

The effect of urea levels on in-vitro digestibility and rumen fermentation characteristic of ammoniated oil palm trunk

ABSTRACT

The purpose of this research to evaluate the effect of urea levels for ammoniated of oil palm trunk on in vitro digestibility and rumen fermentation characteristics. The treatment was A0 = Oil palm trunk without treated (control), A1: ammoniated oil palm trunk using 2% urea; A2: ammoniated oil palm trunk using 4% urea; A3: ammoniated oil palm trunk using 6% urea; A4: ammoniated oil palm trunk using 8% urea; A5: ammoniated oil palm trunk using 10% urea. The variables measured were in vitro digestibility such as dry matter, organic matter, crude protein and fiber fractions (NDF, ADF, cellulose and hemicellulose), concentration of NH_3 and total of volatile fatty acid (VFA) and pH value. Data was analyzed using SAS program with analysis of variance test (ANOVA) and Duncan's multiple range test (DMRT). The results obtained showed that the using of urea with various levels of oil palm trunk ammoniation was significant ($P < 0.01$) increased in vitro digestibility of dry matter (IVDM), organic matter (IVOM), crude protein (IVCP) and fiber fraction digestibility, pH value, NH_3 and total of VFA concentration compared to control (A0). It can be concluded that the using of level 6% urea gave the best result for ammoniation of oil palm trunk such as IVDM: 45.91%, IVOM: 46.33%, IVCP: 61.51% and in vitro digestibility of NDF: 43.34%, ADF: 38.20%, cellulose: 44.28%, hemicellulose: 63.25% whereas pH: 7.02, NH_3 : 9.02 mg/100 ml and total VFA: 99.57 mM respectively. © 2020, Insight Society.