

## Physico-chemical properties and nutrient status of soil profiles producing varying quality chillies in Dharwad, Karnataka

B.I. BIDARI, K.K. MATH AND B.T. NINGANUR

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See end of the article for authors' affiliations

Correspondence to :

**B.I. BIDARI**

Department of Soil Science and Agricultural Chemistry, College of Agriculture, University of Agricultural Sciences, DHARWAD (KARNATAKA) INDIA

### ABSTRACT

A study was undertaken to ascertain the reasons for wide variation in yield and quality of Byadgi chilli grown in different locations under similar climatic conditions and management practices. All black oil pedons were clays, whereas red sod pedons were sandy clay to clay loam and loam. Bulk density, per cent pore space, moisture content, organic matter content and CEC were higher in black soil pedons compared to red soil pedons. Black soils were neutral to alkaline whereas red soil pedons were acidic to neutral. Pedons producing first grade fruits recorded higher N and P contents than pedons producing second and third grade fruits. Black soil pedons were high in available K while red soil pedons were medium to high. Not much variation was observed between deep black and medium black soils with regard to status or micronutrients. Red soil pedons having acidic pH have higher micronutrient content than black soil pedons.

**Key words :** Chilli, Available macro nutrient, Available micronutrients, Cumulative soil moisture

Knowledge regarding the type and distribution of soils is essential for proper appraisal or their productivity and assessment of input requirements and in turn relative to them. In the transitional belt of Dharwad district in North Karnataka, chilli is being grown on an area of 115 thousand hectares with a production of 55,737 metric tons. Major soils of this tract are deep black, medium black and red soils. Yield and quality attributes of chillies differ widely from area to area. Climate being mostly the same within the limited area, it is likely that soil factor plays an important role for its yield and quality difference. Integrated data on properties of chilli growing soils producing varying quality chillies are lacking. The

present investigation was therefore undertaken to study the physical, chemical and nutrient status of chilli growing soils in Dharwad district.

### MATERIALS AND METHODS

Based on the extent of area in a particular taluka under chilli cultivation along with yield and quality of chilli fruits obtained by different farmers, traversing of the entire district was undertaken to know the different soil types associated with chilli cultivation during 2005-06. Totally fourteen profiles were selected for the study representing eleven talukas of Dharwad district. These fourteen pedons include two deep black soil pedons producing first

**Table 1 : Location of study sites with soil type and chilli cultivar grown in Dharwad district (Karnataka)**

Location/ Profile No.	Village	Taluk	Survey No.	Soil type	Chilli cultivar
1.	Gudgeri	Kundagol	1/12	Deep black	Byadgi kaddi, Dyavnur and Byadgi dabbi
2.	Devanur	Kundagol	-	Deep black	Byadgi kaddi, Dyavnur and Byadgi dabbi
3.	Gunjigatti	Shiggaon	18/4	Medium black	Byadgi kaddi, Dyavnur and Byadgi dabbi
4.	Devagiri	Haveri	-	Medium black	Byadgi kaddi,
5.	Somanahalli	Hirekerur	23/3	Medium black	Byadgi kaddi,
6.	MRS, Dharwad	Dharwad	D-96	Medium black	Byadgi kaddi and Dyavnur
7.	Annigeri	Navalgund	-	Medium black	Dyavnur
8.	Yaliwal	Kundagol	224/3	Medium black	Byadgi dabbi
9.	Malligawad	Hubli	-	Medium black	Byadgi dabbi
10.	Saidapur	Navalgund	-	Medium black	Byadgi dabbi
11.	Kurtkoti	Gadag	-	Medium black	Byadgi dabbi
12.	Kalagond	Hirekerur	53	Red	Byadgi kaddi
13.	Thimmenahalli	Byadgi	22/3	Red	Byadgi kaddi
14.	Asundi	Ranebennur	248	Red	Byadgi kaddi