

Abstract

Two field experiments were carried out concurrently at the Faculty of Agriculture, Field station farm, University of Nairobi in March-July 2000 (season I) and June-September 2000 (season II) to determine the effect of application of different levels of phosphorous (P) fertilizer on growth and yield of snowpea (*Pisum sativum* L. var. Oregon sugar pod II). The experiments were laid out in a complete randomized block design with three replicates. Four levels of P (0, 57, 114 and 171 kg P₂O₅ ha⁻¹) were applied as TSP (46% P₂O₅) at planting. Plant heights were measured at 31, 38, 45, 58, 71, 84 and 97 DAS. Leaf area index and above-ground dry mass were determined at 29, 43, 63, 77 and 94 DAS. Harvesting of pods was done at 68, 72, 75, 79, 82, 86, 89, 93, 96 and 100 DAS. P fertilization resulted in significant ($P \leq 0.05$) increases in plant height, leaf area index, and total above ground dry matter accumulation in both seasons. Number of pods plant⁻¹ showed a quadratic trend with increasing P at 68, 89 and 93 DAS in season I. Linear and quadratic increases in number of pods plant⁻¹ were observed at 96 DAS and on total number of pods plant⁻¹. At 100 DAS, only linear increase was observed. Pod dry mass plant⁻¹ showed a quadratic increase at 68, 89, 93 and 96 DAS. At 100 DAS, linear increase in pod dry mass plant⁻¹ was observed. Linear and quadratic increases were observed in total pod dry mass plant⁻¹. P application did not affect both the number of pods and pod dry mass plant⁻¹ in season II probably because of the low amount of rainfall. Application of 57 kg P₂O₅ ha⁻¹ resulted in dry pod yields of up to 9.75 tons ha⁻¹ which is higher than the national dry mass averages of 5 to 6 tons ha⁻¹. It is therefore recommended that judicious levels of P be applied for growth of snowpeas.