



Response of castor (*Ricinus communis* L.) to organic and inorganic sources of nitrogen for seed yield, oil yield and oil content

MOHAN CHAVAN, B.T. PUJARI AND ARJUN SHARMA

ABSTRACT

Differential response of castor to organic and inorganic sources of nitrogen for seed yield, oil yield and oil content was studied at the Agricultural College Farm, Raichur on deep black clay soil during late *Kharif* season of 2002-03. The result showed that, green leaf manuring of sunnhemp recorded significantly higher seed yield (10.23 q ha⁻¹), oil yield (4.91 q ha⁻¹) and oil content (48.02 %) over the sole castor without green manuring (8.44 q ha⁻¹, 3.98 q ha⁻¹ and 47.36 % of seed yield, oil yield and oil content, respectively) and castor with *in situ* green manuring (8.43 q ha⁻¹, 3.97 q ha⁻¹ and 47.26 % of seed yield, oil yield and oil content respectively). Among the nitrogen levels, application of 80 kg N ha⁻¹ recorded highest seed yield (10.09 q ha⁻¹) and oil yield (4.87 q ha⁻¹) while application of 60 kg N ha⁻¹ recorded highest oil content (48.30%) and these two treatments were found at par with each other in seed yield, oil yield and oil content which were found significantly superior over control (7.07 q ha⁻¹, 3.28 q ha⁻¹ and 46.45 % of seed yield, oil yield and oil content, respectively), application of 20 kg N ha⁻¹ (8.50 q ha⁻¹, 4.01 q ha⁻¹ and 47.20 % of seed yield, oil yield and oil content, respectively) and application of 40 kg N ha⁻¹ (9.44 q ha⁻¹ and 4.45 q ha⁻¹ of seed yield and oil yield, respectively) while the oil content with the application of 40 kg N ha⁻¹ (47.74 %) was at par with that of application of 80 kg N ha⁻¹ and significantly lower than that of application of 60 kg N ha⁻¹.

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Key words : Green manures, *In situ*, Green manuring, Inorganic fertilizers, Castor

INTRODUCTION

Castor occupies an important place among the oil seeds on account of its role played in the economy of India. Oil obtained from the castor seed is non-edible but has a great industrial importance. It is used as raw material in the manufacture of soaps, cosmetics, pharmaceuticals, perfumes, paints, lubricants etc. Annual domestic consumption of castor oil in India is only about 0.80 to 1.00 lakh tonne. Owing to its economic importance, the Bombay Oil seeds and Oils Exchange (BOOE) has established an International Castor Oil Further Exchange (ICOFE) at Vashi (Navi, Mumbai) which started functioning from May 10, 1999. For improving the production of castor, one of the major thrusts in oil seeds research programme has been the

development of location specific agro production technologies including cropping systems and integrated nutrient management (Prasad, 1994). Castor is being grown on marginal lands where fragile resources of these farmers and non availability of costly nitrogen fertilizers, use of green manures form an important component of integrated nutrient supply system. The supplementary and complimentary use of green manures, besides improving soil physical, chemical and biological properties also increases the use efficiency of applied fertilizers. With this view, an experiment was undertaken to know the response of castor to organic and inorganic sources of nitrogen for its seed yield, oil yield and oil content.

Correspondence to :

MOHAN CHAVAN, Krishi Vigyan Kendra, University of Agricultural Sciences, RAICHUR (KARNATAKA) INDIA
Email : mkchavan76@rediffmail.com

Authors' affiliations:

B.T. PUJARI AND ARJUN SHARMA, Krishi Vigyan Kendra, University of Agricultural Sciences, RAICHUR (KARNATAKA) INDIA