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Impact of Climate Change on Agriculture Production in District Kinnaur, Himachal Pradesh

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ABSTRACT Weather phenomena are influencing temperature and rainfall patterns in the region, which impacts crop production. Therefore, the present study was conducted with the objective of ascertaining the effect of climate change on agricultural crop productivity in the district of Kinnaur. During the kharif season, results revealed that the maximum temperature rose at the rate of 0.02°C per year. After 1999, the maximum temperature remained above the long-term average except for the years 2001, 2002, 2005, 2008, 2011, 2013 and 2014, indicating an overall warming trend. During the rabi crop season, diurnal temperature increased by 0.02°C per year, which was statistically significant. As per the outputs from Mann Kendal Tests, an overall increased productivity trend was recorded for maize, barley and common millets, wherein wheat showed a decreasing trend of -0.014 t ha^{-1} $year^{-1}$. This means that the observed significant maximum variations in climatic parameters for rice are 35.6 percent, 15.4 percent for maize, and 9.0 percent for common millets. Non-significant variations were recorded for wheat, barley and ragi.