



Changes of growing degree days in the main maize producing area of China during past years

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The agricultural demands and supply were expected to grow all of the more severe with increasing population. Growing degree days is the dominant factors associated with the quality and quantity of many agricultural crops. In order to find out the effects of historical climate changes on agricultural production, we investigated the trends and changes of growth degree days (GDD) and heat degree days (HDD) in the main maize producing area of China by using the Inter-Sectoral Impact Model Intercomparison Project (ISIMIP) data. In this study, we find that the GDD and HDD increased slightly during 1861-2005 with more abruptly increases in GDD, which lead to better production environment in Central and Eastern China for maize. However, the climatic trend rates showed large variation in spatial, as GDD shows an upward trend in Hebei and Shandong provinces and HDD was on the rise in Shandong and Shanxi provinces. The GDD and HDD in the northern part of Hebei province and the northern part of Shanxi province are lower, but have a higher rising trend. Therefore, the future heat resources are better for maize production, but the risk of extreme high temperature is increased. This result indicates a necessary to the crop layout in these areas.

Appendix. List of figures

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