

## Effects of Different Nitrogen Fertilizer Levels on Sunflower Growth and Yield Attributes

**Abstract:** Background and Objective: Controlled application of Nitrogen fertilizer to the soil improves growth and yield of crops. However crops are sensitive to the amount of nitrogen fertilizers applied. Excessive nitrogen fertilization results in reduced sunflower yield, whereas proper nitrogen application optimizes seed yield and quality. The objective of the current study was to determine the optimum nitrogen level which could effectively improve the sunflower growth parameters and yield attributes in Burundi. Methodology: A field experiment was undertaken in a randomized complete block design using nine treatments of nitrogen different levels viz. T1: NPK (0-0-0), set as control treatment, T2: NPK(30-50-30), T3: NPK(40-50-30), T4: NPK(50-50-30), T5: NPK(60-50-30), T6: NPK(70-50-30), T7: NPK(80-50-30), T8: NPK(90-50-30) and T9: NPK(100-50-30), with three replications for each. Results: The results indicated that treatment T9 i.e., NPK (100-50-30) significantly improved and enhanced sunflower head diameter, plant height, stem girth, total grain yield weight, number of pair leaves, total grains number and full grains number. There was a significant correlation between these parameters, the highest was recorded between full grains number and total grains number ( $R^2 = 0.988$ ) with a  $p < 0.01$ . Conclusion: The treatment T9 was the most effective treatment in improving sunflower growth parameters and yield attributes.

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