Impact on growth and nutritive value of King Napier grass treated with organic and inorganic fertilizers for animal feed

Nur Syafiqah C.O[a]., Hisham M.N.[a*] and Jusoh S.[b]

[a]Department of Biology, Faculty of Science, Universiti Putra Malaysia,
43400 UPM Serdang, Selangor, Malaysia.

[b]Department Of Animal Science, Faculty of Agriculture, Universiti Putra Malaysia,
43400 UPM Serdang, Selangor, Malaysia

Abstract

The aim of this study is to investigate the effect of organic, inorganic and mixture of organic and inorganic fertilizers on the growth and nutritive value in King Napier grass. The King Napier grass were assigned to seven treatments; Treatment 1, control (no fertilizer; n=9), Treatment 2 (50 N Kg/ha inorganic fertilizer; n=9), Treatment 3 (100 N Kg/ha inorganic fertilizer; n=9), Treatment 4 (50 N Kg/ha organic fertilizer; n=9), Treatment 5 (100 N Kg/ha organic fertilizer; n=9), Treatment 6 (mixture of inorganic and organic fertilizer with ratio 50:50 N Kg/ha; n=12) and Treatment 7 (mixture of inorganic and organic fertilizer with ratio 100:100 N Kg/ha; n=9). King Napier that were applied with mixture of organic and inorganic fertilizer (Treatment 7) were the highest than other treatments and showed high content of dry matter (DM;96%) and crude protein (CP;17.7%) and low amount of Neutral Detergent Fiber (NDF;61.7%), Acid Detergent Fiber (ADF;36.5%) and Acid Detergent Lignin (ADL;14.8%). Good quality forages with high essential nutrients can be indicated by having higher DM and CP content. Low NDF values are desired as it indicates that the forages has high quality and lower values in ADF and ADL indicates higher quality forages as ADF and ADL level decreased, the digestibility energy level increased. It could be suggested that applying mixture of inorganic and organic fertilizer with ratio 100:100 N Kg/ha could improve the quality and appropriate nutrient composition in Napier grass.

Keywords: Chemical analysis, fertilizer, inorganic fertilizer, King Napier grass, organic fertilizer.

*Corresponding author: mnhisham@upm.edu.my