

Rainfall Pattern and Cropping System in Kinathukadavu Block Coimbatore District

R. KULANDAIVELU¹, N. KEMPUCHETTY², P. RAJENDRAN³ and Y. B. MORACHAN⁴

The rainfall pattern of Kinathukadavu block was analysed statistically and presented in the form of charts for annual, seasonal, monthly and weekly means along with number of rainy days. The data show the well distributed rainfall in summer, South-west and North-east monsoons. The farmers can raise two crops under rainfed condition. The first crop of groundnut can be sown after middle of April and the second crop of sorghum or cotton can be sown by first week of August. This type of cropping system will enable the farmers to maintain the soil fertility.

The distribution pattern of rainfall and the quantity of rainfall received at different part of the year decide the cropping system in rainfed agriculture. The various agricultural operations from time of sowing up to harvest also depends upon the rainfall pattern of the locality. The farmers by long experience over a period of several decades arrive at suitable cropping system for that locality.

At present the rainfall quantity and the pattern of distribution of a locality is not the same as it was at twenty years back. Besides the introduction of modern technology in agriculture with introduction of latest new improved short duration varieties, there is necessity to change the cropping system and other agricultural operations according to the present distribution pattern of rainfall. The rainfall pattern of Kinathukadavu block

of Coimbatore district has been taken up for study and analysis. Similar study was reported for Tindivanam by Balasubramaniam (1959).

MATERIAL AND METHODS

The annual rainfall of Kinathukadavu block from 1963 to 1978 and the daily rainfall data from 1974 to 1978 have been collected from the revenue records and were analysed statistically.

RESULTS AND DISCUSSION

Annual rainfall

The mean annual rainfall works out to 680 mm for the sixteen year period (1963-1978) (Fig. 1). During the year 1963 the total amount of rainfall received was 950 mm. Compared to the 1963 rainfall, the total quantity of rainfall received was getting reduced year by year except in 1969 and

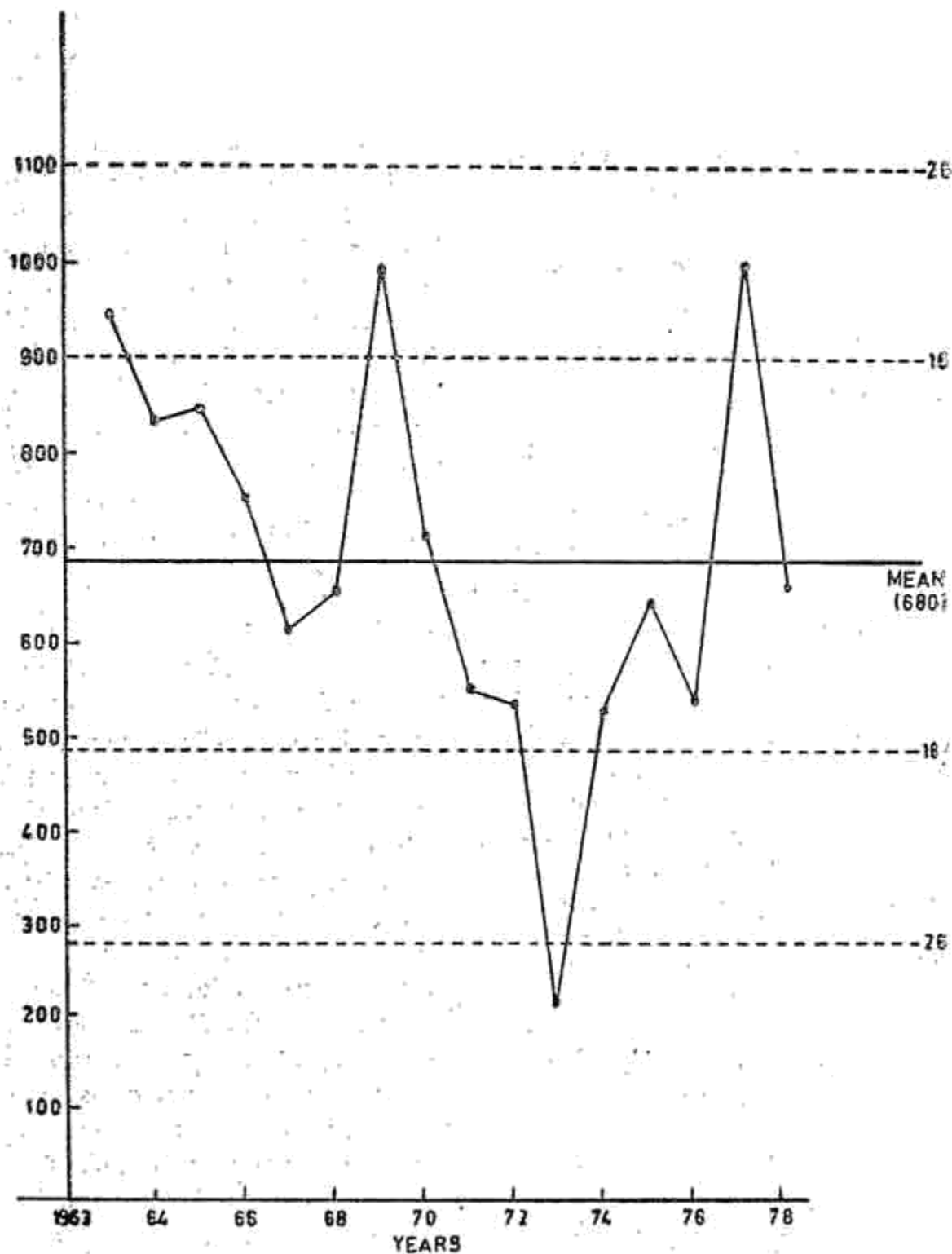
1 Associate Professor

2 & 3 Assistant Professor

4 Professor of Agronomy

} Department of Agronomy, TNAU, Coimbatore-641 003.

Fig. 1. ANNUAL RAINFALL - KINATHUKADAVU BLOCK



1977, wherein the rainfall was about 1000 mm. The entire data show a decreasing trend in the total quantity of rainfall received. A survey of the locality was conducted and the experienced farmers were enquired about the rainfall trend of the Kinathukadavu block. The farmers were of the opinion that the quantity of rainfall received, about 15-20 years back was high and only 50 per cent of the rainfall is being received nowadays. It is also supported by the water-table going down from 10 feet to 50 feet in the wells of the locality.

Seasonal rainfall

As shown in the Figure 2 South-west monsoon gets maximum quantity of 350 mm rainfall which accounts for 53 per cent of the annual rainfall. In North-east monsoon, it is 225 mm forming 34 per cent. The rest of the rainfall is received in Summer season (13 per cent) with little or no rainfall in winter period (January and February months). From the Table given below, it is seen that the rainfall received in South-west monsoon is more dependable than other seasons. Even in summer rainfall is well assured and gives an indication of sowing the first rainfed crop in summer itself. Fairly well distributed rainfall in summer, south-west and north-east monsoon makes the farmers to raise two crops under rainfed condition.

Number of rainy days

The total number of rainy days works out to fifty. In the month of

TABLE

Season	Mean rainfall (mm)	CV%
Summer (March-May)	82.3	51.3
South-west monsoon (June-September)	348.2	31.1
North-east monsoon (October-December)	225.3	91.6

April it is the lowest i.e., one rainy day and in all other months up to November it is more than four and less than or equal to ten. In May it is four, September and October five, June and November eight, July nine and August ten. Since the rainy days are more than four to ten per month from May to November, there is every possibility of raising two crops under rainfed conditions, without much moisture stress.

Mean weekly rainfall

The mean weekly rainfall shown in Fig. 3, indicates that there is continuous rainfall from 16th standard week (April 16th onwards) upto 48th standard week (till 2nd December). During 18th week (April 30th to 6th May) the mean rainfall received is more than 30 mm and this week seems to be the most dependable period for taking up the sowing of first rainfed crop. The rainfall received from 21st to 23rd week (May 21st to 10th June) is less than 10 mm per week and the crop is likely to suffer for want of moisture due to high evaporation from the soil. During the North-east monsoon period the rainfall received between 38th week

FIG. 2. SEASONAL RAINFALL - KINATHUKADAVU BLOCK

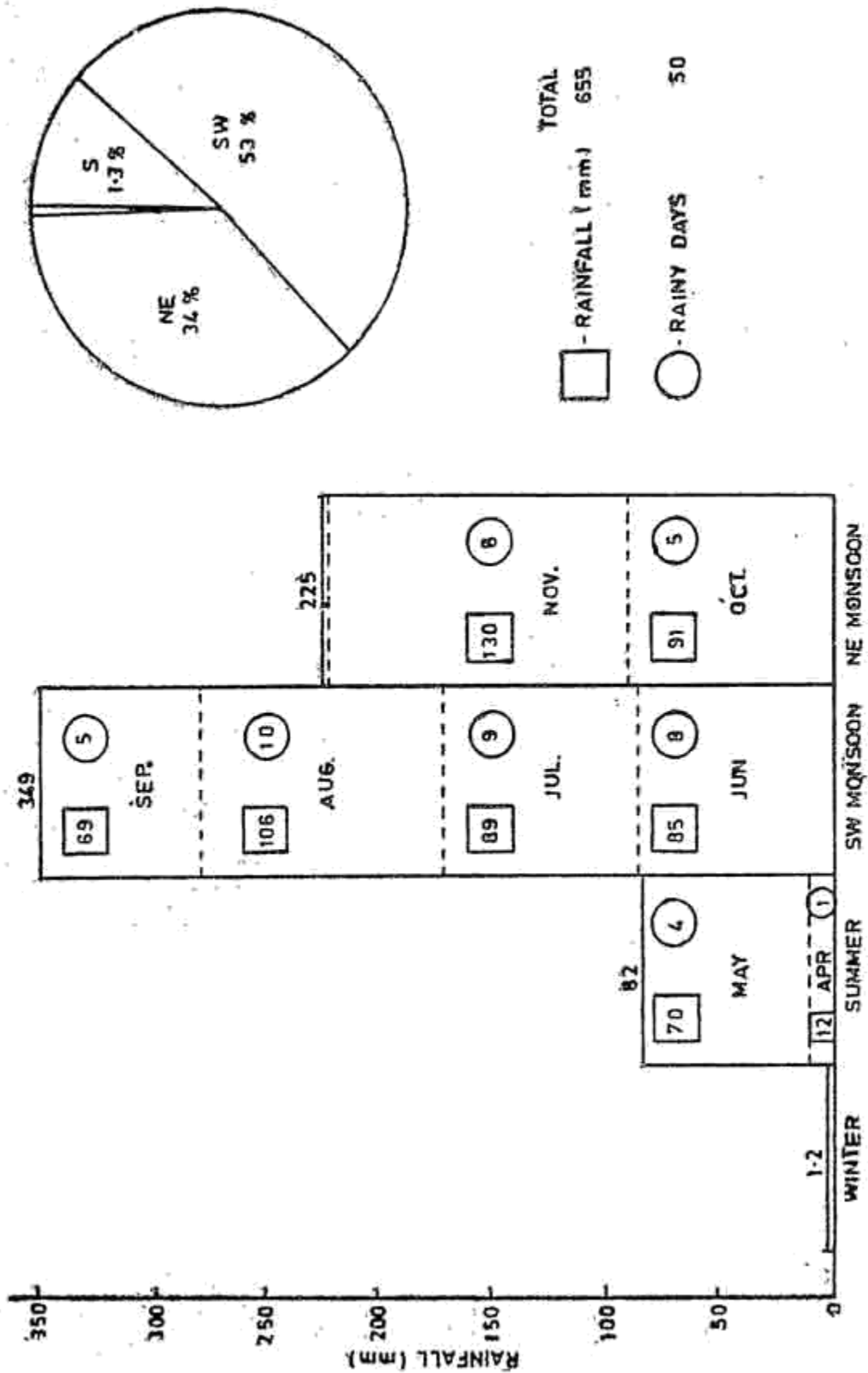
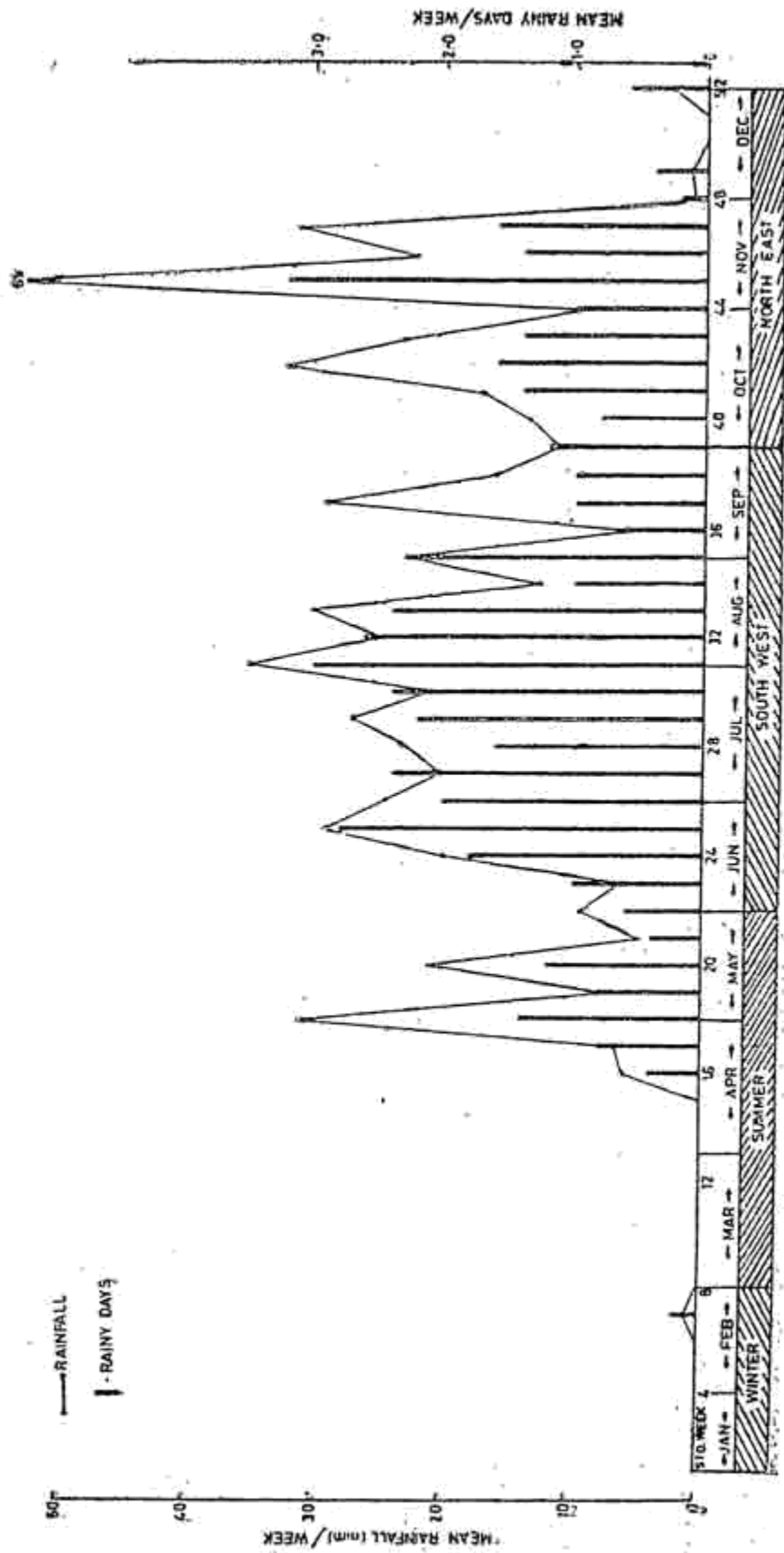


FIG. 3. MEAN WEEKLY RAINFALL (1976-78) - KINATHUKADAVU BLOCK



to 41st week (from September 17th to 14th October) will be less than 15 mm/week, and the second crop sown is likely to suffer for want of moisture. In 45th week (November 5th to 11th) the mean rainfall received is very high of 69 mm and it will be sufficient for the second crop to mature. From 48th week (from 26th November) up to 15 week of next year (up to April 15th) there will not be any rainfall and it will be completely dry.

Cropping system followed by the farmers

With the receipt of first summer shower during middle of March, they used to prepare the land and sow with groundnut crop in the second shower. The crop used to receive rainfall subsequently and pass a dry spell during middle of May to middle of June. Being a long duration spreading variety of groundnut (TMV. 3) it is used to withstand the dry spell and come up well with the receipt of rainfall after middle of June. The crop comes to maturity by end of July and the field will be prepared immediately and sown with a long duration sorghum before first week of August. The sorghum crop also will pass a dry spell from middle of September to middle of October. With the receipt of heavy showers after middle of

October, the crop comes to maturity by first week of of January.

Cropping system suggested

The present trend in rainfall shows that sowing between middle of March to middle of April is not advisable since there is no dependable rainfall. The sowing of first crop has to be taken up only after middle of April and the rains received prior to this can be utilized for preparing the field. After middle of April, sowing of groundnut can be taken up. Growing of intercrops like greengram or lablab or short duration redgram in rows of 8 feet apart can be suggested. The first sown crop will come to harvest by end of July and the field can be prepared and sown with long duration sorghum and Varalakshmi cotton depending upon the farmers requirements of fodder and grain. In sorghum also intercrops like blackgram (or) lablab or cowpea can be grown in rows of 8 feet apart. The intercrops will be harvested earlier than the main crop. Sorghum and cotton will come to maturity by January. This cropping system follows the rotation of legume followed by non-legume which will be useful to maintain the soil fertility.

REFERENCE

- BALASUBRAMANIAM, C. 1959. Rainfall pattern at Tindivanam (South Arcot district). *Madras agric. J.* 46: 131-38.