COMPOUND FERTILIZER (N-P-K) REQUIREMENTS OF THE COMMON BEAN (PHASEOULUS VULGARIS L) GROWN IN THE LOWLANDS OF THE MASERU DISTRICT OF LESOTHO

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ABSTRACT
Field experiments were conducted at the National University of Lesotho Farms in the Roma Valley and at the Maseru Campus. The experiments aimed at examining the effect of compound fertilizer (N-P-K) on beans (phaseoulus vulgaris L.) grown in the lowlands of the Maseru District of Lesotho, in the light of declining yields of the crop in that district and others in the country. Three Pinto bean cultivars were used during the study, with four compound fertilizer N-P-K [2:3:3(22)] treatments, namely: 0, 75, 125 and 175 kg ha⁻¹. Grain yield and yield components increased with fertilizer application. The responses in year one of the study were statistically significant (P<0.05) due to good rainfall, while most of the increases in year two were not significant due to a relatively low precipitation. The observed increases in yields were attributed to increases in leaf area per plant, number of leaves per plant, leaf area index and number of pods per plant. The variation of the yield responses with precipitation in the two years did not allow for a consistent optimum fertilizer rate to be identified. The results of the two years suggest, however, that application of N-P-K fertilizer in the region of 75-175 kg ha⁻¹ can double the yield of beans when compared with a control. The relatively low nutrient levels even at the highest fertilizer rate adopted in this study, and the very high yields in year one, approaching reported ceiling yield of beans in the region, also suggest that fertilizer rates higher than 175 kg ha⁻¹ should not be adopted in the area of this study.

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