Research **P**aper

Integrated nutrient management in amaranthus (*Amaranthus tricolor* L.)

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ABSTRACT : The present investigation entitled integrated nutrient management in amaranthus (*Amaranthus tricolor* L.)" was carried out during rainy season of the 2010-2011. The experiment was laid out in Randomized Block Design (RBD) with twelve treatments T_1- RDF (50 kg N + 50 kg P_2O_5 + 0 kg K_2O per ha), T_2- 10 t per ha FYM, T_3- 5 t per ha vermicompost, T_4- 50 per cent RDF + 10 t per ha FYM, T_5- 50 per cent RDF + 5 t per ha vermicompost, T_6- 25 per cent RDF + 10 t per ha FYM, T_7- 25 per cent RDF + 5 t per ha vermicompost, T_8- 50 per cent RDF + 10 t per ha FYM + 5 kg per ha *Azotobacter* + 5 kg per ha PSB, T_9- 50 per cent vermicompost + 5 kg per ha *Azotobacter* + 5 kg per ha *PSB*, T_{10}- 5 kg per ha *Azotobacter* + 5 kg per ha PSB, T_{11}- RDF + 10 t per ha FYM + 5 t per ha vermicompost + 5 kg per ha *Azotobacter* + 5 kg per ha PSB and T_{12}- Control and replicated three times. An observation in respect of growth, yield and quality parameters were recorded at the time of harvesting. The results of this experiment revealed that, application of recommended dose of fertilizers with 10 t per ha FYM, 5 t per ha vermicompost, 5 kg per ha *Aztobacter* and 5 kg per ha PSB to the crop found to be sound integrated nutrient management practice, where it recorded maximum plant height, number of leaves, total yield per plot and per ha, leaf area and maximum final nutrient status available in the soil after final harvest. The better qualitative character like total chlorophyll content was highest in 50 per cent recommended dose of fertilizer with 5 t per ha vermicompost.

KEY WORDS : Amaranthus, Organic and inorganic fertilizers

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India having 7,981 million ha area under vegetable which produces 1, 29,077 million MT of vegetable with productivity 16.2 MT per ha while Maharashtra having 455.251 million ha area under vegetable with 6454.8 million MT production and having productivity 14.2 MT per ha (Anonymous, 2008-2009). In India, pressure of population on the land is continuously increasing, in such condition, recommendation of vegetables are not fulfilling the demand of the people with current production of vegetables. In order to improve this, it is necessary to increase yield of vegetable with the adoption of integrated nutrient management by using judicious combination of chemical fertilizers, organic manures and bio-fertilizers least affecting in natural yield potential of soil.

Eco-friendly scientific method of crop production envisages the use of organics in the soil as source of nutrients.

Application of inorganic nutrients plays an important direct role on the yield attributes as well as uptake of nutrients at the same time. The inorganic fertilizers are expensive and continuous use of these chemical fertilizers leads to the problem of soil deterioration. Organic manures alone are not able to supply all nutrients required for plant growth. However, use of proper proportion of organics along with inorganic nutrients not only helps in increasing the yield of the crop but also act as store house of nutrients besides it improves physical condition of soil.

RESEARCH METHODS

The field experiment was conducted during 2010-2011 at Horticulture farm, Head, Department of Horticulture, Dr. Panjabrao Deshmukh Agriculture University, Akola (M.S.) India. The experiment was laid out in Randomized Block Design