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Study of rainfall variability of Humnabad taluka (Karnataka)

VISHWANATH BIRADAR*, BASWARAJ BIRADAR AND B. ARUNKUMAR
Regional Agricultural Research Research, U.A.S. (D), BIJAPUR (KARNATAKA) INDIA

ABSTRACT

Rainfall data for the period 1976 - 2009 were used to analyze monthly, seasonal and annual variability of rainfall. The mean annual rainfall was 797 mm with 27 per cent variability; with standard deviation of 216 mm, spread over 50 mean rainy days. August being the wettest month (average rains- 172.7 mm) with coefficient of variation of 50 per cent and with the highest annual rainfall contributing month (21.7%) and mean rainy days (10.3). Rainfall of June to September months showed lower coefficient of variation. The study also revealed that the monsoon contributed 74.6 per cent of annual rainfall with a mean rainfall of 594.7 mm followed by post monsoon (13.9 % and 111.3 mm) season. The rainy days during monsoon season ranged from 25 to 57 days with a mean of 37 days. The coefficient of variation for rainfall and rainy days was highest during winter season when compared to other seasons.

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Key words : Rainfall, Rainy days, Seasonal rainfall

INTRODUCTION

India's economy is dependent on the agricultural production, which in turn is dependent on the monsoon rainfall and its distribution. The year to year fluctuation in rainfall as well as the fluctuation within the monsoon season governs the crop growth, development and yield. Even in monsoon months the crops are subjected to moisture stress due to occasional dry spells. Although the rainfall is high, the distribution is erratic making the crop vulnerable even during monsoon.

The success or failure of the crops in any year is always viewed with great anxiety as they are closely linked with the behavior of the south west monsoon rains received during June to September. Thus for a rainfed crop, rainfall is the only source of water and thereby any fluctuation in rainfall pattern adversely affect the crop production and it tilts the food security of the country. Water is one of the crucial inputs in crop production and its excess or deficit availability/application adversely influences the yield. Rainfall analysis for crop planning was carried out in different regions of the country as reported by Ahmed *et al.* (2009) in the Barak valley zone of Assam and Sarma *et al.* (1996) in the hills zone of Assam. Saha *et al.* (2004) reported rainfall distribution pattern of Cuttack and its implication in rainfed rice and other crop planning for coastal Orissa. Manorama *et al.* (2007) reported rainfall analysis and crop planning for the Nilgiris. Mahale and Dhane (2003) reported rainfall analysis for Panvel region. In this context, a similar attempt was made at Agriculture Research Station, Bidar, to analyze the rainfall variability in month, season and annual wise for Humnabad region

MATERIALS AND METHODS

Daily rainfall data for the past 34 years (1976-2009) were collected from District Statistical Office, Bidar, for analysis. The rainfall data were critically examined for annual, seasonal and monthly values following the procedure of Panse and Sukhatme (1985). The standard deviation (SD) and co-efficient of variance (CV) of rainfall were worked out.

RESULTS AND DISCUSSION

The daily rainfall data for the period from 1976 to 2009 were analyzed and the results were presented under different heads for mean, standard deviation (mm) and coefficient of variance (%) of annual and seasonal rainfall and the per cent of different seasonal rainfall *vis-à-vis* annual rainfall. The highest and lowest rainfall (mm) were recorded in annually in different seasons and are presented in Table 2. The coefficient of variability (CV) indicates the dependability or reliability on rainfall for any period. Lower values of CV indicate better reliability (Ramana Rao, 1988).

Annual rainfall :

The mean annual rainfall was 797.0 mm spread over 50 rainy days. The maximum annual rainfall (1176.7 mm) was recorded in the year 1998 and was 47.6 per cent above normal and occurred in 66 rainy days. The lowest

* Author for correspondence.