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Effect of nutritional status of faba bean on proximate composition, anti-nutritional factors and in vitro protein digestibility (IVPD)

E.A.E. Elsheikh*, A.H. El Tinay, I.A. Fadul

Department of Biochemistry and Soil Science, Faculty of Agriculture, Shambat, Sudan

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Abstract

A field experiment was carried out to study the effect of moisture regime, vesicular arbuscular mycorrhiza (VAM) inoculation, phosphorus (P) and sulphur (S) fertilization on the proximate composition, in vitro protein digestibility (IVPD) and anti-nutritional factors of faba bean. The results indicated that the moisture content was significantly affected by the watering regime, VAM inoculation and P+S treatments. Ash content was significantly higher in the P+S and VAM+S for wet and dry samples, respectively. Sulphur and VAM+P+S were associated with higher levels of fat in the wet and dry samples, respectively. The protein content positively correlates with fertilizer and VAM treatments. Carbohydrate content was higher in the control samples. All treatments gave higher tannin contents. Phytic acid increased significantly in treated samples. Trypsin inhibitor activity was significantly higher for VAM+P+S and for S in wet and dry samples, respectively. Water stress and fertilizer treatments resulted in lower IVPD compared to the control. Reduced values for IVPD were associated with higher levels of tannin and phytic acid.