**ABSTRACT**

The current study was carried out to isolate actinomycetes from the geothermal vents of Menengai crater. Soil samples were collected from vents A and D in sterile polythene papers and transported to Egerton University, Department of biological sciences laboratories. The samples were air dried on the benches for one week. To kill vegetative bacteria, the soil samples were heat in a hot air oven for 1h before serial dilution to 10-6. The samples separately plated on Starch casein agar, Luria Bertani agar and starch nitrate agar in which nystatin and nalidixic acid had been added to reduce the growth of fungi and other types of bacteria. Incubation was carried out at 30 o C for up to a period of one Month. The isolated actinomycetes were characterized by cultural, morphological and biochemical means. There was no significant difference in the number of actinomycetes isolated between vents A and vents D($P=0.439$). However, the number of actinomycetes isolated using the three isolation media varied significantly ($F=37$, $P=0.03$). Totally, 16 actinomycetes were isolated from the vents. It is recommended that the isolates be tested for antagonism against pathogenic microorganism.