Internat. J. Plant Sci. Vol.2 No.1 January 2007 : 18-22

Yield and economics of cassava (*Manihot esculenta* crantz.) as influenced by intercropping and organic manures

M. MOHAMED AMANULLAH*, K. SATHYAMOORTHI, K. VAIYAPURI AND S. PAZHANIVELAN
Department of Agronomy, Tamil Nadu Agricultural University, COIMBATORE (T.N.) INDIA.

(Accepted :September, 2006)

SUMMARY

Field experiments were conducted to find out the effect of intercropping and organic manures on the yield and economics of cassava at Veterinary College and Research Institute Farm, Namakkal during 2001 and 2002. The popular hybrid of cassava H 226 was tried as test crop. Three intercropping systems viz., sole cassava, cassava + maize (var. African tall) and cassava + cowpea (var. CO 5) were assigned to main plots. Six organic manurial treatments viz., FYM (25 t ha^{-1}), Poultry manure (10 t ha^{-1}), composted poultry manure (10 t ha^{-1}), FYM (12.5 t ha^{-1}) + poultry manure (5 t ha^{-1}), FYM (12.5 t ha^{-1}) + composted poultry manure (5 t ha^{-1}) along with control (no organic manure) were assigned to sub plots. The results indicated that the tuber yield of cassava was higher in sole cassava followed by cassava intercropped with cowpea. Composted poultry manure recorded the highest yield. All the organic manurial treatments had higher yield over control. Higher net return and BC ratio were obtained when cassava was intercropped with cowpea applied with composted poultry manure.

Key words: Cassava, Intercropping, Poultry manure, Yield, Economics.

Among cassava growing countries, India ranks twelfth in area, but it is the seventh largest producer of cassava with a production capacity of 5.4 million tonnes from an area of 0.24 million hectares. However, India tops in productivity with 22.1 t ha^{-1} which is the highest for any country in the world (Chadha and Nayar, 1994).

Intercropping in cassava is a widely followed practice in the humid and sub-humid tropics. In Latin America and Africa, cassava is most commonly associated with an early maturing grain crop such as maize or legumes. But, the area under intercropping of cassava is negligible in India especially in Tamil Nadu and research work on intercropping fodder crops is scanty

Cassava, a long season, wide spaced crop is slow in its initial growth and development and therefore, intercropping a short duration crop may increase the biological efficiency as a whole. Normally, green covers are planted with cassava for a variety of purposes such as cultural weed control, fertility and moisture conservation and forage production (Leihner, 1980).

Application of organic manures has various advantages like increasing soil physical properties, water holding capacity, organic carbon content apart from supplying good quality of nutrients. Poultry manure is rich organic manure since solid and liquid excreta are excreted together resulting in no urine loss. In fresh poultry excreta uric acid or urate is the most abundant nitrogen compound (40-70 per cent of total N) while urea and ammonium are present in small amounts (Krogdahl and Dahlsgard, 1981).

The nutritional value of unprocessed poultry manure deteriorates rapidly. Hence, the immediate processing of poultry manure to prevent its rapid decomposition and save its nutrient properties is, thus essential. Composting or the biological degradation of poultry manure produces a material with several advantages with respect to handling by reducing volume, mass of dry matter, odors, fly attraction and weed seed viability (Sweeten, 1980). Composting poultry manure under anaerobic conditions helps for greater recovery of final product and negligible loss of nutrients particularly nitrogen (Kirchmann and Witter, 1989). Even though poultry manure contains more amount of nutrients than other manures, the research work on poultry manure is less, since poultry population is concentrated only in certain areas and hence the manure availability also.

Intercropping in cassava could fetch additional income and since cassava being a wide spaced and initial slow growing crop, could provide ways to accommodate certain specific intercrop for yield and economic advantages. Research work had been carried out on the influence of organic manures on Cassava. But, the information regarding effect of poultry manure and fodder intercrops on cassava is scanty. In this context, present investigation was taken up to study the effect of intercropping fodder crops, the effect of poultry manure on the yield and economics of Cassava.

* Author for corrospondence.