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The effect of organic and inorganic fertilizer on growth of *Jatropha curcas* L. seedling on degraded land Nifas Silk Lafto Subcity, Addis Ababa, Ethiopia

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Jatropha curcas is one of the biofuel plants that can grow on degraded lands for rehabilitation of the soil besides its oil can be used to substitute fossil fuel that cause high environmental pollution and is useful to ease energy scarcity pressure. Though it grows on degraded land with scarce conditions of nutrients, its nutrient requirements are not known for its efficient growth and it gives different response on different climatic and soil conditions. Therefore field experiments were conducted to analyze its growth response to organic and inorganic fertilizers on degraded land. The experiment had been done on degraded land rehabilitation plantation pilot project in Nifas Silk Lafto sub city (NSLSC), Addis Ababa city administration Environmental Protection Authority (AAEPA) on seedlings at the age of nine months after plantation. The selected and plotted 90 samples seedlings of *Jatropha curcas* L. were treated with N (60 and 50 g/plant), P (80 and 100 g/plant), K (75 and 60 g/plant), cow manure (4 and 2 kg/plant), compost (2 and 1 kg/plant) and biogas sludge (3 and 1.5 kg/plant) under normal climatic and soil physicochemical conditions. Morphological growth parameters such as height of the plant (Ht), collar diameter (CD), canopy height (CaH), canopy diameter (CaD), primary branch (PBr), secondary branch (SBr) and leaf area per plant (LA) were measured for six consecutive months. The data were analyzed by Anova, Manova and independent T test. Among all the treatments, combined effect of compost biogas sludge was significant in all growth parameters.

Biography

Etsegenet Gebrehana has earned a degree in Applied Biology at the age of 20 from Addis Ababa University and master's degree from the same university in Environmental Science in 2013. Her curiosity with a big deal initiation has led her to specialize in Environmental Science as it deals with providing a broad range of solution for sustainable development, in conjunction with ways of providing energy sources.

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