Tissue culturing has become a routine method for propagating plants in high technology laboratories. The cost of production using conventional tissue culture is, however, high for most of the countries in the sub-Saharan Africa. In this study, we evaluated a micropropagating protocol for local banana (Musa spp.) (Munju landrace) in Kenya as an alternative to reduce the unit cost of tissue culture micropropagation. Matrices were satisfactory and comparable to the gelling agents. Glass beads were, however, the best matrix in shoot multiplication. Use of support matrices, locally available macronutrients, micronutrients, sugar, equipment and facility reduced the cost of consumable material for banana tissue culturing by about 94%. Putting into account energy, labour and capital investments, the cost dropped from approximately US $ 1.5 to 1.0 per plantlet. Contamination was not observed when the media and equipment were sterilised using a pressure cooker instead of an autoclave. Use of plastic syringes instead of glass cylinders and micropipettes, to measure volumes reduced the cost of the equipment by 96%. The risk of damage and loss due to breakage was eliminated compared to the use of glassware equipment. Shoots were rooted when they were transferred to Murashige and Skoog (MS) medium supplemented with 1 mg l-1 naphthaleneacetic acid (NAA) or 1 mg l-1 Anatone. Acclimatised plants were successfully transplanted and established in the field. There is potential for use of locally available low cost resources as alternatives to the conventional costly laboratory resources.