) over the harvesting intervals. The acid detergent fibre (ADF), neutral detergent fibre (NDF) and acid detergent lignin (ADL) of total foliage was significantly (P<0.01) lower in 4 and 6 weeks interval than 8 weeks interval. Ca and P contents of leaf and total foliage were not significantly (P>0.05) different among the treatments. The values of IVDMD and IVOMD ranges were from 772.0 to 802.0 and 761.0 to 798.0 g kg⁻¹ DM, respectively. Both yields and chemical compositions of Moringa foliage and leaf suggest that the optimum cutting interval was 8 weeks in rainy season from mature Moringa tree. These data suggest that the higher CP and lower fibre value in the leaf indicate a good protein source for poultry or other monogastric animals and Moringa foliage could be a potential protein source for ruminant livestock.

Keyword: Animal feed; Cutting interval; Moringa oleifera; Nutrient composition; Yield