Integrated nutrient management for tomato-okra-stem amaranth cropping pattern in homestead area.

ABSTRACT

Due to increasing population, availability of crop land is decreasing rapidly and many croplands are being turned into homestead. The utilization of homestead is very important. Intensive crop cultivation with high yielding varieties to fulfil food demand for a swelling population has led to mining out the inherent plant nutrients from the soil. An experiment was conducted with tomato-okra-stem amaranth cropping pattern in a homestead area in Chhiata Series of Grey Terrace Soil (Aric Albaquept) under AEZ- 28 at Gazipur to find out the optimum dose of chemical fertilizer and organic manure for obtaining higher crop yield and to study the effect of integrated nutrient management (INM) on soil properties. The experiment consisted of eight treatments: T 1 (Poultry manure, PM @ 5 t ha -1), T 2 (Cowdung, CD @ 10 t ha -1), T 3 (Household waste, HW @ 10 t ha -1), T 4 (PM @ 2.5 t ha -1 + reduced recommended dose of fertilizer, RDF), T 5 (CD @ 5 t ha -1 + reduced RDF), T 6 (HW @ 5 t ha -1 + reduced RDF), T 7 (100% RDF) and T 8 (Control). Among the treatments, 2.5 ton poultry manure along with reduced rate of RDF performed the best in recording yields of tomato, okra and stem amaranth. Next to PM, HW @ 5 t ha -1 + reduced RDF had better results in respect of yield. Bulk density and organic C were improved by the application of organic manure; the highest nutrients uptake and availability was found in T 4 followed by T 6.

Keyword: Homestead; Organic and inorganic fertilizer; Soil properties; Vegetable production.