Springtails belong to the phylum Arthropoda, Class Collembola. They contribute significantly in a complementary way to the cycling of soil nutrients by directly breaking down organic matter and fragmenting plant residues thus increasing surface area for microbes to act on. Among other factors, low soil fertility remains the main contributor to low crop food production in sub-Saharan Africa. Agricultural intensification including use of integrated soil fertility amendment intervention such as use of cow manure and *Trichoderma* is one important approach of boosting soil fertility and hence crop production. The continued crop farming and soil disturbance have adverse ecological and environmental effects which impact negatively on the abundance and diversity of mesofauna especially the Collembola, thus there is a need to search for soil ecofriendly fertility intervention measures.

The purpose of the study was, to determine effects of land use system, seasons and physico-chemical parameters on abundance, density and diversity of Collembola in Embu and Taita- Taveta Districts, Kenya. Soil samples were collected from the various land uses in the two study sites (Embu and Taita), by taking a soil core of 5 cm diameter and at depth of 5 cm. Collembola were extracted using dynamic behavioral modified Berlese funnel. A total of forty seven genera in eighteen families were identified. In Taita, thirty genera in twelve families were identified. While, in Embu seventeen genera in eight families were identified. It was found that land use type and soil amendments affected significantly ($p= 0.05$) the occurrence of Collembola in the two study areas. Abundance, density and diversity decreased along a land use gradient with agro-based land use types (coffee, horticulture and maize plots) presenting an impoverished community.

In Taita high Collembola abundance was recorded in land use types planted with *Pinus patura, Cypress lusitanica, Eucalyptus saligna,* napier grass, fallow and Indigenous forests. Lowest abundance was recorded in land use planted with coffee, horticulture and maize. In Embu high Collembola abundance was recorded in land use types planted with Indigenous forests, *Eucalyptus saligna,* tea and napier grass. Lowest abundance was recorded in land use planted with coffee, fallow and maize. The diversity profiles of the soil dwelling Collembola showed that forests exhibited the highest genera diversity while agro-based land use types presenting the least diversity. In Taita highest genera diversity was recorded in land uses planted with forests. The least diversity was in maize. In Embu highest genera diversity was recorded in land uses planted with coffee, Indigenous forests and *Eucalyptus.*

The family Isotomidae was the most abundant in the two study sites with the genus *Cryptopygus, Isotomiella, Parisotoma* and *Folsomina* being common. Generally, high abundance, density and diversity of the soil Collembola were recorded in the wet seasons than in the dry season for both Taita and Embu. The Principal Component Analysis (pC A) showed that carbon, nitrogen, acidity was the main factors that affected the population of the soil Collembola in the study area. Soils treated with organic amendments (cow manure, *Trichoderma)* and low soil disturbance had the highest number of Collembola compared to the ones where inorganic fertilizers were used both Taita and Embu.

The use of integrated soil fertility management interventions especially application of organic manure (cow manure plus *Trichoderma)* can therefore be a recommended farming practice for its role in sustaining populations of Collembola. the variation in population of the Collembola in different land uses, soil amendments and seasons show their sensitivity to habitat disturbance. Therefore, this high sensitivity to habitat modification makes them good bio-indicators of environmental degradation! disturbance/pollution and weather change.