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EFFECT OF ORGANIC AND INORGANIC FERTILIZERS ON GROWTH AND GREEN FRUIT YIELD OF CHILLI (*Capsicum annum* L.)

M.N. VITKAR, R.R. MANOLIKAR, S.D. VASMATE, B.M. KALALBANDI AND M. F. PATIL

See end of article for authors' affiliations

Correspondence to :
B.M. KALALBANDI
Department of Hoticulture,
College of Horticulture,
Marathwada Agricultural Univ.,
PARBHANI (M.S.) INDIA

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ABSTRACT

Effect of organic and inorganic fertilizers on growth and green yield of chilli (*Capsicum annum* L.) was studied in the Department of Horticulture, Marathwada Agricultural University, Parbhani (M.S.) during the year 2003-04. Treatment 50% FYM + 50% N through neemcake produced maximum plant height, number of primary branches, number of fruit per plant, weight of fruit, length of fruit, diameter of fruit and total yield per hectare as compared to treatment control and rest of treatments under study.

Key words : FYM, RDF, Neemcake, Chilli.

Chilli (*Capsicum annum* L.) belongs to the family solanaceae is one of the important spice cum vegetable crops. It is grown on commercial scale as a cash crop in India. It is grown throughout the year and used as green and red ripe dried stages for their pungency and colour. It is an integral part of Indian diet and used at all time in every Indian home. India ranks second next to china in the vegetable production in the world. The area under vegetables in India is estimated around 6.2 million hectare with annual production 71.66 million tonnes of vegetables (Anonymous, 2003). The application of an integrated plant nutrient supply system is becoming more popular as it is scientifically sound and assures sustainable development in agriculture. Vegetables respond to addition of nutrient through Neem cakes, FYM, Green manuring and chemical fertilizers (Sharma and Rana, 1993). The use of judicious combination of organic and inorganic fertilizers source is essential not only to maintain the soil health but also sustain productivity (Malewar *et al.*, 1998). The present studies was undertaken at Horticulture Research Station, Sub-campus, MAU, Parbhani during *Kharif* season 2003-04.

MATERIALS AND METHODS

The experiment was laid out in randomized block design. There were seven treatment and three replications. The treatments details are given below T_1- 100% RDF (Recommended dose of fertilizers), T_2- 100% N through vermicompost, T_3- 100% N through neem cake, T_4- 50% RDF + 50% N through vermicompost, T_5- 50% RDF + 50% N through neem cake, T_6- 50% RDF + 25% N through neem cake + 25% N through vermicompost, T_7 – control.

The plot size was 3.60 x 3.60 m^2 and spacing 45 x 30 cm. The variety was Pusa Jwala. The recommended dose of fertilizers @ 120 : 80 : 50 kg NPK ha^{-1} was considered as 100% RDF. The vermicompost was applied @ 6t ha^{-1} while neemcake was applied @ 2 t ha^{-1} before 10 days of transplanting of seedlings. The biometric observations on the height of plant number of primary branches were taken at 30 days interval commencing from 30 days after transplanting upto 120 DAT in plant height observation initial plant height was recorded after 5-8 days after transplanting. Days to flower initiation, days to 50 per cent flowering, number of fruits per plant, weight of fruits, length of fruit (cm), diameter of fruit (cm), number of seeds per plant, weight of individual fruits and total yield per hectare were studied.

RESULTS AND DISCUSSION

Height of plant :

The data presented in Table 1 in respect of height of plant as affected by different treatments showed that, the treatment T_5 – 50% RDF + 50% N through Neem cake recorded maximum plant height (51.60 cm) at 120 DAT. The next better treatment in this regard was T_1 – 100% RDF (46.20 cm). In agreement with these results, Fugro (1996) observed that the application of Neem cake @ 2 t/ha along with 75 : 25 : 25 kg NPK/ha showed maximum plant height of chilli. Similar results were reported by Damke *et al.* (1988) in chilli and Atiyeh *et al.* (1999) in tomato.