



Tropentag, September 18-20, 2019, Kassel

“Filling gaps and removing traps
for sustainable resource management”

Nutrient Digestibility and Performance of Sheep Fed Bitter Cassava Leaf Meal Based Diet Supplemented with Cyanide-Degrading Bacteria

SRI SUHARTI, HAFNI OKTAFIA, ASEP SUDARMAN, KOMANG GEDE WIRYAWAN

Bogor Agricultural University, Dept. of Animal Nutrition and Feed Techn., Indonesia

Abstract

This research aimed to study the effect of inoculating cyanide degrading bacteria on the performance and nutrient digestibility of local sheep fed bitter cassava leaf meal based diet. The experimental design used a randomised block design 5×3 using 15 rams, aged about 12 months with a body weight of 18.8 ± 1.02 kg and placed in individual cages. The treatments were P1= 40 % napier grass: 60 % concentrate, P2 = 40 % napier grass: 45 % concentrate: 15 % bitter cassava leaf meal, P3= 40 % napier grass: 45 % concentrate: 15 % bitter cassava leaf meal + cyanide degrading bacteria, P4= 40 % napier grass: concentrate 30 % : 30 % bitter cassava leaf flour, P5= 40 % napier grass: concentrate 30 % : 30 % bitter cassava leaf meal + cyanide degrading bacteria. Variables observed were feed intake, body weight gain, rumen fermentation characteristics (concentration of ammonia (NH_3), volatile fatty acid (VFA) total and partial) and nutrient digestibility. Data were analysed using analysis of variance. The results showed that inoculation of cyanide degrading bacteria to the sheep fed high level of bitter cassava leaf meal (30 %) did not affect feed consumption, but significantly increased ($p < 0.05$) total VFA production, concentration of NH_3 , propionate proportion, body weight gain and feed efficiency. In addition, methane estimation significantly decreased ($p < 0.05$), meanwhile ratio C2/C3 significantly increased. In contrast, the use of bitter cassava leaf meal at the level of 30 % without cyanide degrading bacteria addition significantly decreased body weight gain and feed efficiency of sheep. In conclusion, the addition of cyanide degrading bacteria could detoxify cyanide in bitter cassava leaf meal efficiently to reduce its toxicity for the sheep and enhance rumen fermentation as well as sheep performance.

Keywords: Bitter cassava leaf, cyanide degrading bacteria, digestibility, performance, sheep