

ABSTRACTEFFECTS OF FERTILIZER NITROGEN AND
BIOLOGICAL NITROGEN ON THE YIELD AND
QUALITY OF TWO TYPES OF FORAGE

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The effects of chemically and biologically fixed nitrogen on the yield and quality of forage is compared. Quality is measured by the protein content of the forage produced. Three levels of fertilizer (urea) (100 kg N/ha/yr, 200 kg N/ha/yr and 400 kg N/ha/yr) were applied to tanner grass (Brachiaria sp.) and compared with the introduction of Centrosema pubescens in the sward. Phosphorus and K were applied to some of the treatments and compared with treatments to which P and K were not applied over a 48 week interval. Levels of N fertilizer were applied in split applications at each harvest which occurred at 8 week intervals but P and K was applied at the onset of the experiment.

The results indicate that there was no significant difference in yield between the two N sources. Also, increasing the rate of fertilizer N does not

significantly alter the yield of the forage but introduction of the legume significantly increases the quality of the forage. P and K had no significant effect on the yield and protein content of the fertilized plots or grass/legume mixtures. It however increased the protein content of the legume only treatments. Further, soil physical characteristics had an effect on the results of the experiment, because of a gravel lens in the soil profile which affected the water relations of the soil.

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