

## Effect of Different Concentrations of Indigenous Microorganism and NPK Fertilizer on the Growth, Yield and Some Nutrient Content of *Brassica oleracea* var. *capitata* f. *rubra* (red cabbage) in Bambili, Cameroon

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### Abstract

Red cabbage (*Brassica oleracea* L.) is a nutritious and delicious vegetable consumed all over the world, mostly as an ingredient in raw vegetable salads. Despite the efforts of farmers to improve its production, there has been a decreasing trend due to low soil fertility. The aim of this study was to evaluate the effect of different concentrations of indigenous microorganism (IMO) fertilizer and NPK fertilizer on the growth, yield and nutrient content of red cabbage. The experimental field was established on the research farm of the University of Bamenda, in Bambili. A randomized complete block design, with five treatments (IMO at different concentrations of 600 g (T1), 800 g (T2) and 1000 g (T3), NPK (T4), and Control (T5) and three replications. The number of leaves and plant height were recorded every two weeks. Harvesting was done at 18 weeks after planting. Fresh cabbage samples were analyzed for proximate composition. Results showed plants with NPK gave tallest plants ( $15.07 \pm 2.22$ ) cm, followed by IMO plants ( $14.87 \pm 1.306$ ) cm, which were significantly different ( $p < 0.05$ ) from the control. Plants grown with IMO had the highest number of leaves ( $17.87 \pm 2.17$ ) followed by NPK plants ( $17.80 \pm 2.54$ ), with no significant difference at  $p < 0.05$  between them, but rather with the control. For the circumference and weight of cabbage heads, NPK recorded the highest ( $46.48 \pm 10.64$ ) cm and ( $0.78 \pm 0.37$ ) kg respectively, followed by IMO plants with ( $35.47 \pm 3.23$ ) cm and ( $0.462 \pm 0.090$ ) kg respectively. There was a significant difference ( $p < 0.05$ ) in the yield parameters for all the treatments. However, no yield was recorded for the control treatments. IMO at different concentrations had greater effects on the growth and yield parameters, where T3 recorded the best results for all the parameters, followed by T2 and then T1. In terms of nutrient content of red cabbage, IMO treatments recorded the best results. This showed that IMO fertilizer which is eco-friendly can substitute for NPK.

### Keywords

Indigenous Microorganism, NPK, red cabbage, nutrients, Yield.