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Short communication

Probability analysis of weekly rainfall for crop planning in Nilgiris hills of Tamil Nadu

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Rainfall is one of the important factors deciding success of rainfed agriculture of the particular agro-ecological region where the major part of the precipitation is rainfall. Crop growth and yield will be affected by the amount of rainfall received during the period and its distribution. Seventy per cent rainfall occurs during the monsoon period, out of this crops use only small amount and its large portion ends as surface runoff. Detailed knowledge of the rainfall pattern helps in planning crop calendar and designing of different structures for flood control and for designing storage capacity of water harvesting structures to meet out the irrigation requirement during drought periods. Nilgiris hill ranges are located on the fragile environment of Western Ghats with an elevation ranging from 300 m to 2634 m above mean sea level. Major part of the Nilgiris is covered under forest (56%) followed by plantation crops (20%) like tea, coffee and remaining areas are covered by vegetables. Out of total annual rainfall of 1204 mm, 54 % of rainfall is distributed over four month analysis for crop planning in the Nilgiris of Tamil Nadu State was scanty and limited. Hence, an attempt was made to analyze the weekly rainfall data for crop planning in Udhagamandalam block of the Nilgiris.

The weekly rainfall data of 52 years (1961-2013) recorded at Regional Centre of Indian Institute of Soil and Water Conservation, Udhagamandalam were collected. Rainfall at the various probability levels 30, 50, 60 and 70per cents were worked out for all 52 standard weeks using Weibul's formula. The weekly probable rainfall values for different probability levels have been depicted in Fig. 1.

The weekly probable rainfall values shows that maximum rainfall of 33.9 mm occurs during 40thweek (1st to 7th October) followed by 31.4 mm during 42ndweek (15th to 21st October) at 70 per cent probability level. It is evident from Fig. 1 that at 50 per cent probability level,minimum rainfall is received in every meteorological week from 15thto 50th weeks. Field preparation and tillage operations could be