

Evaluation of Nitrogen and Phosphorus Fertilizers on Growth of Sesame (*Sesamum indicum*)

By

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Abstract

Sesame (*Sesamum indicum*) is a high value crop which is a cheap source of oil. Despite its high value and its high oil content, its production in the country has still remained low. This is because farmers have not been sensitized on how they can increase the production of the crop and reap its benefits. When sesame is treated under fertilizer and at the right stages of growth, more production will be realized and farmers will get high income from its production. . This study was aimed at studying the growth of sesame when treated with phosphorus and nitrogen fertilizers. The specific objectives were to determine the growth indices in terms of; stem length and leaf area of sesame when treated with nitrogen fertilizer, to determine the growth indices in terms of; stem length and leaf area of sesame when treated with phosphorous fertilizer and to determine the growth of sesame without any treatment. The experiment was conducted at the University of Embu farm. The experiment was laid out in a randomized complete block design with three treatments. The treatments were replicated in four blocks. Urea was used as a source of nitrogen fertilizer and double super phosphate (DSP) was used as source phosphorus. Both fertilizers were applied by placement method during sowing time. A row spacing of 60cm and interplant spacing of 45cm was used. The treatments were: X1- Control experiment; X2- Treatment using Nitrogen fertilizer and X3- Treatment using phosphorus fertilizer. Data collected include number of leaves, diameter of stem, leaf area and height of the plant are the parameters which will be observed during the experiment. The data collected on number of leaves, diameter of stem ,leaf area and plant height will be subjected to analysis of variance and treatment means to be used is Duncan's Multiple Range Test (DRMT) at 5% probability level. The results showed that there was a difference in the studied parameters under different treatments. Urea had the best performance in all the studied growth indices followed by phosphorous and then the control. The leaf area, number of leaves, height of the sesame and stem diameter were higher in urea treatments compared to phosphorous treatments and the control because urea has nitrogen which supports growth and development of vegetative parts. TSP had lower effect on the growth indices studied because it supports growth and development of roots and not vegetative parts. TSP showed better effect on the growth indices studied compared to the control because of the fact that, it boosted root development of the sesame and thus more nutrients were absorbed compared to the control. The study recommended that sesame farmers should be encouraged to use nitrogen fertilizers for good development of vegetative parts of their sesame plants.