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Research Article

Response of different organic manures and spacing on growth, yield, quality and economics of Kalmegh Panchang under loamy sand of inceptisol of Anand

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Summary

A field experiment was conducted to study the response of different organic manures (FYM, castor cake and vermicompost) and spacing (30 cm x 15 cm, 30 cm x 30 cm, 30 cm x 45 cm and 30 cm x 60 cm) on growth, yield quality and economics of Kalmegh Panchang as well as on soil properties in inceptisol under *Kharif* season from 2007-08 to 2009-10 at Medicinal and Aromatic Project, Anand Agricultural University, Anand. The results revealed that the effect of organic manures and spacing were found non-significant for growth parameters, yield and quality of crop. However, higher values of yield components and economics of the crop were recorded under treatment combinations M_2S_1 and M_1S_1, respectively. Slight improvements in chemical properties was observed due to continuous application of organic manures under study.

Key words : Kalmegh panchang, Organic manure, Spacing , Yield and its component

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Introduction

Kalmegh Panchang is an important annual medicinal herb, widely distributed in the plains thought the India. Kalmegh is widely used in Indian traditional system of medicine against different aliments. It is reported that this plant possesses astringent, anodyne tonic and alexipharmic properties, which are useful in curing dysentery, cholera, diabetes, influenza, bronchitis, piles, hepatomegaly, skin disorder, fever and warm. Kalmegh also showed its efficiency to control HIV-AIDS. 'Panchang' parts of plant used in homeopathic and ayurvedic medicines. The major bitter constituent in Kalmegh is due to the presence of diterpene lactone called andrographolide. Kalmegh may play a vital role in sustaining soil health and crop production on long term basis. With these consideration in view, the present study was conducted during *Kharif* 2007-08 to 2009-10.

Resources and Research Methods

The long term field experiment was conducted at Medicinal and Aromatic Project, Anand Agricultural University, Anand. Agro-climatic zone-III (AES-II) during 2007-08 to 2009-10. The soil type was loamy sand having pH 7.6, EC 0.18 dSm^{-1}, low in available N (185 kg ha^{-1}), high in available P_2O_5 (102.28 kg ha^{-1}) and medium in available potash (238.17 kg ha^{-1}). The experiment was laid out in Split Plot Design in four replications with 16 treatments combinations comprised of four levels of organic manures *viz.*, M_0 (Control), M_1 (FYM @ 10 t ha^{-1}), M_2 (Castor cake @ 1 t ha^{-1}) and M_3 (Vermicompost @ 2 t ha^{-1}) with four levels of spacing (S) *viz.*, (30 cm x 15 cm), S_2 (30 cm x 30 cm), S_3 (30 cm x 45 cm) and S_4 (30 cm x 60 cm) as sub plots treatments.

The variety of Kalmegh Panchang used for experiment was Anand Kalmegh-I. Well decomposed FYM, castor cake and vermicompost were applied as per treatment to the respective plots at the time of soil preparation before transplanting. These above fresh biomass were dried