EFFECT OF BIOLOGICAL TREATMENTS OF GREEN CORN STALKS AND SUGAR CANE TOPS ON LAMBS GROWTH PERFORMANCE

By

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ABSTRACT

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green and dry Corn stalks and green and dry sugar cane tops were treated with *lactobacillus plantarum* and/or ZAD to study its effects on chemical composition and cell wall constituents as well as to study the possibility of replacing part of green fodder with treated by products.

Biological treatments using ZAD + *Lactobacillus plantarum* and ZAD resulted in an increase in the content of green and dry corn stalks, green and dry sugar cane tops, protein and ash of the ether extract, but while decrease in organic matter, crude fiber and different fiber fraction and nitrogen free extract. Biological treatment of *Lactobacillus plantarum* did not affect the above-mentioned residues compared with control.

Biologically treated green and dry corn stalks were carried on farm and chosen due to its great effect on reducing NDF, ADF and CF and increasing CP compared with biologically treated dry and green sugar cane tops.

Twenty-four animals of Ossimi sheep were used with an average weight of about 25.5 ± 0.5 kg after weaning. The animals were randomly divided into six groups**.**

Each group containing four animals to receive one of three treatments as follow. C: (group1 and group2) animals were fed 33 % concentrate feed mixture + 67% (green and dry) corn stalks (untreated). Second treatment (ZP): (group3and group4) animal were fed 33% concentrate feed mixture + 67% (green and dry) corn stalks treated with (ZAD + *Lactobacillus plantarum*). Third treatment (ZAD): (group5 and group 6) animal were fed 33% concentrate feed mixture + 67 % (green and dry) corn stalks treated with (ZAD).

Results indicated that ZP and ZAD treatments with (green and dry) corn stalks decreased CF and NDF, ADF, ADL contents and increased CP content compared to the untreated by products.

Feeding lambs on treated corn stalks (green and dry) significantly ($P<0.05$) improved all of nutrients digestibility compared with those fed on control. The nutritive values as TDN and DCP for lambs fed treated (green and dry) corn stalks showed significant($P<0.05$) higher values than those fed untreated and it had the same trend of nutrient digestibility . Adding *lactobacillus palantarum* + ZAD improved digestion coefficients of nutrients and TDN values compared with control.

Treatment groups (green and dry) corn stalks showed significant increases ($P <0.05$) in the pH values of the rumen fluid compared to the control treatment. The treatment groups (treatment 1, treatment 2) recorded the highest significant value ($P <0.05$) for volatile fatty acids of rumen fluid compared to control (treatment 1).ZP and ZAD recorded the highest value ($P <0.05$) for rumen ammonia concentration compared with control.

Results of blood parameter indicated that ZP and ZAD of (green and dry) corn stalks had a significant ($P<0.05$) effect on (Tp, Alb, Glb, A/G) compared to the Control of (green and dry) corn stalks. All values of plasma ALT and AST for all treatments were in normal rang where all treatments had no effect on ALT. However, (green and dry) corn stalks had a significant ($P<0.05$) effect on AST compared to the control. All values of plasma creatinine and urea for biological treatments appeared to have significant ($P<0.05$) higher values. However, these values were in normal range. Results indicated that biological treatment on (green and dry) corn stalks decreased plasma blood (glucose, triglycerides and cholesterol) compared with control

Biological treatment, ZP and ZAD with (green and dry) corn stalks, resulted in an increase in final body weight, daily gain and total increase during the growth period of the experiment (120 days) compared

to the untreated control group. Improvements were observed in the mean values of feed conversion as DM, DCP and TDN for the groups ZP and ZAD compared to the control groups.

Keywords: Corn stalk, corn stalks, Lactobacillus plantarum Silage, Biological Treatment, Cellulose enzymes, ZAD, digestibility, nutritive value, rumen liquor parameters, blood plasma parameters, ossimi sheep.

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