

# **Quantifying nutrient losses with different sediment fractions under four tillage systems and granitic sandy soils of Zimbabwe**

**Munodawafa Adelaide**

## **Introduction**

In soil erosion studies too much emphasis has been placed on the weight of soil loss (t/ha), while the real issue is not only about the amount of soil lost or the area of land degraded, but the effect of soil erosion on the productivity of the land. Soil erosion is rated as one of the major threats of sustainable land management, but the research data on the impact of erosion on soil properties and its effect on crop yield is grossly missing (Hudson, 1993), especially in tropical Africa (Kaihura, et.al., 1998). While the process of erosion is somewhat better understood, the resultant changes in the soil properties, the decline in yield and evaluating the loss in productivity should be of concern to the researchers in this region. On arable land, soil erosion is initiated through tillage. Tillage is the mechanical manipulation of soil for any purpose (Gill and Vanden Berg, 1967). It is an important part of the over-all farming system. The primary objectives of tillage, as given by Godwin (1990) and Lobb (1995) are to prepare a desirable seedbed, to control weeds, enhance soil and water storage and retention, manage crop residues and reduce erosion. Tillage can however, either conserve or damage the soil depending on the intensity of inversion and the degree of exposure of the soil to weather conditions. The intensity of soil inversion also influences surface roughness, which in turn determines the sealing tendency of uncovered soil.