Effect of cropping systems and organic inputs on soil carbon and nitrogen level and sorghum yields in Kitui County, Kenya

Degree Programme: BSC. MANAGEMENT OF AGROECOSYSTEMS & ENVIRONMENT
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Sorghum (Sorghum bicolor) is a crop of nutritional and ecological significance in the arid and semi-arid lands of Kenya but its production is on the decline and/or it has been totally neglected due to low soil fertility, high cost of inorganic fertilizer vis-à-vis high poverty levels. The main objective of this study therefore is to assess the influence of cropping system, organic inputs on soil nutrient levels and sorghum yields in Kitui County, Kenya. A Randomized Complete Block Design with a split plot arrangement will be used. The main plots will be the cropping systems: mono cropping (pure sorghum), intercropping (sorghum and dolichos/chick pea) and crop rotation (dolichos-sorghum). The sub-plots will be organic inputs (control, farm yard manure and compost). Soil and plant samples will be collected and analyzed for N, P and Organic C using standard laboratory analytical methods. It is postulated that at the end of the study, the cropping systems and organic inputs will have a profound effect on soil nutrients and yield of sorghum.

Key words: cropping systems, organic inputs and sorghum

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