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## Using compost and compost tea as biofertilizers to improve onion growth and yield in the field at Gapring-Lara in the Department of Mayo Kani (Cameroon)

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### Abstract

In Cameroon, onion production has grown but poor agricultural practices are challenges to be addressed in order to improve its production. The aim of this study is to assess the fertilizing effects of compost and compost tea on onion growth and production, in order to provide a plausible alternative to synthetic chemical inputs. The study was conducted at the Gapring-Lara experimental site (Cameroon). The experimental set-up used was a randomized complete block consisting of three replications and five treatments including Cow dung compost (Cp), Cow dung compost tea (CpT), Cow dung compost + Cow dung compost tea (Cp+CpT), Negative control (Ctrl) and NPK 20-10-10 (ChF). The results showed that the experimental soils contained high concentrations of phosphorus, potassium, calcium, iron, magnesium and nitrogen after experimentation. Four species of bacteria (*Pseudomonas* sp., *Bacillus cereus*, *Bacillus subtilis* and *Micrococcus* sp.) were determined, with *Pseudomonas* sp. dominating in the compost (69.14%) and compost tea (56.32%). The plots amended with compost had the best average harvest weights, with  $248.33 \pm 88.08$ g and  $234 \pm 77.61$ g respectively over the two years of the study. Agronomic production was considerably increased by the CpT treatment with 65.48 t/ha in 2018/2019 and by the Cp treatment with 28.14 t/ha in 2019/2020. In view of the results obtained, this study shows the value of using organic matter as a fertilizer in onion cropping systems, in order to increase soil productivity and ensure its sustainable use.

**Keywords:** Onion, fertilization, compost, compost tea, Gapring-Lara.

