



Effect of secondary nutrients on growth and yield of dry chilli (*Capsicum annuum* L.)

Krishna D. Kurubetta¹, T. B. Allolli, M. H. Tatagar, R. K. Mesta and Abdul Kareem M.

¹ Assistant Professor of Agronomy, HRES, Devihosur, Haveri, Karnataka

E-mail: krishna.kurubetta@uhsbagalkot.edu.in

ABSTRACT

The experiment was conducted at Horticulture Research and Extension Station, Devihosur, Haveri, Karnataka to study the effect secondary nutrients on growth and yield of dry chilli. The three years pooled results (2005, 2006 & 2007) of the experiment revealed that the treatment applied with RDF along with Ca+Mg+S @ 25+25+25 kg/ha recorded significantly higher dry chilli yield of 814 kg/ha compared to the rest of the treatments. However, it is found on par with the treatment RDF+ Ca+Mg+S @ 25+50+50 kg/ha. The yield and growth parameters were also found significantly superior for the treatment RDF + Ca+Mg+S @ 25+25+25 kg/ha compared to rest of the treatments.

Key words : Dry chilli, Secondary nutrients, Byadagi chilli

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INTRODUCTION

Chilli (*Capsicum annuum* L.) is an important commercial vegetable crop grown in India. In the recent years chilli growers are getting the low productivity in chilli crop. This in turn affected overall production of chilli in our country [3]. To increase the productivity, adoption of recommended package of practice is need of the day. Macro and micronutrients play a vital role in the physiology of plants. The secondary nutrients have the significant role in improving the yield and quality of the produce. Among the secondary nutrients Calcium (Ca), Sulphur (S) and Magnesium (Mg) plays a major role in the chilli production [4]. Application of Ca, S and Mg has been studied for yield improvement of several vegetable crops but little work has been done in this zone particularly on dry chilli. Keeping this view in background, the present investigation was carried out to study the effect of secondary nutrients on yield and quality of dry chilli.

MATERIALS AND METHODS

A field experiment was conducted in *kharif* season during 2015, 2016 and 2017 on medium deep black soils at Horticultural Research and Extension Station, Devihosur, Haveri, Karnataka on chilli variety Bydagi dabbi. The experiment was laid out in Randomized Block Design consists of thirteen treatments with three replications and the gross and net plot sizes of the experiment were 6 m X 4.8 m and 5.4 m X 4.2 m respectively. The standard agronomic practices were followed during experimentation. The recommended doses of inorganic fertilizers (NPK) @ 100:50:50 kg/ha was applied along with various doses of secondary nutrients as per the treatment. The data on growth and yield parameters were recorded.

RESULTS AND DISCUSSION

The three years pooled results (2005, 2006 & 2007) of the experiment (Table No.1) revealed that the treatment (T7) applied with RDF along with Ca+Mg+S @ 25+25+25 kg/ha recorded significantly higher dry chilli yield of 814 kg/ha compared to the rest of the treatments. However, it is found on par with the treatment (T8) RDF+ Ca+Mg+S @ 25+50+50 kg/ha. The significantly least yield was noticed with treatment T4- RDF+ Mg @50 kg/ha. Similar results were also noticed by Shivaprasad et al., 2009 [4] and Hussain et al., 1989 [2].

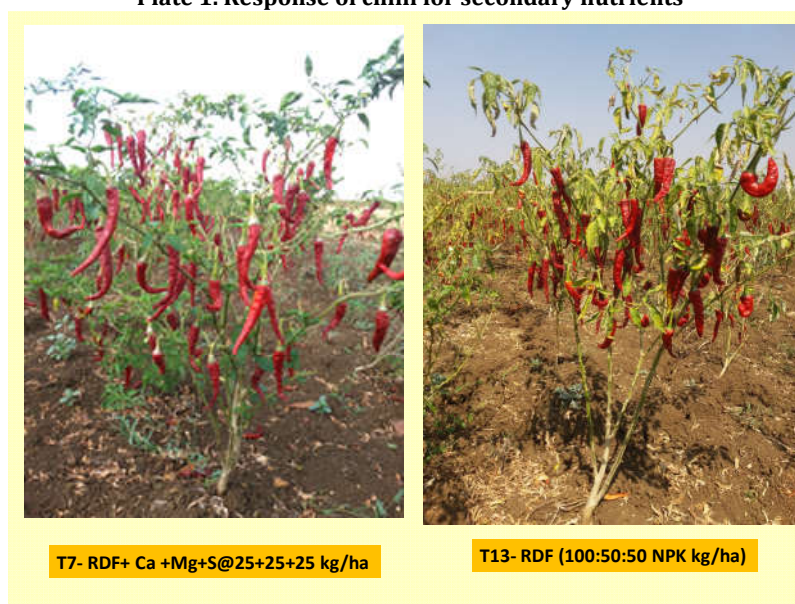
The yield and growth parameters like dry fruit yield per plant, number of fruits per plant, number of leaves and number of branches per plant are also differed significantly for the varied levels of secondary nutrients application. Among the different treatments the performance of all these yield and growth parameters were also found significantly superior for the treatment T7 i.e. RDF + Ca+Mg+S @ 25+25+25 kg/ha compared to rest of the treatments. These results are in conformity with Hatwar *et al.*, [1] and Singh & Verma [5].

Table 1. Effect of secondary nutrients on growth parameters and yield of byadgi chilli (Three years 2015, 2016 & 2017 data)

Treatments	Plant Height (cm)	Number of Branches /plant	No. of leaves/ pant	No. of Fruits /plant	Dry fruit yield (g/pant)	Dry chilli Yield (kg/ha)
T1- RDF+ Ca @25 kg/ha	81	4.58	118	41	25	608
T2- RDF+ Ca @50 kg/ha	71	4.58	117	42	28	703
T3- RDF+ Mg @25 kg/ha	80	4.28	107	44	28	710
T4- RDF+ Mg @50 kg/ha	80	4.28	105	39	19	462
T5- RDF+ S @50 kg/ha	77	3.98	97	44	27	647
T6- RDF+ S @25 kg/ha	80	4.88	129	42	30	727
T7- RDF+ Ca+Mg+S @25+25+25 kg/ha	81	5.68	156	47	33	814
T8- RDF+ Ca Mg+S @25+50+50 kg/ha	83	5.08	138	48	30	754
T9- RDF+ Ca+Mg+S @25+50+25 kg/ha	80	5.18	133	41	22	537
T10- RDF+ Ca+Mg+S @50+50+50 kg/ha	79	4.58	116	39	27	640
T11- RDF+ Ca +Mg+S @ 50+25+25 kg/ha	75	4.88	126	41	30	721
T12- RDF+ Ca +Mg+S @50+50+25 kg/ha	74	4.28	105	42	27	656
T13- RDF (100:50:50 NPK kg/ha)	79	4.28	107	42	30	732
S.Em ±	5.12	0.13	5.06	0.8	0.8	21.8
C. D @ 5%	NS	0.39	15.0	2.5	2.3	65.0

- RDF- Recommended dose of chemical fertilizer

Plate 1. Response of chilli for secondary nutrients



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