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Effect of integrated nutrient management on yield of turmeric (*Curcuma longa* L.) cv. KESAR under North Gujarat condition

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Abstract : A field experiment was carried out at Horticultural Instructional Farm, Chimanbhai Patel College of Agriculture, S. D. Agricultural University, Sardarkrushinagar during *Kharif* 2008, 2009 and 2010 consecutively at the same plot to find out effect of organic manures in combination with essential nutrients on yield of turmeric (*Curcuma longa* L.) cv. KESAR. The experiment was laid out in Randomized Block Design comprising of sixteen treatment combinations replicated thrice. Treatments were selected to evaluate the recommended dose of 90 kg/ha N through organic sources like FYM, vermicompost and poultry manure while 60 kg/ha P and K 30 kg/ha Zn and Fe through inorganic source. It was observed that application of RD of nitrogen through poultry manure in combination with RD of essential nutrients like phosphorus, potassium, zinc sulphate and ferrous sulphate significantly improved the yield of turmeric.

Key words : Intergrated nutrient management, Mother rhizome, Turmeric, Yield

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Turmeric (*Curcuma longa* L.) also known as the "golden spice" or "spice of life" belongs to family Zingiberaceae and mainly its underground rhizomes which are of use in culinary, medicinal, cosmetics and textile industries.

Apart from curcumin (colour pigment) and the volatile oil 'turmerol', it also contains appreciable quantities of protein, fat, carbohydrate, calcium, sodium, phosphorus, iron, zinc, thiamine, riboflavin, niacin, ascorbic acid, moisture in the edible portion of ground turmeric (Ravindran *et al.*, 2007).

India is the largest producer and exporter of turmeric in the world that accounts about 80 per cent of the world's output. In India, it is mainly grown in the states of Andhra Pradesh, Orissa, Tamil Nadu, Assam, Gujarat and Maharashtra. Gujarat is one of major producing states of turmeric and area under said crop is gradually increasing in the state.

The judicious application of organic manures and inorganic fertilizers in optimum quantity at suitable time and interval has capitulated in sound growth, better yield and good quality product of crops. Macro and micro nutrients play an important role in improving productivity and quality of turmeric and judicious use of chemical fertilizers increases the quality and quantity of turmeric.

In recent past, awareness of organic produce or products grown with least use of chemicals and recent price hike in inorganic fertilizers, the use of indigenous sources like farmyard manure, vermicompost, poultry manure etc. has become inevitable in package of practices of crops. FYM, vermicompost and poultry manure are good source of organic manure containing most of the essential macro and micro nutrients, hence, can be proved effective in sustainable farming system.

Looking to the facts and need of integrated nutrient management for turmeric the present investigation was carried out to find out effect of organic manures in combination with essential nutrients on growth, yield and quality of turmeric (*Curcuma longa* L.) cv. KESAR.

RESEARCH METHODS

The experiment was conducted at Horticultural Instructional Farm, Chimanbhai Patel College of Agriculture,