

Research Paper :

Effect of nutrient ratios on yield and economics of chilli (*Capsicum annum L.*) cv. BYADGI DABBI in a vertisol of northern transitional zone of Karnataka

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ABSTRACT

Field experiment was conducted during *khariif* 2005 to find out the effect of N and K ratio on yield and economics of chilli cv. BYADGI. The results revealed that application of 200:75:125 kg NPK per ha (2:1.25 N:K) resulted in significantly higher yield per ha (11.59 q ha⁻¹) as compared to RDF (9.19 q ha⁻¹). Economic analysis clearly suggests that application of 200:75:125 kg N:P₂O₅:K₂O per ha/2:1.25 N:K ratio has appeared to be economically feasible to get higher net returns and benefit:cost ratio.

Key words : N : K ratios, Byadgi dabbi, B:C ratio.

Chilli belongs to the family solanaceae and two main species are *Capsicum annum L.* and *Capsicum frutescens L.* Chillies are classified as pungent and non-pungent varieties. Most of the Indian chillies belong to the *Capsicum annum* species and thus constitute the major commercial variety used in food flavourings. Pungency and colour are the two important characters liked by consumers. Titillating pungency and fascinating natural colour of chillies form an indispensable adjunct in every home all over the world. It is liked for its pungency, spicy taste besides the appealing colour it adds to the food. Chilli is mainly grown in Andhra Pradesh (49%), Karnataka (15%), Orissa (8%), Maharashtra (6%), West Bengal (5%), Rajasthan (4%) and Tamil Nadu (3%). In Karnataka, it occupies 1.72 lakh ha of area with a production of 1.32 lakh tonnes (Anon., 2002).

Chilli is one of the major crops in the northern transitional zone (Zone 8) of Karnataka which comprises Dharwad, Kundagol, Haveri, Hirekerur, Byadagi, Shiggaon, Gadag, Belgaum, Sankeshwar and Nippani talukas. In Dharwad district, it is grown over an area of 1.14 lakh ha with a production of 0.56 lakh tonnes with a productivity of 485 kg per ha. The level of nutrient supply at which the maximum yield of the plant is obtained reflects the optimum requirement of a particular plant species. Proper balance between the applied nutrients decides the maturity, fruit size, yield and quality of vegetables. Imbalance between these nutrients either in soil or in the plant hampers the physiological process. Information pertaining to the effect of varying N and K

ratios on chilli yield with optimum benefit cost ratio to arrive at profitable fertilizer dose is lacking. Hence, the present investigation was taken up to recommend best fertilizer dose (N and K fertilizers) to chilli to obtain maximum return per rupee invested on fertilizers.

MATERIALS AND METHODS

A field experiment was laid out in a Randomized Block Design, replicated four times during *khariif* 2006-07 on a medium black clay soil at Main Agricultural Research Station, College of Agriculture, University of Agricultural Sciences, Dharwad (Karnataka). The physico-chemical properties of the experimental site are presented in Table 1. There were 12 treatments and treatment details are given below:

Treatments	N:K ratio
T ₁ – 150:75:75 kg N:P ₂ O ₅ :K ₂ O ha ⁻¹ (RDF)	2:1
T ₂ – 150:75:93.75 kg N:P ₂ O ₅ :K ₂ O ha ⁻¹	2:1.25
T ₃ – 150:75:112.5 kg N:P ₂ O ₅ :K ₂ O ha ⁻¹	2:1.5
T ₄ – 150:75:150 kg N:P ₂ O ₅ :K ₂ O ha ⁻¹	2:2
T ₅ – 200:75:100 kg N:P ₂ O ₅ :K ₂ O ha ⁻¹	2:1
T ₆ – 200:75:125 kg N:P ₂ O ₅ :K ₂ O ha ⁻¹	2:1.25
T ₇ – 200:75:150 kg N:P ₂ O ₅ :K ₂ O ha ⁻¹	2:1.5
T ₈ – 200:75:200 kg N:P ₂ O ₅ :K ₂ O ha ⁻¹	2:2
T ₉ – 250:75:125 kg N:P ₂ O ₅ :K ₂ O ha ⁻¹	2:1
T ₁₀ – 250:75:156.25 kg N:P ₂ O ₅ :K ₂ O ha ⁻¹	2:1.25
T ₁₁ – 250:75:187.50 kg N:P ₂ O ₅ :K ₂ O ha ⁻¹	2:1.5
T ₁₂ – 250:75:250 kg N:P ₂ O ₅ :K ₂ O ha ⁻¹	2:2