

Budakli Carpici E., 2011. Changes in leaf area index, light interception, quality and dry matter yield of an abandoned rangeland as affected by the different levels of nitrogen and phosphorus fertilization. Turkish Journal of Field Crops, 16(2): 117-120.

Abstract

The object of this study was determine the effects of nitrogen (0, 50, 100, 150, 200 and 250 kg N ha⁻¹) and phosphorus rates (0, 50, 100 and 150 kg P₂O₅ ha⁻¹) on dry matter yield (DMY), leaf area index (LAI), light interception(LI), crude protein (CP) content, ADF, NDF and total digestible nutrient (TDN) of an abandoned rangeland in Bursa-Turkey in 2010 and 2011 years. Depending on the increases of nitrogen rates, the DMY, LI, CP, NFD and TDN increased, but ADF decreased. However, LAI did not indicated any relation with nitrogen rates. The highest dry matter yields were 9466.9 and 9008.2 kg ha⁻¹ at 200 and 250 kg N ha⁻¹ levels, respectively. The LAI, LI and CP contents were significantly affected by phosphorus rates. The highest LAI and LI values occurred at 100 and 150 kg P₂O₅ ha⁻¹ levels. The highest CP contents were obtained at rates of 50, 100 and 150 kg P₂O₅ ha⁻¹. On the other hand, no effects of phosphorus rates on dry matter yield, ADF, NDF and TDN were recorded. As a result, 150 kg N ha⁻¹ can be recommended to increase dry matter yield and forage quality of an abandoned rangelands encountered in the experimental region.

Keywords: Nitrogen, phosphorus, dry matter yield, crude protein, ADF, NDF, TDN.