ABSTRACT.

Pepino melon (Solanum muricatum Ait.) is an exotic vegetable whose consumption is on the increase in Kenya due to its health and nutritional benefits. A study was conducted at Egerton University, Kenya in 2018-2019 to investigate the effect of NPK fertilizer rates (0, 100, 200. 300 and 400 kg ha-1) on growth and yield of field and greenhouse grown pepino melons. The experiment was laid in a randomized complete block design with three replications. Data was recorded on plant height, stem diameter, number of leaves per bush, number of branches, days to 50% flowering, fruit weight and total yield. Data were analyzed using analysis of variance with the SAS statistical package. Significant means were separated using Tukey's Honestly Significant Difference at $p \leq 0.05$. Results indicated that NPK fertilizer rates and growing environment influenced growth and yield of pepino melon. At 100 DAP plants grown in the greenhouse and supplied with 200 kg NPK ha-1 had a stem diameter of 14.01 mm which was significantly bigger $p \leq 0.05$ compared to those grown in the field and supplied with 300 kg NPK ha-1 with a stem diameter of 11.71 mm in trial two. Application of 300 kg NPK ha-1 for field grown pepino melons gave the highest yield of 1102.48 kg ha-1 and 1060.55 kg ha-1 in trial one and two respectively. In conclusion, application of 300 kg ha-1 of NPK fertilizer for field grown pepino melon is recommended

Keywords: Pepino melon, NPK fertilizer, plant growth, yield, field, greenhouse