

Letter to the Editor

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LOCAL VARIATIONS IN RAINFALL PATTERN AT COIMBATORE

Agarwala (1961) has established a local variation of 3 to 20 per cent in the mean monthly and seasonal totals of rainfall with reference to Delhi. He has also cited in his paper the findings of Bose (1960) in regard to the localised nature of rainfall within small areas in India. A similar study has been taken up with reference to Agricultural College and Research Institute, Coimbatore and the adjoining rain-recording stations at the Millet Breeding Station, Central Sugarcane Research Institute and Headquarters Hospital.

The daily rainfall data collected at these four rain-recording stations for a period of twentyeight years from 1935 to 1962 were compiled along with the data on the number of rainy days in each station. A day with 2.54 mm and above of rain has been considered as a rainy day.

Methods

(i) The year was divided into five main periods
(a) Dry Weather period (January and February),
(b) Hot Weather period (March to May), (c) Southwest Monsoon period, First half (June and July),
(d) Southwest Monsoon period, Second half (August and September) and (e) Northeast Monsoon period (October to December).

(ii) Analysis of variance was worked out for the above five periods to test the nature of variations due to localities and occasions under the following four groups—I. Days with rainfall at some of the stations only, irrespective of the quantity, II. Days with rainfall of less than 2.54 mm at all the four stations, III. Days with rainfall of either below or above 2.54 mm at all the four stations and IV. Days with rainfall of 2.54 mm and above at all the four stations.

(iii) In respect of groups II and IV, *i.e.*, days with rainfall of less than 2.54 mm and days with rainfall of 2.54 mm and above at all the four stations, the rainfall data were further analysed on yearly basis to assess the nature of variations due to localities and also due to years.

(iv) The percentage of range of variation of both rainfall and number of rainy days over their respective means were also calculated in respect of each station for the pre-monsoon and monsoon periods.

Conclusion

Significant variations due to localities have been observed only in the following periods—

(a) *Hot Weather period*—The variation due to locality is significant at 5 per cent level only in the case of rainfall of either below or above 2.54 mm in all the four stations. Further, the comparisons reveal that the Government Headquarters Hospital generally records lowest rainfall, while the rains in the other three stations are practically on a par.

(b) *Southwest Monsoon period*—In the first half (June and July) variation due to localities is highly significant for all the four rainfall classifications at 1 per cent level. In the second half (August and September) variation due to locality is significant at 5 per cent level in the case of occasions of rainfall at some of the stations only irrespective of the quantity. Further, the Central Sugarcane Research Institute appears to have the heaviest type of rainfall pattern in the entire Southwest Monsoon period of June to September

(c) When the variation due to number of occasions of rains is considered, it is significant at 1 per cent level with the following exceptions—

Dry weather period	Groups II and III
Hot Weather period	Group II
Southwest Monsoon period second half	Group II at $P=0.05$
Northeast Monsoon period	Group II at $P=0.05$

This indicates that the variation due to occasions is highly pronounced in the case of occasions of 2.54 mm and above of rain and not in the mild drizzle type of rain of less than 2.54 mm.

(d) In regard to variation due to years it is highly significant at one per cent level for both heavy and mild types of rains, thereby connoting the wide fluctuations in the year-to-year rainfall pattern in and round about Coimbatore city.

(e) In the pre-monsoon period the rain-recording station at the Agricultural College and Research Institute will have the heaviest rainfall pattern, while that at the General Headquarters Hospital will have the mildest rainfall pattern. But in the entire monsoon period of June to December the rain-recording station at the Central Sugarcane Research Institute will generally record the heaviest rainfall, while that at the Millet Breeding Station will record the mildest rainfall.

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In summing up it may be stated that the Central Sugarcane Research Institute is situated in a locality, which is in the nearest vicinity to the Palghat gap, the influence of which is very well known, particularly at the time of the onset of the Southwest Monsoon. Further, variation due to both localities and occasions is really conspicuous in the case of rains of 2.54 mm and above. It is also to be noted that the year-to-year variation is really significant in the natural rainfall pattern of Coimbatore city.

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REFERENCES

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