Abstract

Continuous decline in soil productivity is a major constraint to the improvement of livelihoods of smallholder farmers of Kenya. In highlands, levels of soil nitrogen, phosphorus and sometimes potassium are low and the situation is worsened by the methods of cultivation that results in nutrient mining rather than nutrient build up. Low soil fertility contributes to one of the greatest challenges currently facing Kenya; inadequate food production for the rapidly growing population. There is a need to seek for environmentally friendly and economically viable technologies to assist in soil fertility improvement and hence high and sustainable crop yields. To this end, a multidisciplinary research team of scientist and farmers implemented a participatory trial in Meru South district, one of the main maize growing areas of central Kenya. The trial was farmer-researcher managed with a general objective of offering small scale resource poor farmers with feasible soil nutrient management techniques for combating soil nutrient depletion caused by continuous cropping without adequate additions of external soil fertility inputs. Preliminary results indicate that maize performance may be improved by combining fast decomposing plant biomass (e.g. Tithonia diversifolia) with half the recommended rate of nitrogen fertilizer.