Annual and seasonal rainfall variability of Bidar taluka (Karnataka)

VISHWANATH BIRADAR*, BASWARAJ BIRADAR AND B. ARUNKUMAR
Regional Agricultural Research Station, UAS (D), BIJAPUR (KARNATAKA) INDIA

ABSTRACT

Daily rainfall data of thirty fours (1976-2009) have been analyzed for establishing the long term averages of monthly, seasonal and annual and its variability. The mean annual rainfall is 937.3 mm with coefficient of variation of 22.2 per cent indicated that the annual rainfall was more or less stable over the years. The season wise per cent contribution to annual rainfall was 1.6, 8.4, 75.5 and 14.5 per cent of winter, summer, monsoon and post monsoon seasons, respectively. Within the rainy season, August was the highest rainfall contributing month (21.3 per cent) followed by July (19.9 per cent). There is an ample scope for rain water harvesting from July to September which can be utilized as crop saving irrigation as well as per sowing irrigation for succeeding *Rabi* crops which are generally sown on residual soil moisture.

Key words : Rainfall, Rainy days, Seasonal rainfall

INTRODUCTION

Rainfall analysis is important for crop planning for any region. In order to stabilize crop yields at reasonable levels in rainfed situation, it is essential to plan rainfed crops and their management practices, in consonance with the rainfall pattern prevalent in the region (Deka and Nath, 2000). So, studying rainfall and its variability is becoming important for agricultural production and management. It was noticed that monsoon rainfall does not follow any definite trend in all India scale (Mooley and Parthasarathty, 1984, Kripalani *et al.,* 2003) although some significant trends exist in some pockets of India when long term data are analyzed (Kolli *et al.,* 1992).

Knowledge of average monthly, seasonal and annual rainfall is helpful in understanding the general picture of the particular region. Annual rainfall varies greatly from year to year. Generally higher the rainfall less is the coefficient of variation (CV). Rainfall received during specified intervals like week, month or season indicate its distribution, which can be known by the rainy days. Distribution of rainfall is more important than total rainfall in a season for optimum crop yield. Rainfall analysis for crop planning was carried out in different regions of the country as reported by Singh *et al.* (2008) for Pusa, Bihar and Singh *et al.* (2008) for Sabour region of Bihar. Jat *et al.* (2003) reported rainy season and its variability for crop planning in Udaipur region and Victor *et al.* (1991) reported for Andhra Pradesh. Rana and Thakur (1998) reported rainfall analysis for crop planning in Kullu valley, Himachal Pradesh. 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 Bidar 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 Coefficient 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) recorded in annual and in different seasons was also presented as shown 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 overall mean annual rainfall for the past thirty four years (1976-2009) was 937.3 mm (range: 562.1 to 1347.6 mm) with a standard deviation (SD) of 208.6 mm