

Evaluation of Soil Fertility Status of Large Cardamom's (*Amomum subulatum* Roxb.) Field Under Different Shades Trees at Bhojpur, Nepal

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Abstract

Large Cardamom is a perennial, herbaceous, shade-loving cash crop grown under the trees of various species. Mostly, farmers have grown large cardamom in agroforestry systems from a long time back. This action research was done with the objective of accessing the fertility status of soil under shade trees in the research site. Five different cardamom orchards (based on the species of shade trees used) were taken as treatments and 5 composite samples of soil (as replications) were obtained. The soil samples collected were taken to the soil lab located at Regional soil laboratory, Jhumka, Sunsari for analysis of different soil parameters. The research result showed that the highest Soil Organic Matter (4.764%), Nitrogen (0.28%), Phosphorus (64.64 mg/kg) were found under *Alnus nepalensis* and Potassium (358.67 mg/kg) was found under the shade of *Macaranga denticulata* whereas the lowest amount of Soil Organic Matter (2.690), Nitrogen (0.136), Phosphorus (16.72 mg/kg), Potassium (202.12 mg/kg) were under control area. The highest level of pH (5.90) was found in the soil under the shade of *Alnus nepalensis*. Soil texture was found to be sandy loam type. These results concluded shade trees *Alnus nepalensis* was found more suitable for cardamom growers as it improves the available soil nutrients.

Keywords: Soil fertility, Shades trees, Large Cardamom, *Alnus nepalensis*