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Zoning and Trends of LGP Sowing Period in North-west India under Changing Climate using GIS

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Abstract: A study was conducted to quantify trends, variability and spatial distribution of length of growing period (LGP) in north-west India. For this purpose more than 30 years daily data on rainfall, maximum and minimum temperatures was collected from twenty two different agrometeorological stations situated in NW India. The map of north-west India was digitized and four LGP zones (<120 days, 120-180 days, 180-240 days and >240 days) were delineated using GIS. Growing period increased toward centre both from south and north end of the study area. Trends in LGP for different meteorological stations, hills, plains and north-west India were evaluated using trend analysis. Among stations the normal length of growing period was maximum for Manali and Ranichauri (365 days) and lowest for Ganganagar (59 days). The normal LGP for annual was 299.5, 151.9 and 191.9 days with coefficient variation of 17.5, 38.3 and 45.4 per cent for effective growing season normal LGP was 184, 73 and 103 days with coefficient variation of 45.5, 60.2 and 25.4 per cent and for dormant season it was 116, 78 and 89 days with coefficient variation of 25.4, 42.3 and 40.4per cent for hills, plains and north-west India, respectively. The highest LGP was observed in hills followed by plains and north-west India. A non-significant increasing trend was observed in rainfall, PET and LGP over north-west India.

Keywords: GIS, Length of Growing period, North-west India, Trend analysis, Zoning